

# PARTS & SERVICE NEWS

<b>REF NO.</b>	AA04002
<b>DATE</b>	Dec. 18, 2003

**SUBJECT:** REPAIR PROCEDURE OF HYDRALIC CIRCUIT FOR AJSS EMERGENCY STEERING

**PURPOSE:** To introduce a modification to improve the AJSS emergency steering function.

**APPLICATION:** WA700-3 Wheel Loader, S/N A50057, 51001, 51003, 51005 and 51006  
 WA700-3A Wheel Loader, S/N A50017, A50023, A50024, A50050, A51005 thru A51009 and A51012  
 WA800-3 Wheel Loader, S/N 50022, 50025 and 50035  
 WA900-3 Wheel Loader, S/N 50001, 50014, 50018, 50023 thru 50026, 50030 thru 50033 and 51001

**FAILURE CODE:** R400MC

**DESCRIPTION:**

On the wheel loaders employing the AJSS (New Joystick Steering System) for the steering operations using parts having been supplied from our factory, when failures occur in the electric circuits like break-age of a wire, controller failure, etc., the steering speed may drop greatly in comparison with the steering speed in the normal condition, thus making the function of the emergency steering system ineffective.

To secure the steering performance which enables the operator to make emergency evacuation even under the aforementioned status, make the modification being introduced in this **PARTS & SERVICE NEWS**.

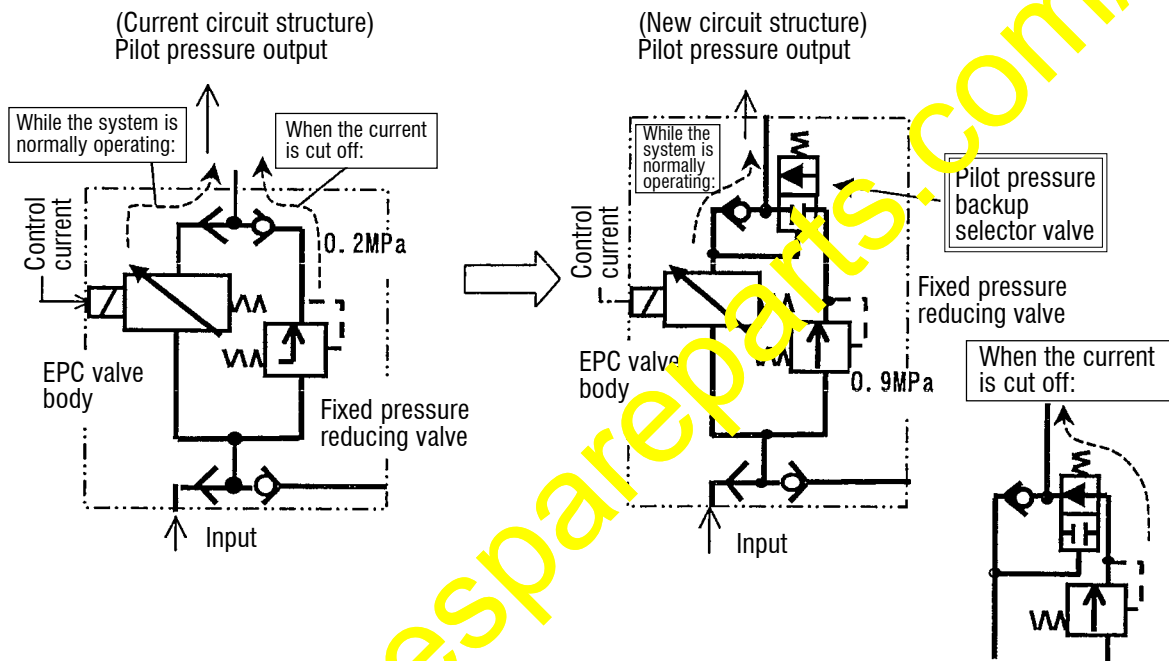
**LIST OF PARTS:**

Part No.	Part Name	Purpose of Part	Qty.	Remarks
427-62-22150 (427-62-22140)	EPC Valve A. (EPC Valve A.)	Replacement	1 (1)	Bosch Rexroth, Japan
427-62-24380 (42C-62-14380)	Bracket (Bracket)		1 (1)	The current parts can be continuously used for the WA1200
07002-21423	O-ring		4	Replace with new parts

3. Details of the modification

With this modification, the circuit structure of the EPC (Electromagnetic Proportional Control) valve ass'y is modified to improve the hydraulic circuit to satisfy the two requirements described below.

- ① To secure a steering speed (pilot pressure) which is sufficient to evacuate from the trouble site or to travel to a service shop, when the EPC control current is cut off by breakage of wires or other failures.
- ② To maintain the same steering operationability while the system is normally operating.



By the addition of the pilot pressure backup selector valve, the pilot pressure (minimum guarantee pressure = pressure setting of the fixed pressure reducing valve) when the current is cut off has been increased from 0.2 MPa to 0.9 MPa.

#### 4. Modification procedure

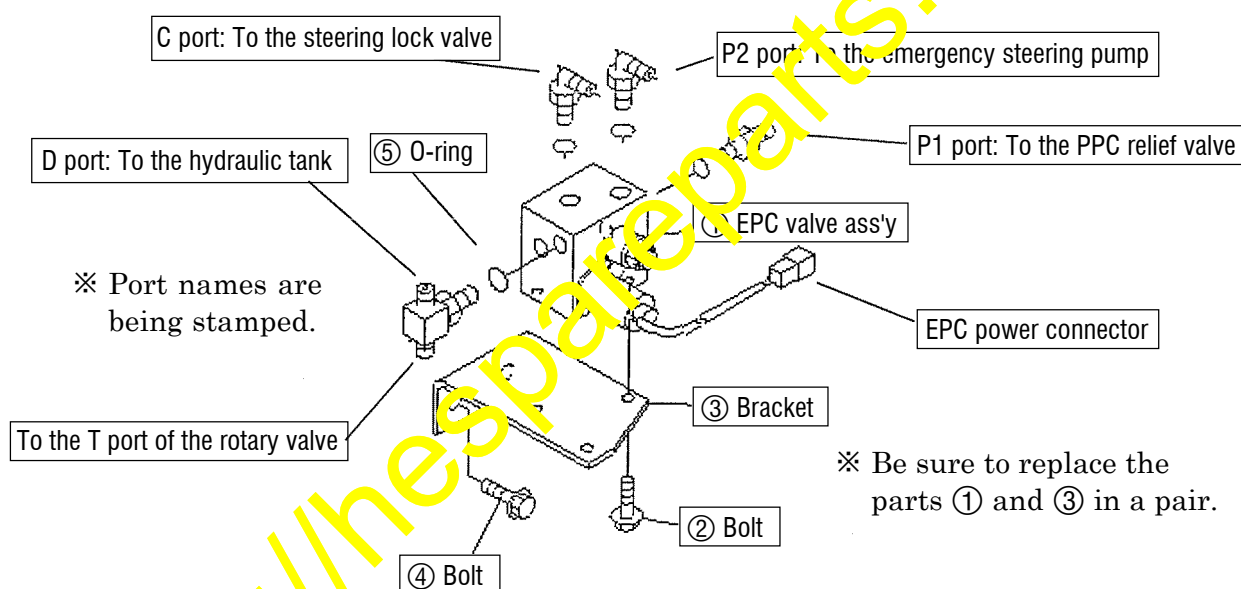
Applicable machine models: WA900-3, WA800-3 and WA700-3 (AJSS)

##### 4-1. Preparations before starting the modification work

- 1) Prepare the replacing parts. Refer to the list of parts.
- 2) Park the machine on a horizontal and hard ground, lower the work equipment to touch the ground, turn on the parking brake, stop the engine, set the safety bar and apply chocks to the tires.
- 3) Operate the joystick steering lever for 2 to 3 times to free the remaining pressure from the pipings.
- 4) Loosen the cap of the hydraulic tank gradually to free the internal pressure from the tank.
- 5) Clean the surroundings of the EPC valve ass'y and the piping sections, and pay attention to dust so that it may not enter into the valve and the piping.

##### 4-2. Replacement of the EPC valve

※ Refer to Sections 4-4 and 4-5 regarding the position to install the EPC valve ass'y.



- 1) Disconnect the EPC power connector from the machine side harness.
- 2) Disconnect the 5 hoses connected to the ① EPC valve ass'y (427-62-22140).
- 3) Loosen the bolt ② (01435-00816: 2 pcs.) and bolt ④ (01435-01220: 2 pcs.) to remove the EPC valve ass'y ① and bracket ③ (42C-62-14380).
- 4) Removing all the elbows and tees (total 4 pcs.) from the EPC valve ass'y ① and replacing the O-ring ⑤ (07002-21423: 5 pcs.) with new parts, install them to the improved new EPC valve ass'y (427-62-22150).  
(Positions of the corresponding ports are the same. Order the new O-rings referring to the list of parts.)
- 5) Install the improved new EPC valve ass'y and improved new bracket (427-62-24380) using the bolts ② and ④.
- 6) Connect the 5 hoses which have been disconnected as per Section 1-1) to the improved new EPC valve ass'y. (Positions of the corresponding ports are the same.)
- 7) Connect the EPC power connector to the machine side harness.

#### 4-3. Measures to take after the modification work

- 1) Refill the hydraulic tank with oil and tighten the cap.
- 2) Free the safety bar and remove the chocks.
- 3) Start the engine and carry out air bleeding from the steering circuit referring to the Section "Inspection and adjustment" in the Shop Manual.
- 4) At the same time that the joystick steering lever is operated for air bleeding from the circuit, check that any does not occur with the joystick steering.  
Also, check that an error code is not indicated on the monitor.
- 5) After the air bleeding work, check for oil leakage.
- 6) Inspect the oil level in the hydraulic tank, and if the hydraulic oil is in short, add the hydraulic oil.
- 7) Disconnecting the EPC power connector once, starting the engine, releasing the parking brake and setting the transmission at the neutral position, check that the steering function is effective.

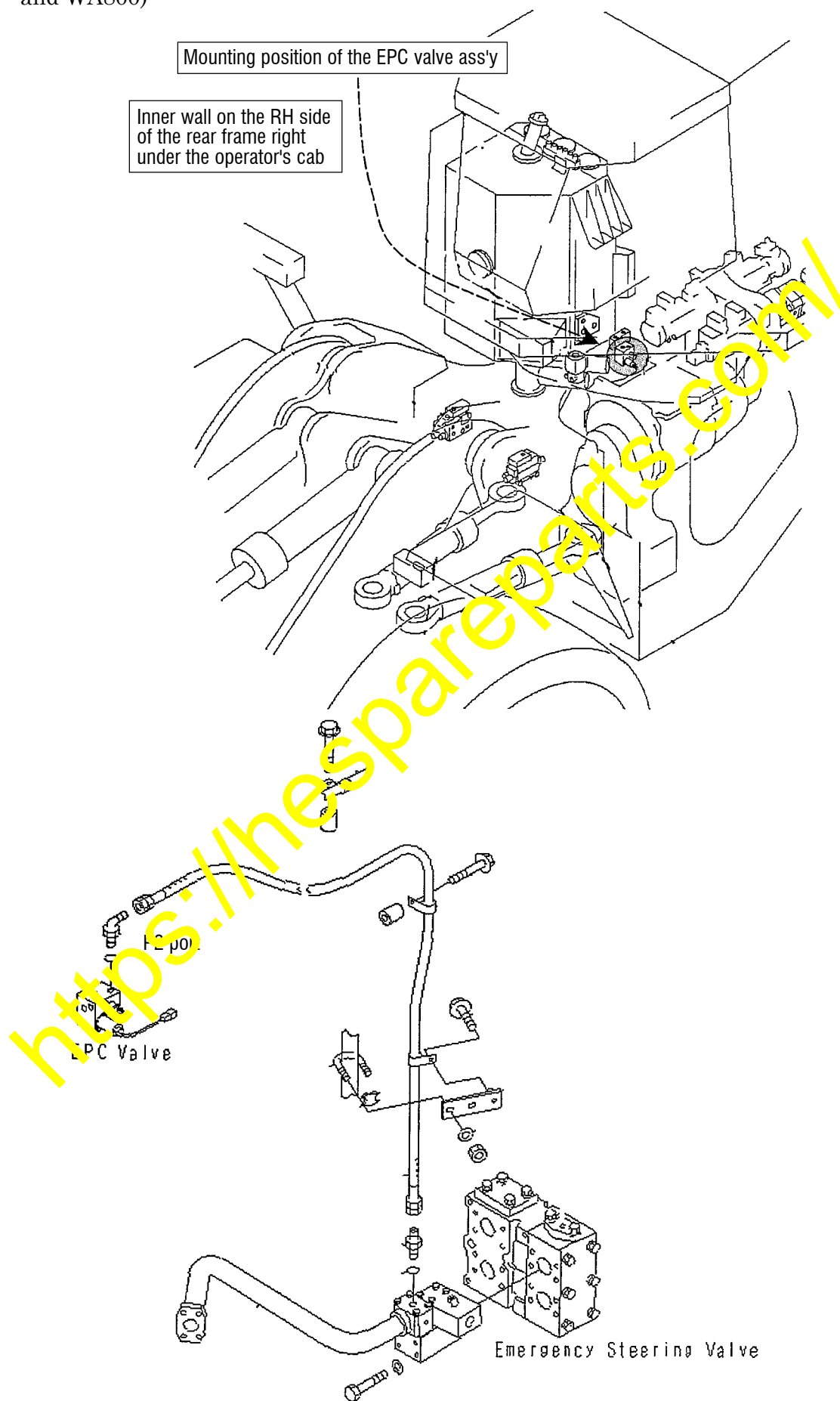
Judgment standard: With the engine at Lo-Idling revolution, RH lock - LH lock should be made within 7 sec.

After confirming the above, reconnect the EPC power connector to its original position.

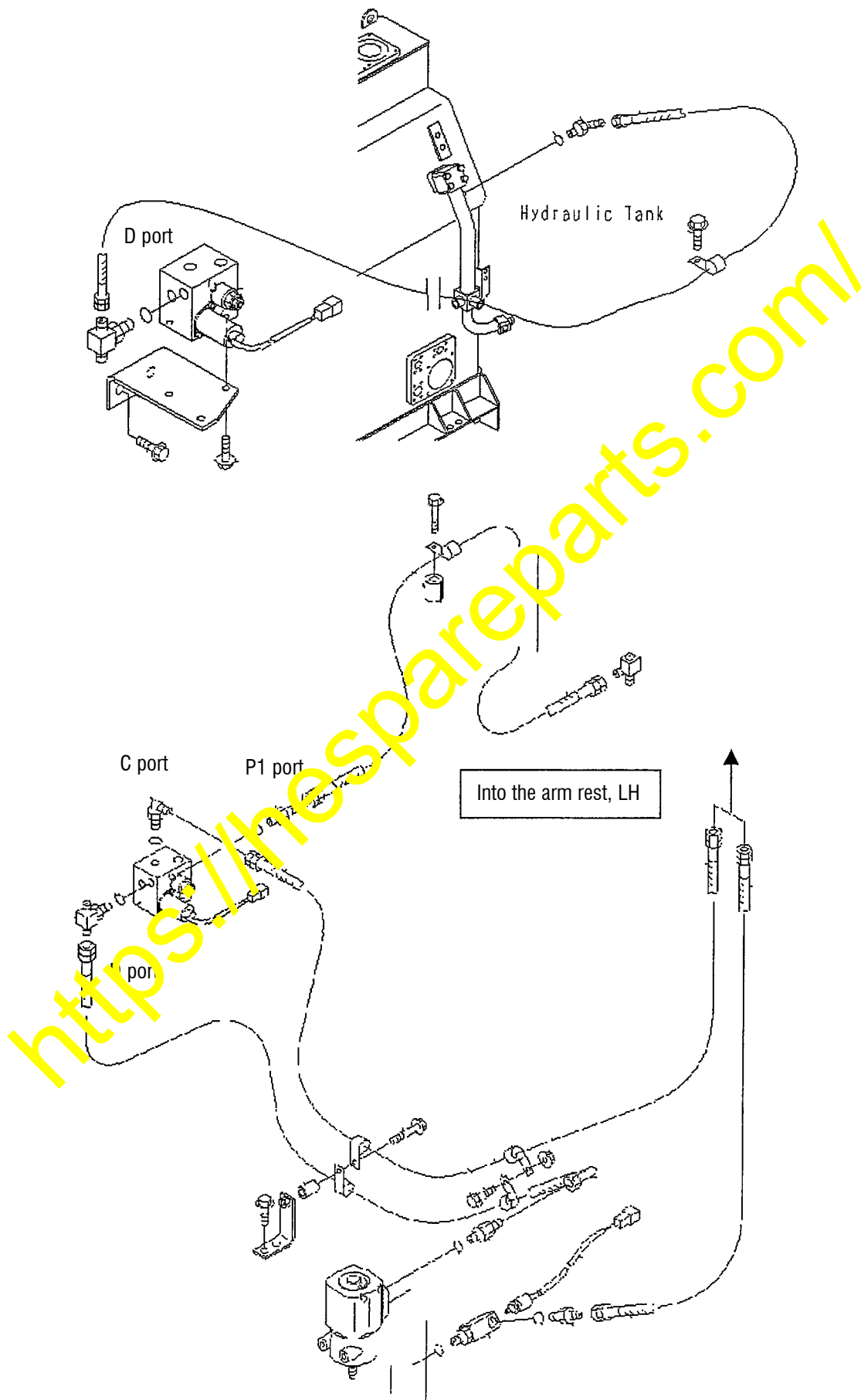
When disconnecting or reconnecting this connector, stop the engine and turn on the parking brake.

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4-4. Mounting position of the EPC valve ass'y and hose connections (In case of the WA900 and WA800)



4-4. Mounting position of the EPC valve ass'y and hose connections (In case of the WA900 and WA800) (Continued)



## 4-5. Mounting position of the EPC valve ass'y and hose connections (In case of the WA700)

※ Install the EPC valve ass'y inside the LH side column of the floor support.

