

**PARTS & SERVICE
NEWS**

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(C)

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This PARTS & SERVICE NEWS supersedes the previous issue No. AT03114A dated Oct. 21, 2003 which should be discarded.

SUBJECT: REPAIR PROCEDURES FOR WHITE SMOKE & BACK FIRE AT COLD OPERATION AND FOR TROUBLE MESSAGE 318 ON SAA6D170E-3

PURPOSE: To introduce modification procedure to repair the failures of white smoke exhaust out of the SAA6D170E-3 engines and back fire accompanied by the white smoke exhaust under low temperature environments by replacement of the air intake connector, presetting the engine controller program to match this modification and correcting frequent displays of the Error Code 318

APPLICATION: HD465-7, HD605-7, WA600-3, WD600-3, WA700-3, PC1250-7
(Refer to Page 12)

FAILURE CODE: A010NF

DESCRIPTION:


1-1. Introduction

When white smoke exhausts out of the SAA6D170E-3 engines or back fire occurs accompanied by the white smoke exhaust under low temperature environments, repair the failure following the modification procedure described in this Service News.


1. Change of the position of the intake air temperature sensor by replacement of the air intake connector.
2. Adoption of the engine controller program (calibration data) for the modification purpose.

This program also includes the modification to control the frequent display of the Error Code 318.

1-2. Revised places:

17 places 	Jun. 21, 2004	Reviewed the contents of this Service News.
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2. List of parts

 • Common for all the machine models


Part No.	Part Name	Purpose of part	Q'ty	Remarks
6240-11-4312 (6240-11-4311)	Connector (Connector)	Replacement	1 (1)	Extension harness for the boost temperature sensor
6150-11-4821	Gasket		2	
07042-70108	Plug		1	
07040-11409	Plug		1	
07002-11423	O-ring		1	
6240-81-4930	Harness		1	

 • Exclusive parts for the WA600-3E, WD600 and WA700-3

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6560-01-1581 (6560-01-1580)	Disc, program ass'y (Disc, program ass'y)	Addition	1 (1)	WA600-3E Program for INSITE
6560-01-1591 (6560-01-1590)	Disc, program ass'y (Disc, program ass'y)		1 (1)	WD600-3 Program for INSITE
6560-01-1511 (6560-01-1510)	Disc, program ass'y (Disc, program ass'y)		1 (1)	WA700-3 Program for INSITE
6560-01-1571 (6560-01-1570)	Disc, program ass'y (Disc, program ass'y)		1 (1)	WA600-3D/EU NOISE Program for INSITE
04434-50610	Clip		2	For the harness clamp on the WA/WD600 and WA700-3
01010-81045	Bolt		2	
01643-31032	Washer		2	
6132-21-6630	Spacer		2	
42743-11570	Bracket		1	
02010-70638	Bolt		1	
01643-31032	Washer		1	
04434-50610	Clip		1	
01435-01016	Bolt		1	
6560-01-1581 (6560-01-1560)	Disc, program ass'y (Disc, program ass'y)	1 (1)	WA600-3D/EU NOISE Program for INSITE	

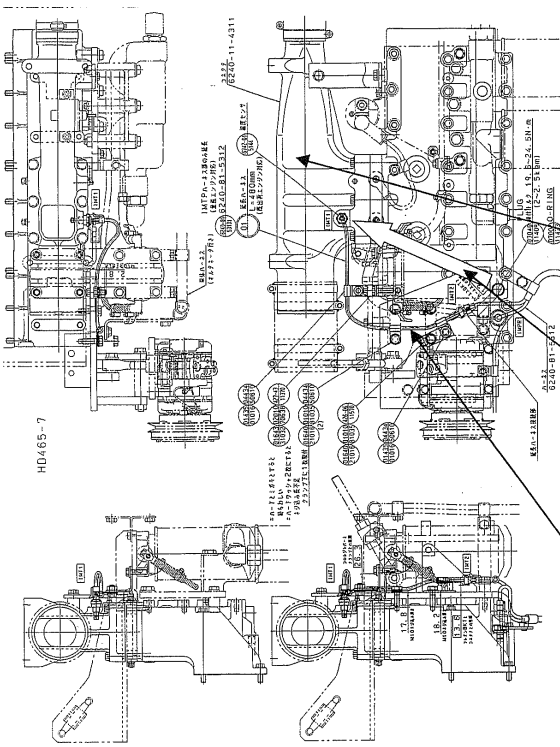
- For the HD465-7

Part No.	Part Name	Purpose of part	Q'ty	Remarks		
6560-61-1611 (6560-61-1601)	Controller ass'y (Controller ass'y)	Addition	1 (1)	INSITE program for the HD465/605-7 (Note 1)		
6560-01-1651 (6560-01-1550)	Disc, program ass'y (Disc, program ass'y)	Replacement	1 (1)	Engine controller ass'y for the HD465/605-7 (Note 2)		
04434-50610	Clip	}	1	}		
01010-81035	Bolt		1			
01640-21016	Washer		2			
427-43-11370	Bracket		1			
02010-70638	Bolt		1			
01643-31032	Washer		1			
04434-50610	Clip		Addition		1	For the harness clamp on the HD465/605-7
01435-01016	Bolt		1			
426-06-11570	Bracket		1			
01010-81035	Bolt		1			
01640-21016	Washer		1			
04434-50610	Clip		1			
01435-01016	Bolt		1			
6162-85-2311 (6162-85-2311)	Plate (Plate)		Replacement		1 (1)	
04418-02550 (04418-02550)	Screw (Screw)	4 (4)		For installation of the engine nameplate		

 For the PC1250-7

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6560-01-1521 (6560-01-1520)	Disc, program ass'y (Disc, program ass'y)	Addition	1 (1)	INSITE program for the PC1250-7 For the harness clamp on the PC1250-7
6152-51-5520 (6164-81-7130)	Spacer (Pin)	} Replacement	1 (1)	
01011-81025 (01011-81000)	Bolt (Bolt)		1 (1)	
08034-20519	Band	Addition	3	

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Addition and clamping of the extension harness

Replacement of the air intake connector
Replace the air intake connector with the new air intake connector equipped with the sensor mounting seat.

Shifting the position of the boost temperature sensor to the air intake connector where thermal influence of the head is smaller. In the meantime, install the plug to the opening after the intake air temperature sensor has been removed.

Fig. 1

2. Details of the modification

- To improve the characteristics of discharging white smoke exhaust gas under low temperature environments of the SAA6D170E-3 engines, fuel injection timing control by boost temperature is to be added (modification of the calibration data) and the mounting position of the boost temperature sensor is to be shifted to the air intake connector where thermal influence of the head is smaller.
- The aforementioned calibration data program also includes the modification to control the frequent display of the Error Code #13. The determination standard for errors has been changed.

To improve the characteristics of discharging white smoke exhaust gas while the HD465-7 and HD605-7 dump trucks are making low hill travels, the details of the fuel injection timing control has been changed.

3. Outline of the modification

- Replace the air intake connector with the part $\phi 249-11-4312$ which is equipped with the sensor mounting seat and change the position of the boost temperature sensor from the lower section of the intake manifold to the upper section of the intake manifold.
- Connect the boost temperature sensor which has been moved to the new position and the original engine harness using the extension harness.

Reviewing the calibration changing method:

- Add the fuel injection timing controlling function by boost temperature to the controller.
 - When replacing the controller:
 - Replace the controller in the ECM SOFT assembly similar to the replacing method in Japan.
 - When changing the calibration data only, not replacing the controller:
 - Preparing the INSITE writing DISK applicable to each machine model, reviewing the calibration data with the INSITE. Regarding the rewriting procedure for the controller, refer to the "Parts & Service Operation Tips No. SEKN5034".
- When carrying out this modification on the general overseas spec. HD465-7 or HD605-7 dump trucks, it becomes necessary to replace the engine nameplate and order it indicating this Service News number and the serial number of the engine from the Quality Assurance Dept., Oyama Plant.

Applicable machine model/serial number	Part No. of the ECM assy		Part No. of the INSITE writing DISK (Current Part No.)	Remarks
	(Current Part No.)	(Current Part No.)		
HD465/605-7 WA600-3/3A : STD, JP #52001 - #52999 #54001 - WA600-3LK: CMO	6560-61-1611 (6560-61-1601)	6560-01-1651 (6560-01-1550)		
	6560-61-1221 (6560-61-1220)	6560-01-1581 (6560-01-1580)		Hi revolution: 2,170 ± 30 [rpm]
	6560-61-1221 (6560-61-1203)	6560-01-1581 (6560-01-1560)		Large sized radiator Hi revolution: 2,170 ± 30 [rpm]
WA600-3D: Conforming to the noise control regulations in the EU #53001 - #53999	6560-61-1211 (6560-61-1210)	6560-01-1571 (6560-01-1570)		Hi revolution: 2,170 ± 20 [rpm]
WD600-3	6560-61-1901 (6560-61-1900)	6560-01-1591 (6560-01-1590)		
WA700-3	6560-61-1801 (6560-61-1800)	6560-01-1511 (6560-01-1510)		
PC1250-7	6560-61-1701 (6560-61-1700)	6560-01-1521 (6560-01-1520)		

4. Details of the modification

Processes to replace the air intake connector and to move the position of the boost temperature sensor

Refer to the Shop Manual regarding the details of the disassembly and assembly procedure.

Removed gaskets, O-rings and seals should be replaced with new parts.

1. Replacement of the air intake connector

- 1) Disconnect the machine harness and piping being connected to the boost hose and the air intake connector.



Photo. 1

- 2) Remove the nut (1) fixing the intake air heater and disconnect the harness (2).

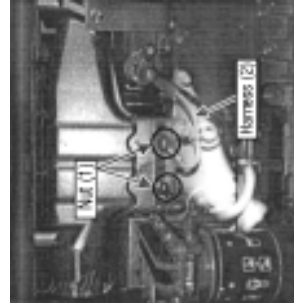


Photo. 2

- 3) Remove the bolts (1) and (2) and remove the clamp (3) to replace the air intake connector.

Current air intake connector:

6240-11-4311

New air intake connector:

6240-11-4312

Replace the gaskets (4) being used at top and bottom of the intake air heater with new parts before installing the air intake connector.

Part No. of the gasket (4):

6150-11-4821

Tightening torque

Bolts (1) and (2):

49 - 73.5 Nm (5.0 - 7.5 kgm)

Clamp (3): 9.8 Nm (1.0 kgm)

- 4) Connect the harness to the intake air heater

Nut tightening torque:

16.7 - 22.1 Nm (1.65 - 2.25 kgm)

2. Shifting the position of the boost temperature sensor

- 1) Remove the boost temperature sensor being installed to the lower section of the intake manifold.
Install the plug to the opening after the intake air temperature sensor has been removed.

Part No. of the plug:

Plug: 07040-11409

O-ring: 07002-11423

Tightening torque:

35 - 63 Nm (3.5 - 6.5 kgm)

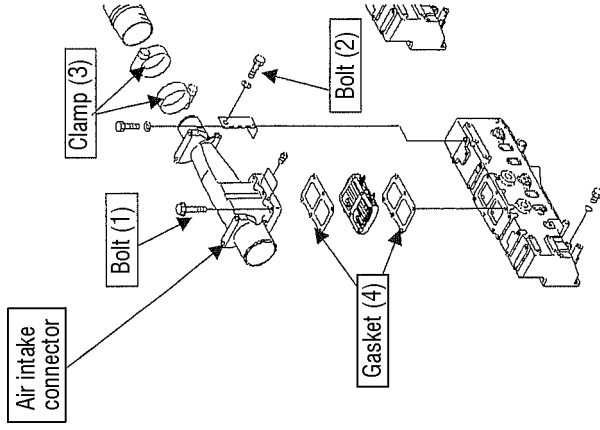


Fig. 2



Photo. 3

Processes to replace the air intake connector and to move the position of the boost temperature sensor

Refer to the Shop Manual regarding the details of the disassembly and assembly procedure.

Removed gaskets, O-rings and seals should be replaced with new parts.

- 2) Install the removed boost temperature sensor to the replacing new air intake connector. Tightening torque: 12.6 - 14.2 Nm (1.29 - 1.45 kgm)
- 3) Connect the boost temperature sensor and the engine harness using the extension harness (6240-81-4930). Fix the extension harness using the clamps.

Since the clamping positions differ depending on the machine model, follow the instructions given in this Service News.

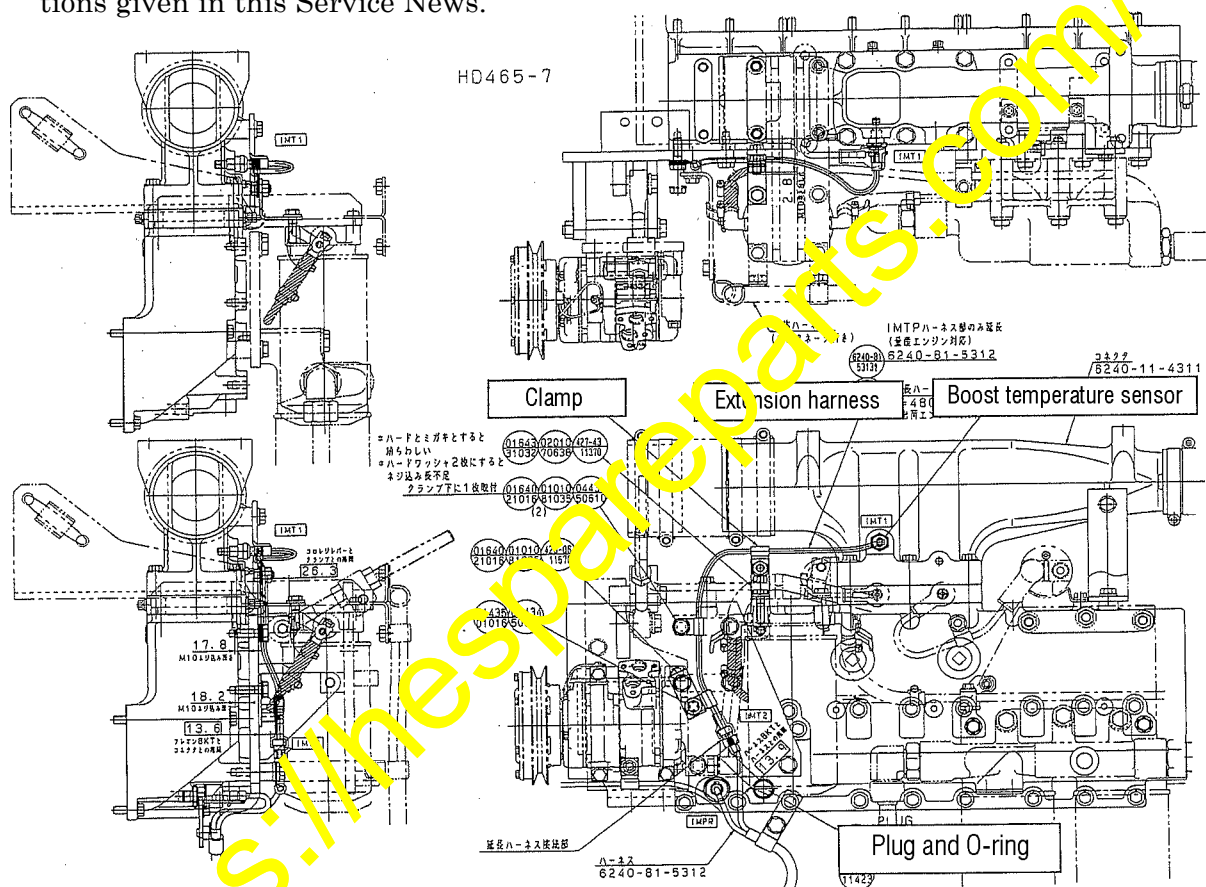


Fig. 3

- 3) Connect the boost hose and clamp the machine harness and piping.

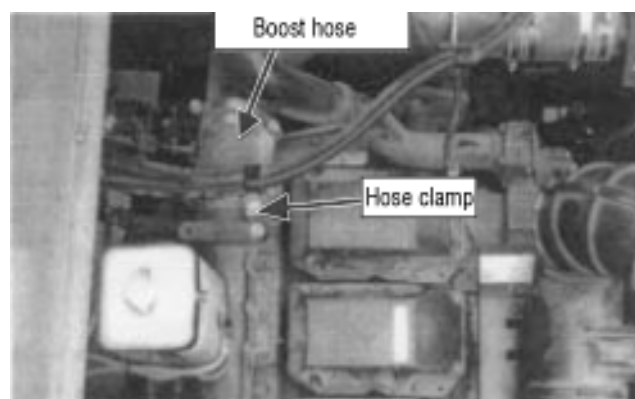


Photo. 4

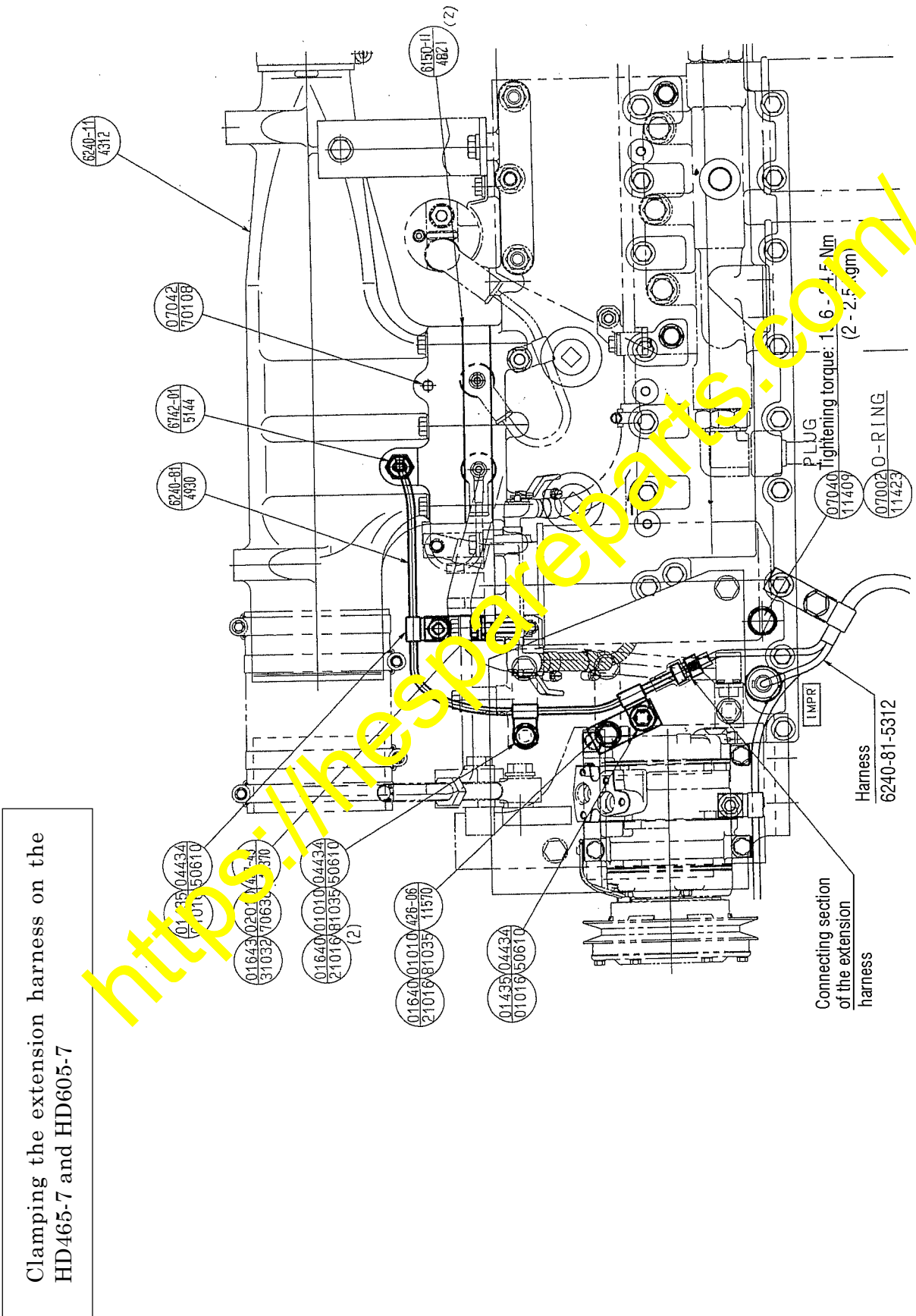
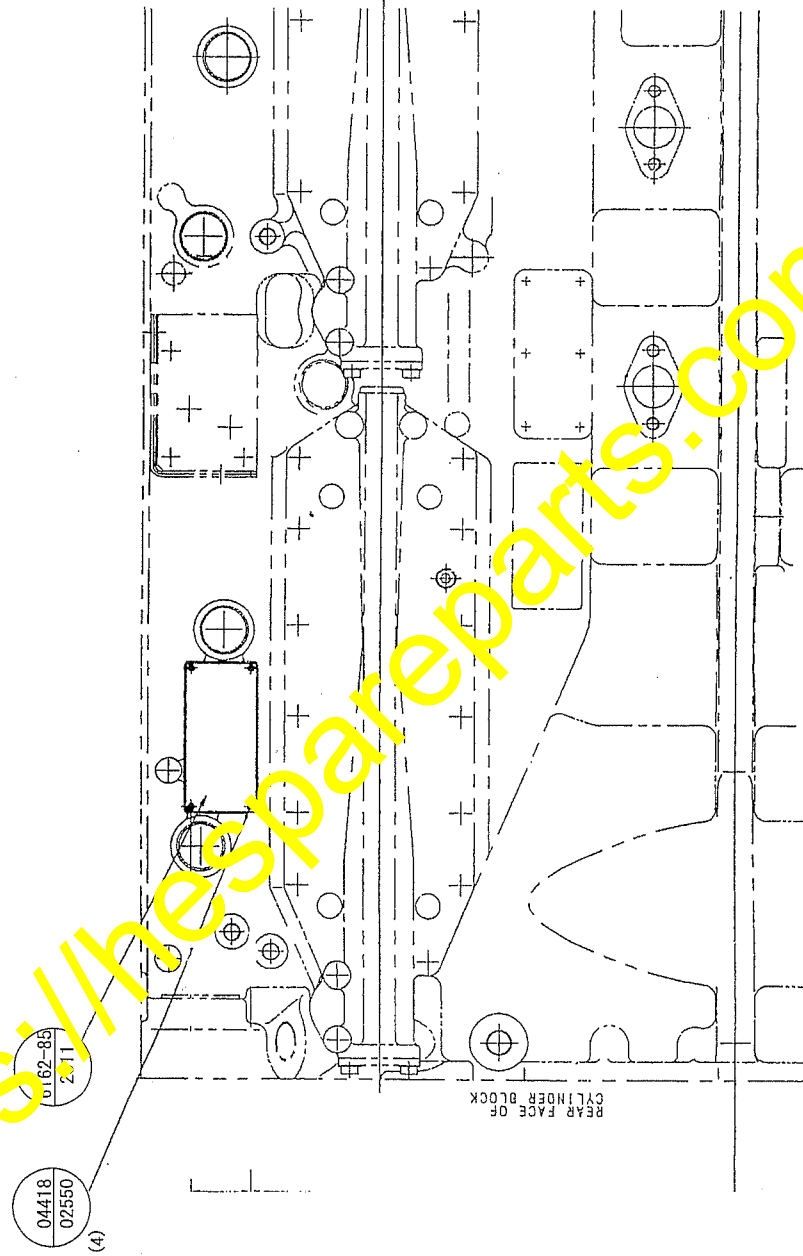


Fig. 4

Replacing the engine nameplate on the HD465-7 and HD605-7

Remove the currently installed engine nameplate and attach the new nameplate.

※ Check that the serial number of the engine being indicated on the current engine nameplate and on the new engine nameplate are the same before installing the new engine nameplate.



RH side view

Fig. 5

Clamping the extension harness
on the WA600-3, WD6000-3 and WA700-3

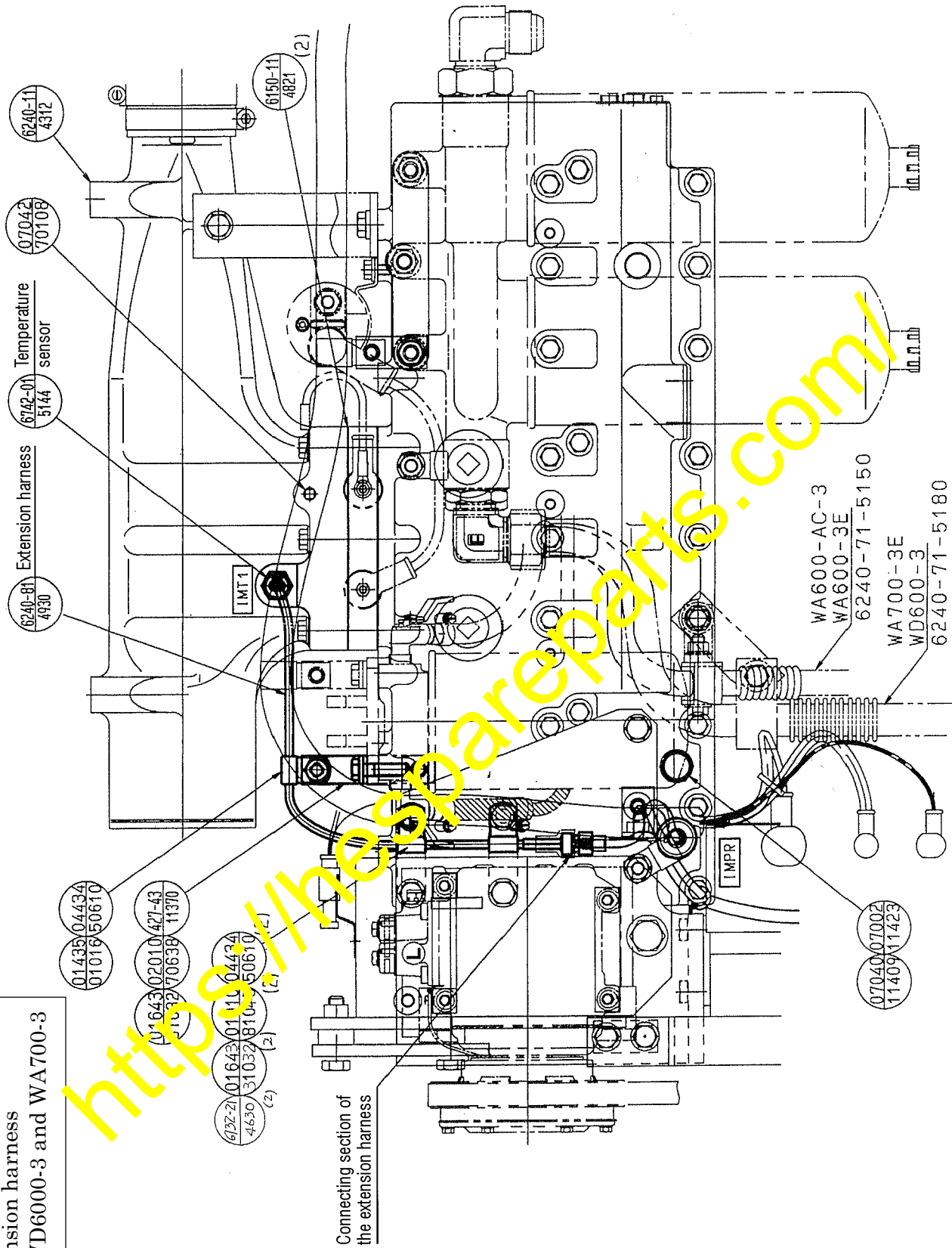


Fig. 6

Clamping the extension harness on the PC1250-7

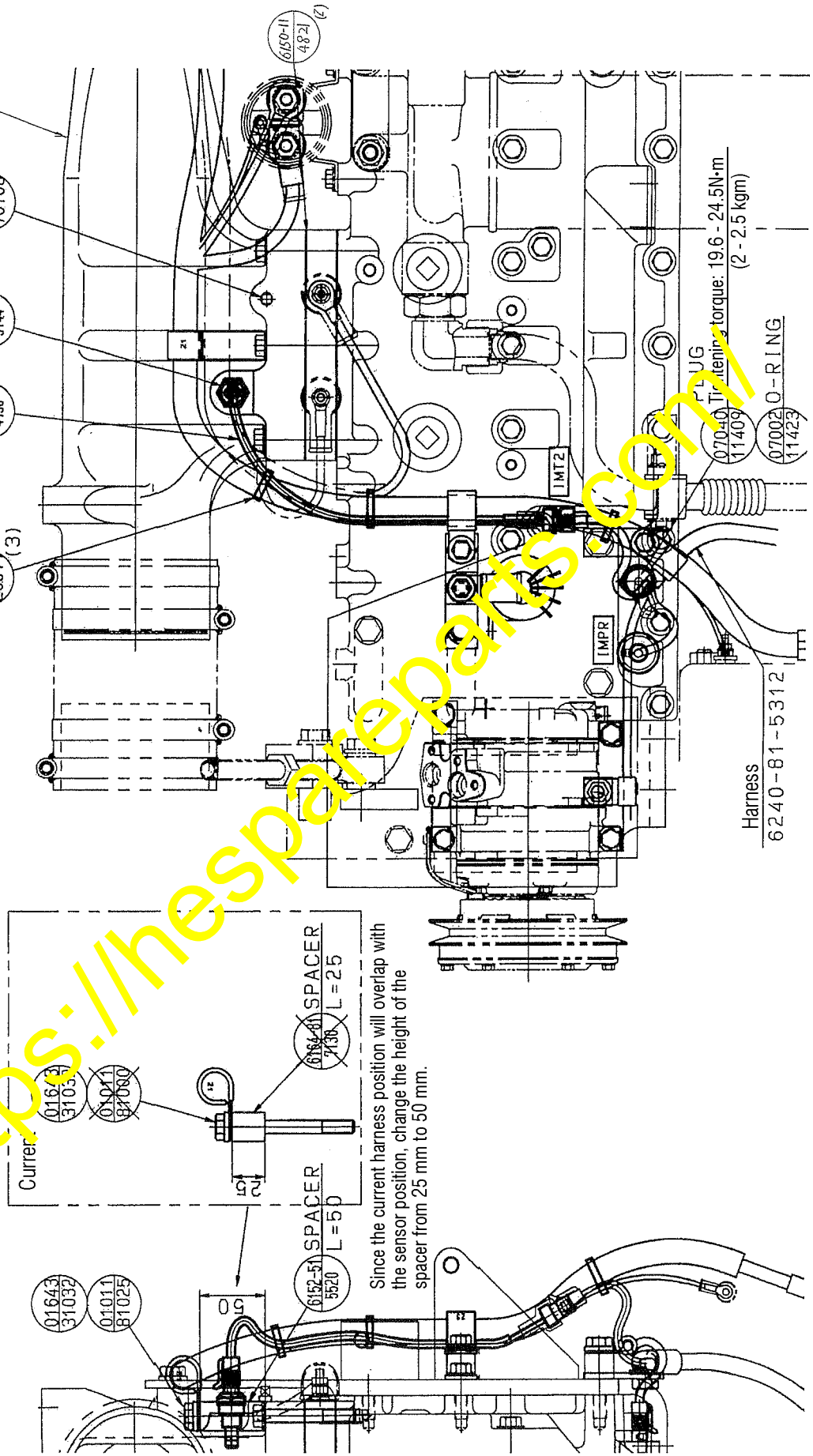




Fig. 7

Check table for the serial numbers of main machine models applicable to this modification
 The serial number starts from the first shipment machine on all the machine models
 (From 03/4/22)

No.	Applicable machine model	Serial No. of the engine		Serial No. of the machine		
		Engines in the field	Engines shipped with the modification completed	Machines in the field	Machines shipped with the modification completed	
	1	HD465-7	~ #311601	#311617 ~	7001 ~ #7268	#7269 ~
	2	HD605-7	~ #311601	#311617 ~	7001 ~ #7115	#7116 ~
	3	WA600-3E	~ #310775	#310797 ~	50001 ~ #52072	#52073 ~
	4	WA600-AC-3	~ #310648	(Production stopped)	—	—
	5	WD600-3	~ #310732	#310827 ~	50001 ~ #50003	#50004 ~
	6	WA700-3	~ #310787	#310829 ~	~ #51005	#51006 ~
	7	PC1250-7	~ #310791	#310815 ~	~ #20070	#20071 ~
	8					
	9	WA600-3D			53001 ~ #53025	#53026 ~
	10	WA600-3	~ #310775	#310797 ~	54001 ~ #54002	#54003 ~
	11					
	12					
	13					
	14					
	15					
	16					
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	19					
	20					

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