# INSTALLATION MANUAL

| REF NO. | BA00009 |
|---|---|
| DATE | July 18, 2000 |



**SUBJECT:** NEW RETARDER CONTROL VALVE

**PURPOSE:** To introduce a new retarder control valve

**APPLICATION:**
HD205-3 Dump Trucks, S/N 1003 and up
HD320-3 Dump Trucks, S/N 2501 and up
HD325-3 Dump Trucks, S/N 1501 and up
HD325-5 Dump Trucks, S/N 2002 and up
HD325-5PB Dump Trucks, S/N 3001and up
HD325-6 Dump Trucks, S/N 5001 and up
HD465-2 Dump Trucks, S/N 1101 and up
HD465-3 Dump Trucks, S/N 2001 and up
HD465-3PB Dump Trucks, S/N 3001 and up
HD465-5 Dump Trucks, S/N 4001 and up
HD785-1 Dump Trucks, S/N 1028 and up
HD785-2 Dump Trucks, S/N 1501 and up
HD785-3 Dump Trucks, S/N 2001 and up
HD785-3MC Dump Trucks, S/N 3001 and up
HD1400B-3 Dump Trucks, S/N 1005 and up
HD1200M-1 Dump Trucks, S/N 1101 and up
330M Dump Trucks, S/N A10090 and up

**FAILURE CODE:** RX0099

**DESCRIPTION:**

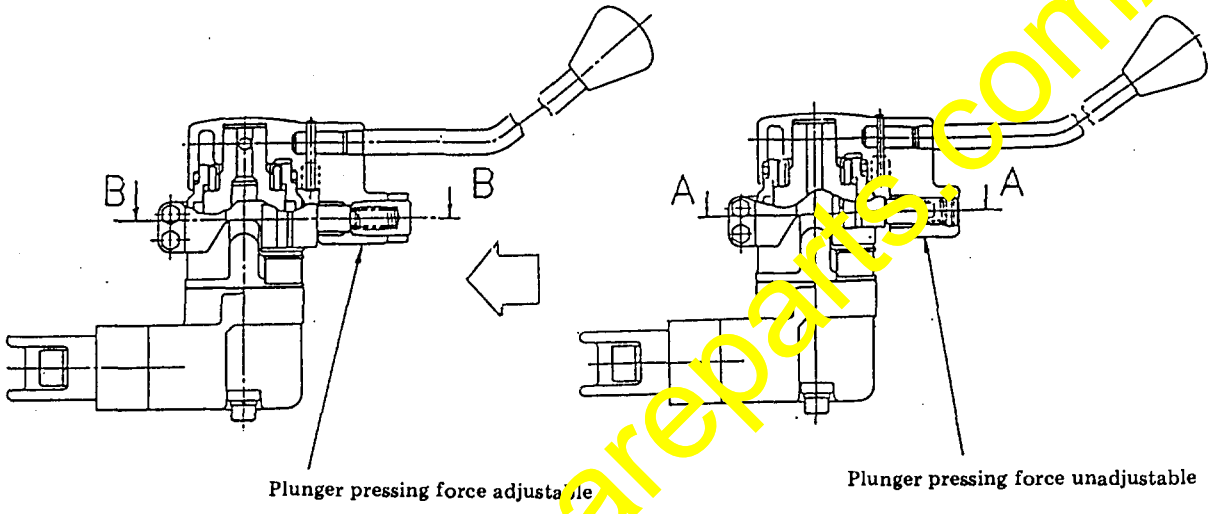
A new retarder control valve provided with the external resistance mechanism of a resistance force adjusting type is now available.

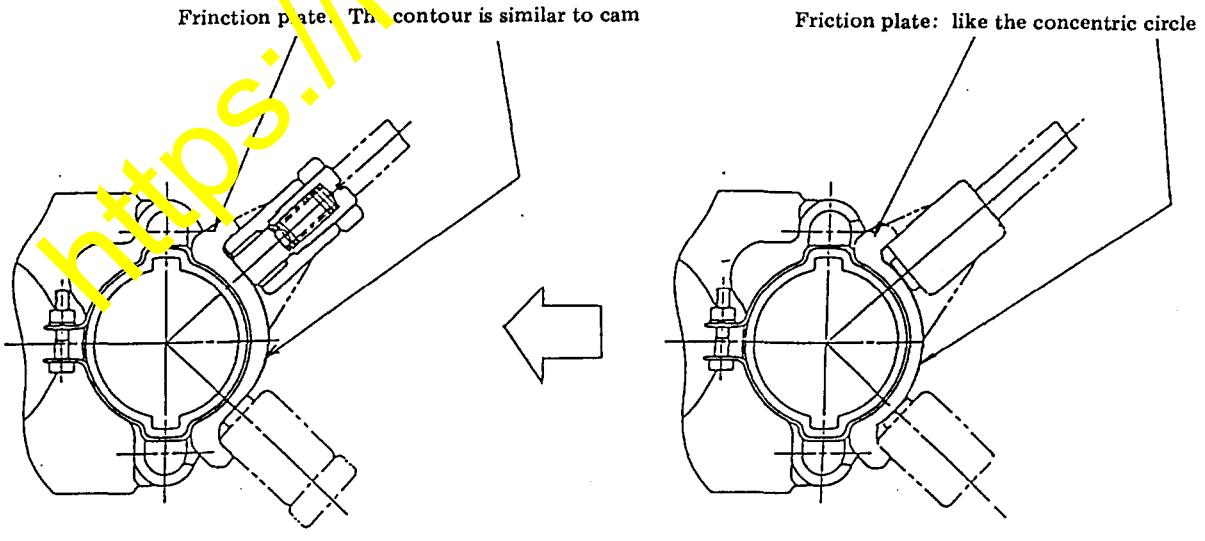
If the valve lever natural return is encountered with the conventional retarder control valve, the new resistance force adjusting type introduced herein is recommended for use in its stead.

2. Outline of new retarder control valve

The contour of friction plate sheathing the valve body has been changed from the concentric circle to the cam, and the valve is structured so that the plunger pressing force can be adjusted, thereby improving the preventive force of the natural lever return.

[ New ] [ Current ]




Section B-B Section A-A

3. List of parts to be newly prepared

| No. | Part No. | Part Name | Q'ty | Remarks |
|---|---|---|---|---|
| (1) In case of the replacement between assemblies | | | | |
| 1 | 561-35-62202<br>(561-35-62201) | VALVE ASS'Y<br>(VALVE ASS'Y) | 1<br>(1) | |
| (2) In case of the replacement between parts | | | | |
| | 561-35-05030 | LEVER KIT | 1 | |
| 1 | 566-35-19182<br>(566-35-19181) | ·PLATE<br>(·PLATE) | 1<br>(1) | |
| 2 | 566-35-19190 | ·BOLT | 2 | |
| 3 | 566-35-19220 | ·WASHER | 2 | |
| 4 | 566-35-19210 | ·NUT | 2 | |
| 5 | 566-35-16380 | ·O-RING | 1 | Wear part |
| 6 | 561-35-62221<br>(561-35-62220) | ·LEVER SUB ASS'Y<br>(·LEVER SUB ASS'Y) | 1<br>(1) | |
| 7 | 566-35-16441 | ·SCREW | 1 | Wear part |
| 8 | 566-35-19121<br>(566-35-19120) | ·PLUNGER<br>(·PLUNGER) | 1<br>(1) | |
| 9 | 566-35-19131<br>(566-35-19130) | ·SPRING<br>(·SPRING) | 1<br>(1) | |
| 10 | 561-35-62230 | ·CASE | 1 | |
| 11 | 561-35-62240 | ·NUT | 1 | |

4. Installation procedure

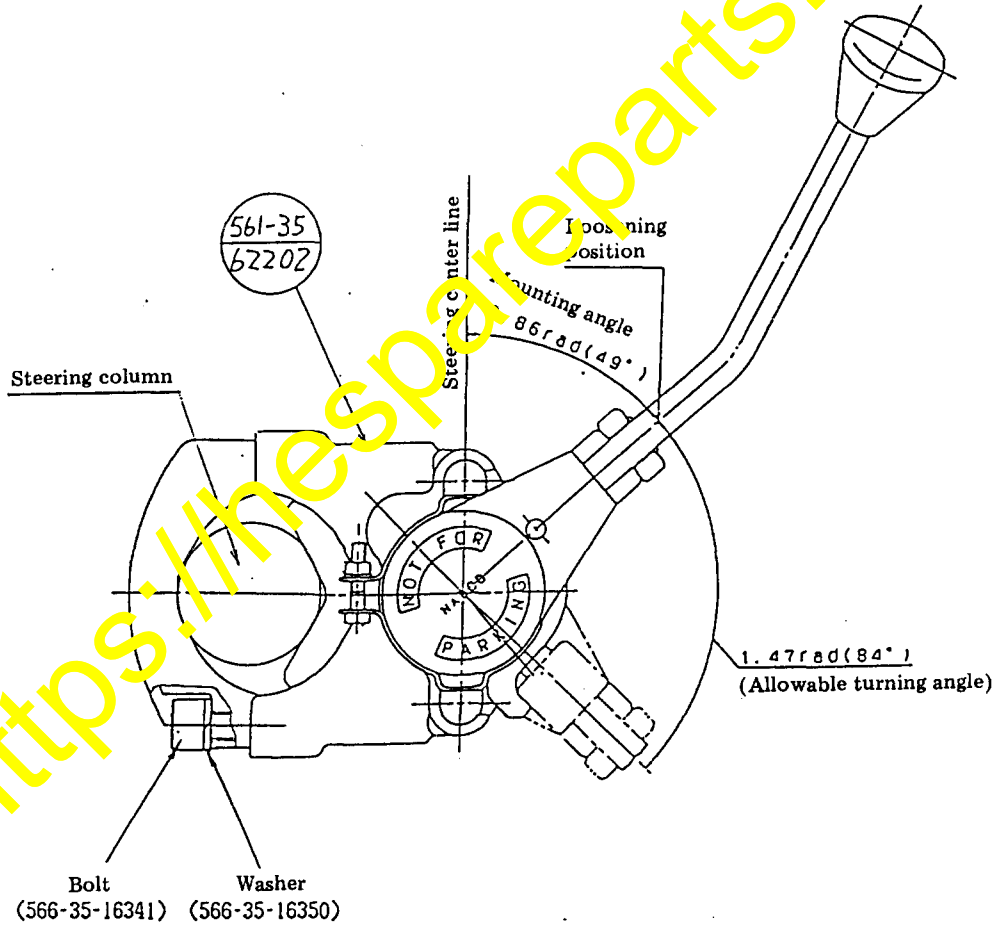
The installation procedure consists of the two replacement methods. One is the replacement method between assemblies and the other is the replacement method between the current and the new (improved) parts. According to the respective methods, prepare the applicable parts listed in PAR. 3.

4-1 In case of the replacement between assemblies (See Fig. 1.)

(1) Remove the mounting bolts (566-35-16341) and washers (566-35-16350) from the current retarder control valve (561-35-62201). Then, remove the valve ass'y out of place.

(2) Install a newly prepared retarder control valve (561-35-62202) to the steering column with the mounting bolts (561-35-16341) and washers (566-35-16350).

[ Bolt tightening torque range: 6.9 – 8.9 Nm (0.7 – 0.9 kgm) ]




Top view

Fig. 1 Installation drawing of valve ass'y

4-2 In case of the replacement between parts

(1) Removal of parts (See Fig. 2.)

1) Remove the mounting bolts (33) and washers (34) from the current retarder control valve (561-35-62202). Then, remove the control valve ass'y.

2) Remove the lock ring (31) with a pair of ring pliers. Then, remove washer (30), spring (29), and plunger (28).

3) Remove the setscrew (27) (The setscrew stuck in place with the thread tightener is difficult to be loosened.), the lever ass'y (32) and O-ring (26).

4) Loosen bolt (37) and nut (38). Remove the friction plate (36).

★ After completing the above removal, be careful not to lose the adjusting lock washer (25).

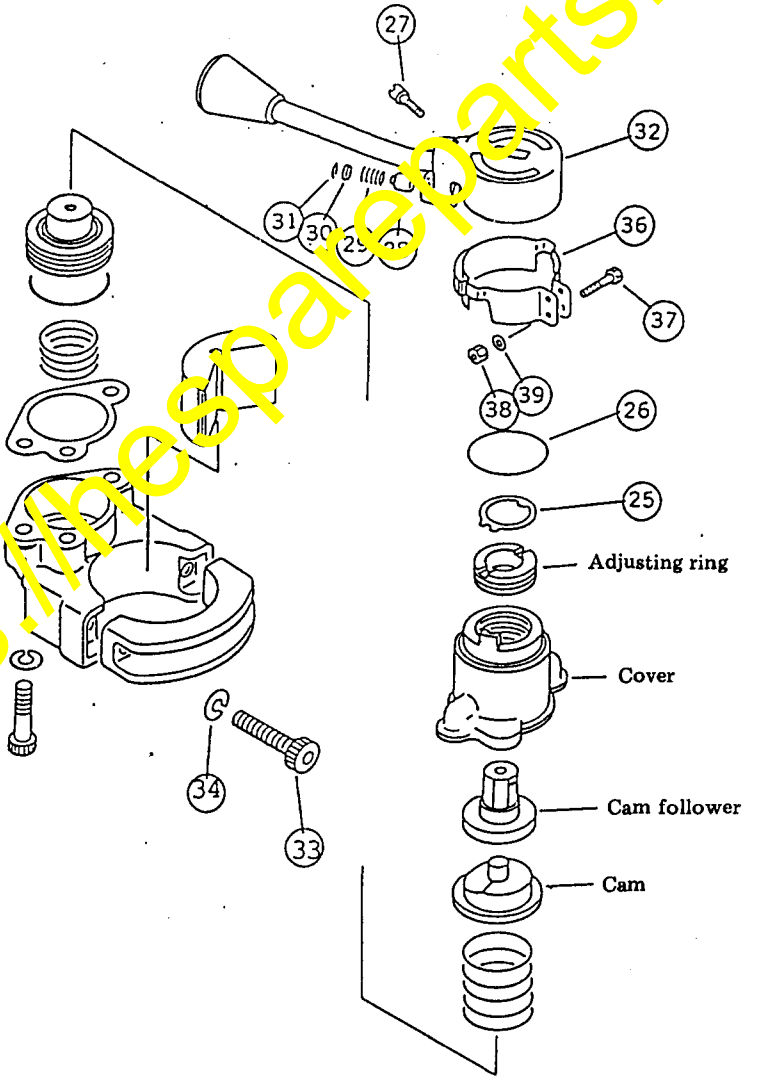



Fig. 2 Parts to be removed

(2) Installation of parts (See Fig. 3.)
The No. suffixed to a part name indicates the No. in the list of parts to be newly prepared. The other parts are the current parts to be reused.

1) Set the friction plate ① (566-35-19182) in the body (cover) and tighten in place with bolts ② (566-35-19190), washers ③ (566-35-19220), and nuts ④ (566-35-19210).
[ Tightening torque range: 0.98 – 1.5 Nm (0.1 – 0.15 kgm) ]
★ Tighten them uniformly at 2 places.

2) Coat O-ring ⑤ (566-35-16380) with grease (lithium-based) and hang it from the cover stepped portion.

3) Insert the lever sub-ass'y ⑥ (561-35-62221) into the hexagonal portion of cam follower and secure it with the setscrew ⑦ (566-35-16441).
[ Tightening torque range: 0.98 – 1.5 Nm (0.1 – 0.15 kgm) ]
★ When inserting the lever sub-ass'y ⑥ into place, be careful not to damage O-ring ⑤.
★ Coat the thread area of the setscrew ⑦ with the thread tightener.

4) Set plunger ⑧ (566-35-19121) and spring ⑨ (566-35-19131) successively in the friction mechanism at the head. Turn in the spring case ⑩ (561-35-62230) and secure it with lock nut ⑪ (561-35-62240).
[ Tightening torque range: 9.8 – 15 Nm (1 – 1.5 kgm) ]
★ The position of the spring case ⑩ to be turned in must be at a point where the case is returned (loosened) by 1.5 – 2 turnings from the max. turned-in position. The spring case ⑩ must not be turned in tightly.
★ Grease should be used only for O-ring positions. Do not use grease for the friction areas.

(3) Installation of the valve ass'y (See Fig. 3.)
Install the set-up valve ass'y in the steering column, using the removed bolts (566-35-16341) and washers (566-35-16350).

(4) Confirmations after completing the installation

1) After the retarder brake is applied, move the lever back to the loosening position. At this time, confirm that no residual pressure remains.
★ If the residual pressure remains, adjust the direction of the friction plate ①.

2) Apply the retarder brake and make sure that the lever has such a degree of the resistance force as not allowing the lever to make the self-return.
★ If the resistance force of the lever runs short or too large, adjust the resistance force properly by the amount of turning-in of the spring case ⑩.

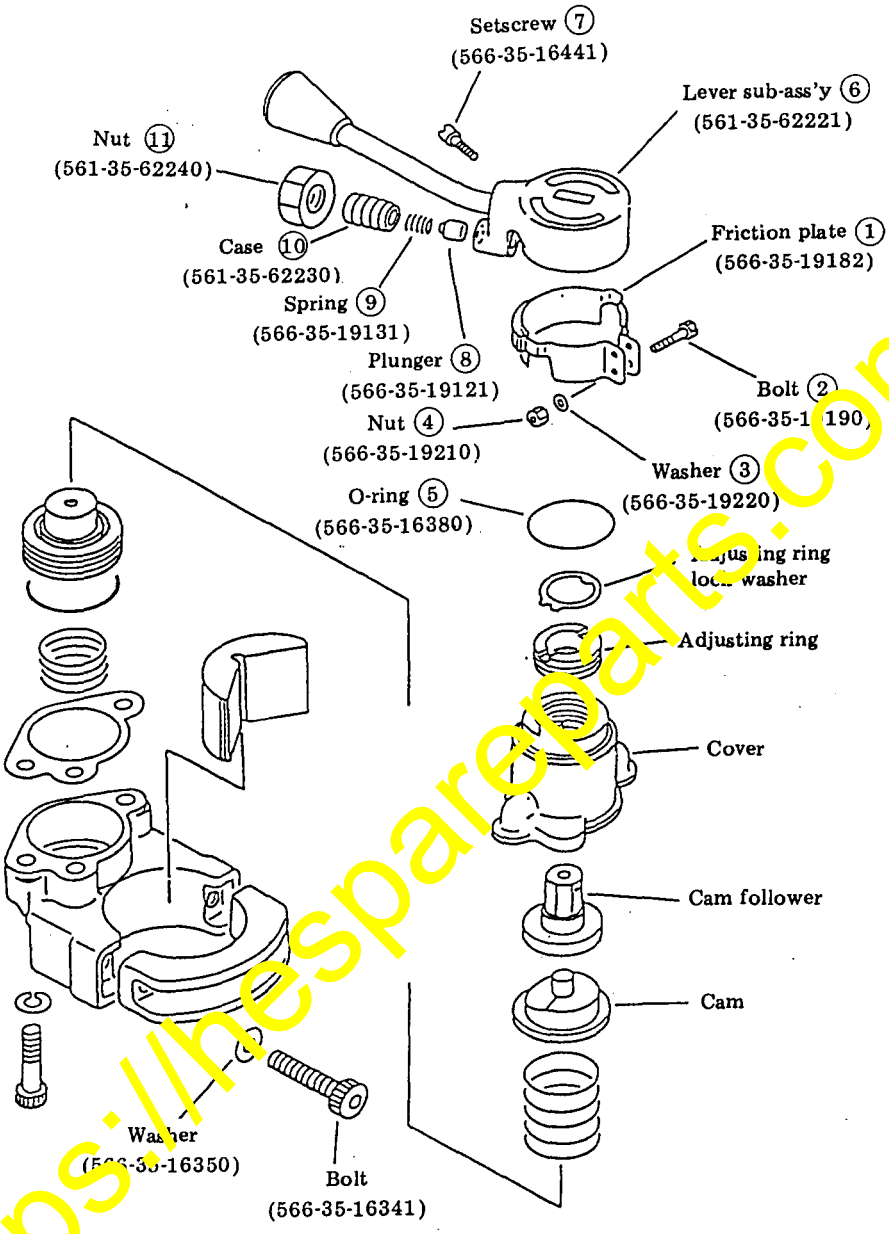



Fig. 3 Parts installation drawing