

INSTALLATION MANUAL

REF NO.	BT02073A
DATE	Feb. 19, 2003
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This INSTALLATION MANUAL supersedes the previous issue No. BT02073 dated Jan. 6, 2003 which should be discarded.

SUBJECT: INSTALLATION PROCEDURE OF VHMS ON HD465-7/HD605-7

PURPOSE: To introduce local installation procedure for the VHMS (health monitoring system) onto HD465-7 and HD605-7 dump trucks

APPLICATION: HD465-7 Dump Trucks, Serial Nos. 7001 and up
HD605-7 Dump Trucks, Serial Nos. 7001 and up

FAILURE CODE: DPH0Z9

DESCRIPTION:

1-1. Introduction

This Service News will introduce local installation procedure for the VHMS (health monitoring system) onto the HD465-7 and HD605-7 dump trucks.

- This Service News will describe the installation procedure for the VHMS equipment, ORBCOMM equipment and the relevant wire harnesses only.
(Regarding the installation procedure for the PLM equipment and the relevant wire harnesses, refer to separate Service News (No. BT02074).
- After finishing the installation works as per the instructions being given in this Service News, it is necessary to make initial settings and to make function checks.

Refer to the following sections of the Shop Manual for the above settings and function checks.

- (1) Re-setting of the transmission controller
Refer to the Section "Adjustment of Transmission Controller" in the Chapter "Inspection and Adjustment" in the Shop Manual.
- (2) Initial setting of the VHMS and initiation of the ORBCOMM communication (only in case of vehicles being equipped with the ORBCOMM controller)
Refer to the Section "VHMS Controller Related Adjustments" in the Chapter "Inspection and Adjustment" in the Shop Manual.

1-2. Revised places:

27 places ▲	Feb. 19, 2003	Revisions pursuant to the change of the part number of the ORBCOMM controller
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2. Application range

Since the Sales Code is different depending on the specifications and the serial number of the vehicle, be careful when selecting the Sales Code.

Refer to the next page for details.

Table of Sales Codes

Specification		Sales Codes						
		Model	HD465-7	HD605-7	HD465-7	HD605-7	HD465-7	HD605-7
		Serial number	-#7051	-#7020	-#7051	-#7020	#7052-	#7021-
Market		All the markets (excluding U.S.A.)		U.S.A. market		All the markets		
Without the ORBCOMM	Not equipped with the PLM	6HF55-D		6HF55-E		6HF55-F		
	Equipped with the PLM (Built-in VHMS type)	6HF55D-A		6HF55D-B		6HF55D-C		
With the ORBCOMM	Not equipped with the PLM	6HF55A-D		6HF55A-E		6HF55A-F		
	Equipped with the PLM (Built-in VHMS type)	6HF55E-A		6HF55E-B		6HF55E-C		

Specification		Sales Codes						
		Model	HD465-7	HD605-7	HD465-7	HD605-7	HD465-7	HD605-7
		Serial number	-#7058	-#7023	-#7058	-#7023	#7059-	#7024-
Market		All the markets (excluding U.S.A.)		U.S.A. market		All the markets		
Without the ORBCOMM	Not equipped with the PLM	6HF55-D		6HF55-E		6HF55-F		
	Equipped with the PLM (Built-in VHMS type)	6HF55D-A		6HF55D-B		6HF55D-C		
With the ORBCOMM	Not equipped with the PLM	6HF55H-D		6HF55H-E		6HF55H-F		
	Equipped with the PLM (Built-in VHMS type)	6HF55K-A		6HF55K-B		6HF55K-C		

Notes)


- With the ORBCOMM: Means with the satellite communication function
- Equipped with the PLM (Built-in VHMS type): Means the VHMS controller equipped with the PLM functions.
- In case of vehicles equipped with the PLM II (card type), select the Sales Code in the line of the "not equipped with the PLM" in the above table.

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Reference:

Regarding vehicles not equipped with the ORBCOMM controller, when it becomes necessary to install the ORBCOMM controller later on, use the following Sales Codes.

For installation of the ORBCOMM controller, refer to this Service News. (Refer to the "referring pages" given below.)

 Specification	Model	HD465-7	HD605-7
	Serial number	#7001-	#7001-
	Market	All the markets	
When installing the ORBCOMM controller later on (vehicles already equipped with the VHMS)		6HF55F-A	

Specification	Model	HD465-7	HD605-7
	Serial number	#7001-	#7001-
	Market	All the markets	
When installing the ORBCOMM controller later on (vehicles already equipped with the VHMS)		6HF55L-A	

※ If the vehicle is not equipped with the VHMS, these parts are not enough to operate the ORBCOMM controller.


Referring pages	List of parts	P. 9, 10
	Installation procedure	Section "4-5" and after on page 14 Fig "4-1" and after on page 41

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3. List of parts

No.	Part No.	Part Name	Q'ty	Remarks
1	7826-11-1000	Controller, VHMS	1	VHMS controller
2	01010-80885	Bolt	4	
3	01643-30823	Washer	4	
4	569-97-82210	Wiring harness	1	Main harness for the VHMS
5	569-97-82310	Connector	1	Shorting connector (specification selection)
6	600-842-2130	Resistor	1	Milky white color
7	600-842-2140	Resistor	1	Green color
8	569-97-82290	Bracket	1	} To fasten the connectors PM1, PM4 and CAN1
9	01435-01020	Bolt	1	
10	04434-53412	Clip	1	
11	08053-16210	Clip	1	
12	08193-21012	Clip	1	
13	01435-01016	Bolt	1	} For installation of the download connector
14	569-97-82120	Plate	1	
15	01023-70410	Screw	4	
16	01023-20312	Screw	8	
17	01601-20307	Washer	8	
18	01580-60302	Nut	8	
19	08037-11425	Grommet	1	
20	08037-12533	Grommet	1	
21	08034-20533	Band	30	
22	0115-81-8150	Amplifier	2	Exhaust gas temperature amplifier
23	01010-80616	Bolt	8	} For installation of the Item No. 22 "Amplifier"
24	01643-30623	Washer	8	
25	569-97-82180	Bracket	1	Exhaust gas temperature amplifier mounting bracket
26	01435-00814	Bolt	6	
27	569-86-86270	Wiring harness	1	Necessary for vehicles equipped with the PLM II (option) only.
In case of Serial No. 7052 and after of the HD465-7 and Serial No. 7021 and after of the HD605-7, these parts have been already installed to the harness as the accessories for the PLM II (option)				

No.	Part No.	Part Name	Q'ty	Remarks
28-1	7831-46-5002 (7831-46-5001)	Monitor, panel (Monitor, panel)	1 (1)	Not necessary for HD465-7 with the Serial No. 7052 and after.
	(7831-46-5000)	(Monitor, panel)	(1)	Not necessary for HD605-7 with the Serial No. 7021 and after.
For indications of speed in "km/h" (For all the markets excluding the U.S.A.)				
In case of Serial No. 7052 and after of the HD465-7 and Serial No. 7021 and after of the HD605-7, this part is not necessary since it has been already installed to standard spec. vehicles.				
28-2	7831-46-6002 (7831-46-6001)	Monitor, panel (Monitor, panel)	1 (1)	Not necessary for HD465-7 with the Serial No. 7052 and after.
	(7831-46-6000)	(Monitor, panel)	(1)	Not necessary for HD605-7 with the Serial No. 7021 and after.
For indications of speed in "mile/h" (For the U.S.A. market)				
In case of Serial No. 7052 and after of the HD465-7 and Serial No. 7021 and after of the HD605-7, this part is not necessary since it has been already installed to standard spec. vehicles.				
29	Missing number			
30	569-97-82220	Wiring harness	1	Engine sensor harness
31	569-97-82280	Wiring harness	1	Exhaust gas temperature sensor harness (front)
32	561-97-62290	Wiring harness	1	Exhaust gas temperature sensor harness (rear)
33	04435-50810	Clip	Δ 4 3	For intermediate clamping of the exhaust gas temperature sensor harness Use the mounting bolts being used for the blow-by sensor in common to fasten this part.
34	04434-50810	Clip	Δ 1 2	For intermediate clamping of the exhaust gas temperature sensor harness
35	01435-01020	Bolt	1	
36	01584-01008	Nut	1	For intermediate clamping of the engine sensor harness and the exhaust gas temperature sensor harness
37	04434-51110	Clip	2	
38	141-890-2630	Plate	1	For intermediate clamping of the engine sensor harness
39	04434-50610	Clip	1	
40	01435-01020	Bolt	1	
41	01584-01008	Nut	1	
42	08034-20519	Band	1	
43	7861-93-3500	Sensor	1	Oil temperature sensor
44	426-06-11570	Bracket	2	Oil temperature sensor connector mounting parts


No.	Part No.	Part Name	Q'ty	Remarks
45	04434-50610	Clip	1	For intermediate clamping of the oil temperature sensor
46	08193-21012	Clip	1	} (Use the mounting bolts being used for the engine oil filter bracket in common to fasten this part.)
47	01435-01016	Bolt	2	
48	08034-20519	Band	6	To fasten the harnesses of the Item Nos. 30, 31 and 32
49	7861-93-3510	Sensor	1	Atmospheric air temperature sensor
50	569-97-82461	Cover	1	For installation to the atmospheric air temperature sensor
51	01010-81060 (01435-01016)	Bolt (Bolt)	2 (2)	} For installation of the above cover
52	01643-31032	Washer	2	
53	08193-21012	Clip	1	For installation of the atmospheric air temperature sensor connector.
54	569-97-82470	Wiring harness	1	Harness for the atmospheric air temperature sensor
 55	04434-50612 04434-51012	Clip	13	For installation of the harness for the atmospheric air temperature sensor
56	01435-01025	Bolt	1	
57	08034-20519	Band	1	To fasten the harness of the Item No. 54
58	08034-20519	Band	1	To fasten the connector SPA1
59-64	Missing number			
65	569-97-82500	Box ass'y	1	Ground level download box
65-1	•569-97-82510	Box sub ass'y	1	} Component parts of Part No. 569-97-82500
65-1-1	••569-97-82520	Box	1	
65-1-2	••205-60-51220	Lock ass'y	1	
65-1-3	••569-97-82550	Seal	1	
65-1-4	••56B-07-12550	Catch	1	
65-1-5	••01236-40306	Screw	2	
65-1-6	••01370-20308	Screw	2	
65-2	•569-97-82560	Panel	1	
65-3	•01023-70414	Screw	6	
65-4	•569-97-82570	Lamp	1	
65-5	•569-97-82580	Switch	1	
65-6	•562-43-15810	Cap	2	

No.	Part No.	Part Name	Q'ty	Remarks
65-7	•01370-10308	Screw	1	} Component parts of Part No. 569-97-82500
65-8	•01601-20307	Washer	1	
65-9	•569-97-82410	Wiring harness	1	
65-10	•01023-70310	Screw	8	
65-11	•08034-20519	Band	2	
66	01010-81020	Bolt	4	} For installation of the download box
67	01643-31032	Washer	4	
68	569-97-82450	Bracket	1	
69	01010-81230	Bolt	2	
70	01643-31232	Washer	2	} To fasten the download box harness
71	04434-51810	Clip	4	
72	569-97-82420	Wiring harness	1	Download harness
73	198-03-16640	Clip	2	} To fasten the download harness
74	04434-51810	Clip	1	
75	04434-52712	Clip	1	
76	Missing number			
77	56B-43-17150	Plate	1	} For installation of the download harness connector
78	01435-01020	Bolt	1	
79	08193-21012	Clip	1	
80	01435-01020	Bolt	1	
81	01584-01508	Nut	1	
82	08034-20519	Band	1	To fasten the connector SPA2
83	08034-20519	Band	30	Spare parts
84-99	Missing number			
Engine sensor and related parts (Item No. 100 thru No. 142)				
100	6218-81-4111	Sensor	1	Blow-by sensor
101	6240-21-7550 (6162-23-6530)	Connector (Connector)	1 (1)	For the blow-by sensor
102	6127-51-6822 (6127-51-6822)	Gasket (Gasket)	1 (1)	Spare parts
103	01435-01030 (01435-01020)	Bolt (Bolt)	1 (1)	

No.	Part No.	Part Name	Q'ty	Remarks
104	01435-01030 (01435-01020)	Bolt (Bolt)	1 (1)	
105	426-01-11310	Bracket	1	Parts necessary for installation and location shift of the existing heater connector
106	01435-01020	Bolt	1	
107	426-01-11310	Bracket	3	For intermediate clamping of the blow-by sensor
108	6152-51-5520	Spacer	2	
109	01435-00870 (01435-00820)	Bolt (Bolt)	1 (1)	
110	01010-81085 (01010-81025)	Bolt (Bolt)	1 (1)	
111	01010-81085 (01010-81080)	Bolt (Bolt)	1 (1)	
112	01640-21016 (01640-21016)	Washer (Washer)	2 (2)	
113	04434-51010	Clip	3	Use the part of Item No. 33 (Spare parts)
114	01435-01020	Bolt	3	
115	6162-83-6381	Bracket	1	
116	6206-81-9870	Spacer	1	
117	01011-81030	Bolt	1	
118	01643-31032	Washer	1	For installation of the blow-by sensor connector
119	08193-20010	Clip	1	
120	01435-01020	Bolt	1	
121	01584-01008	Nut	1	
122	6240-21-8550	Tube	1	
123	07286-02009	Hose	1	Breather outlet orifice
124	07221-00359	Clip	2	
125	6215-11-8280	Sensor	2	Exhaust gas temperature sensor
126	23S-44-14540	Plate	1	
127	6152-51-5520	Spacer	1	For intermediate clamping of the exhaust gas temperature sensor
128	01010-81085 (01010-81025)	Bolt (Bolt)	1 (1)	
129	01640-21016 (01640-21016)	Washer (Washer)	1 (1)	For intermediate clamping of the exhaust gas temperature sensor
130	6130-81-4420	Clip	2	

No.	Part No.	Part Name	Q'ty	Remarks
131	6131-12-5920	Spacer	1	} For intermediate clamping of the exhaust gas temperature sensor
132	01435-01035	Bolt	1	
133	6166-91-6850	Bracket	1	} For installation of the exhaust gas temperature sensor connector
134	6152-51-5520	Spacer	1	
135	01010-81085 (01010-81025)	Bolt (Bolt)	1 (1)	
136	01640-21016 (01640-21016)	Washer (Washer)	1 (1)	
137	426-01-11310	Bracket	2	
138	01435-01025	Bolt	2	
139	01584-01008	Nut	2	
140	08193-20010	Clip	2	
141	01435-01016	Bolt	2	
142	08034-20536	Band	4	
143-159	Missing number			For the exhaust gas temperature sensor

ORBCOMM communication function related parts (Parts of the Item Nos. 160 thru 184).
The following parts are not necessary for vehicles not equipped with the ORBCOMM satellite communication function.

 160	7826-20-1090 7826-12-2200	Controller	1	ORBCOMM controller
161	01010-80816	Bolt	4	} For installation of the ORBCOMM controller
162	01643-30823	Washer	4	
163	569-97-82260	Wiring harness	1	
164	8A13-10-2150	Antenna	1	Antenna
165	569-97-62250	Cable	1	Antenna cable
166	569-97-82140	Pole	1	
167	01010-81225	Bolt	2	
168	01643-31232	Washer	2	
169	569-97-62150	Plate	1	
170	569-97-82160	Plate	1	
171	569-97-82170	Plate	1	
172	07283-36155	Clip	3	
173	07283-33442	Clip	3	
174	01597-01009	Nut	12	

No.	Part No.	Part Name	Q'ty	Remarks
175	01643-31032	Washer	12	
176	04434-50610	Clip	7	
177	01435-01016	Bolt	5	
178	08036-10614	Clip	5	
179	04434-50612	Clip	7	
180	04434-50612	Clip	2	
181	01435-01220	Bolt	2	
182	04434-50612	Clip	4	
183	01435-01020	Bolt	4	
184	08034-20519	Band	4	To bundle the cable of Item No. 165

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3. Contents of the installation procedure

- (1) Installation of the engine related sensors
 - (a) Installation of the blow-by sensor related parts
 - (b) Installation of the exhaust gas temperature sensor related parts
 - (c) Installation of the oil temperature sensor related parts

- (2) Installation of the VHMS controller related parts
 - (a) Replacing the monitor panel with the one applicable to the VHMS
 - (b) Installation of the VHMS controller related parts
 - (c) Installation of the exhaust gas temperature amplifier related parts
 - (d) Installation of the down load related parts
 - (e) Installation of the harness related parts inside and outside the operator's cab
 - (f) Installation of the atmospheric temperature sensor related parts
 - (g) Installation of the ground level download box related parts

- (3) Installation of the ORBCOMM controller related parts (For vehicles equipped with the ORBCOMM controller only)
 - (a) Installation of the ORBCOMM controller related parts
 - (b) Installation of the harness related parts inside and outside the operator's cab
 - (c) Installation of the antenna related parts

4. Installation procedure

4-1 Preparations before starting the installation work

- (1) Park the vehicle on a flat place, apply the parking brake and turn "OFF" the main switch.
After that, apply chocks to each tire.
- (2) Raise the dump body and insert the safety pin. (Be sure to insert the safety pin to secure safety.)
- (3) Disconnect the grounding stay cable of the battery.

4-2 Installation of the engine sensor related parts

4-2-1 Install the blow-by sensor related parts.

- (1) Remove the plate ① (6163-23-6530) being installed to the cylinder block (on the RH side surface). (Refer to Fig. 1-1.)
- (2) Install the blow-by sensor related parts. (Refer to Fig. 1-2.)
- (3) Install the orifice related parts to the breather drain hose. (Refer to Fig. 1-3.)

4-2-2 Install the exhaust gas temperature sensor related parts.

- (1) Remove the plug ⑫ (6215-11-5920) currently being installed to the exhaust manifold. (Refer to Fig. 1-4.)
- (2) Install the exhaust gas temperature sensor related parts. (Refer to Fig. 1-5.)

4-2-3 Install the oil temperature sensor related parts. (Refer to Fig. 1-6.)

- (1) Remove the plug ⑮ (07043-70211) currently being installed and install the oil temperature sensor related parts.

4-3 Installation of the VHMS controller related parts inside the operator's cab

4-3-1 Replace the monitor panel with the one applicable to the VHMS (Refer to Fig. 2-1.)

- (1) Replace the monitor panel (7831-46-5000 / 7831-46-6000) or (7831-46-5001 / 7831-46-6001) with the one for the VHMS (7831-46-5002 / 7831-46-6002).
- (2) In case of Serial No. 7052 and after of the HD465-7 and Serial No. 7021 and after of the HD605-7, this replacement work is not necessary since the new monitor panel has been already installed to standard spec. vehicles.

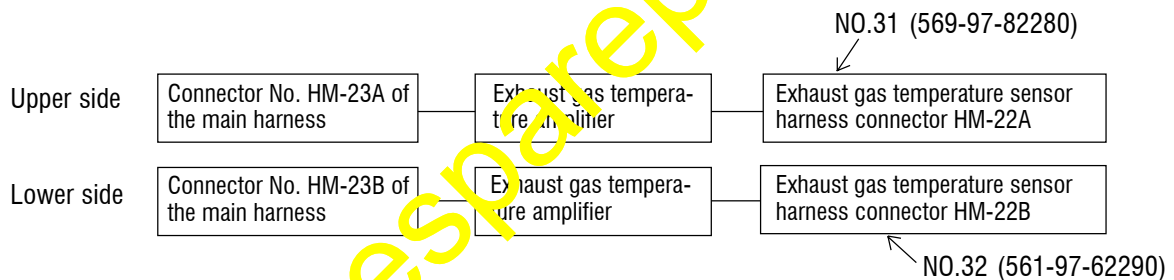
- 4-3-2 To install the VHMS related parts, remove the existing parts from the rear section of the operator's cab. (Refer to Fig. 2-2.)
- 4-3-3 Install the exhaust gas temperature amplifier related parts. (Refer to Fig. 2-3.)
- 4-3-4 Install the download related parts inside the operator's cab. (Refer to Fig. 2-4 and Fig. 2-5.)
- 4-3-5 Install the VHMS main harness related parts (inside the operator's cab). (Refer to Fig. 2-6.)

- (1) Connect the main harness, Item No. 4 (569-97-82210) to the VHMS controller, Item No. 1 (7826-11-1000) and to the connectors Nos. PM1, PM4, PM11, EG4 and CAN1 of the existing harness (569-06-86411).
- (2) Fasten the connectors Nos. PM1, PM4 and CAN1 with the bracket, Item No. 8 (569-97-82290). (Refer to Fig. 2-6.)
- (3) Connect the main harness, Item No. 4 (569-97-82210) to the exhaust gas temperature amplifier, Item No. 22 (6215-81-8150).

(Connector Nos. HM-23A and HM-23B)

Connect the connector No. HM-23A to the upper side exhaust gas temperature amplifier and connect the connector No. HM-23B to the lower side exhaust gas temperature amplifier. Also, connect the exhaust gas temperature sensor harness to the exhaust gas temperature amplifier. (Refer to Section 4-4-2.)

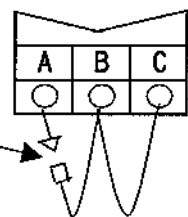
The connectors Nos. HM-23A and HM-23B should be connected to the exhaust gas temperature sensor harnesses No. 31 (569-97-82280) and No. 32 (561-97-62290) through the exhaust gas temperature amplifier as follows.










- 4-3-6. Connect the shorting connector to the main harness (Refer to Fig. 2-7.)
- (1) Connect the shorting connector, Item No. 5 (569-97-82310) to the connector No. HM-50 of the main harness, Item No. 4 (569-97-82210) and fasten them to the main harness by use of the band, Item No. 21 (08034-20536).
 - (2) Depending on the specification of the vehicle, it becomes necessary to change the connections (as follows) of the shorting connector, Item No. 5 (569-97-82310) itself. Be sure to make this connection change when applicable.

IMPORTANT

When the vehicle is not equipped with the PLM (payload meter) function of the built-in VHMS type or when vehicle is equipped with the separate installation type PLM II (card type payload meter), **do not connect** the plug connector between "A" and "B" of the shorting connector. Connect this plug connector in other cases.



- 4-3-7 Connect the resistors to the main harness. (Refer to Fig. 2-7.)
- (1) Connect the resistor, Item No. 6 (600-842-2130) to the connector No. HM-2130 of the main harness, Item No. 4 (569-97-82210) and connect the resistor, Item No. 7 (600-842-2140) to the connector No. HM-2140 of the main harness.
Identification method for the resistors: No.6 (600-842-2130) Milky white color
No.7 (600-842-2140) Green color
 - (2) Fasten the connectors Nos. HM-2130 and HM-2140 of the main harness by use of the band, Item No. 21 (08034-20536).
- 4-3-8 Fasten the protocol connector. (Refer to Fig. 2-4 and Fig. 2-5.)
Fasten the connector No. HM-55 of the main harness, Item No. 4 (569-97-82210) to the existing bracket (569-54-85711) by use of the clip, Item No. 12 (08193-21012) and the bolt, Item No. 13 (01435-01016).
- 4-3-9 Install the VHMS controller related parts. (Refer to Fig. 2-8.)
- (1) Install the VHMS controller, Item No. 1 (7826-11-1000).
 - (2) Reinstall the parts which have been removed from the rear section of the operator's cab as per Section 4-3-2 (Fig. 2-2) to their original positions.
- 4-3-10 After finishing installation of the harness related parts, fasten the necessary sections inside of the operator's cab to the existing harness by use of the band, Item No. 21 (08034-20536) and the band, Item No. 83 (08034-20514).
- 4-4 Installation of the VHMS controller related parts outside the operator's cab
- 4-4-1 Install the engine sensor harness related parts. (Refer to Fig. 3-1.)
- (1) Connect the sensor harness, Item No. 31 (569-97-82220) to the connector of the engine blow-by sensor, Item No. 100 (6213-81-4111) and to the connector of the oil temperature sensor, Item No. 43 (7861-83-3500).
(Connector No. HM-12) → Connector of the blow-by sensor, Item No. 100
(Connector No. HM-31) → Connector of the oil temperature sensor, Item No. 43
 - (2) Connect the connector No. VHM positioned at the opposite side of the sensor harness to the connector No. VHM of the existing engine harness ② (569-06-83311). (The connector No. VHM is located in the rear section at the LH side of the engine.)
 - (3) Clamp the sensor harness as per the instructions given in Fig. 3-1.
- 4-4-2 Install the exhaust gas temperature sensor related parts. (Refer to Fig. 2-6 and Fig. 3-1.)
- (1) Connect the connector No. HM-21A of the exhaust gas temperature sensor harness, Item No. 31 (569-97-82280) to the connector (the inside connector) of the exhaust gas temperature sensor for the front side exhaust manifold. Regarding the connector No. HM-22A, lead it into the inside of the operator's cab and connect it to the upper side exhaust gas temperature amplifier, Item No. 22 (6215-81-8150). Be careful not to make reversed connections. (Refer to Section 4-3-5.)
 - (2) Connect the connector No. HM-21B of the exhaust gas temperature sensor harness, Item No. 32 (561-97-62290) to the connector (the outside connector) of the exhaust gas temperature sensor for the rear side exhaust manifold. Regarding the connector No. HM-22B, lead it into the inside of the operator's cab and connect it to the lower side exhaust gas temperature amplifier, Item No. 22 (6215-81-8150).
Be careful not to make reversed connections. (Refer to Section 4-3-5.)
 - (3) Fasten the exhaust gas temperature sensor harness to the engine body and to the existing harness as per the instructions given in Fig. 3-1.

- 4-4-3 Install the atmospheric air temperature sensor related parts and harness related parts. (Refer to Fig. 3-2.)
- (1) Install the atmospheric air temperature sensor, Item No. 49 (7861-93-3510) on the cover  (569-54-81391) for the LH side front support using the mounting bolts being used for the cover to be fastened to.
 - (2) To clamp the harness, Item No. 54 (569-97-82470), remove the cover,  (569-54-81611) for the steering hose.
 - (3) Connect the harness, Item No. 54 (569-97-82470) to the connector No. SPA1 of the atmospheric air temperature sensor, Item No. 49 (7861-93-3510) and to the connector No. SPA1 of the existing harness  (569-06-83211).
- 4-4-4 Install the ground level download harness related parts and ground level download box related parts. (Refer to Fig. 3-3 and Fig. 3-4.)
- (1) Install the ground level download box ass'y, Item No. 65 (569-97-82500) to the bracket of the hydraulic tank  (569-60-81111) by use of the bracket, Item No. 68 (569-97-82450).
 - (2) Install the ground level download harness, Item No. 72 (569-97-82420) to the connector No. SPA2 of the existing harness  (569-06-83211) and connect the connector on the opposite side (Connector No. GDL) to the harness of the box ass'y, Item No. 65 (569-97-82500). Fasten the harness as per the instructions given in Fig. 3-3.
- 4-4-5 After finishing installation of the harness related parts, fasten the necessary sections outside the operator's cab to the existing harness by use of the band, Item No. 21 (08034-20536) and the band, Item No. 83 (08034-20519).
- 4-5 Installation procedures for the ORBCOMM related parts ---
The installation work in this section is not necessary for vehicles to which the ORBCOMM (satellite communication function) is not installed.
- 4-5-1 Install the ORBCOMM controller related parts. (Refer to Fig. 4-1.)
- (1) Install the ORBCOMM controller, Item No. 160 (~~7826-20-1090~~) in the rear section inside the operator's cab.  7826-12-2200
 - (2) Apply one of the two sheets of labels (serial label for the controller) included in the package of the ORBCOMM controller as per the instructions given in Fig. 4-1. (Be careful not to lose the other label since it is necessary when applying for inauguration of the communication.)
- 4-5-2 Connect the ORBCOMM controller harness, Item No. 163 (569-97-82260) to the ORBCOMM controller itself and to the connector No. HM-81 of the main harness, Item No. 4 (569-97-82210). (Refer to Fig. 4-1.)
- (Connector No. ORB-A) → ORBCOMM controller, Item No. 160
(Connector No. ORB-B) → ORBCOMM controller, Item No. 160
(Connector No. HM-81) → Connector No. HM-81 of the main harness, Item No. 4
- 4-5-3 Reinforce the antenna pole mounting section. (Refer to Fig. 4-2.)
- (1) Reinforce the welded section of the existing seat positioned in the front section of the RH side platform  (569-54-81421) as per the instructions given in this drawing.
 - (2) In case of Serial No. 7052 and after of the HD465-7 and Serial No. 7021 and after of the HD605-7, this reinforcement work is not necessary since this reinforcement has been already made with the standard spec. vehicles.
(Check the subject vehicle and if this reinforcement has not been made, carry out the aforementioned reinforcement work.)

- 4-5-4 Install the antenna related parts. (Refer to Fig. 4-3.)
- 4-6 Reconnect the grounding cable for the battery as it was before.
- 4-7 Remove the safety pin for the dump body and lower the dump body to its original position.

The installation work for the VHMS and related parts has been completed by the above.

This Service News described about the installation work for the VHMS and related parts.

Refer to the Shop Manual when making the operation checks.

Regarding the PLM (Built-in VHMS type), refer to the separately issued Service News (No. BT02074).

IMPORTANT

- 5. Regarding the initial setting, handling, functions and trouble shooting for the VHMS and related parts**
- (1) Regarding the initial setting, handling, functions and trouble shooting for the VHMS, refer to the Operation and Maintenance Manual, and the Shop Manual. (A personal computer, licenses, etc. are required when making the initial setting.)**
 - (2) It is necessary to make the initial setting for the VHMS exactly as per the instructions given in the manual. Be careful since input errors will cause many error code occurrences.**
 - (3) After finishing the installation of the VHMS controller, it becomes necessary to change the setting of the rotary switch of the transmission controller to let the machine monitor conform to the VHMS. Refer to the Shop Manual for details.**

Fig. 1-1 Removal procedure for unnecessary parts before installation of the below-by sensor

- (1) Remove the currently installed plate, gasket and bolt (①, ② and ③).
- (2) Remove some of the oil cooler mounting bolts (④ thru ⑧) in order to install the bracket for the blow-by sensor lead wire clamp.

Removing parts (parts marked ○)

①	6162-23-6530	Plate	1 pce.
②	6127-51-6822	Gasket	1 pce.
③	01435-01025	Bolt	2 pcs.
④	01010-81025	Bolt	1 pce.
⑤	01640-21016	Washer	1 pce.
⑥	01010-81080	Bolt	1 pce.
⑦	01640-21016	Washer	1 pce.
⑧	01435-00820	Bolt	1 pce.

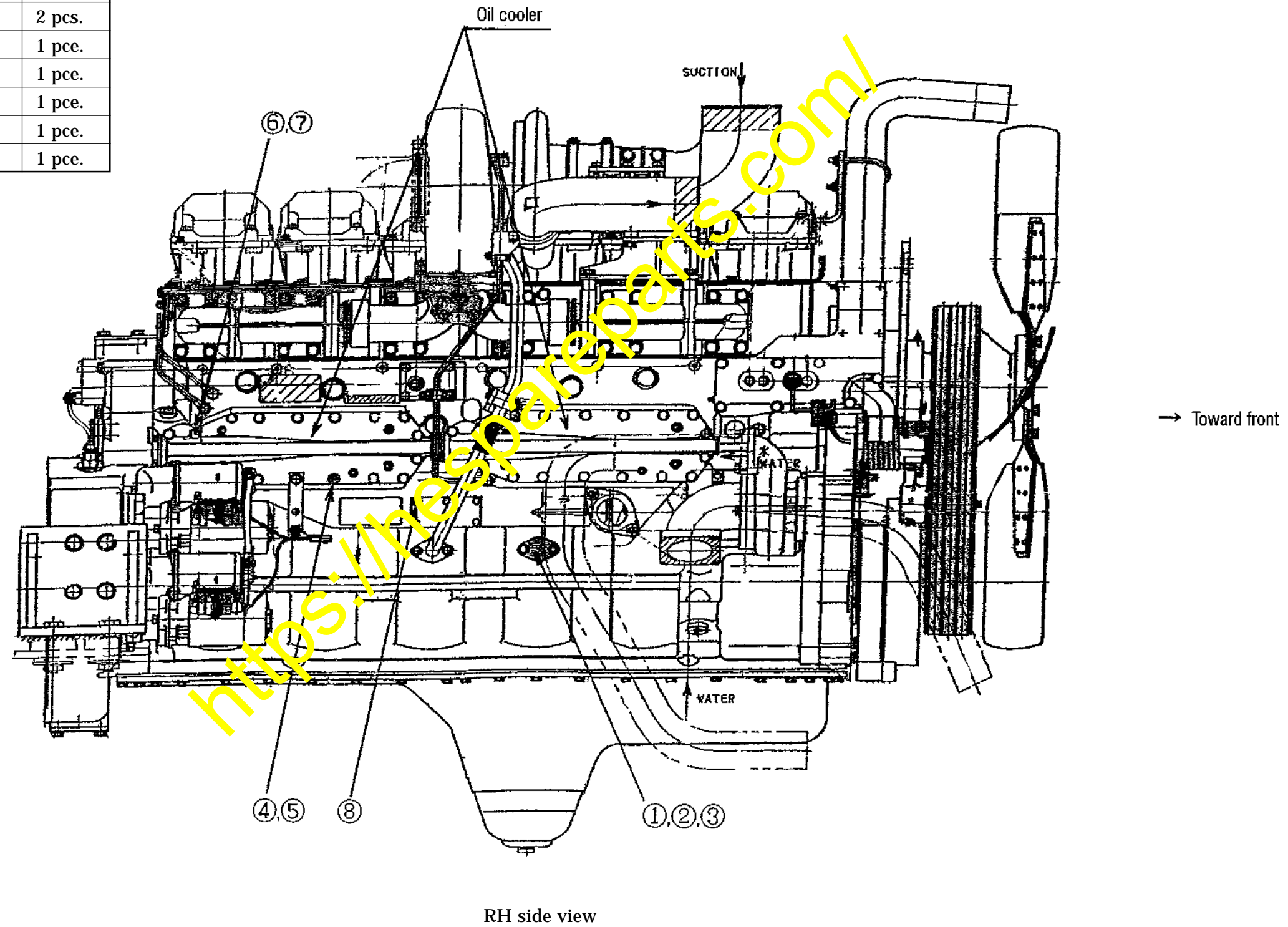


Fig. 1-2 Installation procedure for the blow-by sensor

- (1) Connect the blow-by sensor, Item No. 100 (6218-81-4111) to the new connector, Item No. 101 (6240-21-7550) for the new blow-by sensor.
- (2) Install the above parts [Connector, Item No. 101 + blow-by sensor, Item No. 100] to the port from which removal work was made as per Fig. 1-1.
- (3) Install the blow-by sensor clamp related parts (Item No. 107 thru No. 112, No. 33, No. 114 thru No. 121) to the section (oil cooler mounting bolts) from which removal work was made as per Fig. 1-1.

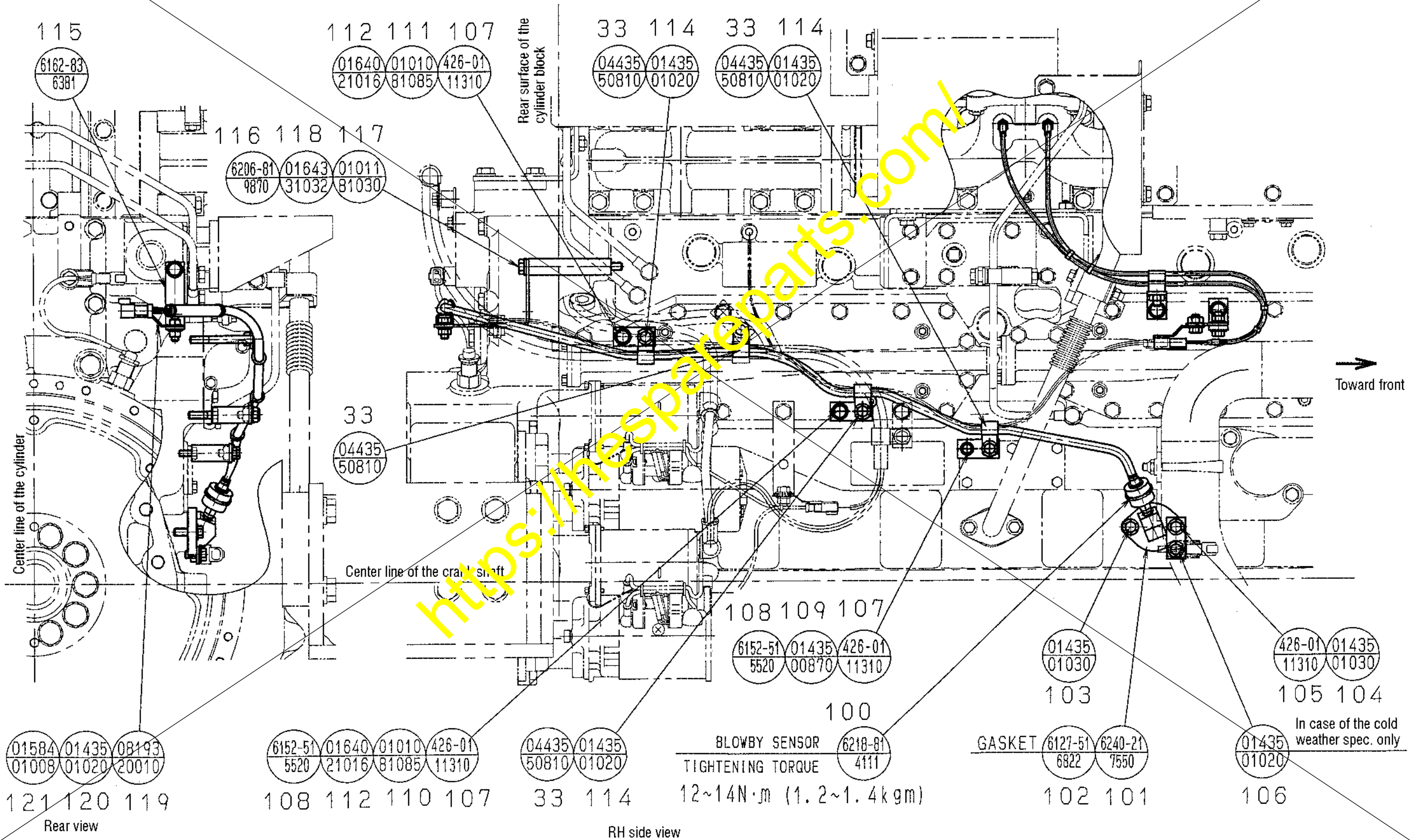


Fig. 1-2 Installation procedure for the blow-by sensor

- (1) Connect the blow-by sensor, Item No. 100 (6218-81-4111) to the new connector, Item No. 101 (6240-21-7550) for the new blow-by sensor.
- (2) Install the above parts [Connector, Item No. 101 + blow-by sensor, Item No. 100] to the port from which removal work was made as per Fig. 1-1.
- (3) Install the blow-by sensor clamp related parts (Item No. 107 thru No. 112, No. 33, No. 114 thru No. 121) to the section (oil cooler mounting bolts) from which removal work was made as per Fig. 1-1.

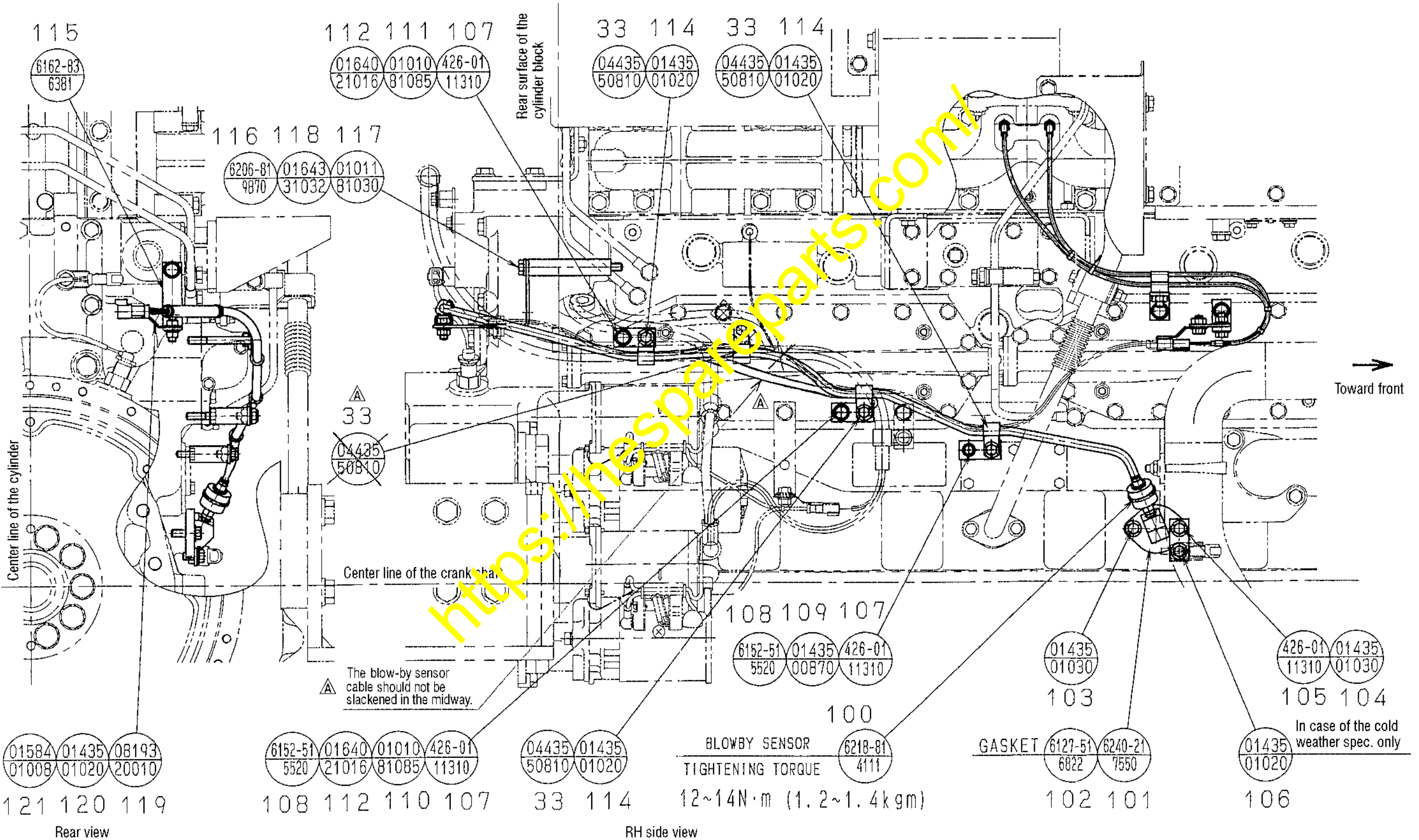


Fig. 1-3 Installation procedure for the orifice to the breather drain hose

- (1) Remove the currently installed breather drain hose ⑩ (07287-02615) from the breather ⑪ (6240-21-8510).
- (2) Install the orifice related parts (Item No. 122, No. 123 and No. 124) between the breather ⑪ and the drain hose ⑩.
- (3) When installing the tube, Item No. 122 (6240-21-8550), pay attention to the upward and downward directions.

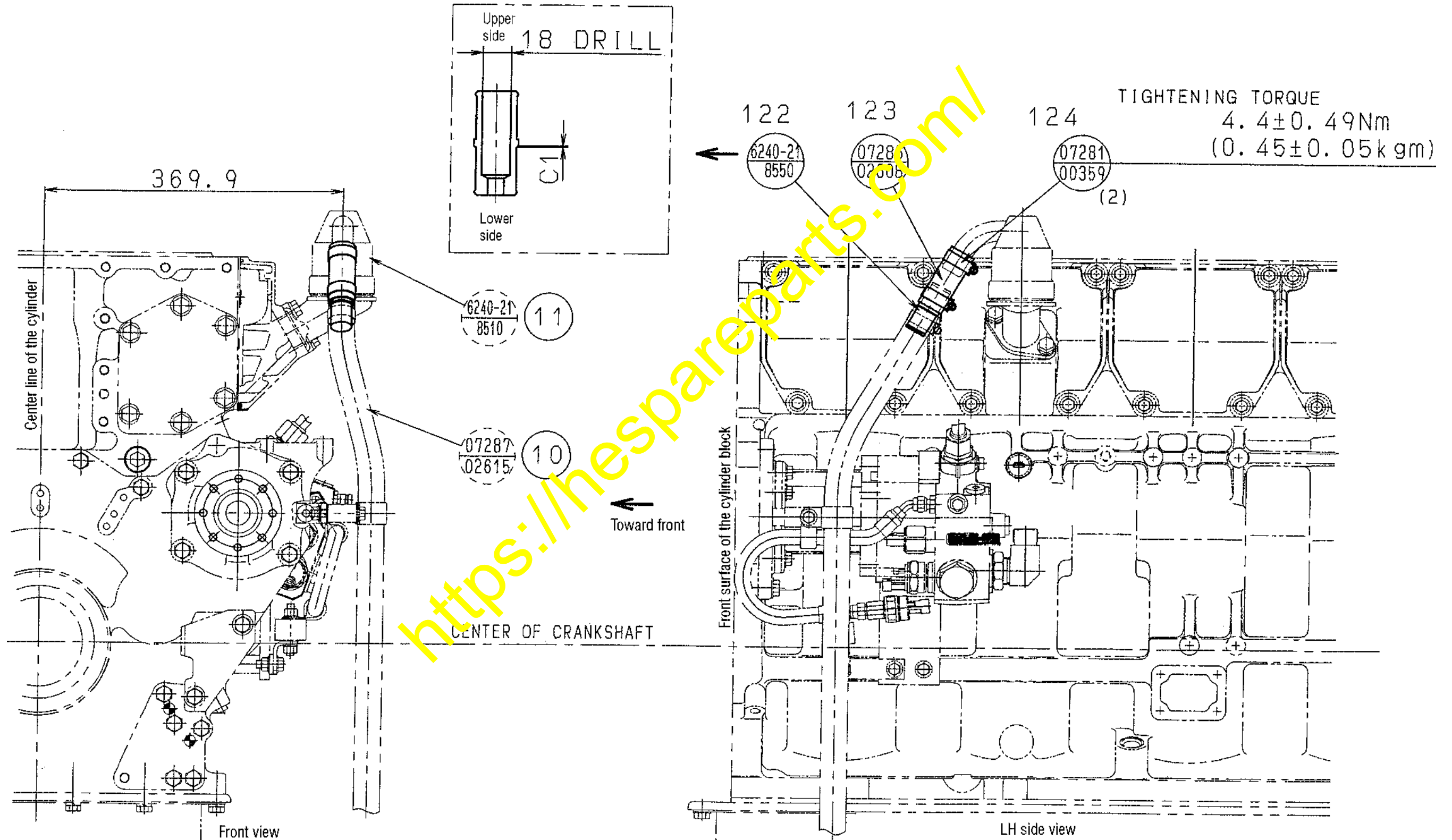


Fig. 1-4 Removal procedure for unnecessary parts before installation of the exhaust gas temperature sensor

- (1) Remove the currently installed plug ⑫ (6215-11-5920).
- (2) In case it is difficult to remove the plug, heat the manifold or use a liquid penetrant to remove the plug carefully not to damage the screw section.
- (3) Remove some of the oil cooler mounting bolts (⑬ and ⑭) in order to install the bracket for the exhaust gas temperature sensor lead wire clamp.

Removing parts (parts marked ○)

⑫	6215-11-5920	Plug	2 pcs.
⑬	01010-81025	Bolt	2 pcs.
⑭	01640-21016	Washer	2 pcs.

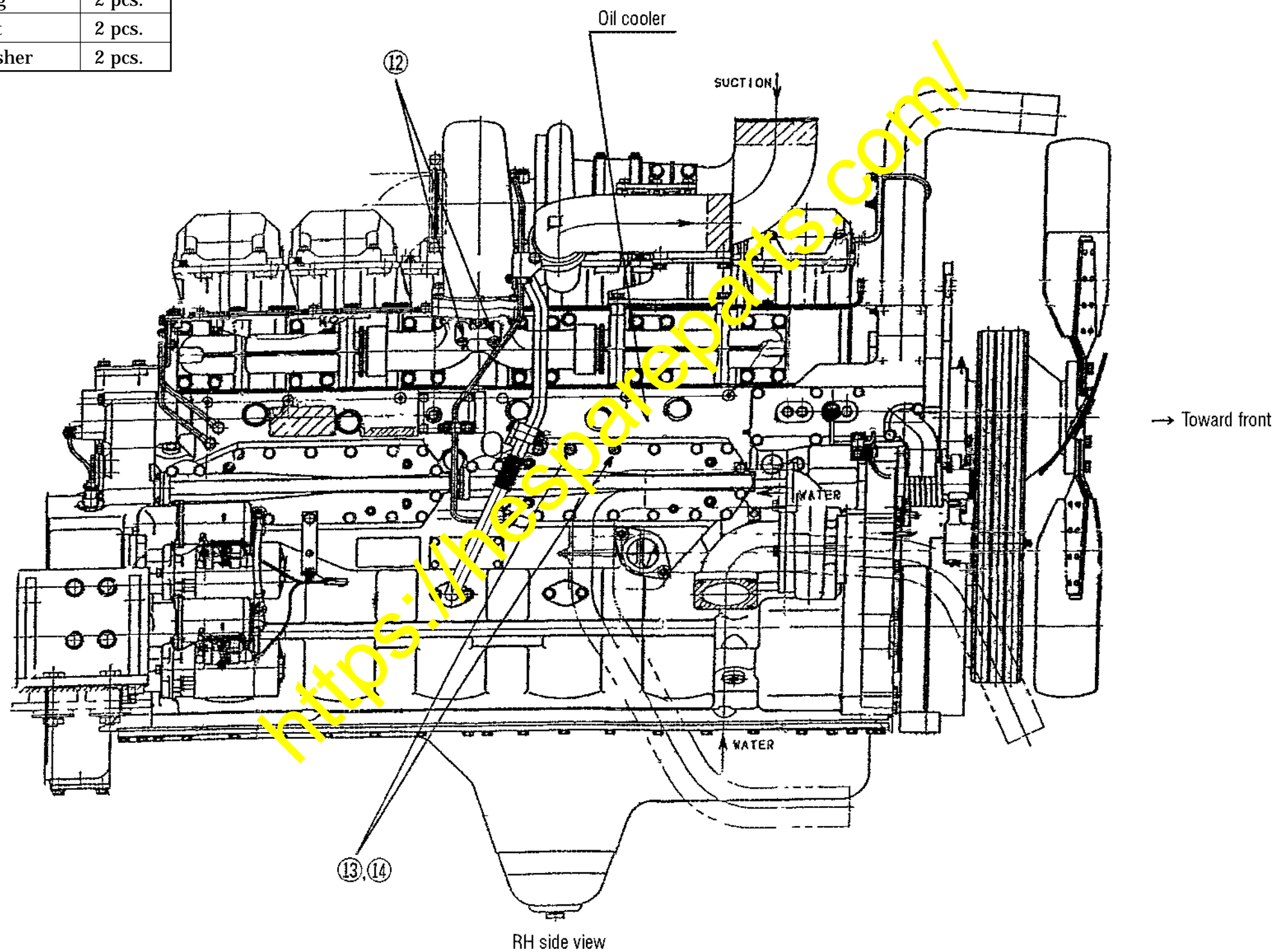


Fig. 1-5 Installation procedure for the exhaust gas temperature sensor

- (1) Install the exhaust gas temperature sensor, Item No. 125 (6215-11-8280) to the section from which the plug ⑫ (6215-11-5920) was removed as per Fig. 1-4.
- (2) Install the exhaust gas temperature sensor clamp related parts (Item No. 126 thru No. 141) to the section (oil cooler mounting bolts) from which removal work was made as per Fig. 1-4.
- (3) Bind the two pieces of the exhaust gas temperature sensors Item No. 125 (6215-11-8280) by use of the band, Item No. 142 (08034-20536).

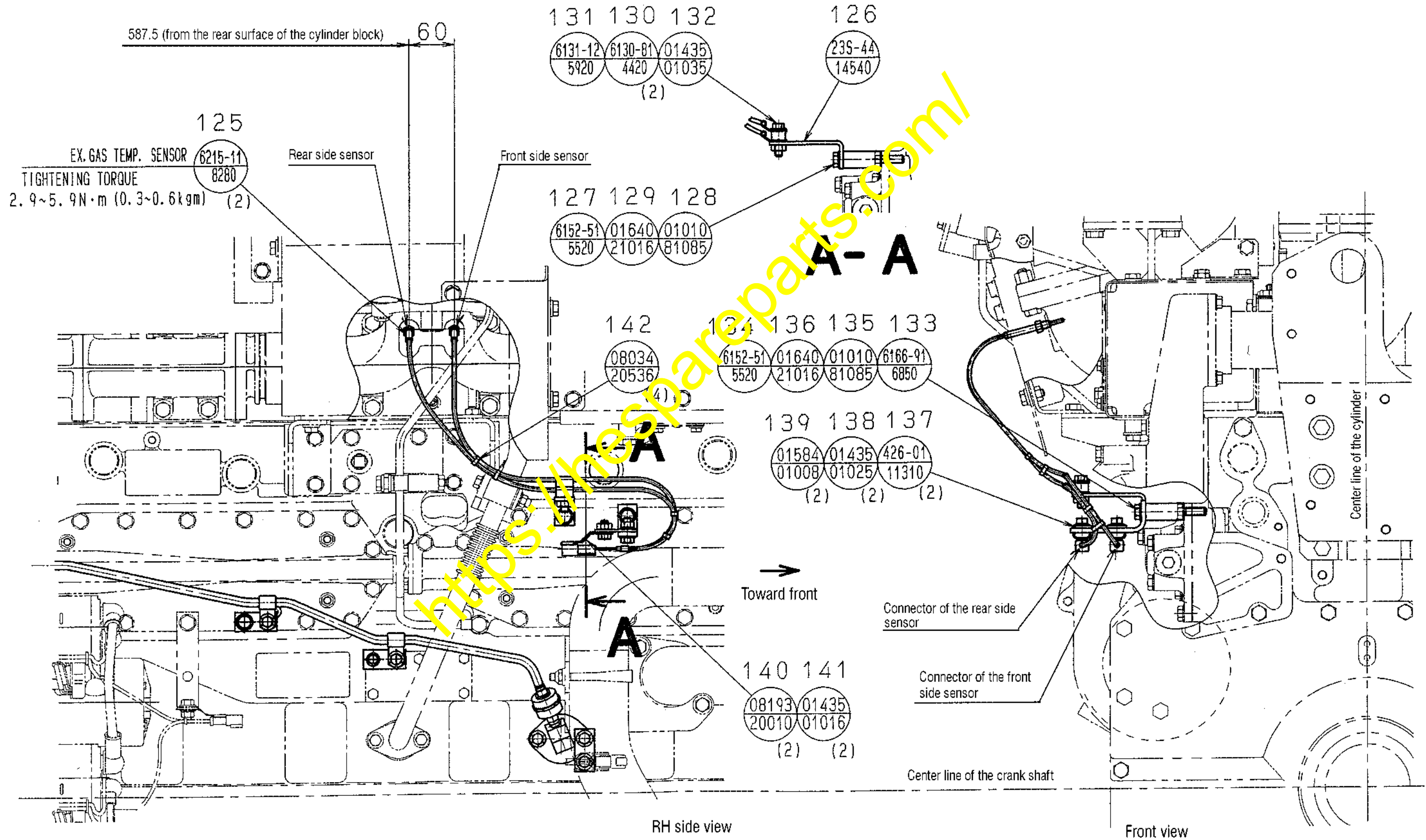


Fig. 1-6 Installation procedure for the engine oil temperature sensor

- (1) Remove the plug ⑮ (07043-70211) from the engine oil temperature sensor mounting port.
- (2) Install the engine oil temperature sensor, Item No. 43 (7681-93-3500) to the port from which the plug was removed.
- (3) Install the engine oil temperature sensor clamp related parts (as per the Item No. 44 thru No. 47).

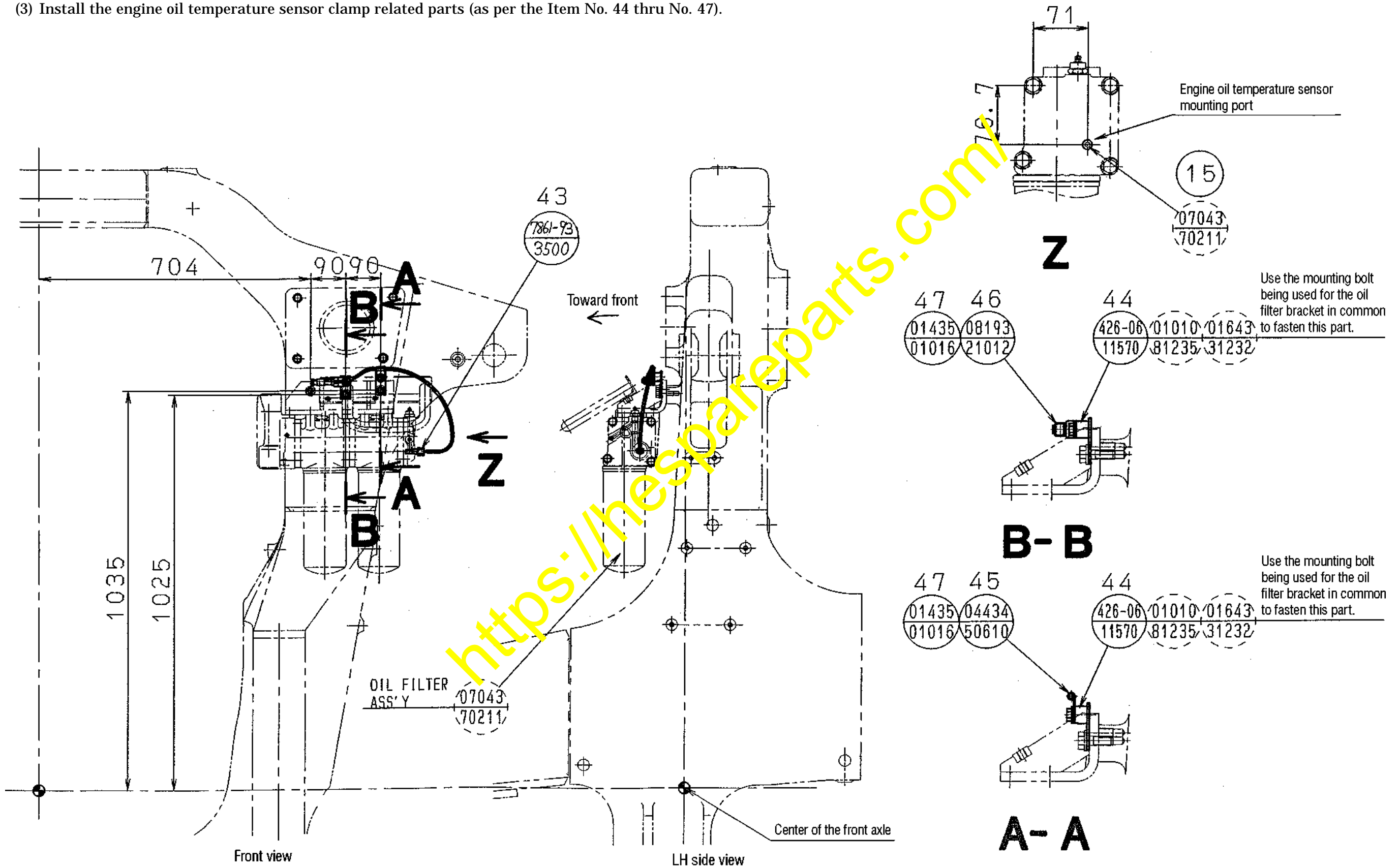





Fig. 2-1 Monitor panel replacement procedure

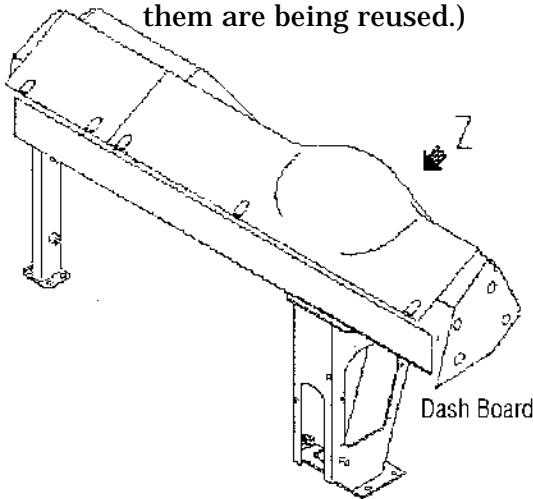
 7059  7024


 ※ Before starting this replacement work, write down to record the ① service meter reading, ② travel distance and ③ reverse travel distance being indicated on the monitor panel in advance.

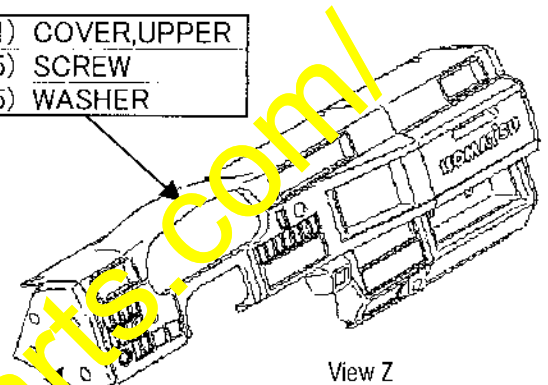
In case of Serial No. ~~7052~~ and after of the HD465-7 and Serial No. ~~7024~~ and after of the HD605-7, this replacement work is not necessary since the new monitor panel applicable to the VHMS has been already installed to standard spec. vehicles.


(1) Remove the dashboard cover. (Sections  and  only being designated in the drawing below)

(Do not lose these parts since all of them are being reused.)



	56B-54-15932	(1) COVER,UPPER
	01245-00616	(5) SCREW
	01642-40608	(5) WASHER

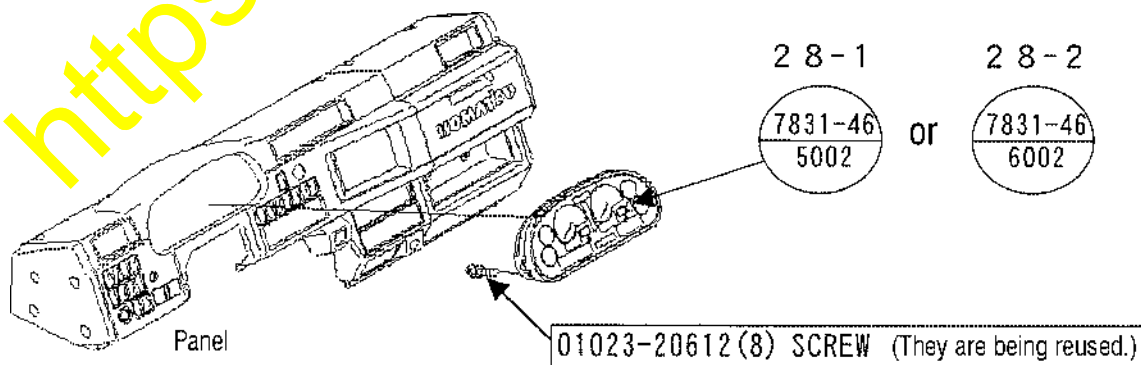


	569-54-85351	(1) COVER,LH
	01245-00616	(2) SCREW
	01642-40608	(2) WASHER

(2) Replace the monitor panel with the new monitor panel applicable to the VHMS.

Pay attention to the part number which is different depending on the indications of the speedometer.

Item No. of the part	Part No. after replacement	Part No. before replacement	Part name	Remark 1
28-1	7831-46-5002	※7831-46-5000 or 7831-46-5001	MONITOR, PANEL	For speedometer indications in "km/h" (For all the markets excluding the U.S.A.)
28-2	7831-46-6002	※7831-46-6000 or 7831-46-6001		For speedometer indications in "mile/h" (For the U.S.A. market)



(3) Reinstall the dashboard cover which has been removed as per the above section (1) to its original place.


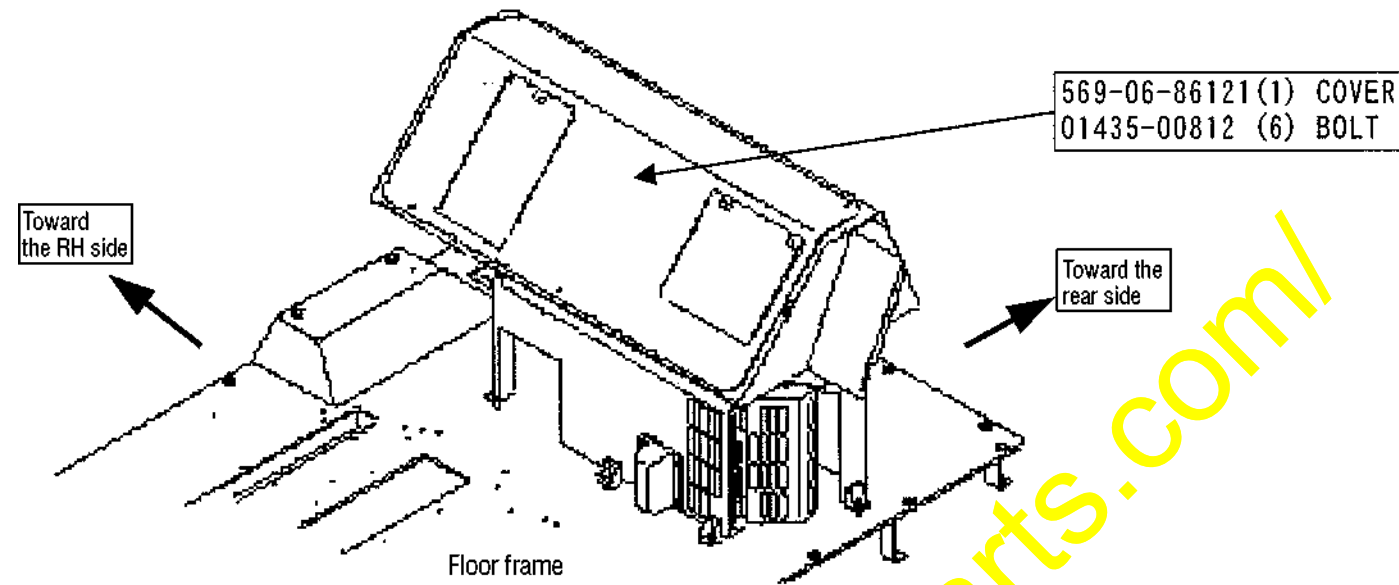
 ※ After finishing this replacement work, set the ① service meter reading, ② travel distance and ③ reverse travel distance on the monitor panel to the figures before starting this replacement work.

Fig. 2-2 Installation procedure for the VHMS controller related parts

(1) Remove the cover (569-06-86121) for the box positioned in the rear section inside the operator's cab. (Do not lose these parts since all of them are being reused.)



(2) Remove the controller and controller bracket from the inside of the box positioned in the rear section inside the operator's cab. (Do not lose these parts since all of them are being reused.)

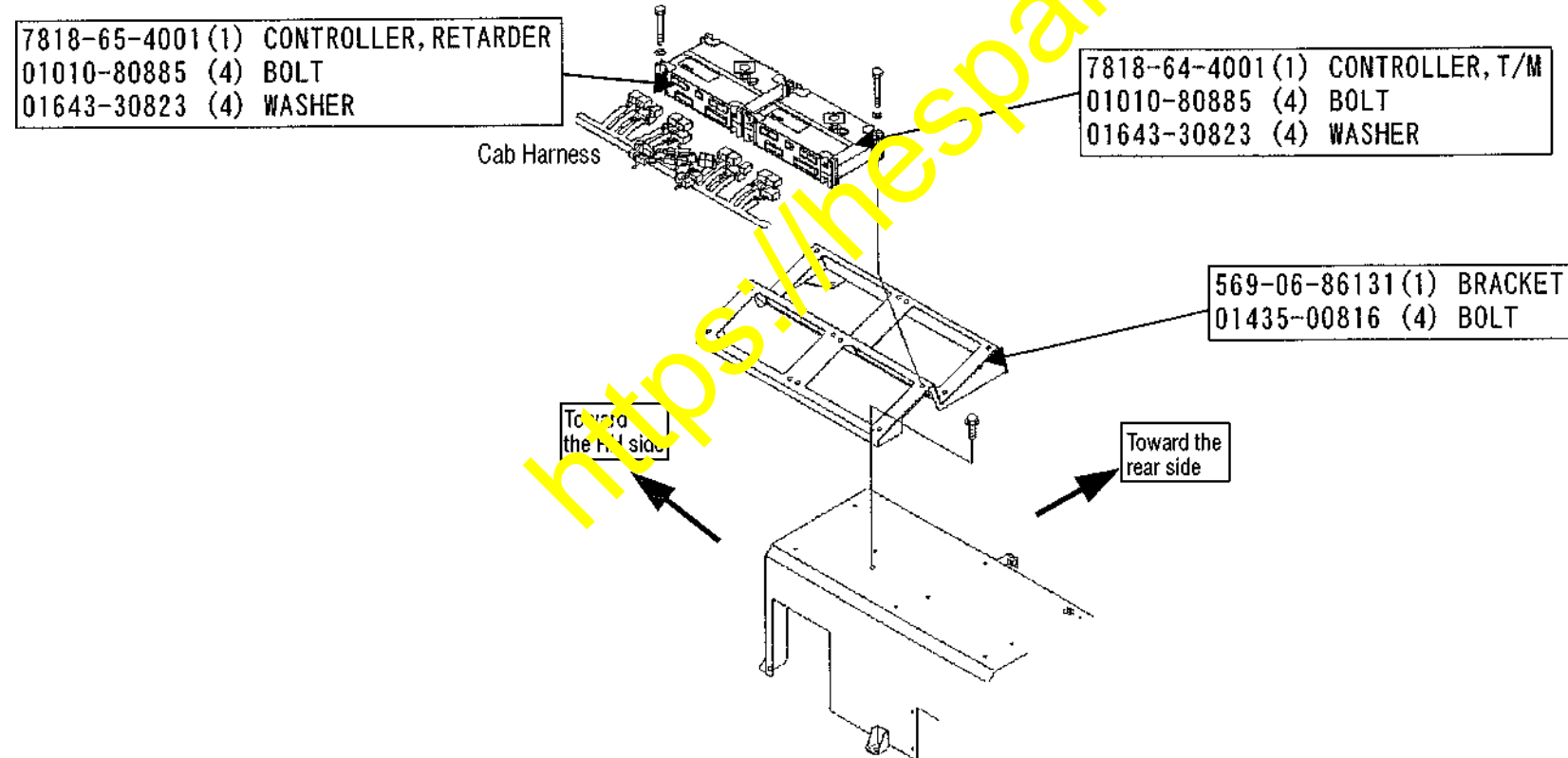


Fig. 2-3 Installation procedure for the exhaust gas temperature amplifier related parts

(1) After sub-assembling the following parts (Item No. 22 thru No. 25), install the sub-assembly to the existing bracket (569-54-85711) using the part, Item No. 26 (01435-00814).

Sub-assembling parts

Item Nos. in the Parts List	Part No.	Part name	Q'ty
22	6215-81-8150	Amplifier	2
23	01010-80616	Bolt	8
24	01643-30623	Washer	8
25	569-97-82180	Bracket	1

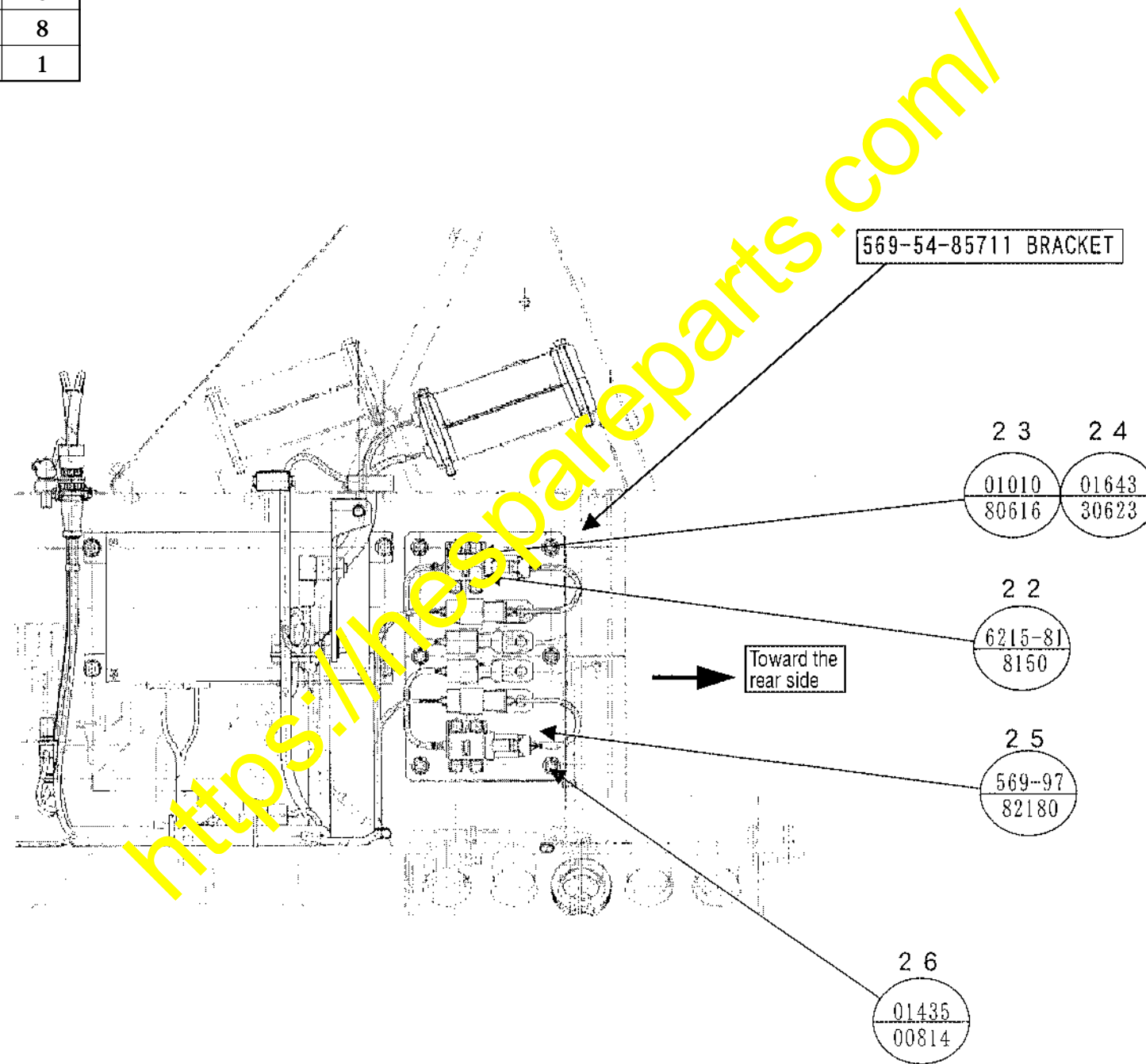


Fig. 2-4 Installation procedure for the download connector related parts inside the operator's cab
(In case of vehicles not equipped with the PLM II (option))

- (1) Install the connector No. VHMS (female) and connector No. PLM (female) of the VHMS main harness, Item No. 4 (569-97-82210) to the download connector mounting plate, Item No. 14 (569-97-82120) positioned inside the operator's cab by use of the mounting parts (Item No. 16, No. 17 and No. 18).
- (2) Install the above plate, Item No. 14 (569-97-82120) to the existing bracket (569-54-85711) by use of the screw, Item No. 15 (01023-70410).
- (3) Take out the connectors No. PLM (male), No. VHMS (male) and HM-55 of the VHMS main harness, Item No. 4 through the hole where the grommet, Item No. 19 (08037-11425) is to be installed as shown in the drawing below.
- (4) Fasten the connector HM-55 of the VHMS main harness, Item No. 4 to the existing bracket (569-54-85711) by use of the clip, Item No. 12 (08193-21012) and the bolt, Item No. 13 (01435-01016).
- (5) For protection of the harness, install the grommet, Item No. 19.
- When installing the grommet, make a cutout and fasten it by use of the band, Item No. 21 (08034-20519).
- (6) Connect the male and female connectors of the connector No. VHMS and connect the male and female connectors of the connector No. PLM, respectively.

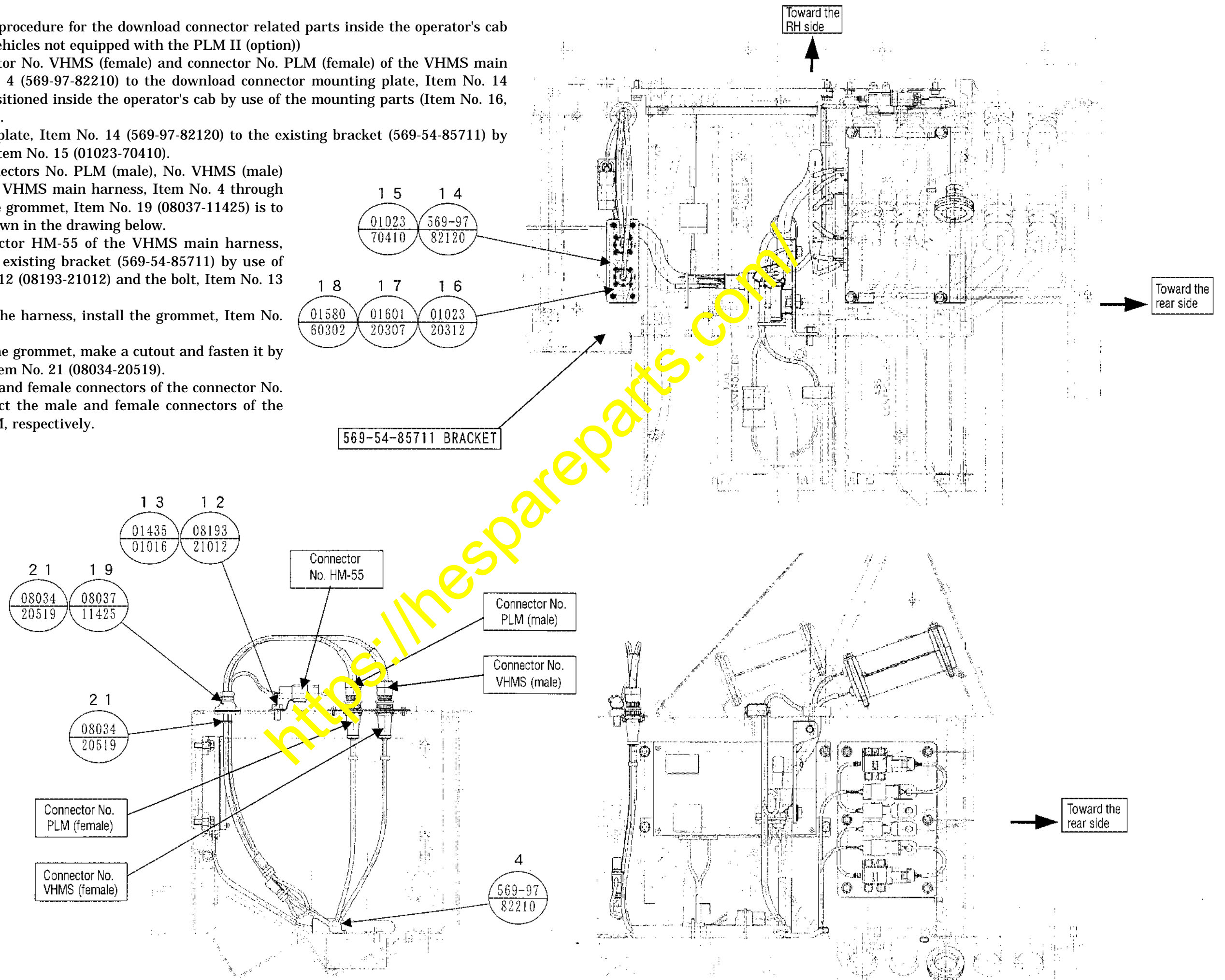


Fig. 2-5 Installation procedure for the download connector related parts inside the operator's cab (In case of vehicles equipped with the PLM II (option))

- (1) Removing the mounting screw (01023-70410) from the existing download connector mounting plate (the same part as the Item No. 14 (569-97-82120)) inside the operator's cab and removing the connector mounting parts (screw (01023-20312), washer (01601-20307) and nut (01580-10312)) also, remove the connector No. PM8 (female) of the PLM II download harness (569-86-86260).
- (2) Install the connector No. VHMS (female) of the VHMS main harness, Item No. 4 (569-97-82210) and connector No. PLM (female) of the PLM II download harness which was removed as per the above section (1) to the download connector mounting plate, Item No. 14 (569-97-82120) positioned inside the operator's cab by use of the mounting parts (Item No. 16, No. 17 and No. 18).
- (3) Install the above plate, Item No. 14 (569-97-82120) to the existing bracket (569-54-85711) by use of the screw, Item No. 15 (01023-70410).
- (4) Connect the connectors No. PLM (male) and the connector No. VHMS (male) of the download adaptor harness, Item No. 27 (569-86-86270) and fasten them to the VHMS main harness by use of the band, Item No. 21 (08034-20536).
- (5) Take out the connector No. VHMS (male) and HM-55 of the VHMS main harness, Item No. 4 (569-97-82210) and the connector No. PLM (male) of the download adaptor harness, Item No. 27 (569-86-86270) through the hole where the grommet, Item No. 19 (08037-11425) is to be installed as shown in the drawing below.
- (6) Fasten the connector HM-55 of the VHMS main harness, Item No. 4 (569-97-82210) to the aforementioned existing bracket (569-54-85711) by use of the clip, Item No. 12 (08193-21012) and the bolt, Item No. 13 (01435-01016).
- (7) For protection of the harness, install the grommet, Item No. 19 (08037-11425). When installing the grommet, make a cutout and fasten it by use of the band, Item No. 21 (08034-20519).
- (8) Connect the male and female connectors of the connector No. VHMS and connect the male and female connectors of the connector No. PM8, respectively.
- (9) Regarding the excessive connector No. PLM (male) of the VHMS main harness, Item No. 4 (569-97-82210), wind vinyl tape around the connector section and fasten it to the VHMS main harness by use of the band, Item No. 21 (08034-20519).

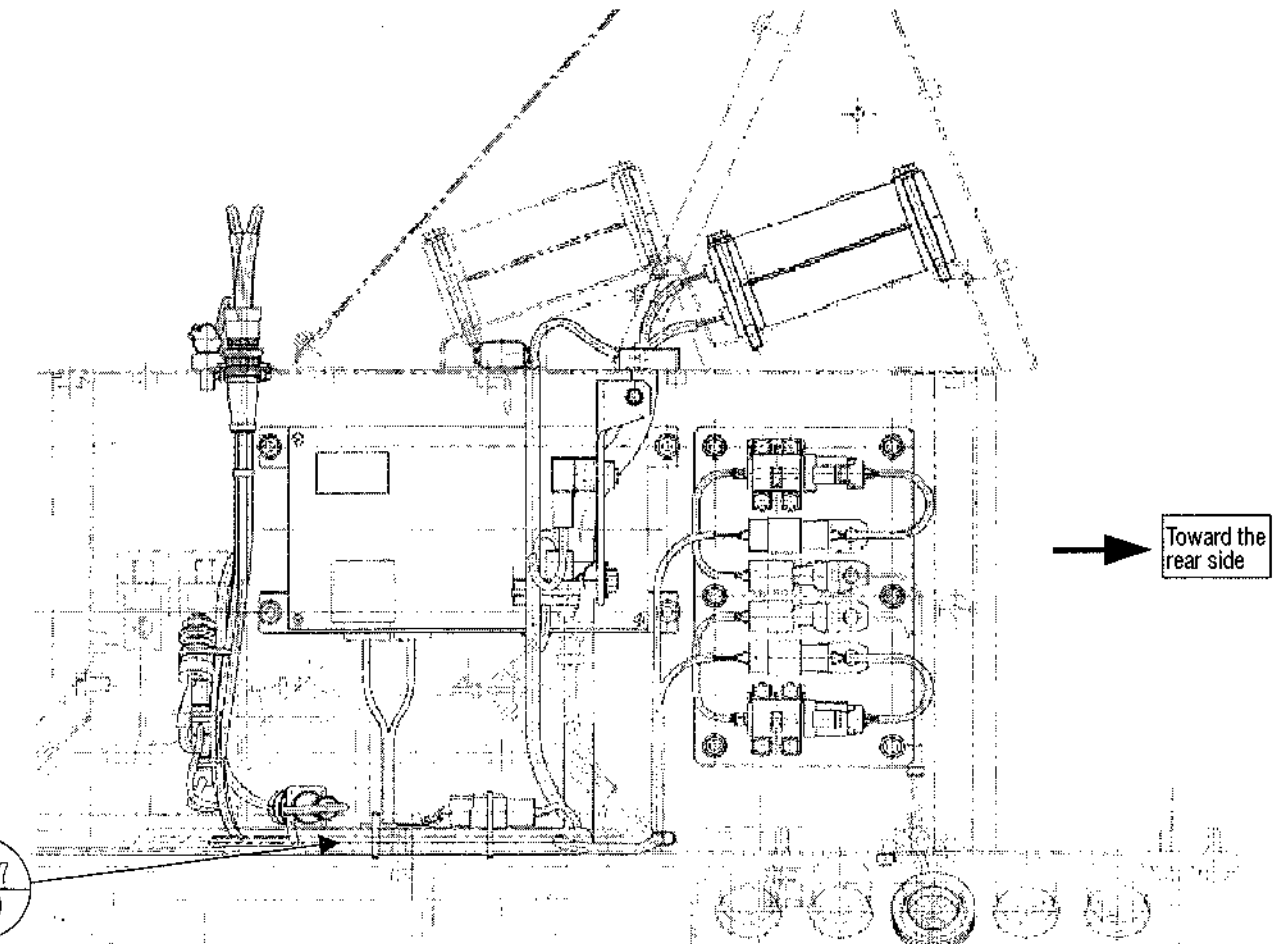
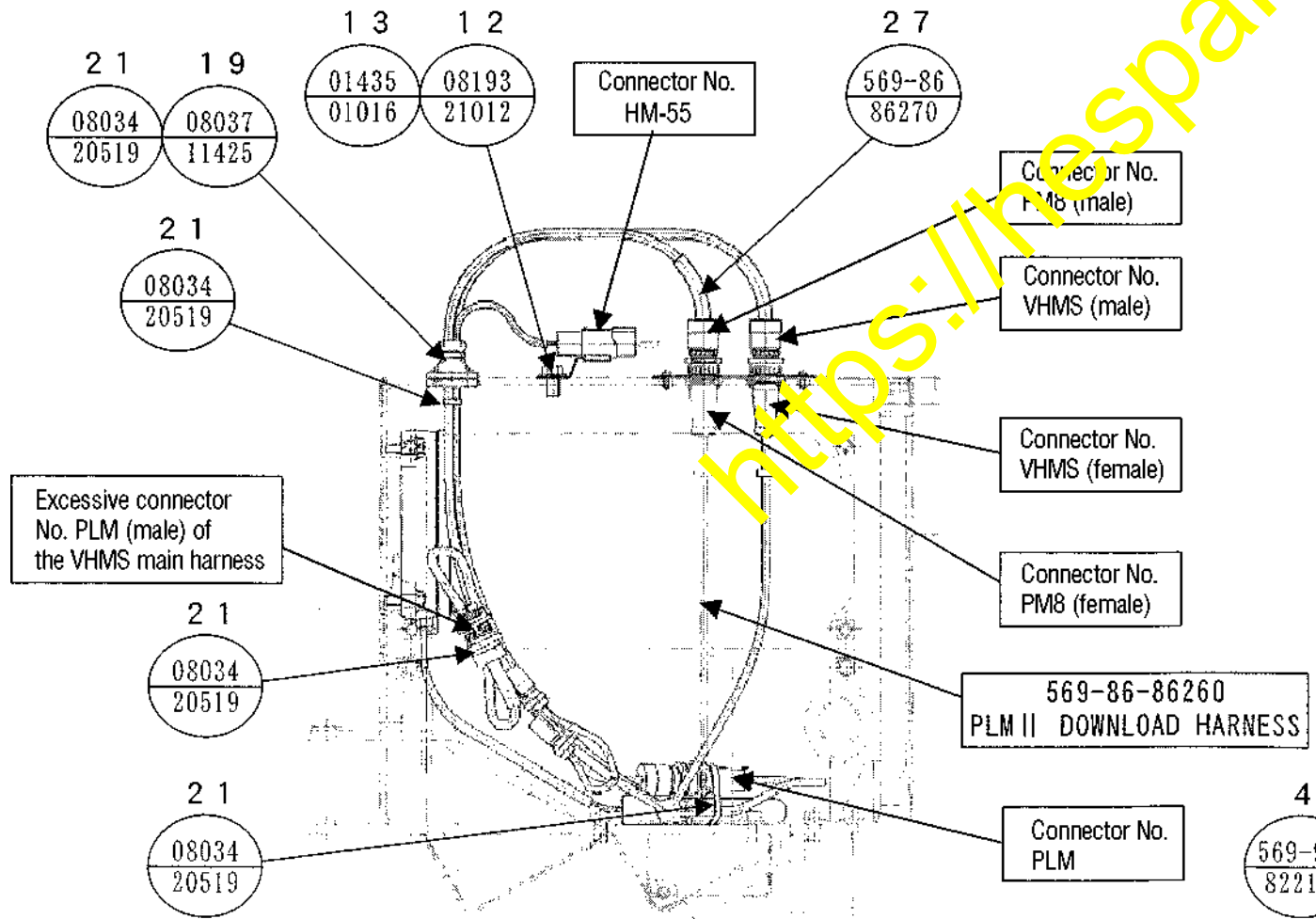
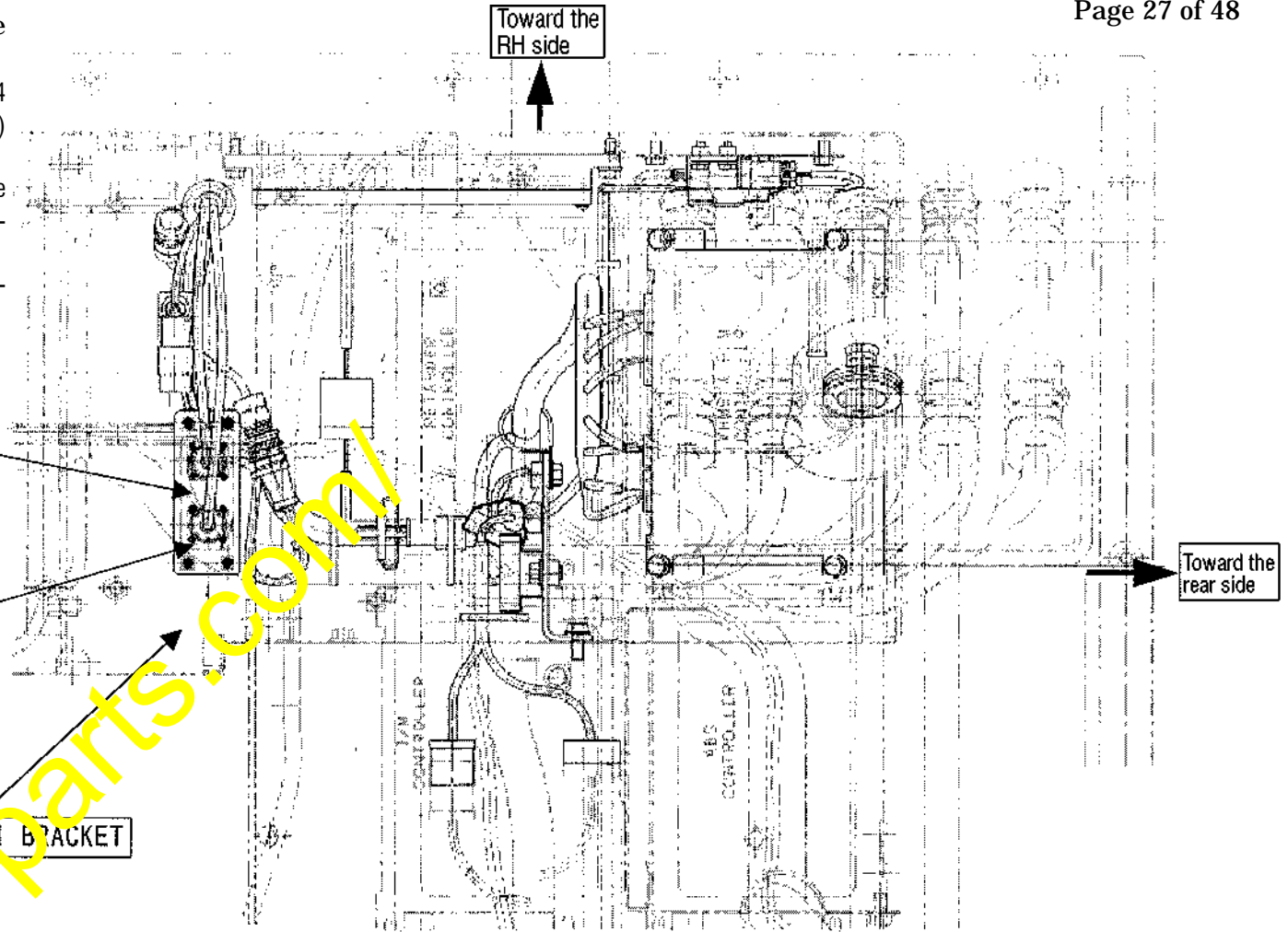


Fig. 2-6 Installation procedure for the harness related parts inside the operator's cab

- (1) Connect the VHMS main harness, Item No. 4 (569-97-82210) to the connectors Nos. PM1, PM4, PM11, EG4 and CAN1 of the existing main harness (569-06-86411) inside the operator's cab.
- (2) Installing the clip, Item No. 11 (08053-16210) and the bolt, Item No. 13 (01435-01016) to the bracket, Item No. 8 (569-97-82290), install the clip, Item No. 10 (04434-53412) through which the VHMS main harness, Item No. 4 has been passed by use of the bolt, Item No. 13.
- (3) After removing the existing bolt (01435-01016 (at the section "A" in the drawing shown on the RH side)) install the bracket, Item No. 8 by use of the bolt, Item No. 9 (01435-01020).
- (4) Fasten the connector No. PM4 and the connector No. CAN1 to the clip of the bracket, Item No. 8 and fasten the connector No. PM1 to the bracket, Item No. 8 by use of the band, Item No. 21 (08034-20519).
Fasten the connector No. PM11 and the connector No. EG4 to the main harness inside the operator's cab by use of the band, Item No. 21.
- (5) Connect the connector No. HM-23A and the connector No. HM-23B of the main harness, Item No. 4 and the connector No. HM-22A and the connector No. HM-22B of the sensor harness, Item No. 31 (569-97-82280) and the sensor harness, Item No. 32 (561-97-62290) to the exhaust gas temperature amplifier, Item No. 22 (6215-81-8150) respectively.

Connections of the connectors should be in conformity with the following chart.

Connector No. HM-23A of the main harness	Upper side exhaust gas temperature amplifier	Connector No. HM-22A of the sensor harness, Item No. 31 (569-97-82280)
Connector No. HM-23B of the main harness	Lower side exhaust gas temperature amplifier	Connector No. HM-22B of the sensor harness, Item No. 32 (561-97-62290)

- (6) When leading the exhaust gas temperature sensor harnesses, Item No. 31 and No. 32 into the inside of the operator's cab, make a cut in the grommet, Item No. 20 (08037-12036) before passing the harnesses and after fastening the top end of the grommet by use of the band, Item No. 21, wind a vinyl tape (black colored tape) and seal the inside of the grommet by use of liquid adhesive (KES 07 581, LT-1A) and, after that, install the grommet into the hole opened in the floor frame.
(Refer to Fig. 3-1 regarding installation of the exhaust gas temperature sensor harnesses, Item No. 31 and No. 32 remaining outside the operator's cab.)

In case of vehicles equipped with the ORBCOMM controller, pass the antenna cable, Item No. 165 (561-97-62250) at the same time.

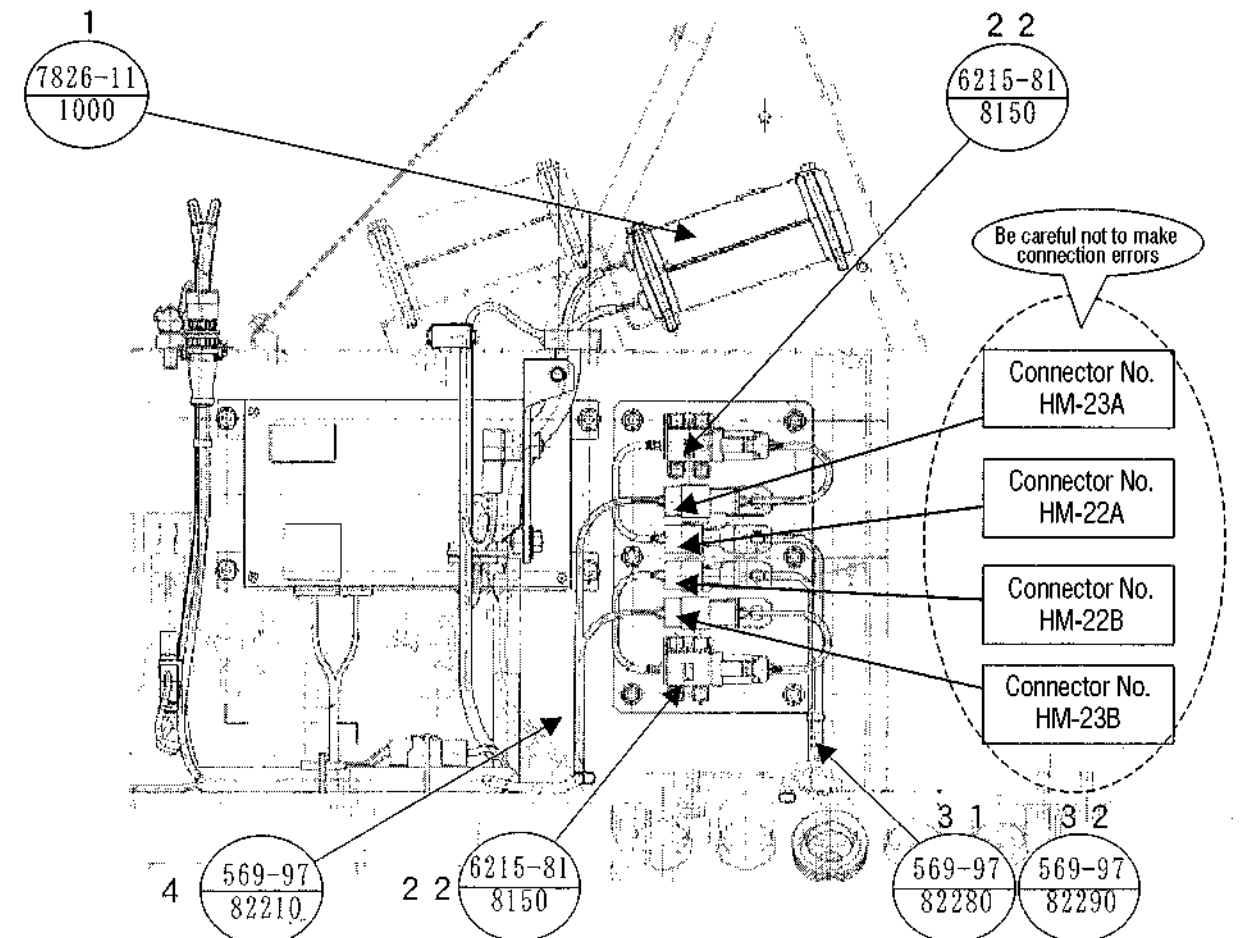
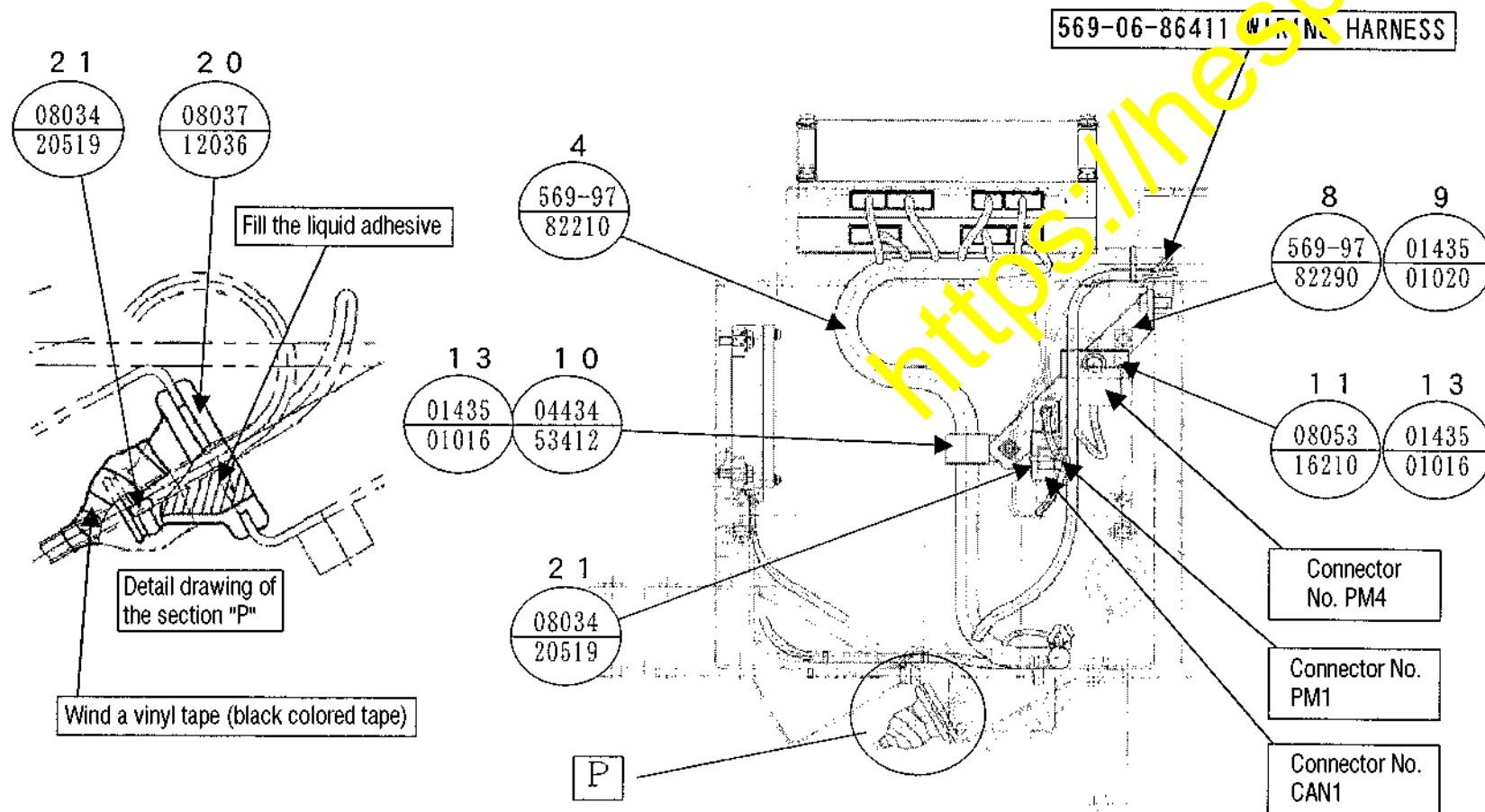
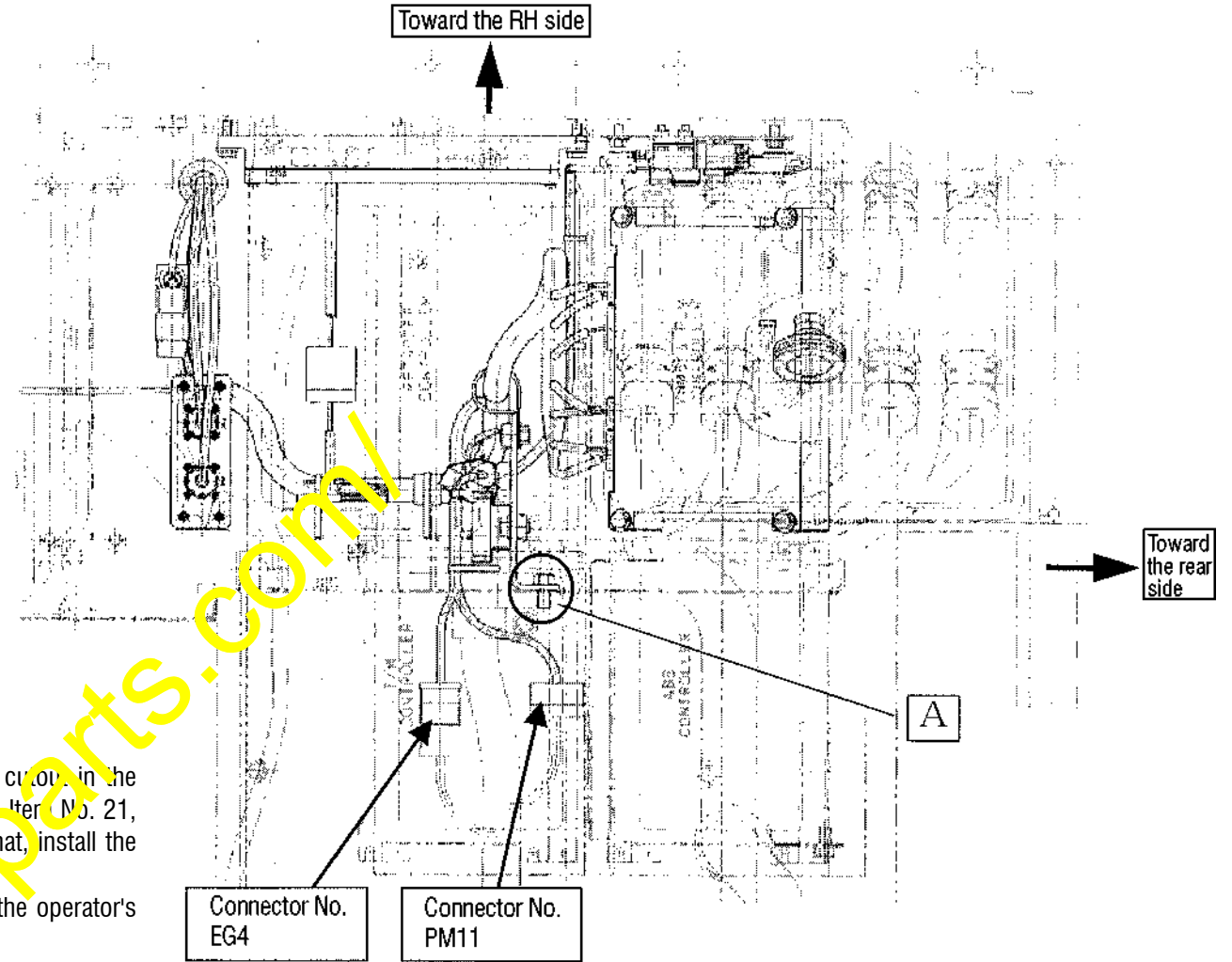


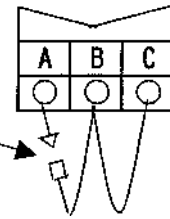
Fig. 2-7 Connection procedure for the shorting connector and the resistor

- (1) Change the connection of the shorting connector, Item No. 5 (569-97-82310). (Be sure to make this connection change.)

IMPORTANT

When the vehicle is not equipped with the PLM (payload meter) function of the built-in VHMS type or when vehicle is equipped with the separate installation type PLM II (card type payload meter), **do not connect** the plug connector between "A" and "B" of the shorting connector.

Connect this plug connector between "A" and "B" in other cases.



- (2) Connect the shorting connector, Item No. 5 to the connector No. HM-50 of the VHMS main harness, Item No. 4 (569-97-82210) and fasten it to the VHMS main harness by use of the band, Item No. 21 (08034-20536).
- (3) Connect the resistor, Item No. 6 (600-842-2130) to the connector No. HM-2130 of the VHMS main harness, Item No. 4 and connect the resistor No. 7 (600-842-2140) to the connector No. HM-2140, then, fasten them by use of the band, Item No. 21.

Be careful not to make connection errors of the resistors.

Identification method for the resistors:

- Item No. 6 (600-842-2130) --- Milky white color
- Item No. 7 (600-842-2140) --- Green color

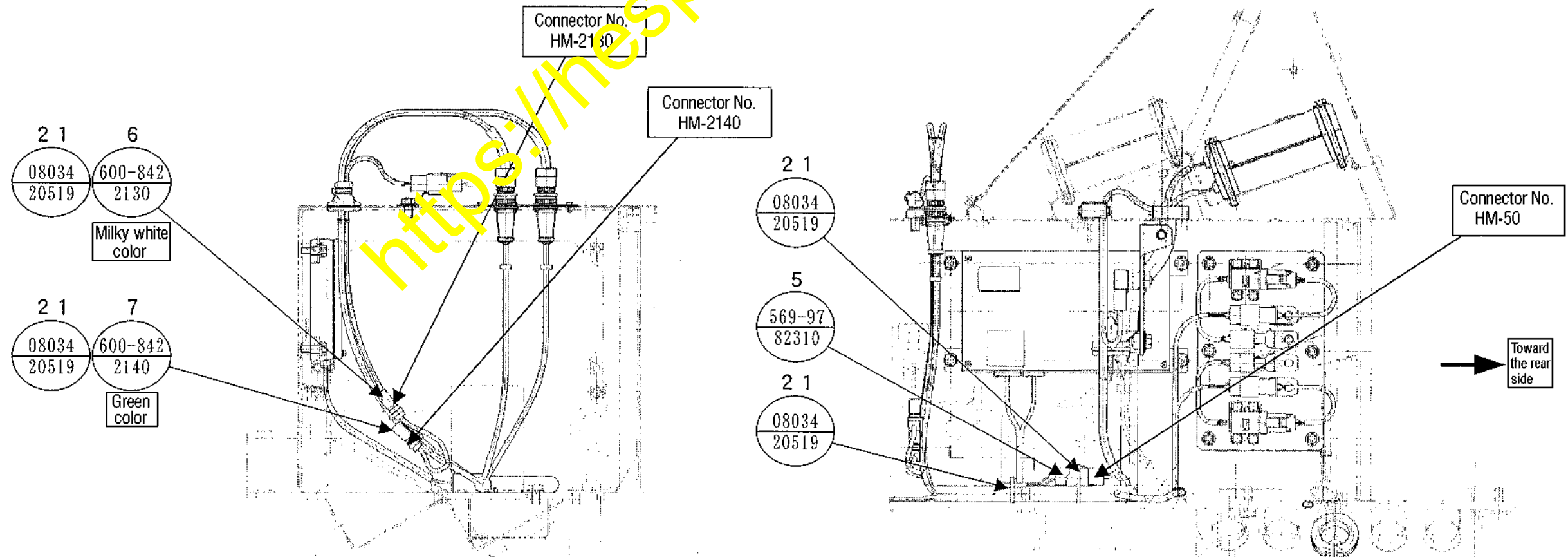
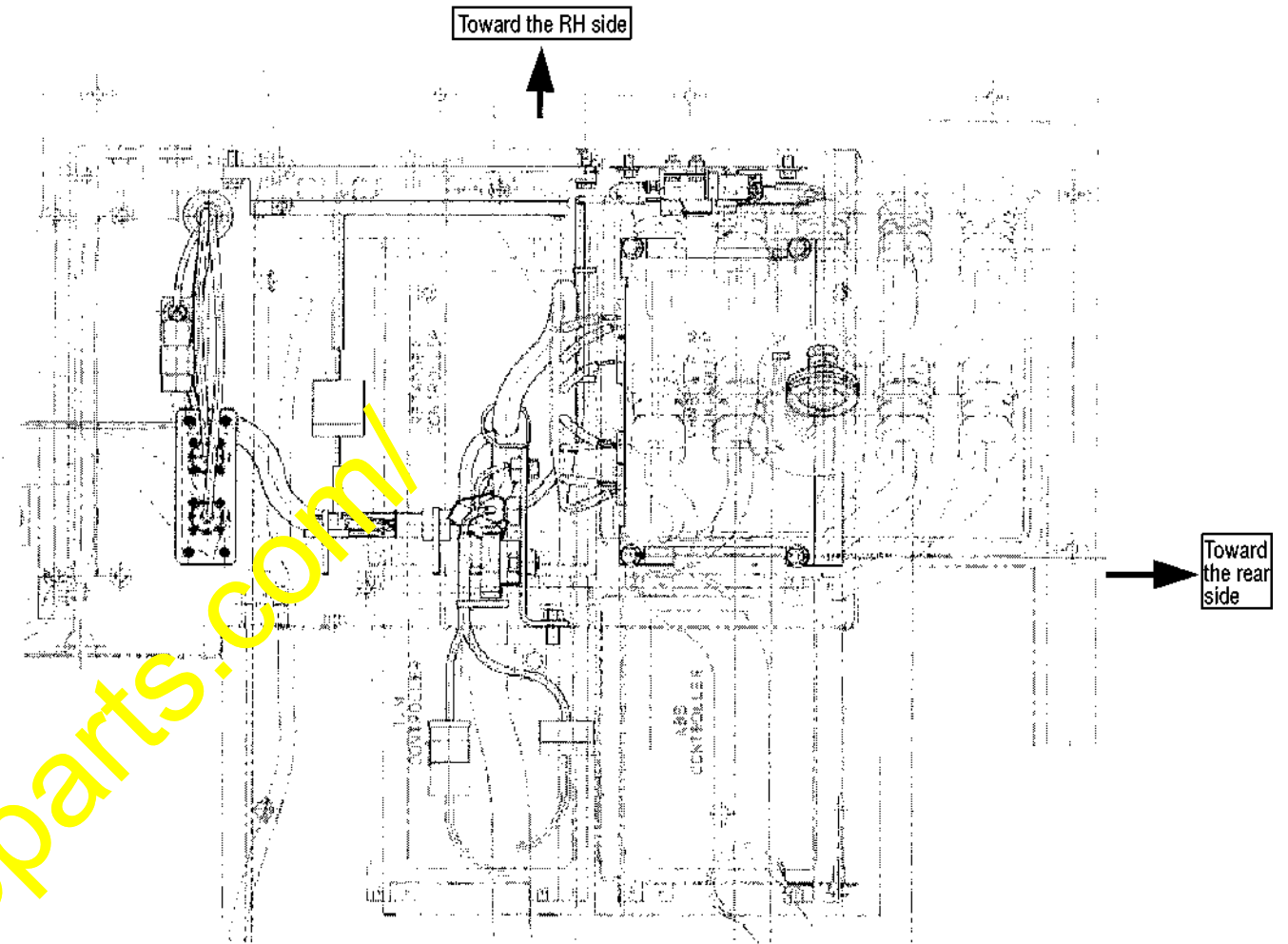
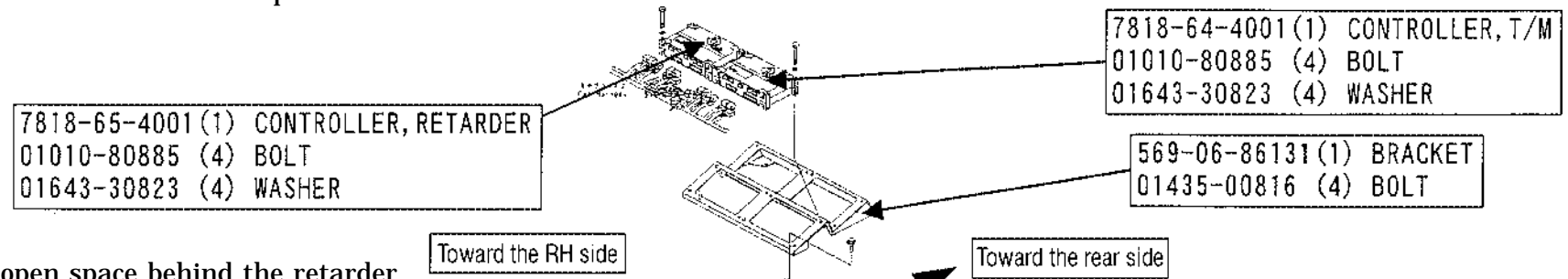
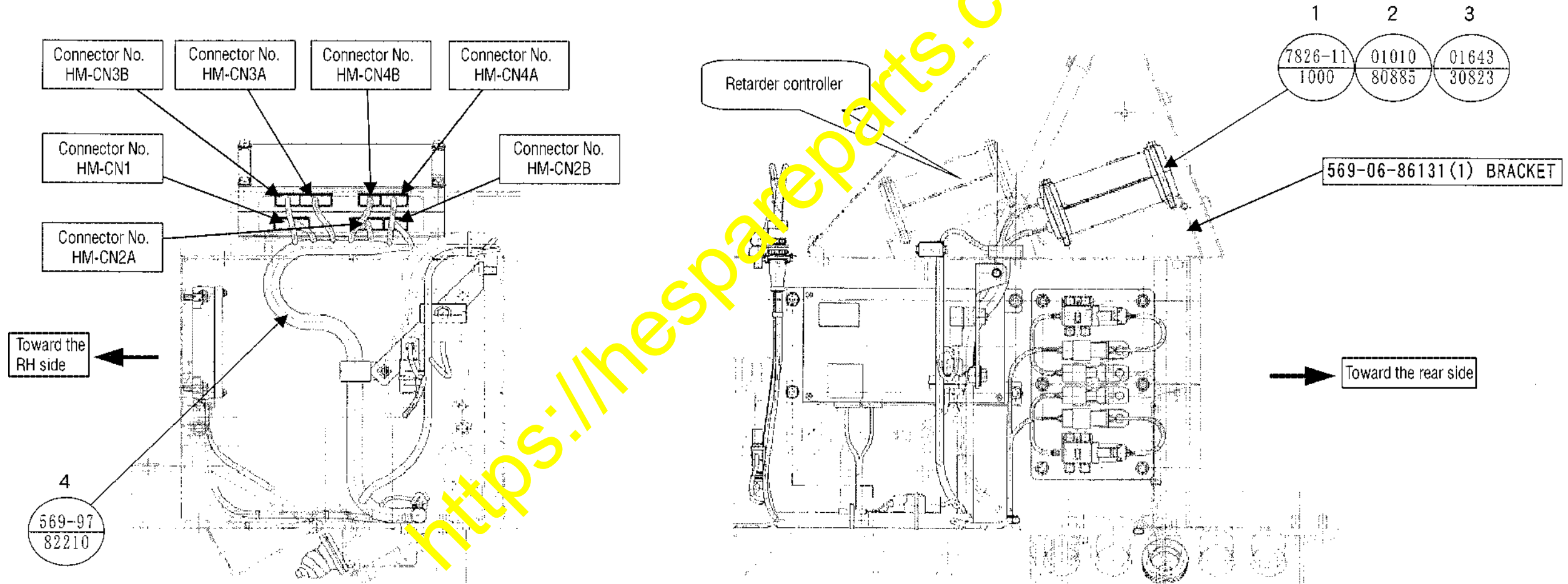


Fig. 2-8 Installation procedure for the VHMS controller related parts

(1) Reinstall the controller and the controller bracket which were removed from the box positioned in the rear section as per Fig. 2-2 back to their original positions.



(2) Install the VHMS controller, Item No. 1 (7826-11-1000) into the open space behind the retarder controller (positioned on the RH side of the operator's cab) on the existing bracket (569-06-86131) by use of the bolt, Item No. 2 (01010-80885) and the washer, Item No. 3 (01643-30823). At this time, connect the VHMS main harness, Item No. 4 (569-97-82210) to the VHMS controller, Item No. 1.



(3) Reinstall the cover (569-06-86121) which was removed from the box positioned in the rear section of the operator's cab as per Fig. 2-2 to its original position.

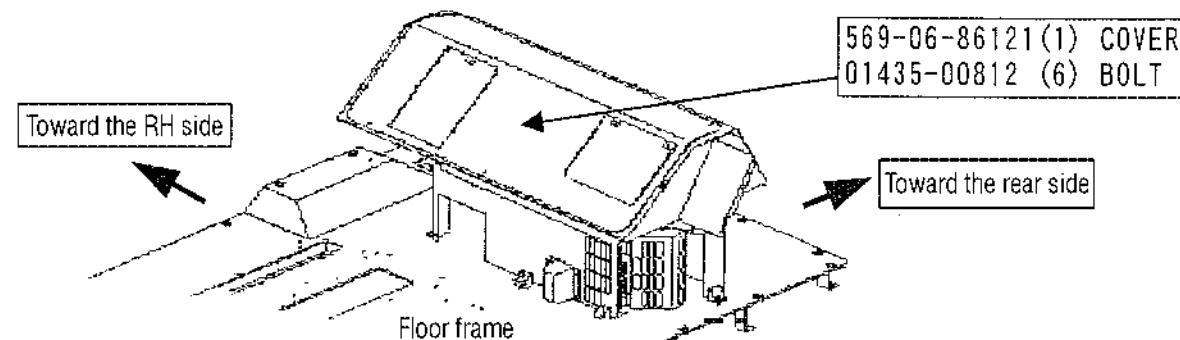


Fig. 3-1 Installation procedure for the engine sensor harness and exhaust temperature sensor harness (1/3)

- (1) Connect the engine sensor harness, Item No 30 (569-97-82220) to the connector of the engine blow-by sensor, Item No 100 (6218-81-4111) and to the connector of the oil temperature sensor, Item No 43 (7861-93-3500).
 (Connector No. HM-12) → Connector of the blow-by sensor, Item No 100
 (Connector No. HM-31) → Connector of the oil temperature sensor, Item No 43
- (2) Regarding the connector No. VHM positioned on the opposite side of the sensor harness to the connector No. VHM of the existing engine harness ② (569-06-83311). (The connector No. VHM is located in the rear section of on the LH side of the engine.)
- (3) Connect the connector No. HM-21A of the exhaust gas temperature sensor harness, Item No. 31 (569-97-82280) to the connector (the inside connector) of the exhaust gas temperature sensor for the front side exhaust manifold. Connect the connector No. HM-21B of the exhaust gas temperature sensor harness, Item No. 32 (561-97-62290) to the connector (the outside connector) of the exhaust gas temperature sensor for the rear side exhaust manifold.
- (4) Clamp the engine sensor harness, Item No. 30 and the exhaust gas temperature sensor harnesses, Item No. 31 and No. 32 as per the instructions given in this drawing. To the clip, Item No. 37 (04434-51210), clamp the 3 harnesses of the engine sensor harness, Item No. 30 and the exhaust gas temperature sensor harnesses, Item No. 31 and No. 32 altogether.

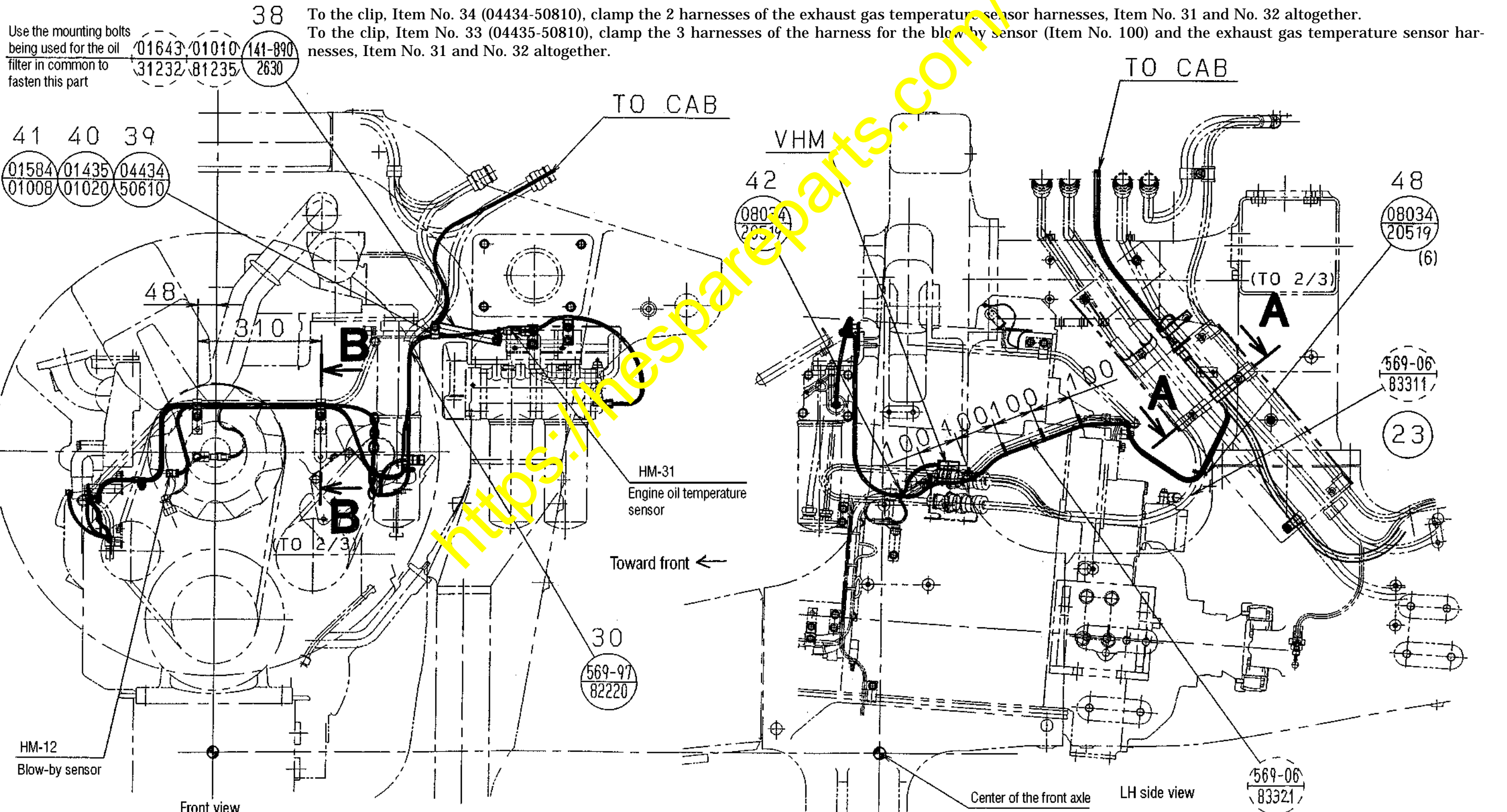


Fig. 3-1 Installation procedure for the engine sensor harness and exhaust temperature sensor harness (2/3)

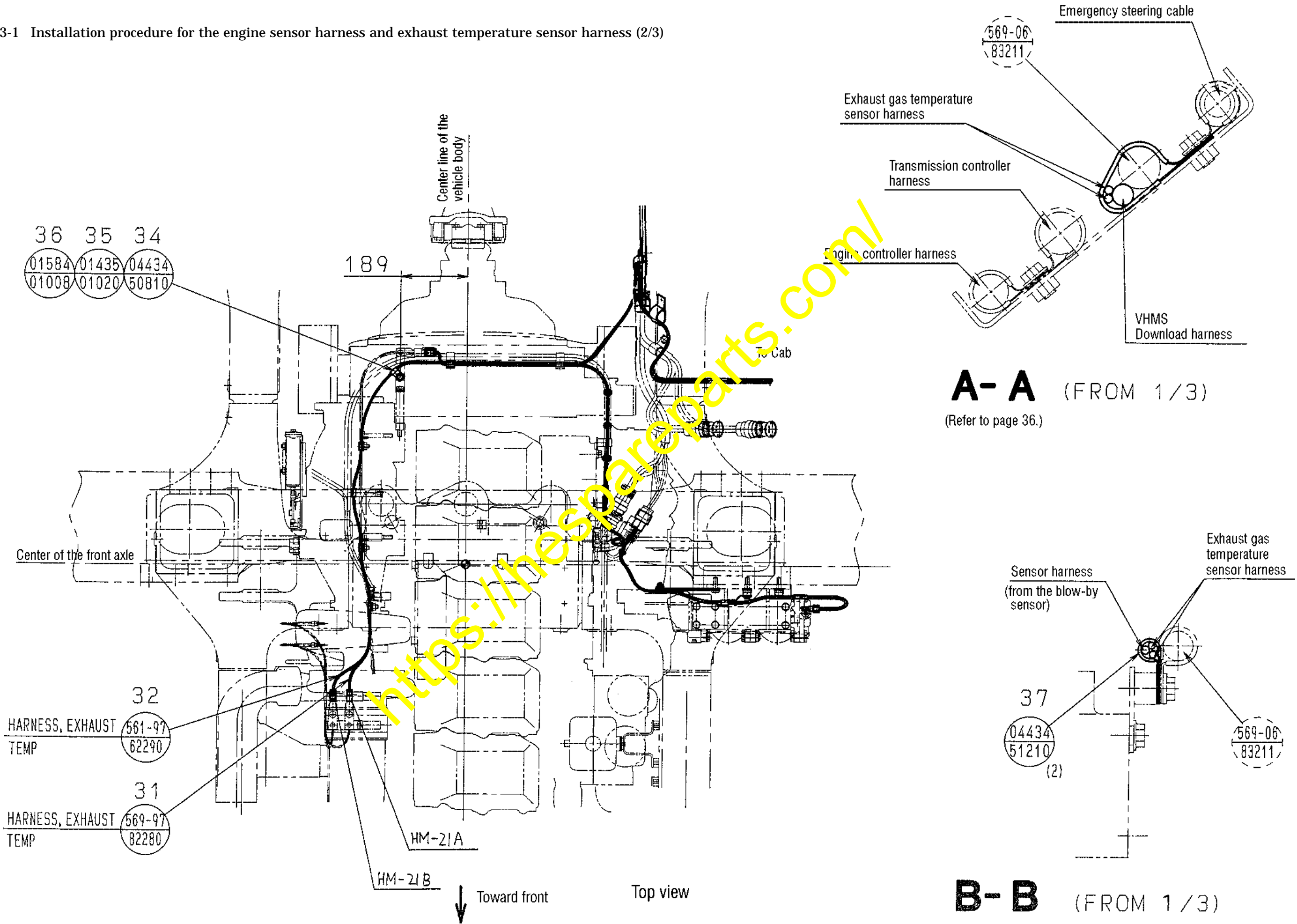


Fig. 3-1 Installation procedure for the engine sensor harness and exhaust temperature sensor harness (3/3)

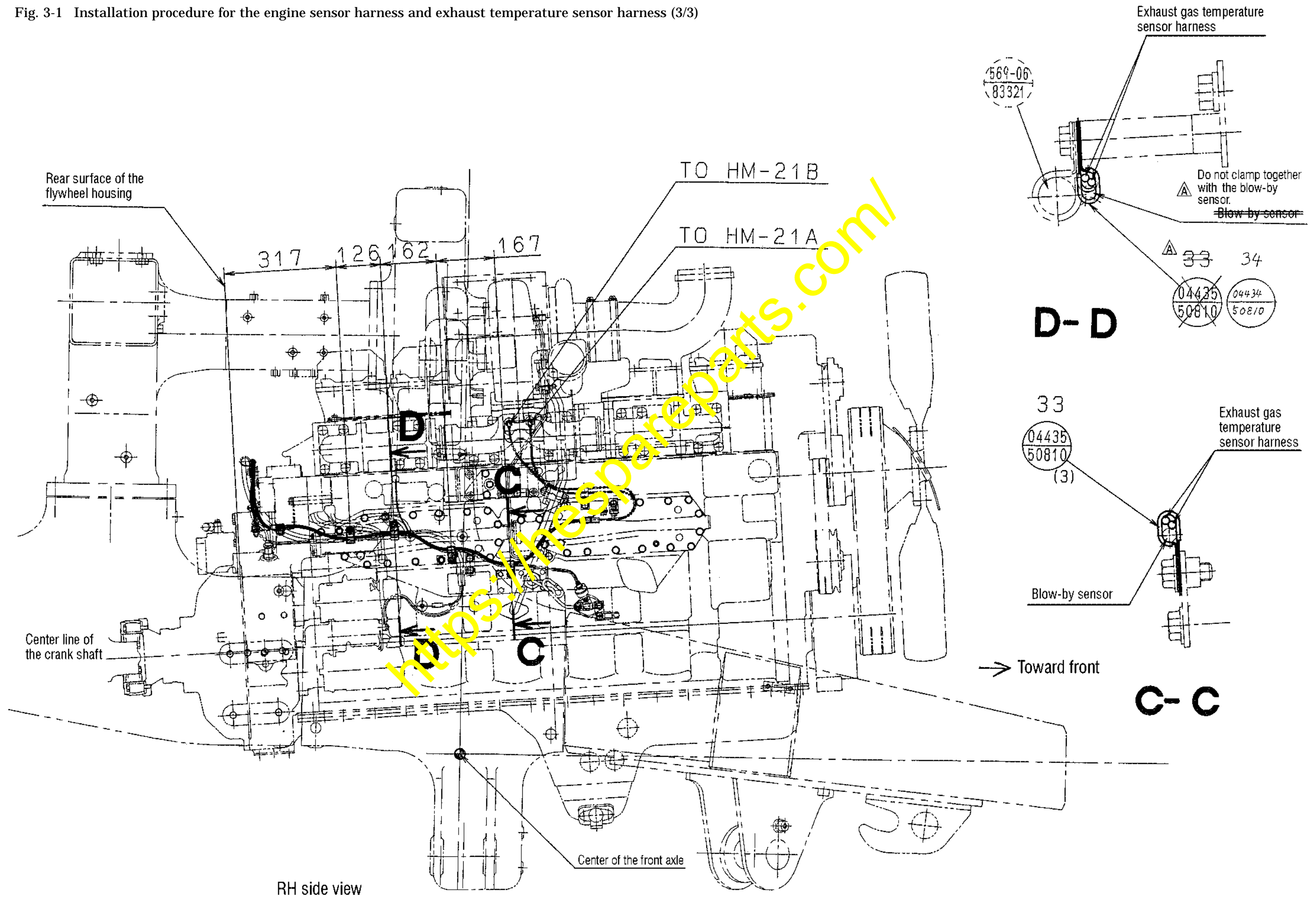


Fig. 3-2 Installation procedure for the atmospheric air temperature sensor related parts and sensor harness related parts. (1/3)

- (1) Install the atmospheric air temperature sensor, Item No. 49 (7861-93-3510) to the cover, Item No. 50 (569-97-82461) for the atmospheric air temperature sensor.
- (2) Removing the mounting bolt for the LH front support cover $\text{\textcircled{29}}$ (569-54-81391), install the cover (Item No. 50) which has been sub-assembled as above and the sensor (Item No. 49) by use of the bolt, Item No. 51 (01010-81060) and the washer, Item No. 52 (01643-31032).
- (3) Fasten the connector of the atmospheric air temperature sensor, Item No. 49 (7861-93-3510) by use of the clip, Item No. 53 (08193-21012).
- (4) Connect the atmospheric air temperature sensor harness, Item No. 54 (569-97-82470) to the temperature sensor, Item No. 49 (7861-93-3510) and to the connector No. SPA1 of the existing harness $\text{\textcircled{24}}$ (569-06-83211).
- (5) Fasten the atmospheric air temperature sensor harness, Item No. 54 (569-97-82470) by use of the clip, Item No. 55 (04434-50612), bolt, Item No. 56 (01435-01025) and band, Item No. 57 (08034-20519).
- (6) Fasten the connector No. SPA1 of the existing harness $\text{\textcircled{24}}$ (569-06-83211) by use of the band, Item No. 58 (08034-20519).

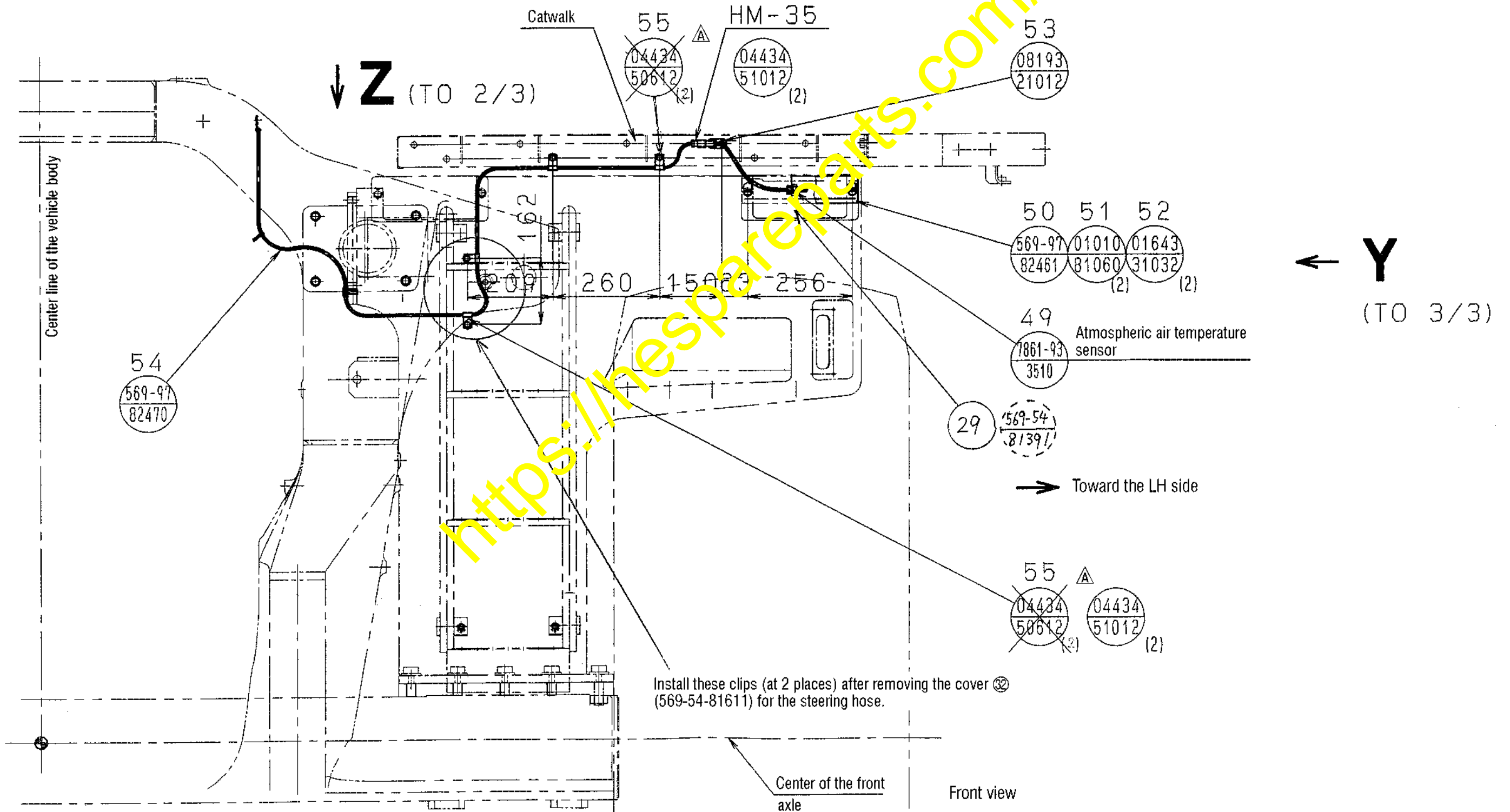
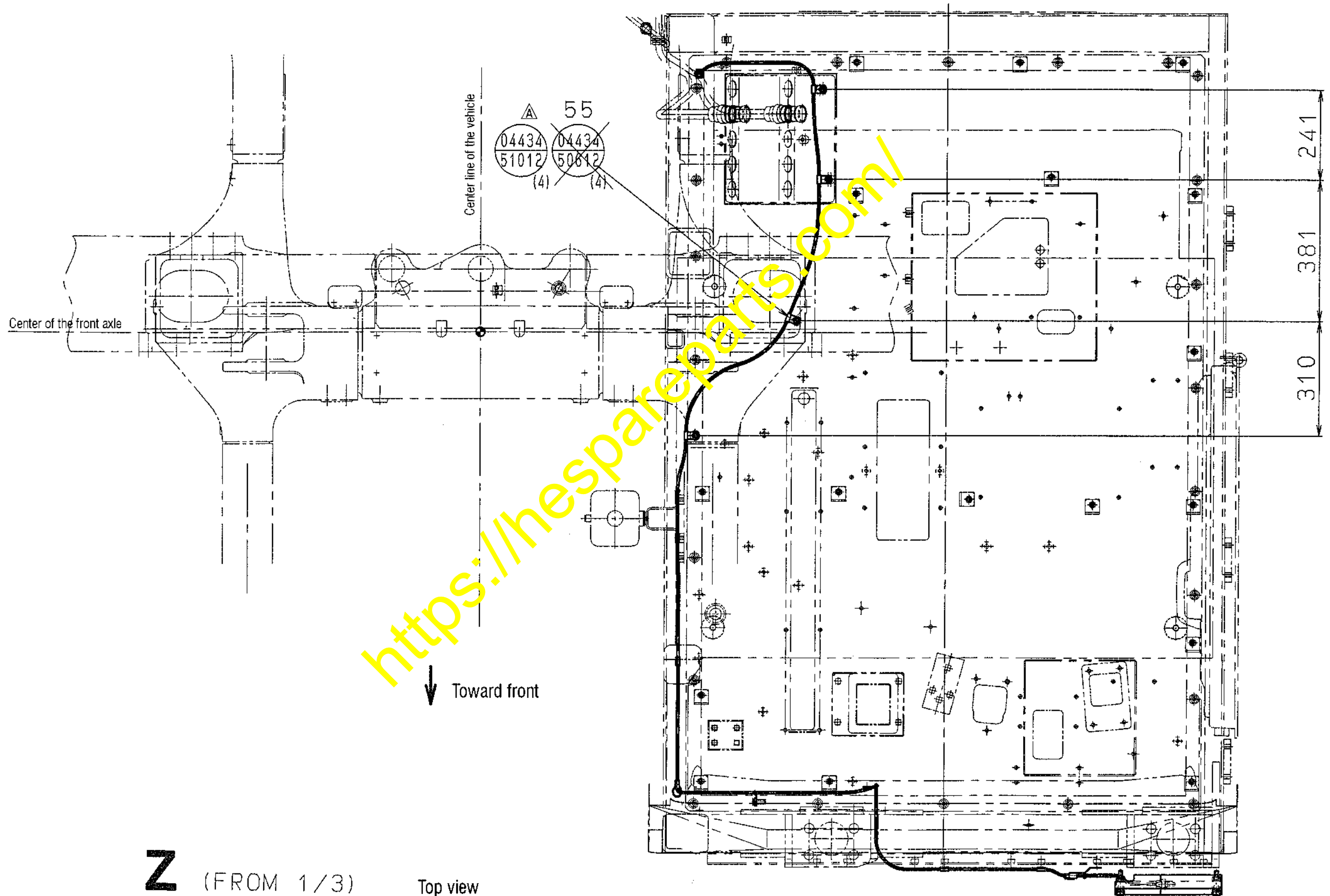


Fig. 3-2 Installation procedure for the atmospheric air temperature sensor related parts and sensor harness related parts. (2/3)



Z (FROM 1/3)

Top view

Fig. 3-2 Installation procedure for the atmospheric air temperature sensor related parts and sensor harness related parts. (3/3)

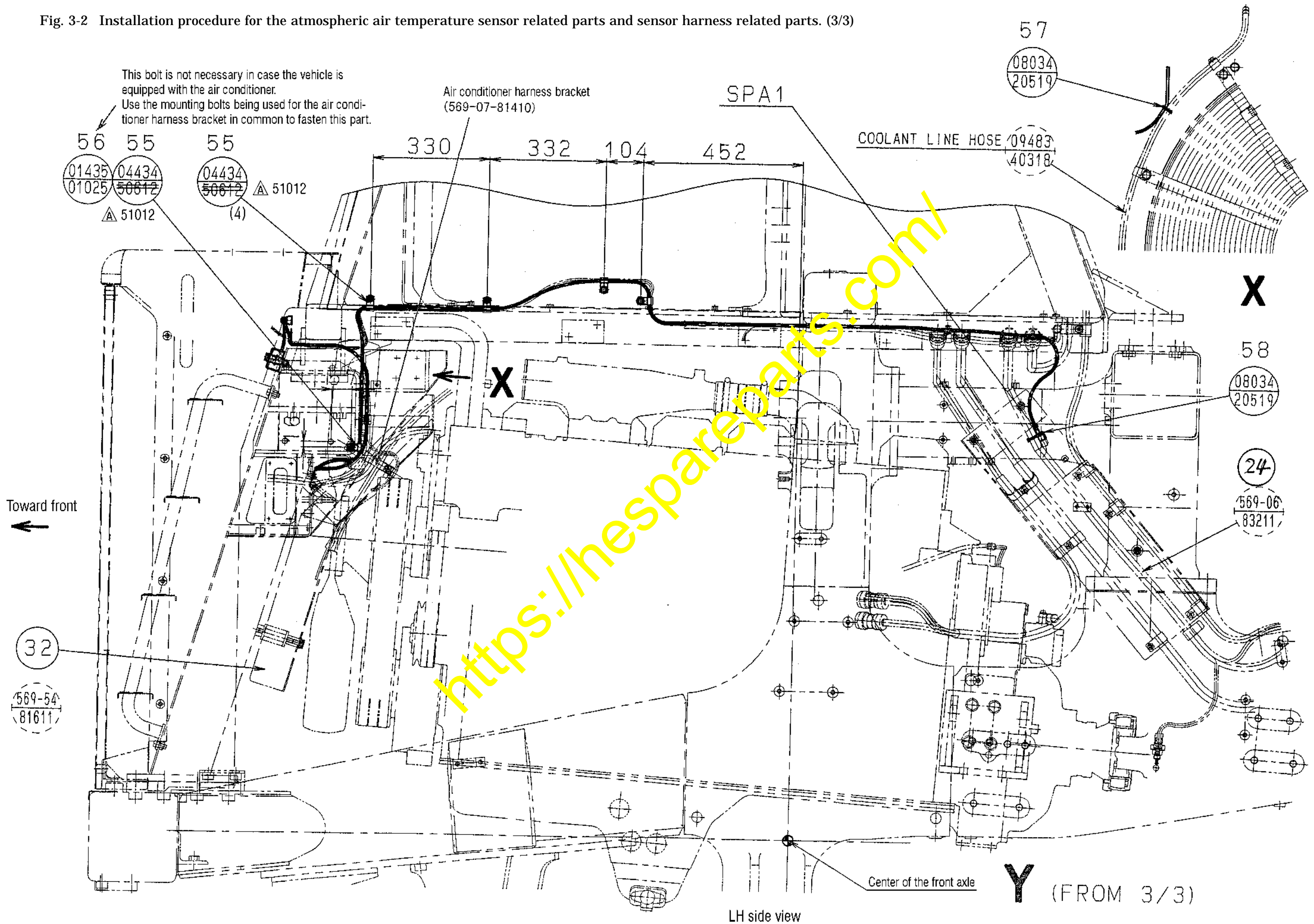


Fig. 3-3 Installation procedure for the ground level download harness related parts and ground level download box related parts (1/3)

- (1) Install the ground level download box ass'y, Item No. 65 (569-97-82500) to the existing bracket of the hydraulic tank ②⑤ (569-60-81111) by use of the bracket, Item No. 68 (569-97-82450) with the mounting parts (Item No. 66 and No. 67).
- (2) Install the ground level download harness, Item No. 72 (569-97-82420) to the connector No. SPA2 of the existing harness ②④ (569-06-83211) and connect the connector on the opposite side (Connector No. GDL) to the harness of the box ass'y, Item No. 65 (569-97-82500). Fasten the harnesses, instructions given in this drawing.
- (3) Refer to Fig. 3-4 regarding the component parts for the download box ass'y, Item No. 65 (569-97-82500).

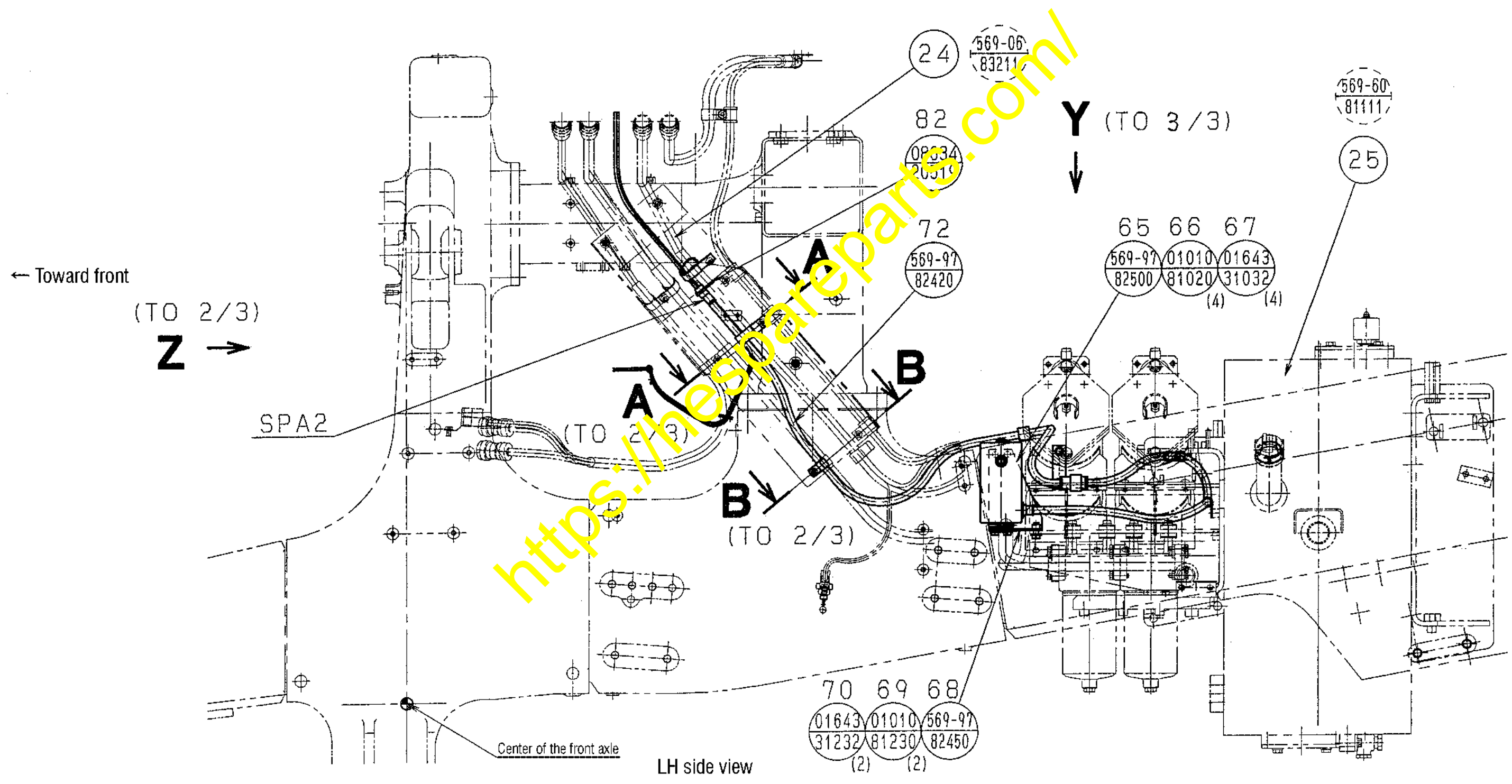


Fig. 3-3 Installation procedure for the ground level download harness related parts and ground level download box related parts (2/3)

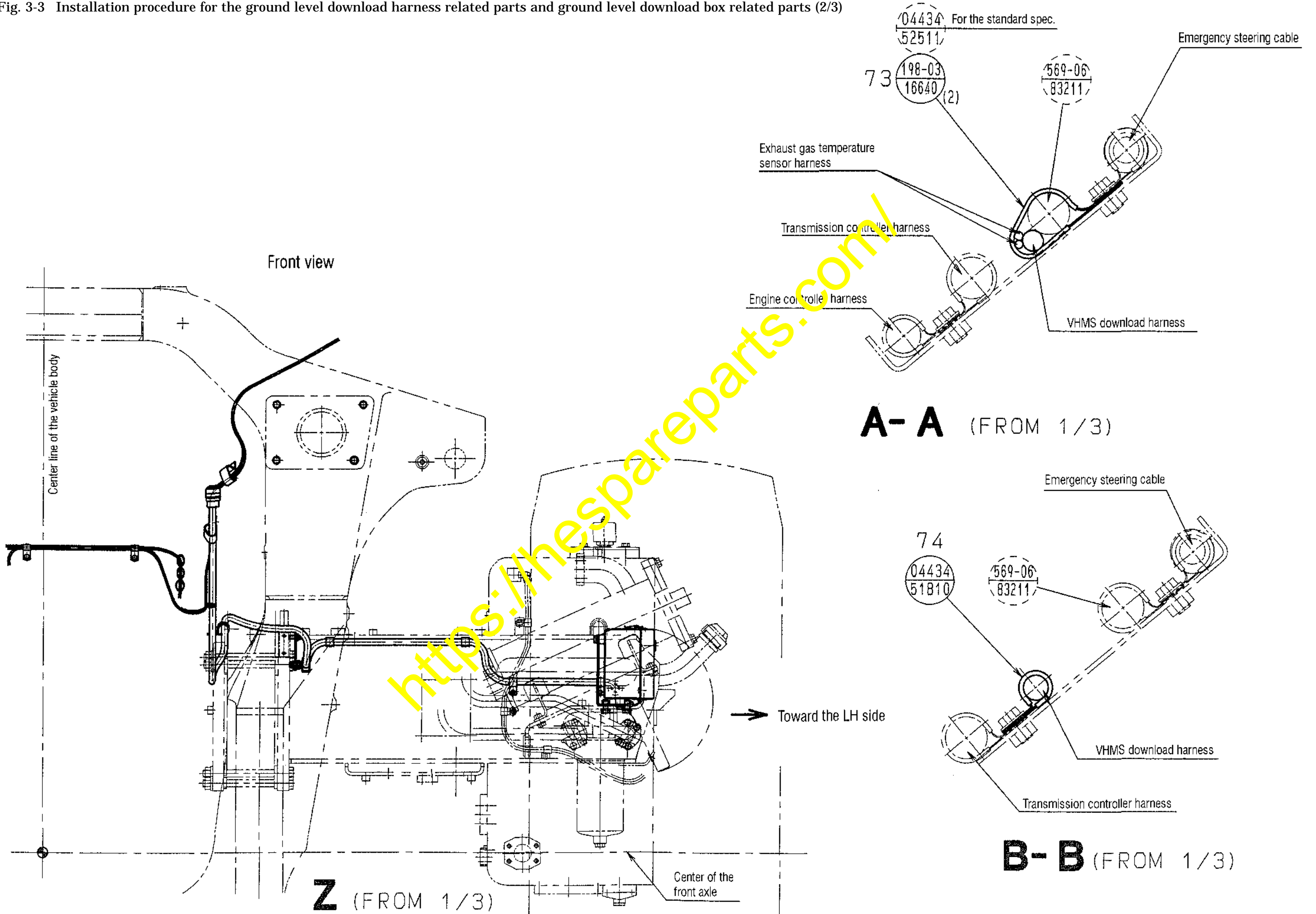


Fig. 3-3 Installation procedure for the ground level download harness related parts and ground level download box related parts (3/3)

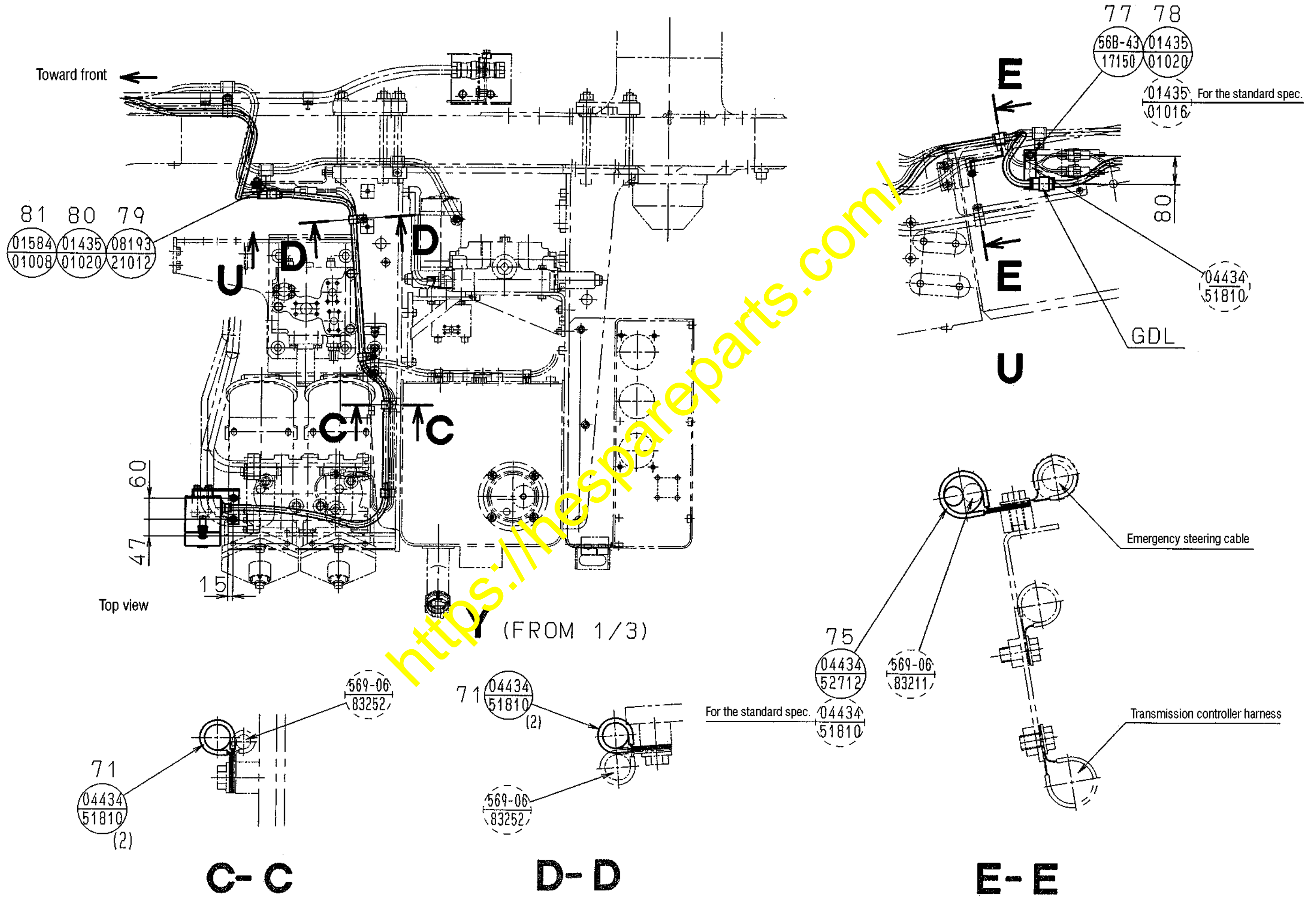
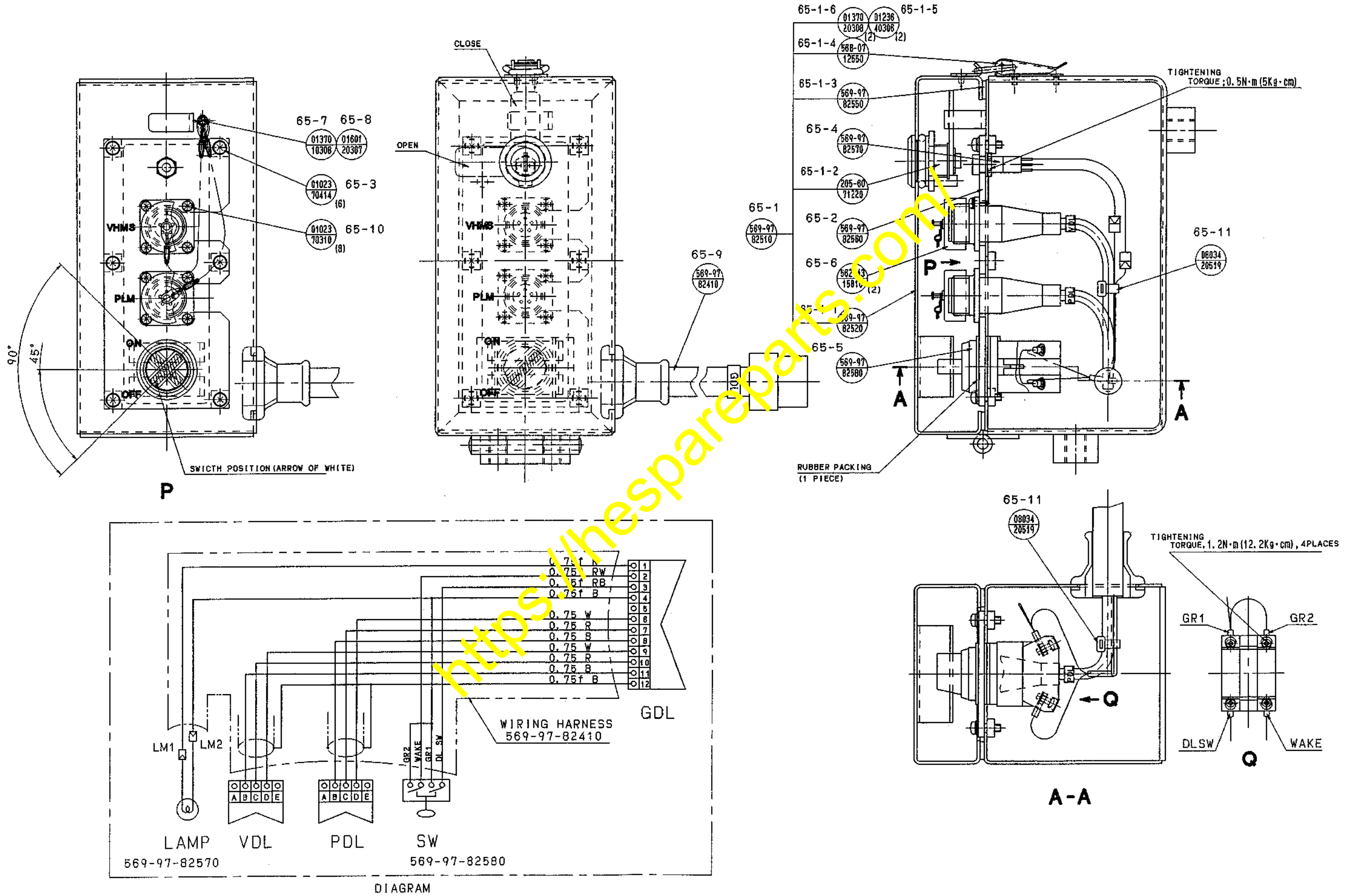
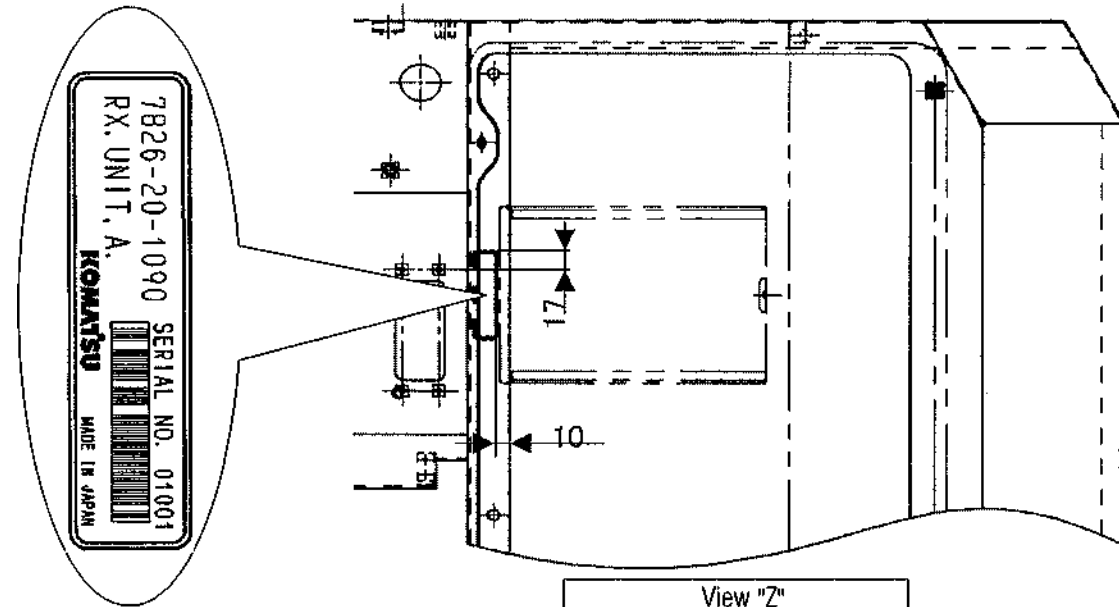


Fig. 3-4 Parts configuration drawing for the download box ass'y (Item No. 65)

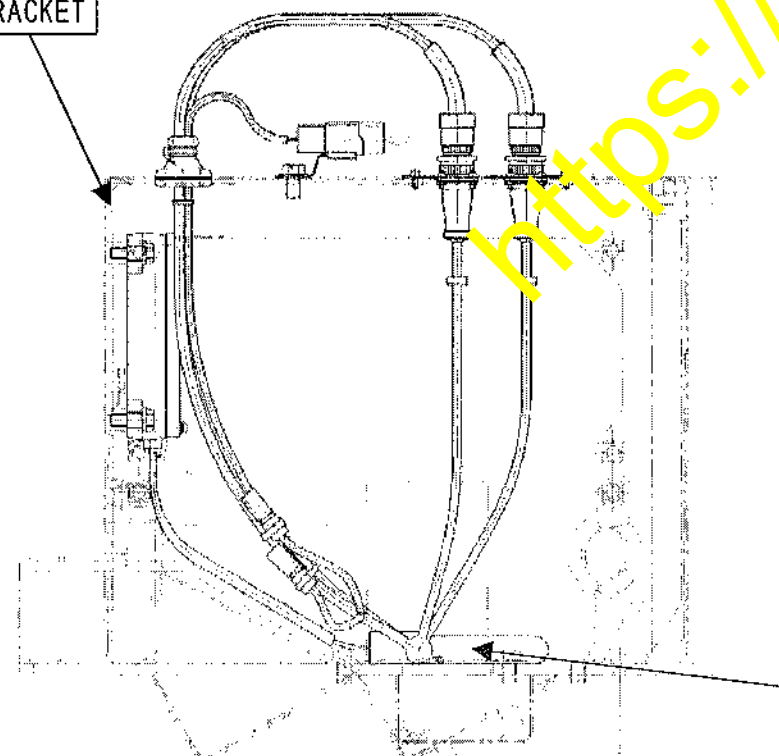


- (1) Remove the controller and controller bracket from the inside of the box positioned in the rear section inside the operator's cab. (Refer to Fig. 2-3 (1) and Fig. 2-4 (2). Do not lose these parts since all of them are being reused.)
- (2) Install the ORBCOMM controller, Item No. Δ 160 (7826-12-2200) to the existing bracket (569-54-85711) by use of the bolt, Item No. 161 (01010-80816) and the washer, Item No. 162 (01643-30823).
- (3) Connect the ORBCOMM controller, Item No. 160 (7826-12-2200) and the connector No. HM-81A of the VHMS main harness, Item No. 4 (569-97-82210) by the ORBCOMM controller harness, Item No. 163 (569-97-82260).
- (4) Connect the ORBCOMM antenna cable, Item No. 165 (561-97-62250) to the ORBCOMM controller. (Refer to Fig. 3-1 (5) regarding how to pass the ORBCOMM controller harness into the operator's cab.)
- (5) Apply one of the two sheets of labels being included in the package of the ORBCOMM controller. (Refer to View "Z".)
(Be careful not to lose the other label since it is necessary when applying for inauguration of the communication.)
- (6) Reinstall the parts which were removed as per the above Section (1) to the original state.



View "Z"
Detail drawing for the position to apply the nameplate

569-54-85711 BRACKET



Connector No.
HM-81A

Δ 160
~~7826-12-2200~~ ~~7826-20-1090~~

162 161
~~01643-30823~~ ~~01010-80816~~

163
~~569-97-82260~~

4
~~569-97-82210~~

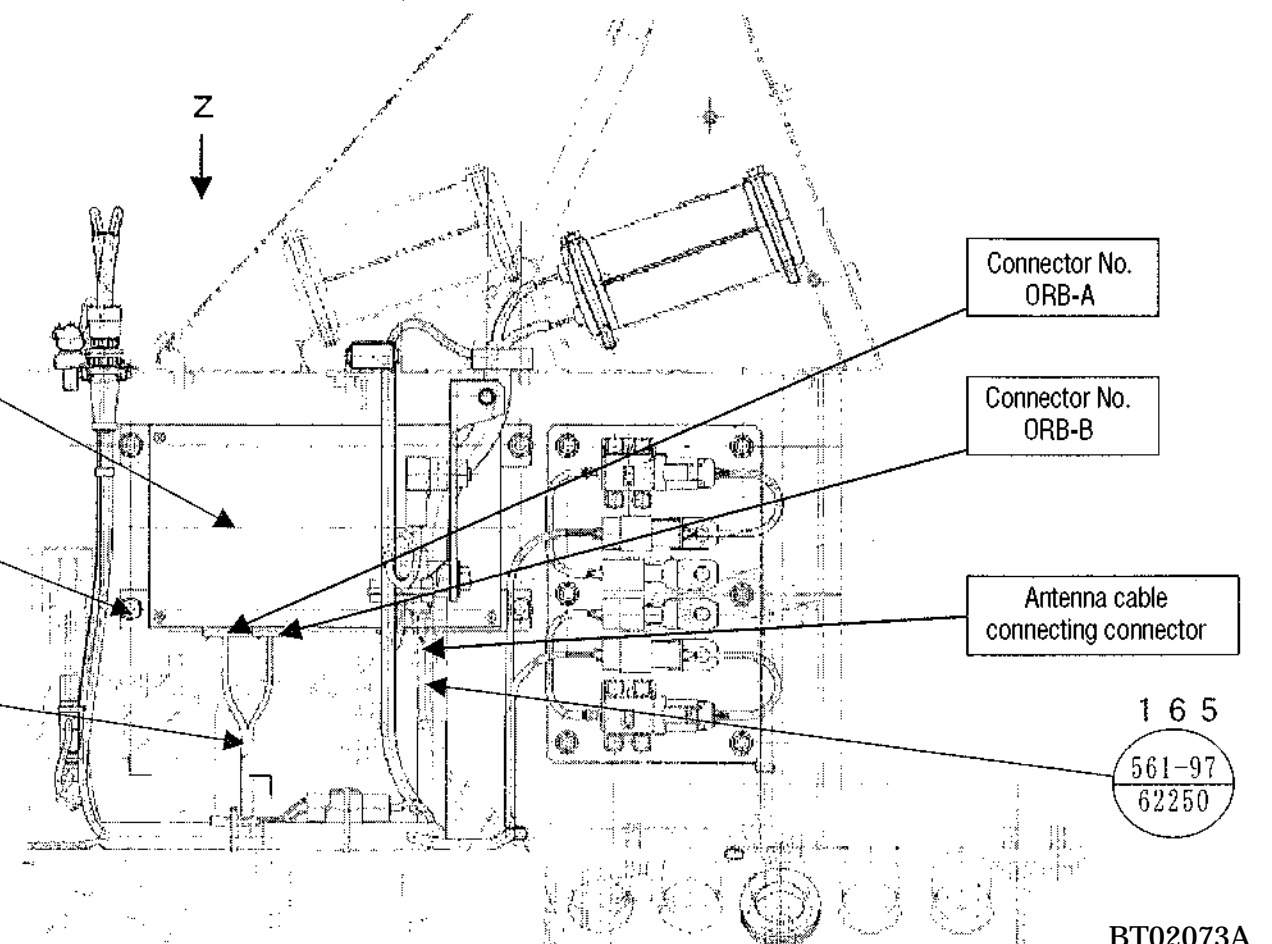
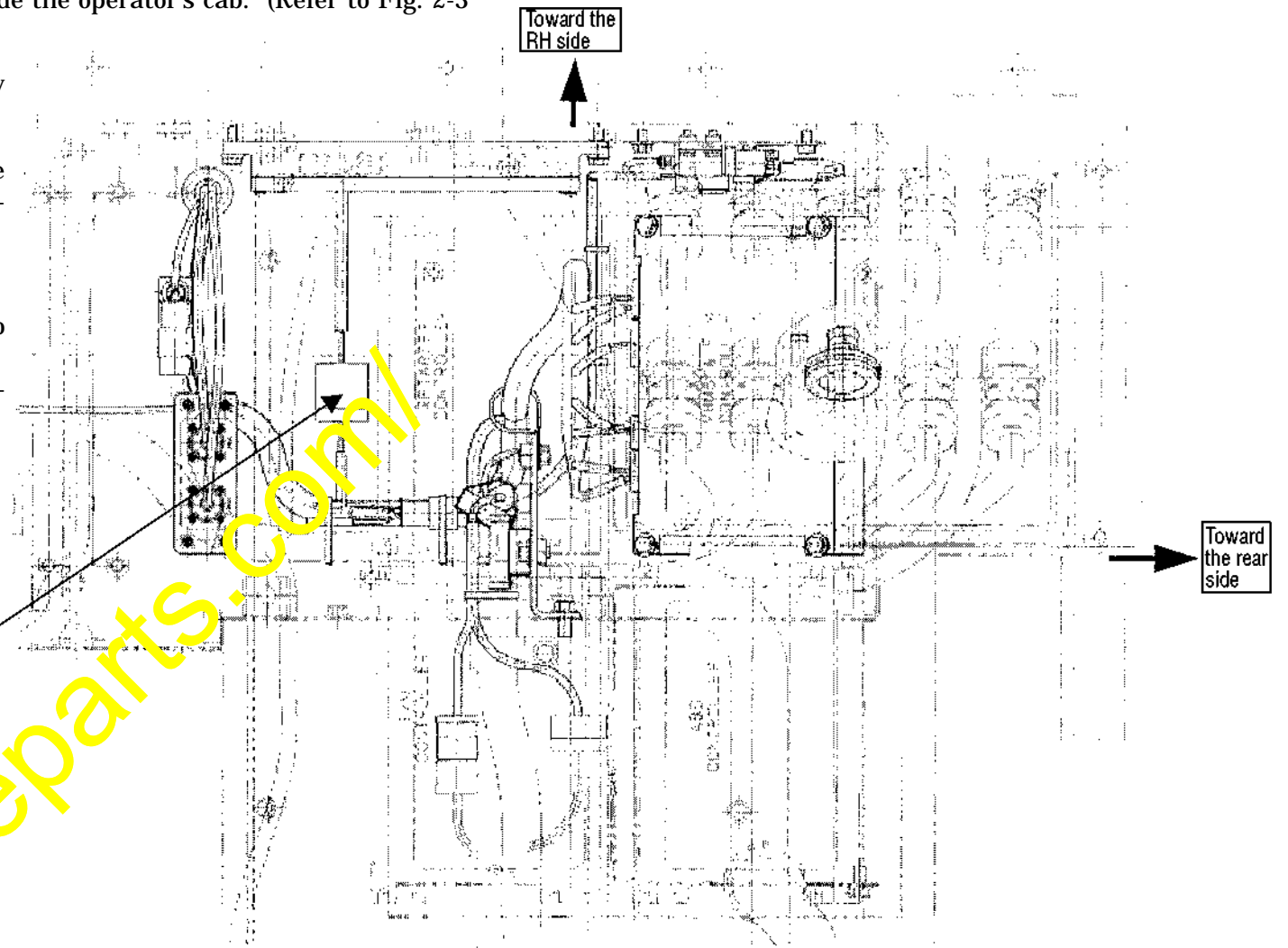


Fig. 4-2 Reinforcement procedure for the antenna pole mounting section.

- (1) Reinforce the welded section of the existing seat (antenna pole mounting seat) positioned in the front section of the RH side platform $\text{\textcircled{26}}$ (569-54-81421) as per the instructions given in this drawing.
 - Grind off the hatched section from the seat. (At 1 place)
 - Make build-up welding at the corner section of the above seat. (At 1 place)
- (2) In case of Serial No. \triangle 7059 and after of the HD465-7 and Serial No. \triangle 7024 and after of the HD605-7, this reinforcement work is not necessary since this reinforcement has been already made with the standard spec. vehicles.
 (Check the subject vehicle and if this reinforcement has not been made, carry out the aforementioned reinforcement work.)

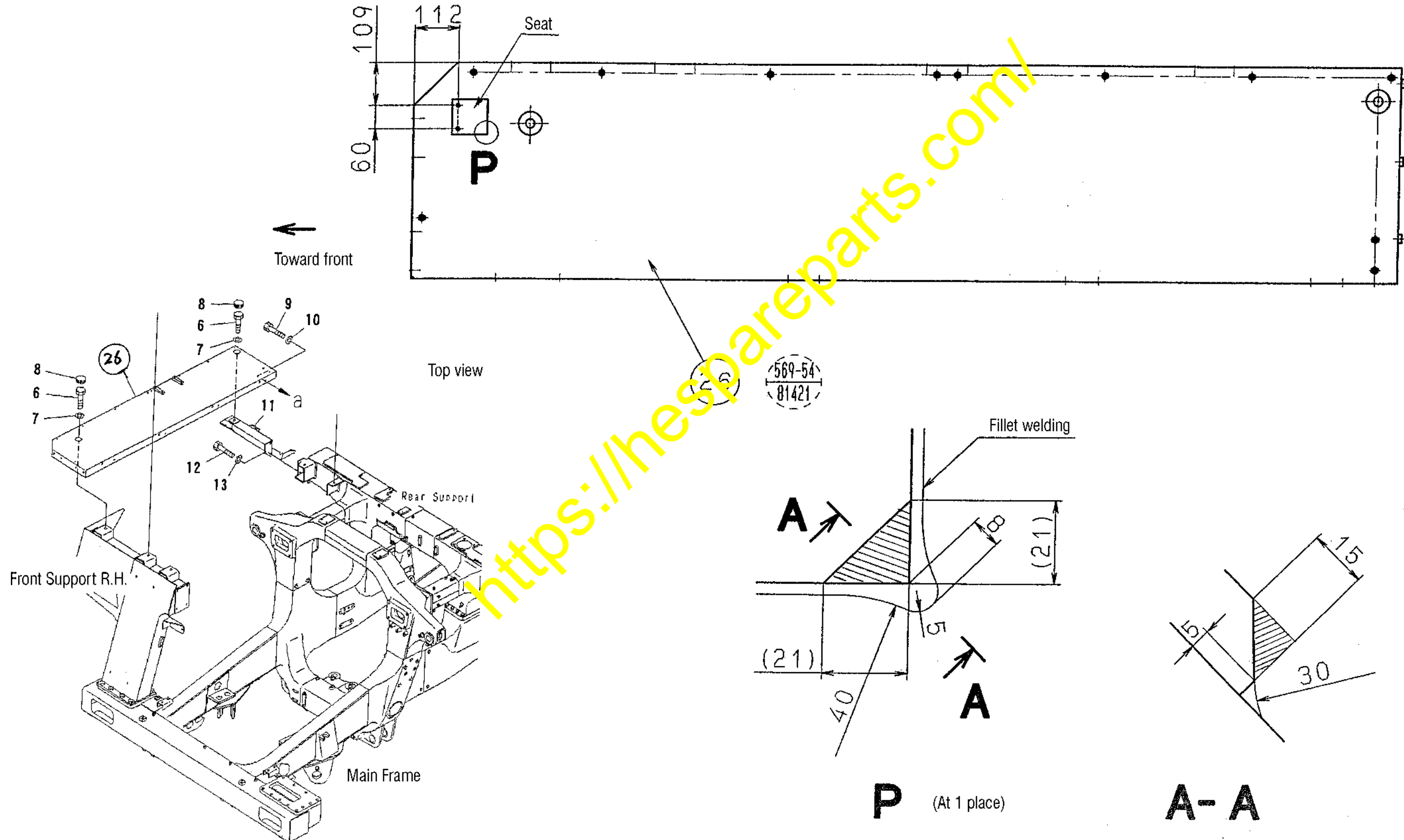


Fig. 4-3 Installation procedures for the antenna and antenna cable (1/3)

- (1) Install the antenna pole, Item No. 166 (569-97-82140) to the existing seat positioned in the front section of the RH side platform 26 (569-54-81421) and to the guards 27 (569-54-81783) and 28 (569-54-81752) by use of the mounting parts (Item No. 167 thru No. 175).
- (2) When installing the antenna, Item No. 164 (8A13-10-2100) to the antenna cable, Item No. 165 (561-97-62250), apply liquid adhesive LT-2 to the threads.
- (3) Lead the antenna cable, Item No. 165 (561-97-62250) into the inside of the operator's cab and connect it to the ORBCOMM controller, Item No. 160 (7826-20-1090).
Regarding the hole to lead the antenna cable into the inside of the operator's cab, use the same hole as the one through which the exhaust gas temperature sensor harness was passed as per Fig. 3-4.
- (4) Clamp the antenna cable, Item No. 165 (561-97-62250) by use of the parts (Item No. 176 thru No. 181) as per the instructions given in this drawing.
In case the cable is too long, fasten the excessive part of the cable to the existing harness by use of the band, Item No. 184 (08034-20519).

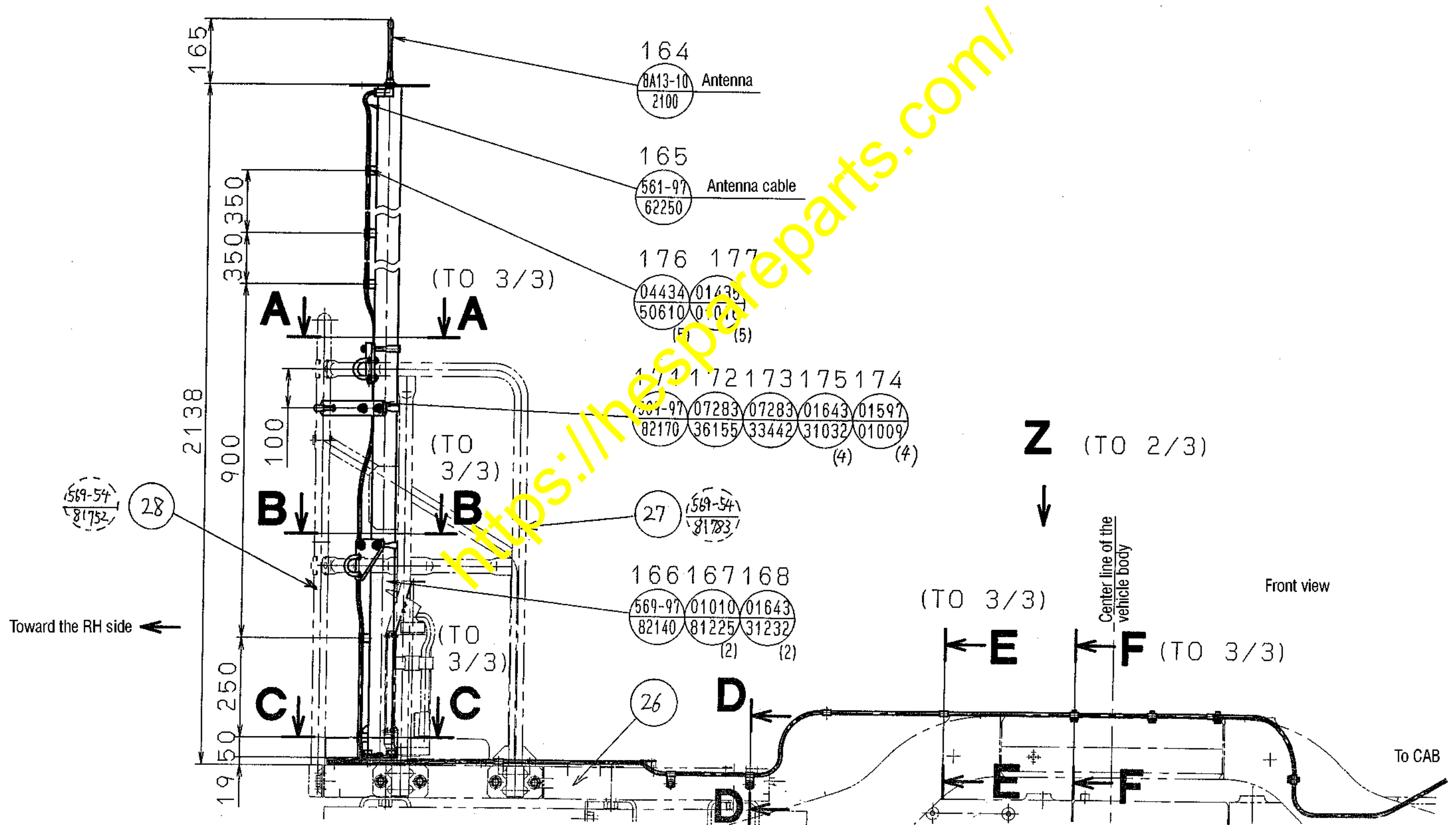


Fig. 4-3 Installation procedures for the antenna and antenna cable (2/3)

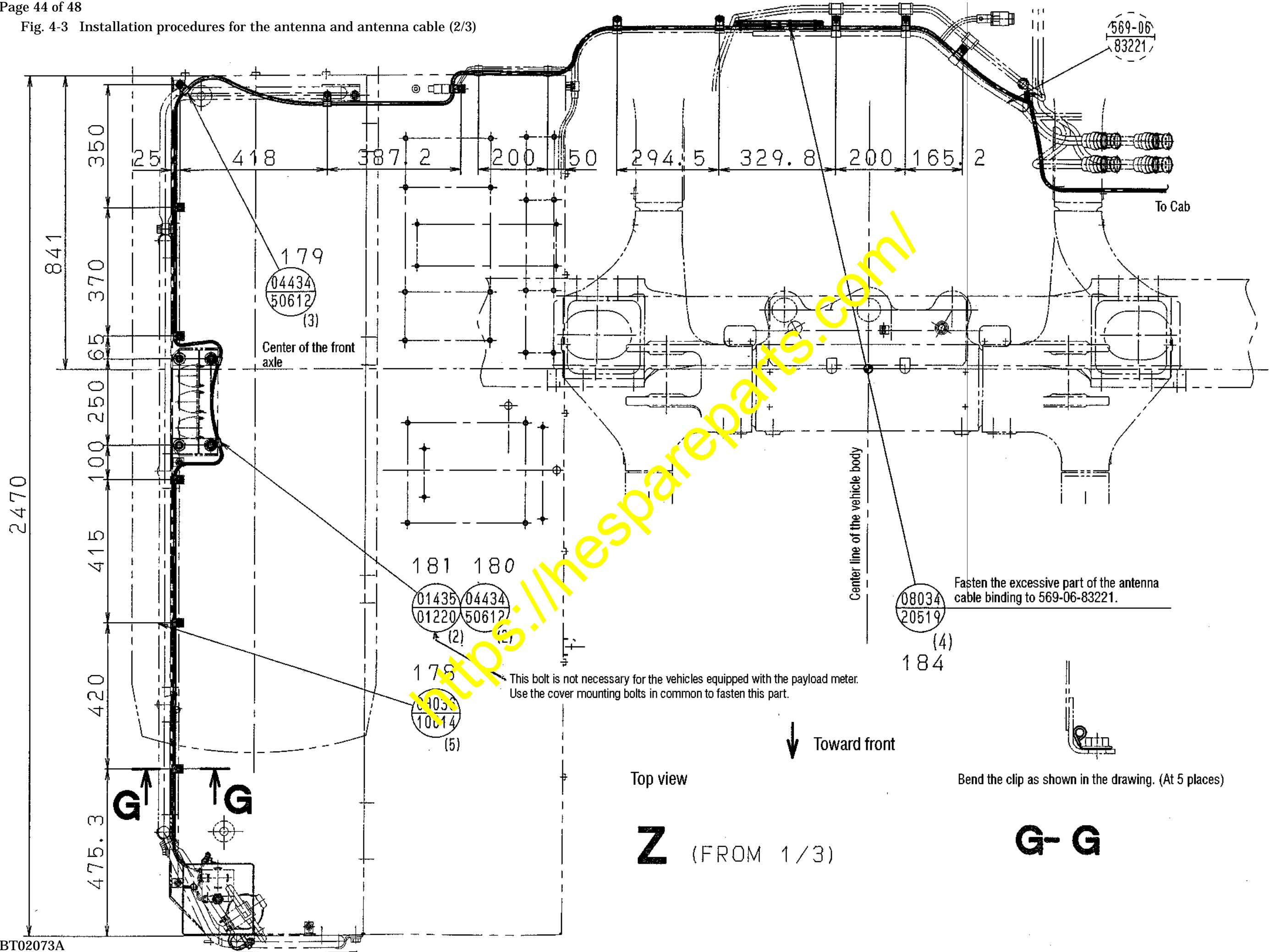
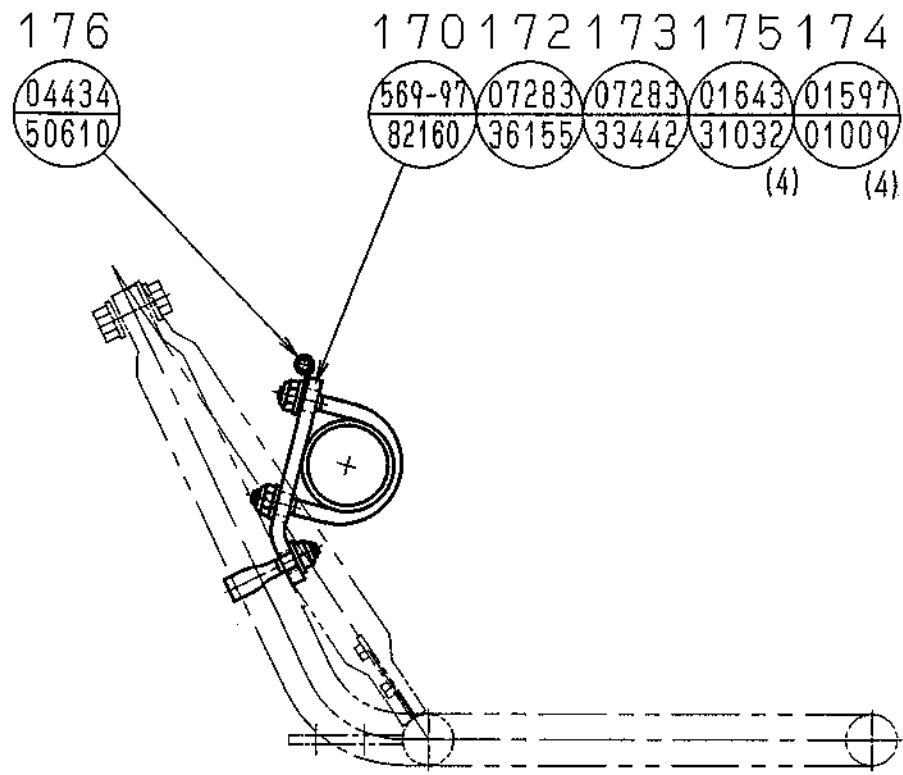
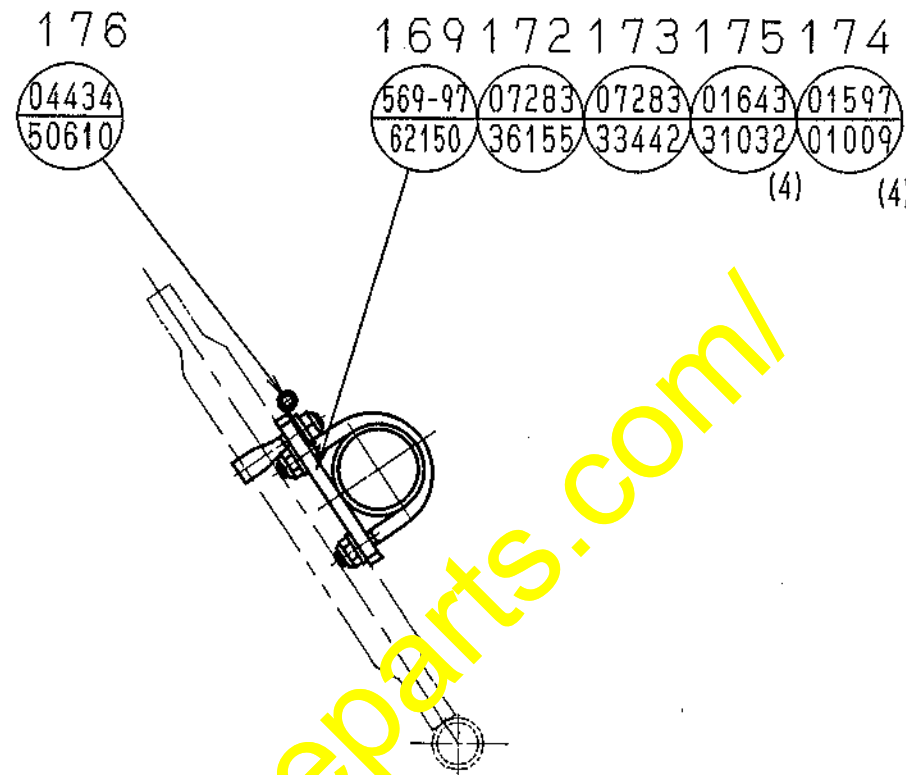


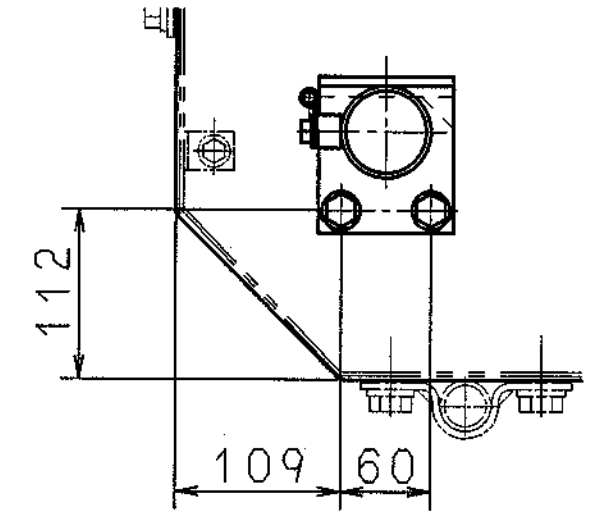
Fig. 4-3 Installation procedures for the antenna and antenna cable (3/3)



A-A (FROM 1/3)

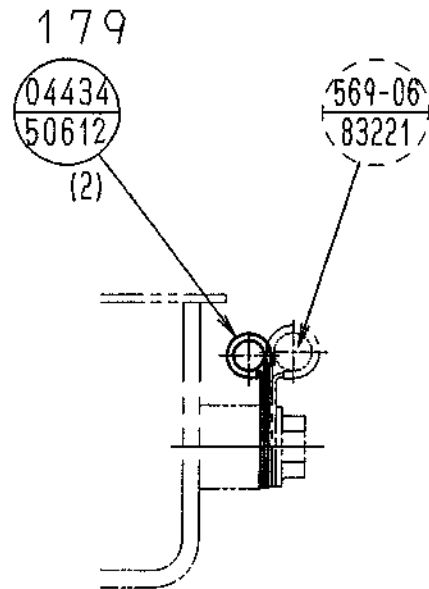


B-B (FROM 1/3)

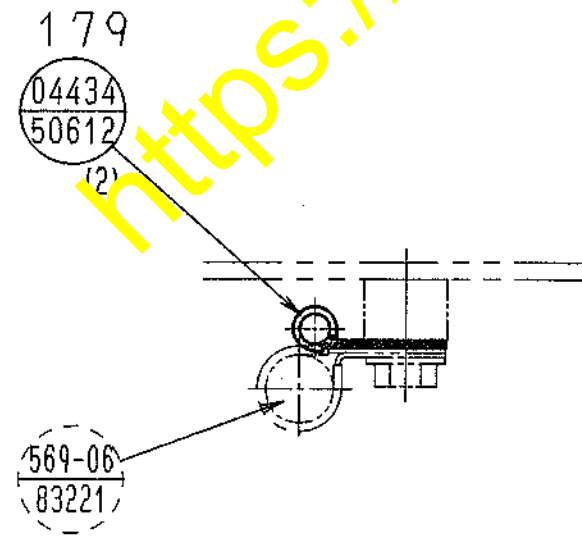


(FROM 1/3)

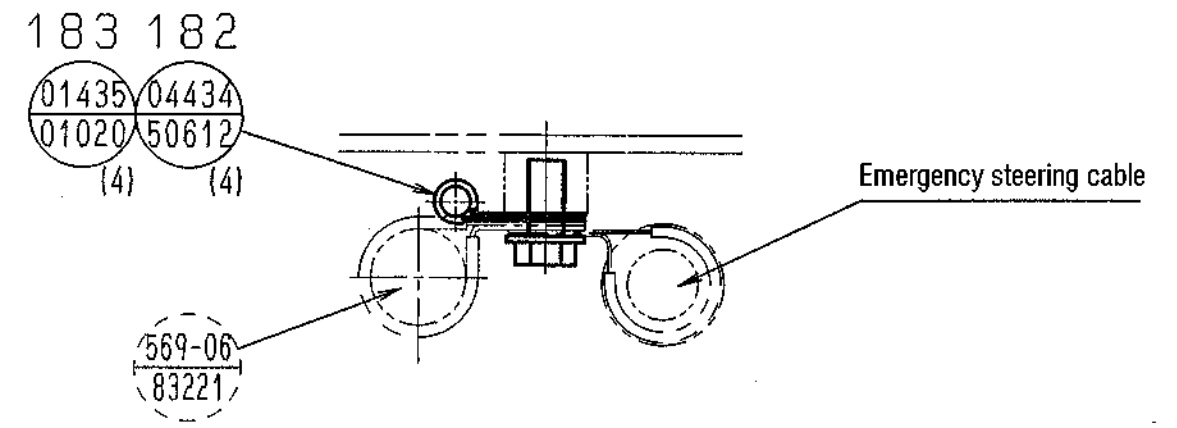
C-C



D-D (FROM 1/3)



E-E (FROM 1/3)



F-F (FROM 1/3)

Fig. 5-1 System configuration diagram
 Harnesses ④, ⑤ and ⑥ become necessary in case of vehicles equipped with PLM II.

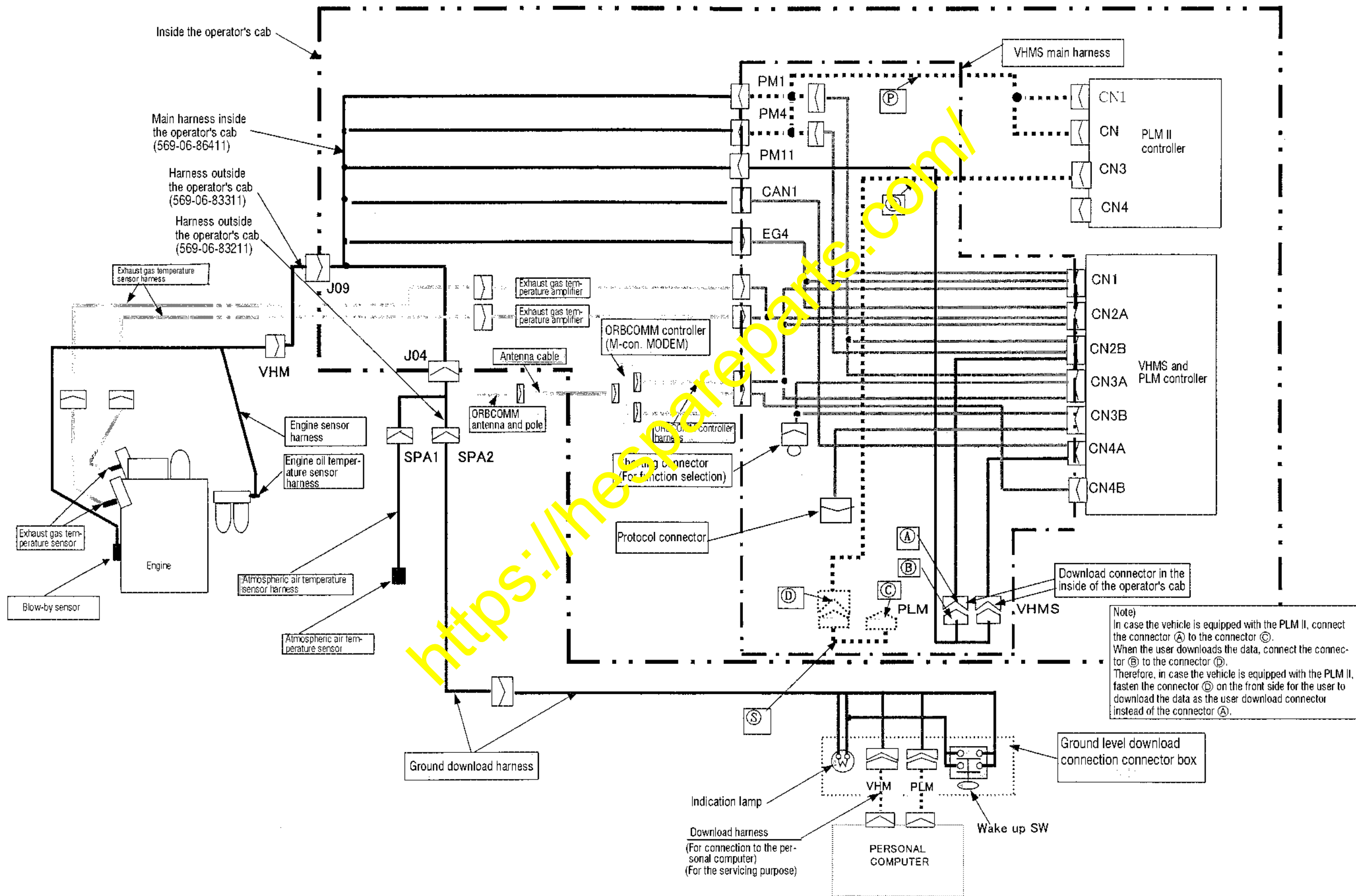
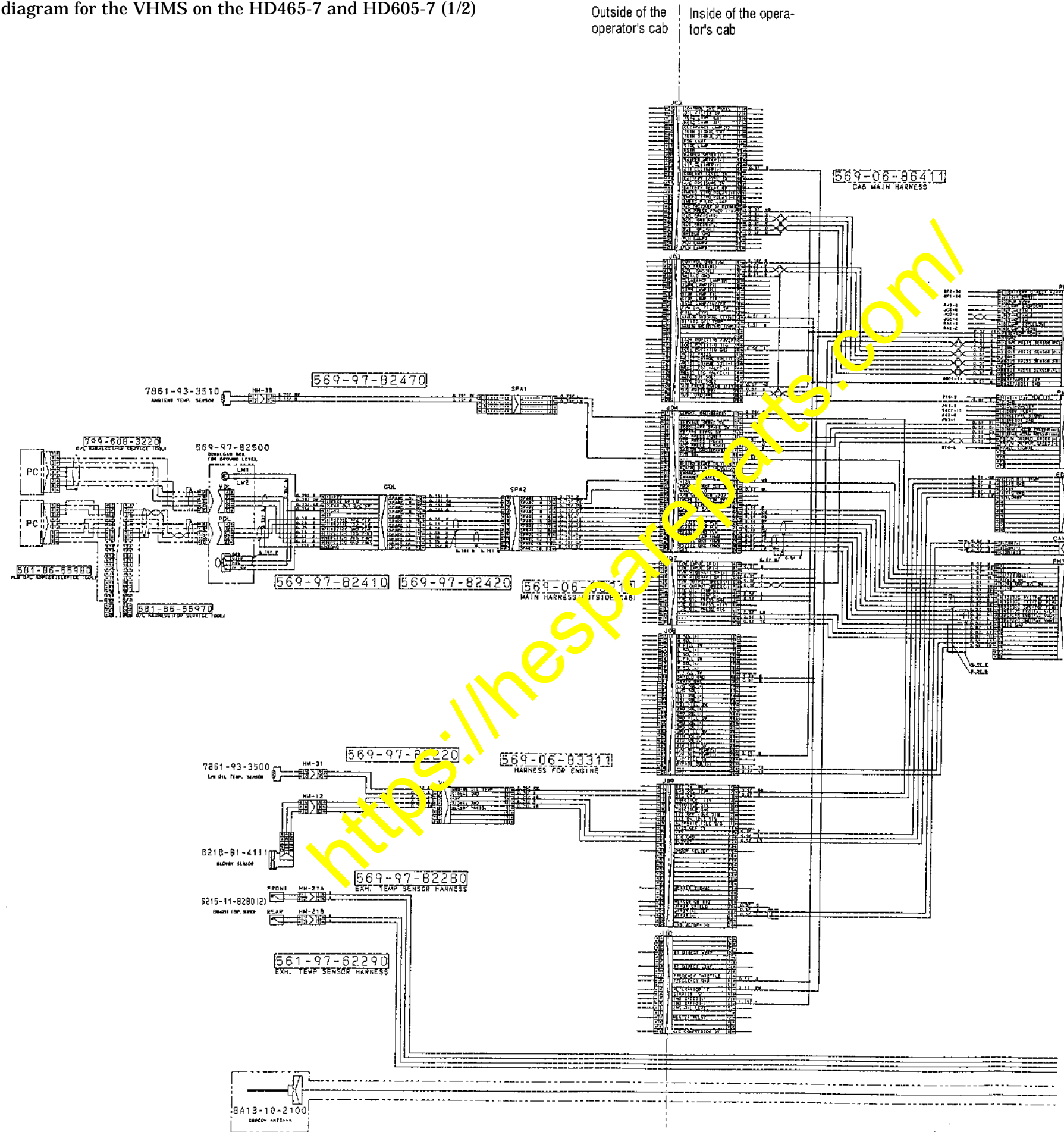


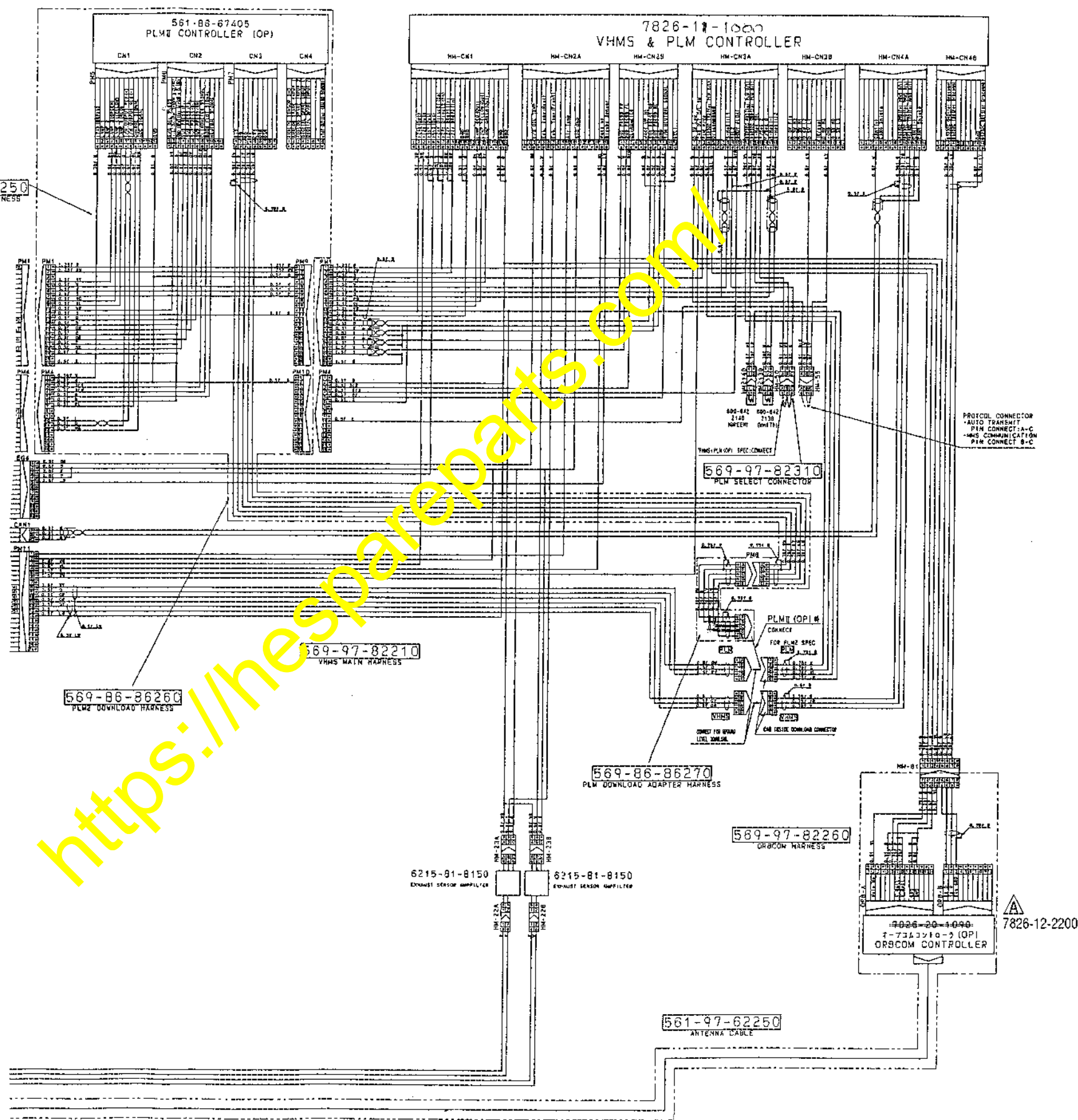
Fig. 5-2 Connection diagram for the VHMS on the HD465-7 and HD605-7 (1/2)



To be continued to the next page →

Fig. 5-2 Connection diagram for the VHMS on the HD465-7 and HD605-7 (2/2)

← Continued from page 45



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