

# PARTS & SERVICE NEWS

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**SUBJECT:** INTRODUCTION OF IMPROVED T/M MAIN RELIEF VALVE

**PURPOSE:** To introduce:

- ① An improved main relief valve eliminating the whistling sound
- ② An improved pressure reducing valve facilitating shim supplementation work

**APPLICATION:** WA600-3 Wheel Loaders., Serial Nos. 50001 thru 50021, A52009 and up (T/M No. 6001 thru 6022)

**FAILURE CODE:** 159060

**DESCRIPTION:**

## 1. Introduction

### ① An improved main relief valve eliminating the whistling sound

With the current main relief valve for the transmission on the WA600-3 wheel loaders, depending on the revolution level of the engine, a whistling sound may occur when the oil passes through the throttled section of the valve. Although such whistling sounds do not influence the durability of the valve, we have prepared an improved main relief valve eliminating such whistling sound. This Service News will introduce the structure and installation procedures for the new valve.

### ② An improved pressure reducing valve making for easy shim supplementation work

With the pressure reducing valve currently used on the WA600-3 wheel loaders, shim supplementation work for hydraulic pressure adjustment has been difficult since the clearance between the plug and the shims is very narrow when the pressure reducing valve is in a closed state. This time, we have prepared an improved pressure reducing valve which can secure sufficient clearance to facilitate the shim supplementation work and this Service News will introduce its structure and installation procedures.

## 2. List of parts

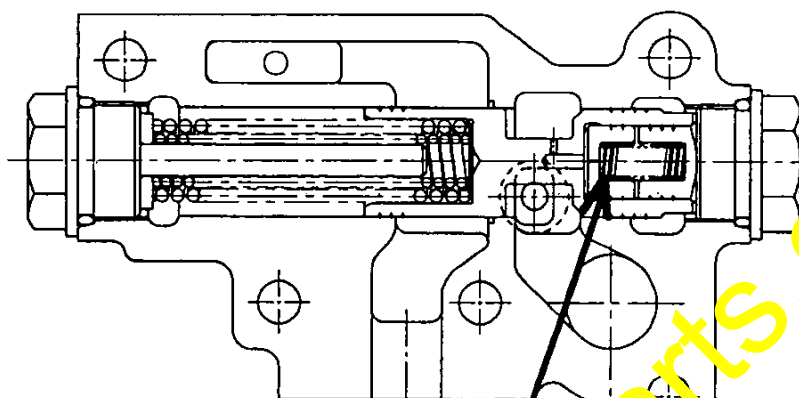
Part No.	Part Name	Q'ty	Remarks
426-15-31001 (426-15-31000)	Transmission Ass'y (Transmission Ass'y)	1 (1)	Interchangeability: New ⇄ Current
426-15-35001 (426-15-35000)	Valve ass'y (Valve ass'y)	1 (1)	Interchangeability: New ⇄ Current
562-15-16110 (198-15-15770)	Spring (Spring)	1 (1)	← The part which is effective in eliminating the whistling sound.
425-15-15520	Washer	1	← The part to prevent occurrence of interference with the plug and shim
(07002-03034)	(O-ring)	(2)	} Consumable parts to be replaced when installing the part to eliminate the whistling sound
(426-15-15911)	(Gasket)	(1)	
(07000-73030)	(O-ring)	(2)	} Consumable parts to be replaced when installing the part to prevent occurrence of interference between the plug and shim
(07002-03034)	(O-ring)	(1)	
(428-15-15980)	(Gasket)	(1)	

Current parts

## 3. Contents of the modification

[① Regarding the improved main relief valve eliminating the whistling sound]

With the current main relief valve for the transmission on the WA600-3 wheel loaders, depending on the revolution level of the engine, a whistling sound may occur when the oil passes through the throttled section of the valve. Although such whistling sounds do not influence the durability of the valve, we have prepared an improved main relief valve eliminating the whistling sound as shown in the schematic diagram below.



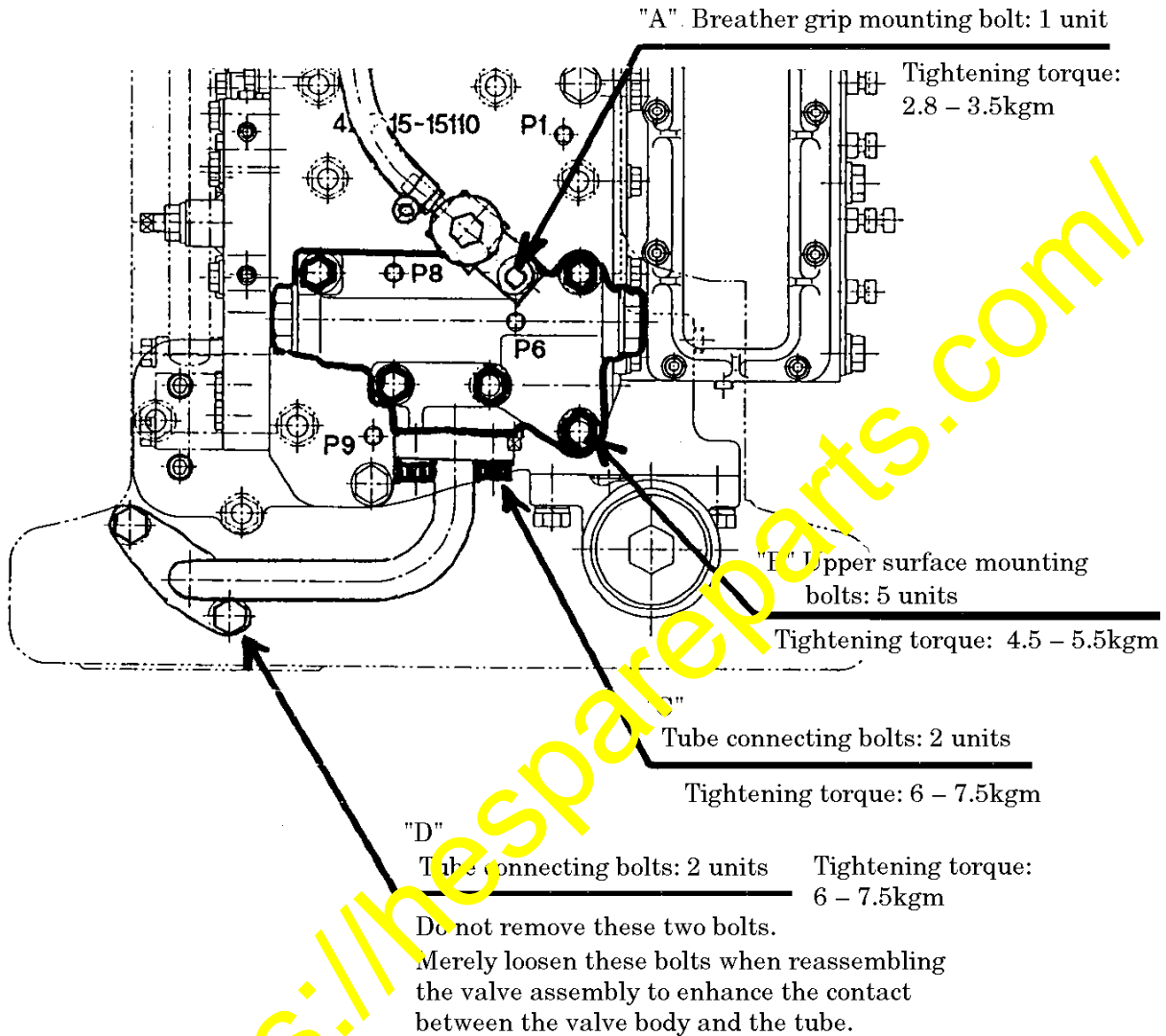
The vibration isolator spring  
has been modified.

<p>&lt;Current part&gt; 198-15-15770 Wire diameter: <math>\phi</math> 1.0 Free length: 30mm</p>	➔	<p>&lt;New part&gt; 562-15-16110 Wire diameter: <math>\phi</math> 1.0 Free length: 43.9mm</p>
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The whistling sound has been eliminated by modification of the vibration isolator spring as above.

4. Replacement procedures [① The improved main relief valve eliminating the whistling sound]

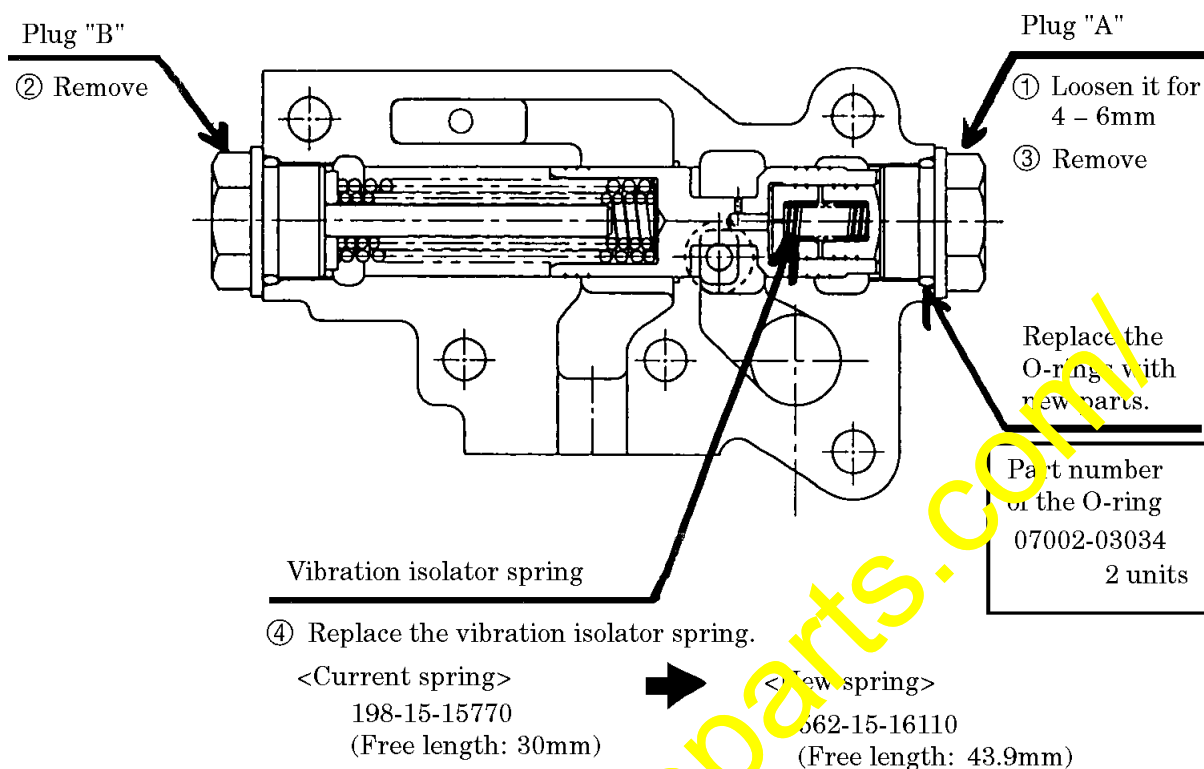
4-1 Removing the main relief valve assembly



Remove the bolts "A" through "C" designated in the above schematic diagram to detach the main relief valve assembly from the control valve assembly.

**(Note)** Since the main relief valve is being removed with the control valve assembly being installed to the chassis as is, pay great attention not to allow entry into the hydraulic circuits of dust and any other foreign substances.

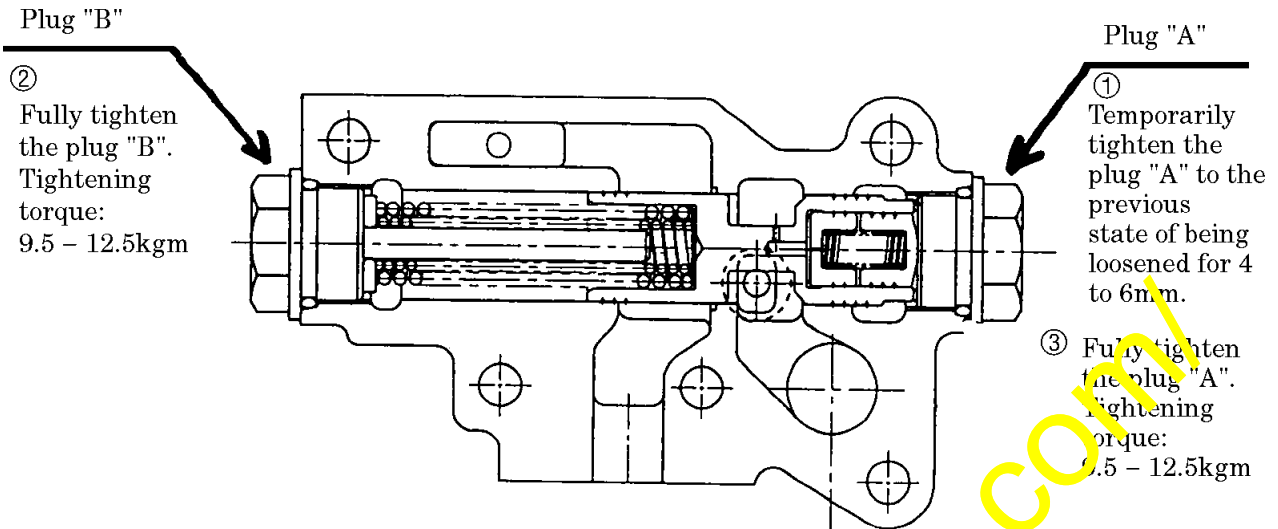
## 4-2. Disassembling the main relief valve and replacing the vibration isolator spring



- ① Loosen the plug "A" designated in the above schematic diagram for 4 to 6mm. Do not loosen the plug "A" for any more than 6mm under any circumstances, since the total threading depth of the Plug "A" is 10.5mm only. If you loosen it excessively and when the plug separates, the inside spool will jet out by the spring force and it will be very hazardous.
- ② Remove the plug "B". Since the inside spool will jet out by the spring force at the instance when the plug "B" is separated, loosen the plug gently while holding the plug in position.
- ③ Remove the plug "A" also away from the main relief valve assembly totally.
- ④ Replace the O-rings.
- ⑤ Replace the vibration isolator spring with the new part of the part number according to the designation in the above schematic diagram.

**(Note) When replacing the spring, pay great attention not to let dust or any other foreign substances adhere to the spool, spring, etc. When dust or any other foreign substances are adhering to these parts, wash them thoroughly in a detergent solution.**

### 4-3. Reassembling the main relief valve

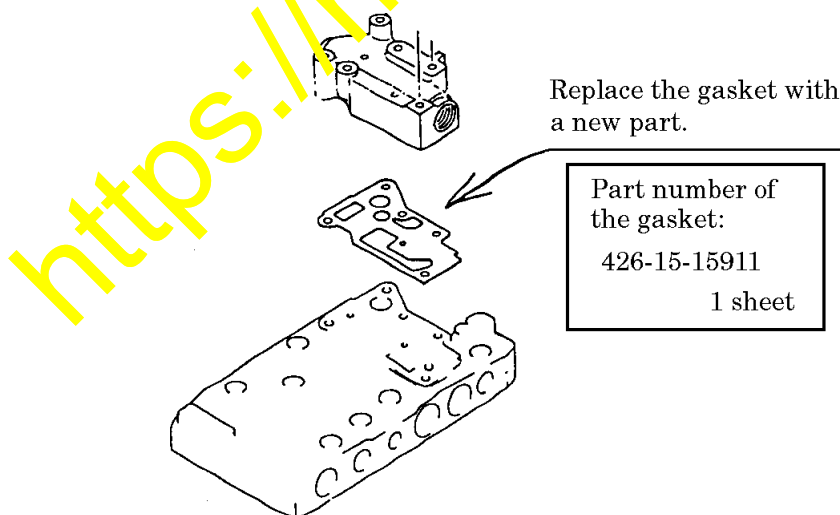


- ① Temporarily tighten the plug "A" to the previous state of being loosened for 4 to 6mm.
- ② Fully tighten the plug "B" at the tightening torque designated above.
- ③ Fully tighten the plug "A" at the tightening torque range designated above.

### 4-4. Reinstalling the main relief valve

- ① Replace the gasket with a new part.
- ② Tighten the bolts "A" through "C" at the tightening torque ranges designated in Fig. 3-1.

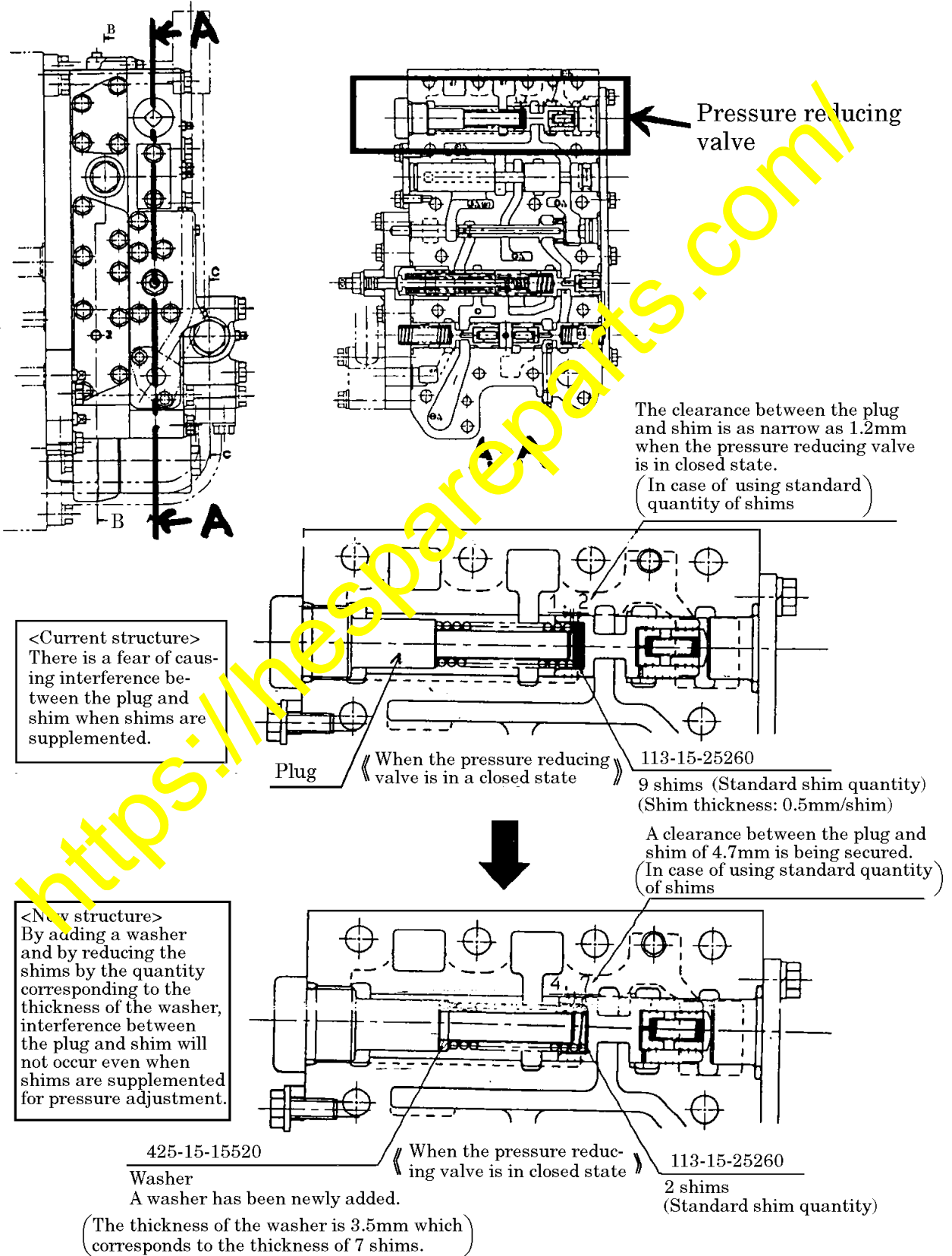
**(Note) When tightening the bolts "C", be sure to loosen the bolts "D" to free the tube from excessive stress.**



5. Contents of the modification

[② Regarding the improved pressure reducing valve facilitating shim supplementation work]

We have supplemented a washer with a thickness corresponding to that of 7 shims on the plug side to secure sufficient clearance and to facilitate the shim supplementation work for adjustment of the hydraulic pressure.



6. Replacement procedures

Replace the pressure reducing valve referring to Sections "Removal and Assembly".

Meanwhile, replace the O-rings and the gasket with new parts respectively.

