

PARTS & SERVICE NEWS

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SUBJECT: IMPROVED DURABILITY OF PISTON WEAR RING FOR HOIST CYLINDER ON HM400-1

PURPOSE: To introduce modification procedure to increase the durability of the wear ring of the hoist cylinder piston on HM400-1 articulated dump trucks

APPLICATION: HM400-1 Articulated Dump Trucks, Serial Nos. 1001 thru 1079

FAILURE CODE: H1J0FF

DESCRIPTION:

1. Introduction

There is a possibility of occurrence of internal damages in the hoist cylinder being caused by cracks of the wear ring for the hoist cylinder piston of the HM400-1 articulated dump trucks. When a malfunctioning occurs in the hoisting operation on the HM400-1 by the aforementioned internal damage, make the modification being introduced in this Service News to replace the hoist cylinder with the improved hoist cylinder with increased durability of the wear ring.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
707-09-16024 (707-09-16022)	Cylinder (Cylinder)	Replacement	2 (2)	Consumable parts
07000-F3032 (07000-F3032)	O-ring (O-ring)		4 (4)	
07000-F3022 (07000-F3022)	O-ring (O-ring)		4 (4)	

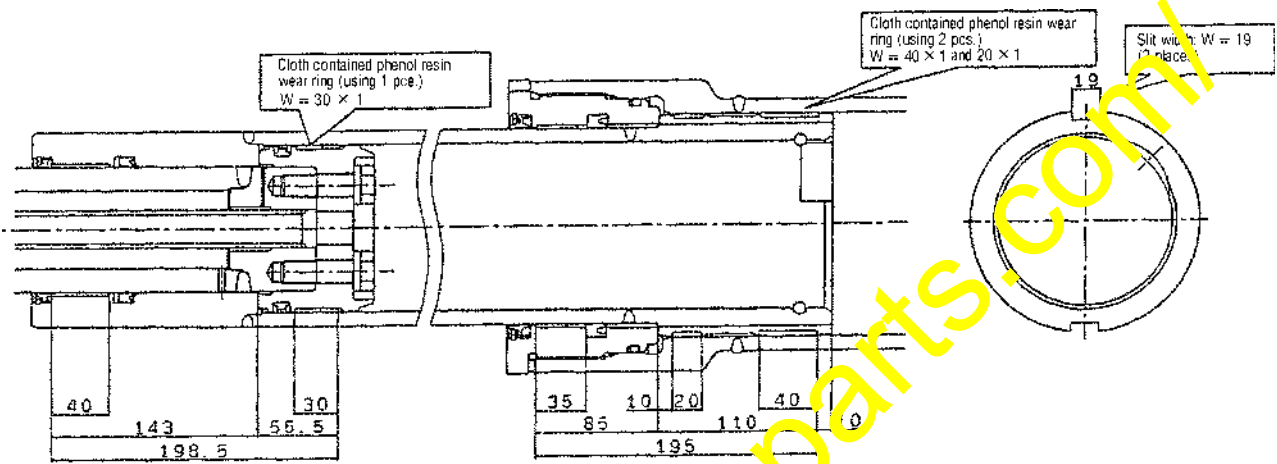
3. Details of the modification

(1) The material of the piston wear ring of the hoist cylinder has been changed to increase the durability.

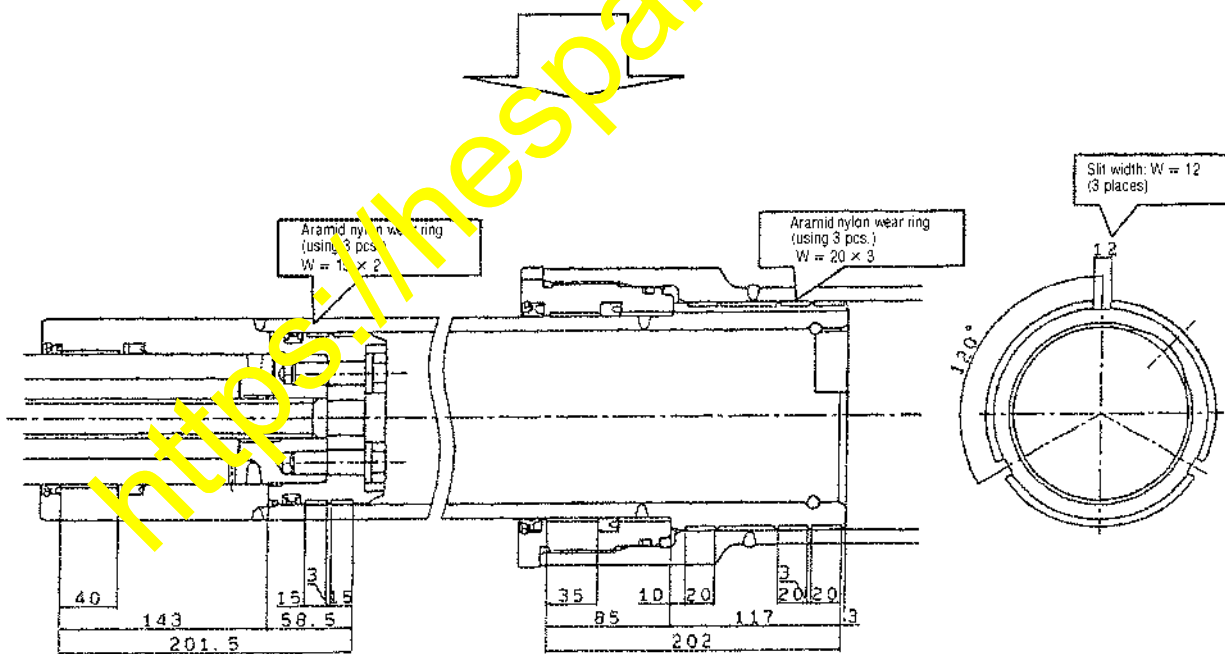
New material: Aramid Nylon ← Current material: Cloth contained phenol resin

(2) The slit width of the first cylinder piston has been changed so that the tip end of the split section of the wear ring may not be caught by the slits of the piston.

New piston: 12 mm width slit × 3 places ← Current piston: 19 mm width slit × 2 places



Current structure



Improved structure

4. Modification procedure

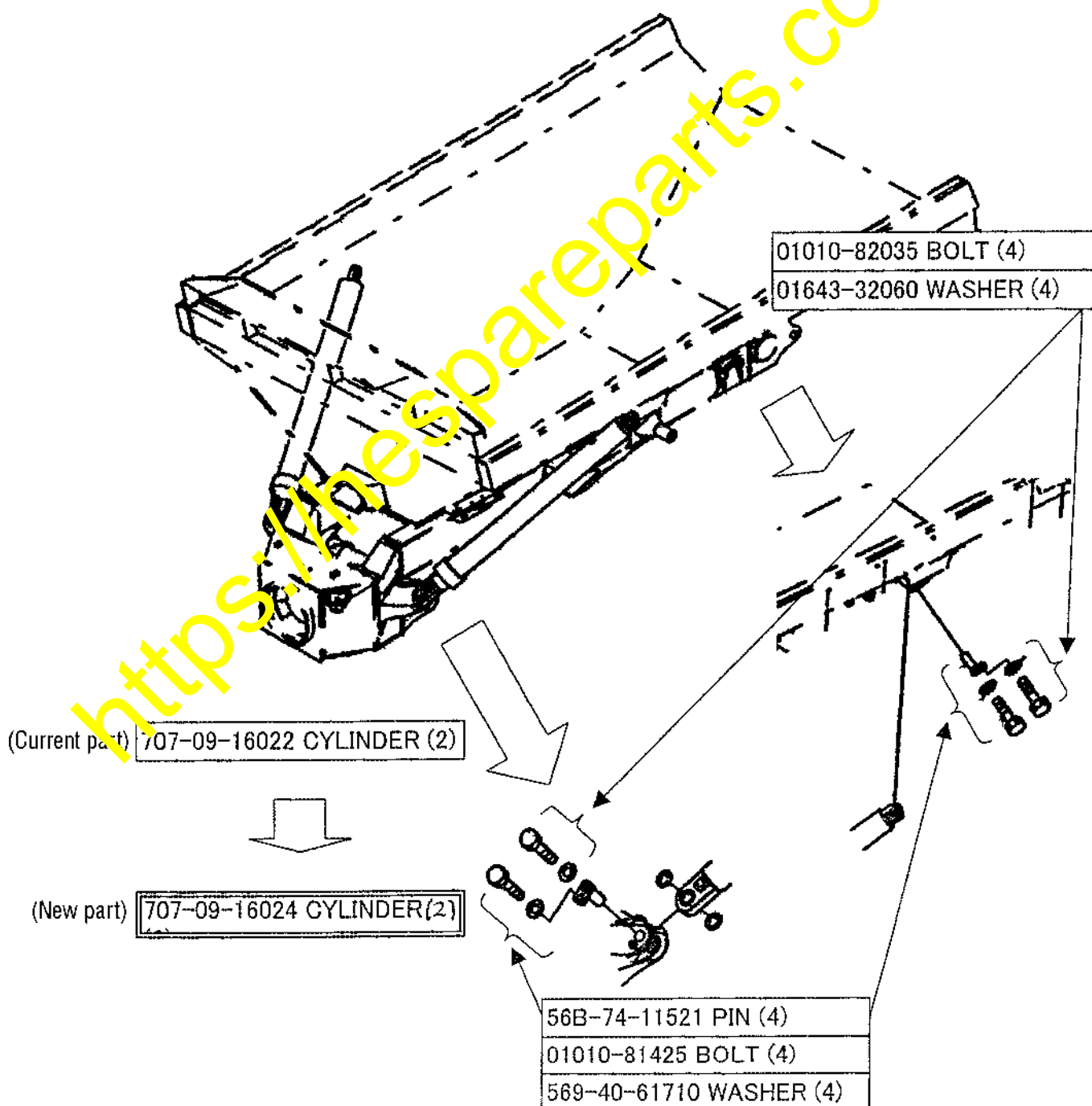
4-1. Preparations before starting the modification work

- (1) Park the vehicle on a flat place, stop the engine and apply chocks under the tires.
 - Set the hoist lever to the "HOLD" position and apply the lock.
- (2) Gradually loosen the hydraulic tank cap to release the internal pressure from the tank.

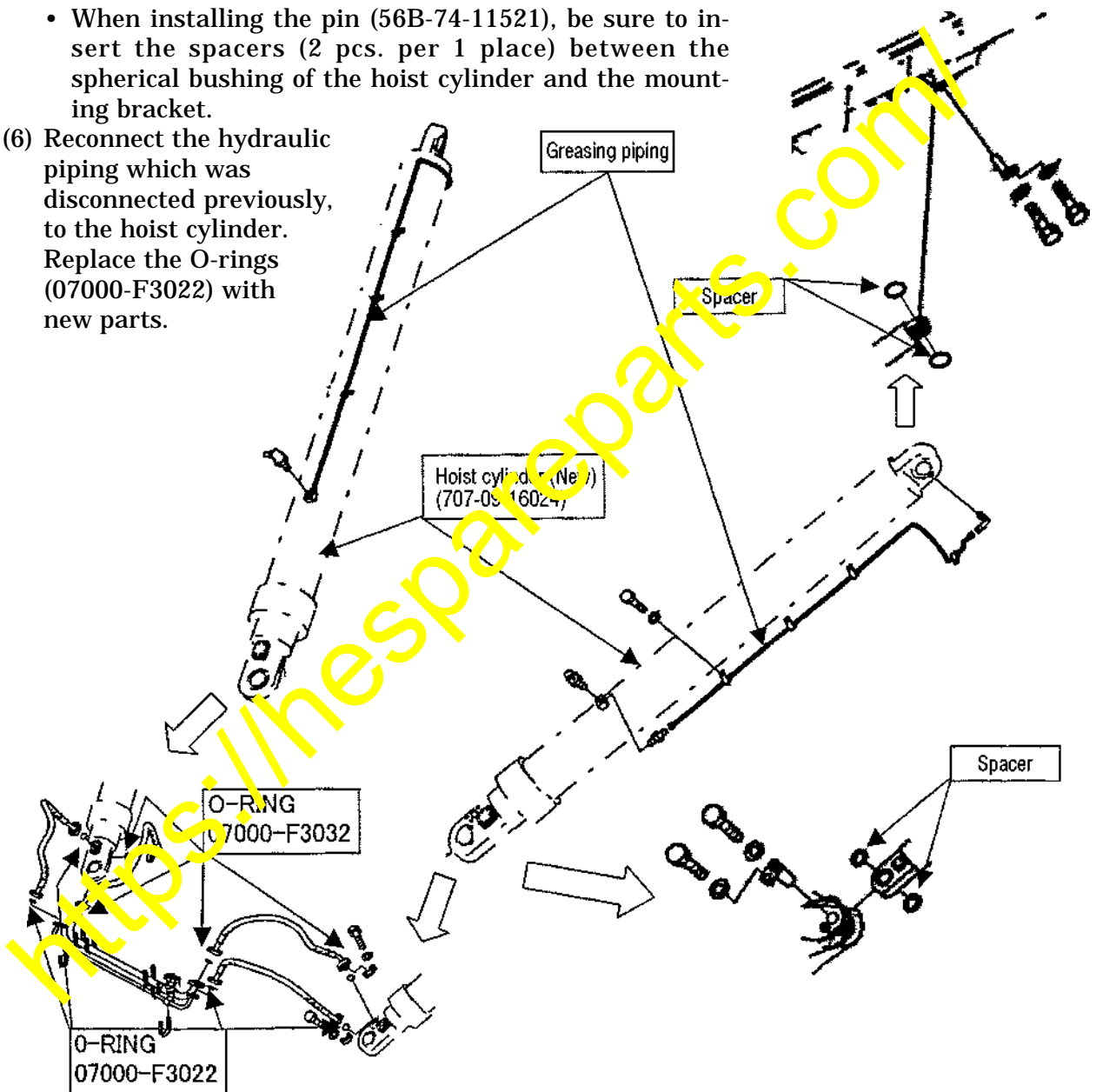
(Caution) You may suffer burns if you loosen the hydraulic tank cap while the oil temperature is still high. Therefore, loosen the cap after the oil temperature has dropped sufficiently.
- (3) Since the oil remaining inside the hoist cylinder will flow out when the piping is disconnected, place an oil pan.

4-2. Modification procedure

- (1) Disconnect the hydraulic piping hose from the hoist cylinder rod head.
- (2) Holding the hoist cylinder using a hoisting tool, loosen the bolt (01010-81425) to pull out the pin (56B-74-11521) from the upper section.



- If the pin does not come out easily, remove the bolt (01010-82035) and use the bolt as a forcing tap.
- (3) Similarly, pull out the pin (56B-74-11521) from the lower section and remove the hoist cylinder (707-09-16022).
 - (4) Disconnect the greasing piping from the removed LH and RH hoist cylinders, reconnect it to the new cylinders.
 - (5) Install the new hoist cylinders (707-09-16024).
 - Install the new hoist cylinder so that the greasing piping may come to the upper side and be careful not to make an installation error with the LH hoist cylinder for the RH or vice versa.
 - When installing the pin (56B-74-11521), be sure to insert the spacers (2 pcs. per 1 place) between the spherical bushing of the hoist cylinder and the mounting bracket.
 - (6) Reconnect the hydraulic piping which was disconnected previously, to the hoist cylinder. Replace the O-rings (07000-F3022) with new parts.



4-3. Inspections to perform after the modification work

- (1) After the reassembly work, start the engine and check for oil leakage.
- (2) Repeat raising and lowering operation of the dump body to fill the inside of the hoist cylinder with oil (air bleeding), check the oil level in the hydraulic tank. If the oil level is lower than the specified level, add hydraulic oil upto the specified level.
- (3) If the dump body seating shock is excessive, perform the body system calibration work referring to the Section "Testing and Adjusting" in the Shop Manual.