

INSTALLATION MANUAL

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(C)

SUBJECT: INSTALLATION PROCEDURE FOR ADDITIONAL FUEL FILTER
(VERY LOW GRADE FUEL SPEC.) ON HD465/605-7

PURPOSE: To introduce local installation procedure for the additional fuel filter (of the very low grade fuel spec.) 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: 041HZ9

DESCRIPTION:

1. Introduction

This Installation Manual will introduce local modification procedure to install the additional fuel filter (of the very low grade fuel spec.) onto the HD465-7 and HD605-7 dump trucks.

2. List of parts

No.	Part No.	Part Name	Q'ty	Remarks
1	569-84-81380	Seat	1	Parts to weld to the main frame
2	569-84-81321	Te	1	
3	6240-71-5860	O ring	1	
4	6240-71-5850	O-ring	1	
5	421-09-31230	Hose	1	Replace it with 569-04-81210
6	569-84-81310	Bracket	1	
7	01010-81230	Bolt	3	
8	01643-31232	Washer	3	
9	6240-71-6112	Bracket	1	
10	01011-81205	Bolt	3	
11	01643-31232	Washer	3	
12	600-311-3200	Cartridge ass'y	4	2 pcs. in case of the 5AB11 spec.
13	07270-40801	Tube	2	
14	07285-00125	Clip	2	
15	569-84-81350	Bracket	1	

No.	Part No.	Part Name	Q'ty	Remarks
16	07283-33442	Clip	5	
17	01597-01009	Nut	10	
18	01643-31032	Washer	10	
19	569-84-81420	Bracket	1	
20	01010-81235	Bolt	1	
21	01643-31232	Washer	1	
22	569-84-81410	Bracket	1	
23	01010-81235	Bolt	1	
24	01643-31232	Washer	1	
25	01010-81020	Bolt	2	
26	01643-31032	Washer	2	
27	569-84-81341	Joint	1	
28	207-62-64740	O-ring	2	
29	01010-81020	Bolt	2	
30	01643-31032	Washer	2	
31	6240-71-6740	Elbow	1	
32	6240-71-5840	O-ring	1	
33	207-62-64740	O-ring	1	
34	569-04-81220	Hose	2	
35	419-09-11150	Clip	2	
36	07095-07034	Cushion	2	
37	01435-01016	Bolt	1	
38	01643-31032	Washer	1	
39	01580-11008	Nut	1	
40	6240-71-6740	Elbow	1	For the inlet of the additional filter
41	6240-71-5840	O-ring	1	
42	207-62-64740	O-ring	1	
43	6240-71-6740	Elbow	1	For the outlet of the additional filter
44	6240-71-5840	O-ring	1	
45	207-62-64740	O-ring	1	
46	424-09-31110	Hose	1	

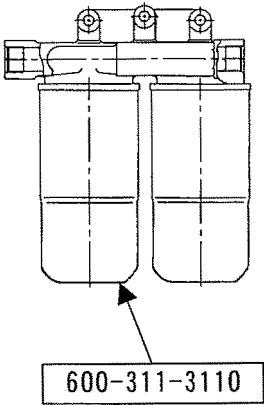
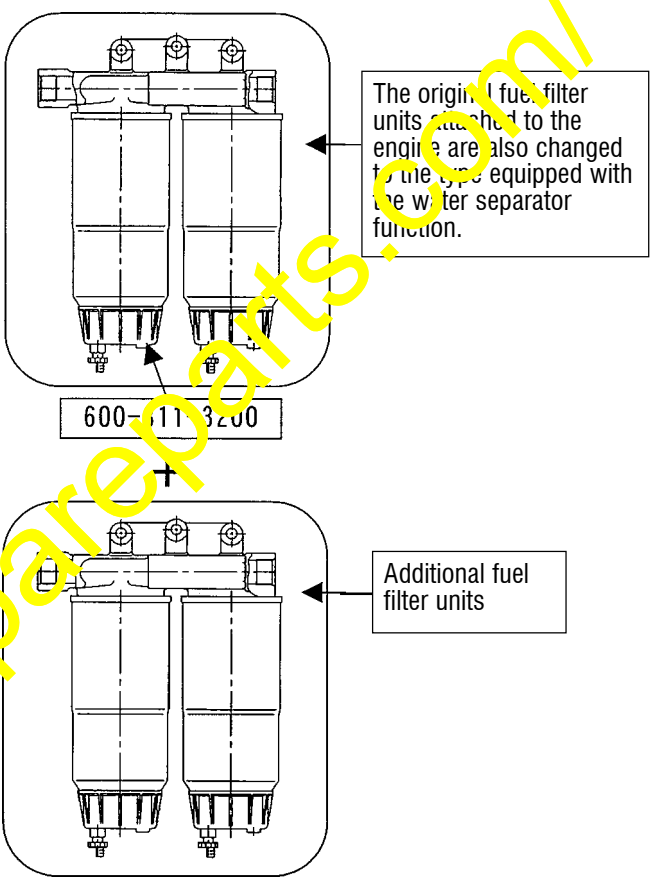
No.	Part No.	Part Name	Q'ty	Remarks
47	6240-71-6740	Elbow	1	To be installed to the tee (569-84-81321)
48	6240-71-5840	O-ring	1	
49	207-62-64740	O-ring	1	
50	560-50-11461	Plate	2	
51	07283-32236	Clip	1	
52	01597-01009	Nut	2	
53	01643-31032	Washer	2	
54	419-09-11150	Clip	2	
55	07095-01034	Cushion	2	
56	569-84-81360	Cover	1	
57	01010-81025	Bolt	6	
58	01643-31032	Washer	6	
59	22W-43-17330	Washer	2	
60	01434-10830	Bolt	2	
61	421-06-12780	Spacer	2	
62	01435-01045	Bolt	1	
63	04434-52112	Clip	1	Replace it with the 04434-51810.
64	02765-20310	Nose	2	Replace them with the 02765-03010.
65	566-06-41290	Insulator	4	Replace them with the 581-35-23540.

3. Outline of the very low grade fuel spec. additional fuel filter

(1) Comparison of the fuel filter specifications

In case of the very low grade fuel spec. additional fuel filter, 4 units of the fuel filters equipped with the water separator function are to be installed.

Table 1

	Standard spec.	Very low grade fuel spec.
Filter construction		
Specifications of the filter	Filtration grain size: 5 μ	Filtration grain size: 5 μ + Water separator function

(2) Circuit diagram of the fuel filter line

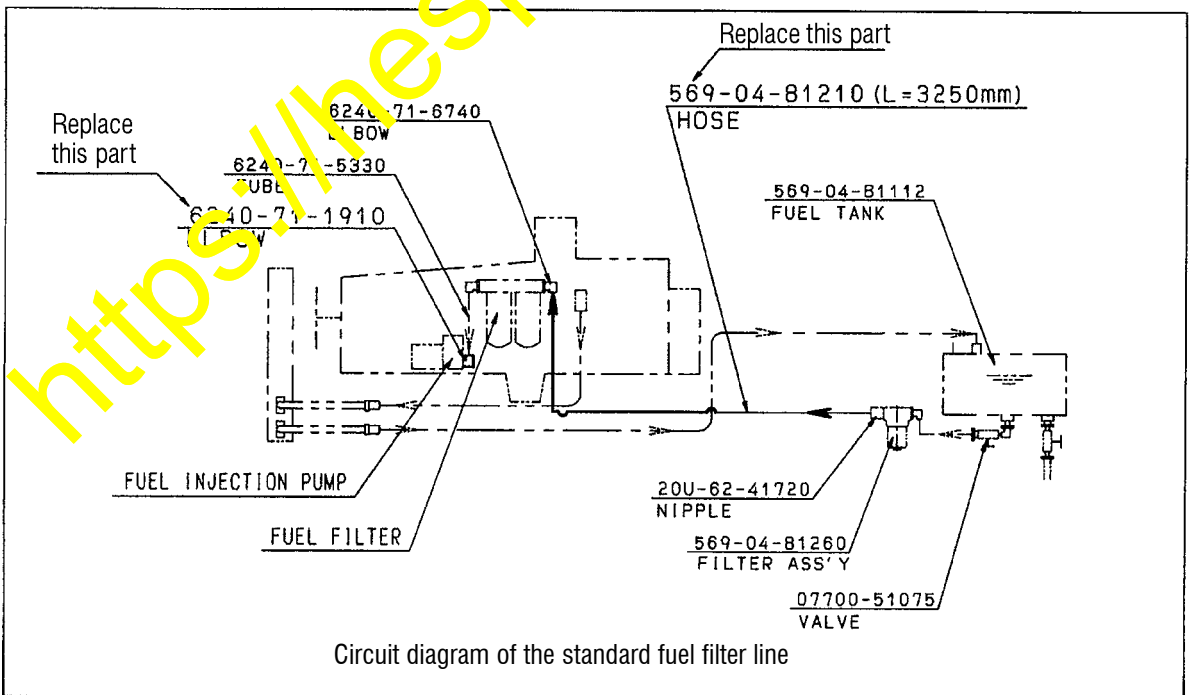
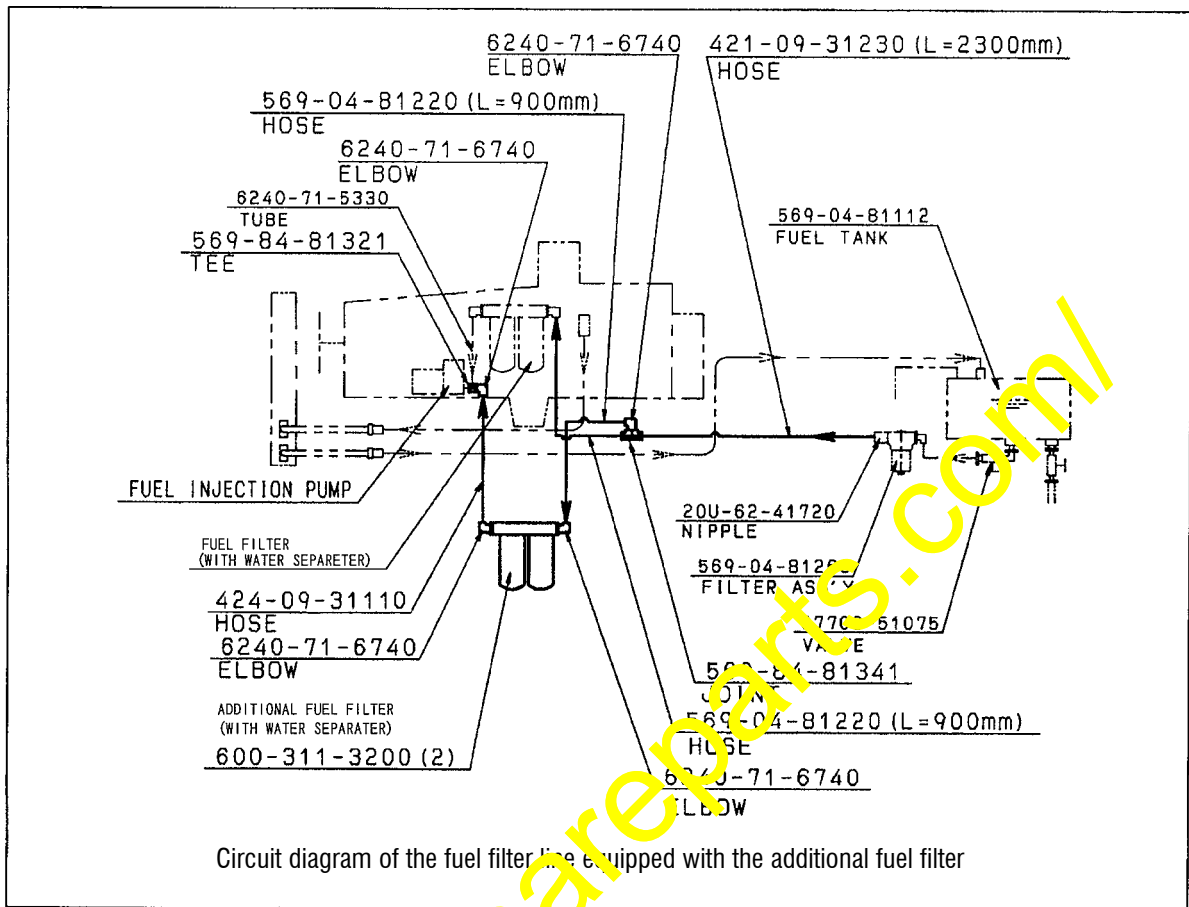


Fig. 1

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) Disconnect the grounding side cable of the battery.
- (3) Close the valve (07700-51075) located at the lower section of the fuel tank.

4-2 Installation processes

- (1) In preparation for carrying out the welding of the additional fuel filter mounting seat No. 1 (569-84-81380) on the LH outside of the front section of the main frame, remove the steering circuit hydraulic piping related parts. (Refer to Fig. 2.)
While removing these parts, the oil remaining inside the hydraulic piping will flow out. (About 10L)
Since all the parts removed here are being reused, be careful not to lose them.
Seal the parts removed and their opposite parts with vinyl tape, etc. not to allow entry of dust into the inside.
- (2) Carry out welding of the additional fuel filter mounting seat No. 1 (569-84-81380) on the LH outside of the front section of the main frame. Especially, finish the welding ends on both sides by use of a grinder with care so that welding defects are not occurring. (Refer to Fig. 3.)
After the welding work, paint the welded section. Painting color should be Black Gray (KES 57. 041. 895).
- (3) After the welding of the additional fuel filter mounting seat, restore the removed steering circuit hydraulic piping parts to their original states. At this time, be careful not to forget to install the O-rings. (Refer to Fig. 2.)
- (4) Add the oil to supply the quantity of the oil flowed out.
- (5) Replace the elbow of the suction port of the fuel injection pump with a new tee. (Refer to Fig. 4.)
 - Replace the elbow of the suction port with the new tee No. 2 (569-84-81321).
 - Until connection of the new hose is completed, seal the port of the additional fuel filter using vinyl tape, etc. so that dust may not enter into it.
- (6) Replace the fuel suction hose (Refer to Fig. 5.)
 - Replace the suction hose (569-04-81210) connecting the filter ass'y (569-04-81260) and the engine fuel filter with the new hose No. 5 (421-09-31230).
 - Connect the front end of the new hose No. 5 (421-09-31230) to the new joint No. 27 (569-84-81341). Refer to Fig. 6 thru Fig. 9 for details.
- (7) In order to install the additional fuel filter mounting bracket related parts, remove the fuel return hose related parts.
Refer to Fig. 5 for details.
- (8) Install the additional fuel filter mounting bracket related parts. (Refer to Fig. 6 and Fig. 7.)
- (9) Install the additional fuel filter piping related parts. (Refer to Fig. 6 thru Fig. 11.)
- (10) Replace the LH side brake circuit hose (02765-00310) with the new hose No. 64 (02765-20310) and replace the insulator with the new insulator No. 65 (566-06-41290). (Refer to Fig. 12.)
- (11) Replace the current fuel filter cartridge with the new type cartridge equipped with the water separator No. 12 (600-311-3200).
(Replacement of the current fuel filter cartridge as above is not necessary on vehicles with which the fuel filter equipped with the water separator is already installed to the engine itself.)
- (12) Open the valve (07700-51075) located at the lower section of the fuel tank to bleed air from the fuel filter line. (For details, refer to the fuel filter cartridge replacement procedure described in the Operation and Maintenance Manual.)
- (13) Reconnect the grounding side cable of the battery.

4-3 Removal and reinstallation procedures for the steering circuit hydraulic piping

- (1) In preparation for welding the additional fuel filter mounting seat on the LH outside of the front section of the main frame, remove the steering circuit hydraulic piping related parts.

While removing these parts, the oil remaining inside the hydraulic piping will flow out. (About 10L)

Since all the parts removed here are being reused, be careful not to lose them.

- (2) Seal the parts removed and their opposite parts with vinyl tape, etc. not to allow entry of dust into the inside.
- (3) After the welding of the additional fuel filter mounting seat, restore the removed parts to their original states. At this time, be careful not to forget to install the O-rings.
- (4) Add the oil to supply the quantity of the oil flowed out.

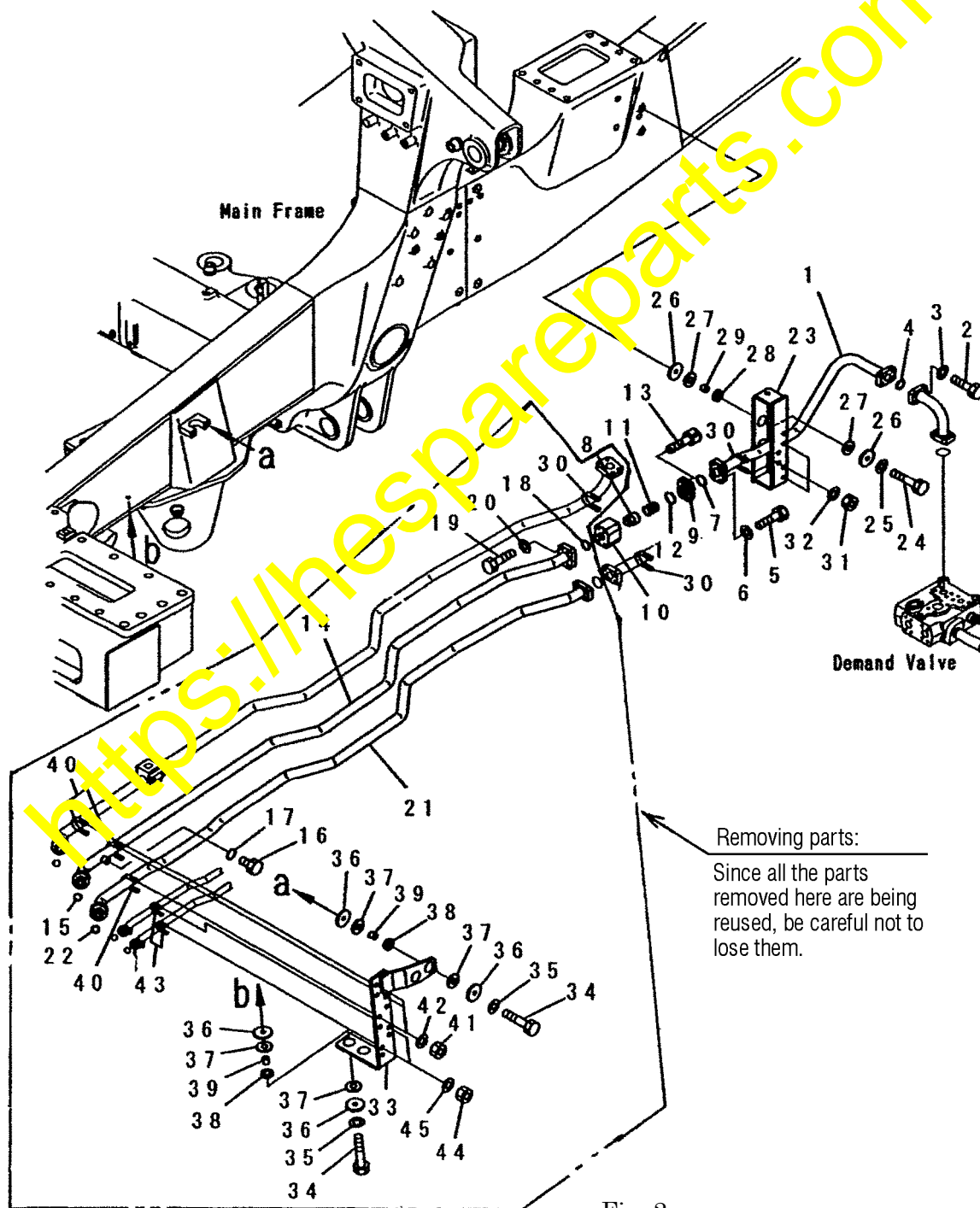


Fig. 2

4-4 Welding procedure for the additional fuel filter mounting seat

- (1) Welding the additional fuel filter mounting seat No. 1 (569-84-81380) on the LH outside of the front section of the main frame. Especially, finish the welding ends on both sides by use of a grinder with care so that welding defects are not occurring.
- (2) After the welding work, paint the welded section. Painting color should be Black Gray (KES 57. 041. 895).

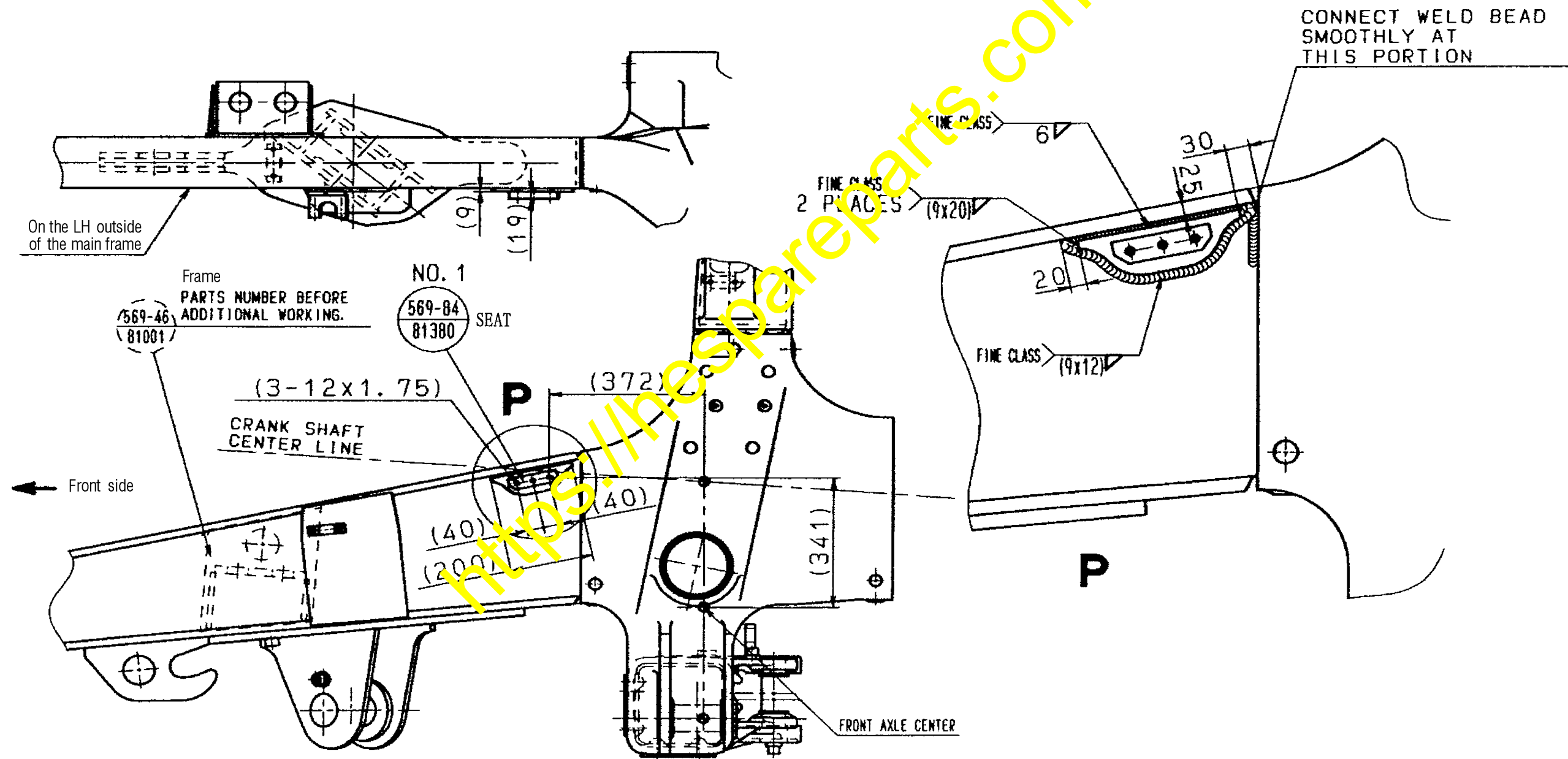


Fig. 3

4-5 Replacement procedure for the elbow of the suction port of the fuel injection pump

- (1) Replace the elbow ⑦ (6248-71-1910) of the suction port of the fuel injection pump with the new tee No. 2 (569-84-81321). While replacing the elbow with the new tee, be careful not to allow entry of dust.
- (2) Until connection of the new hose is completed, seal the port of the additional fuel filter using vinyl tape, etc. so that dust may not enter into it.
- (3) At this time, be careful not to forget to install the O-rings (No. 3 and No. 4).

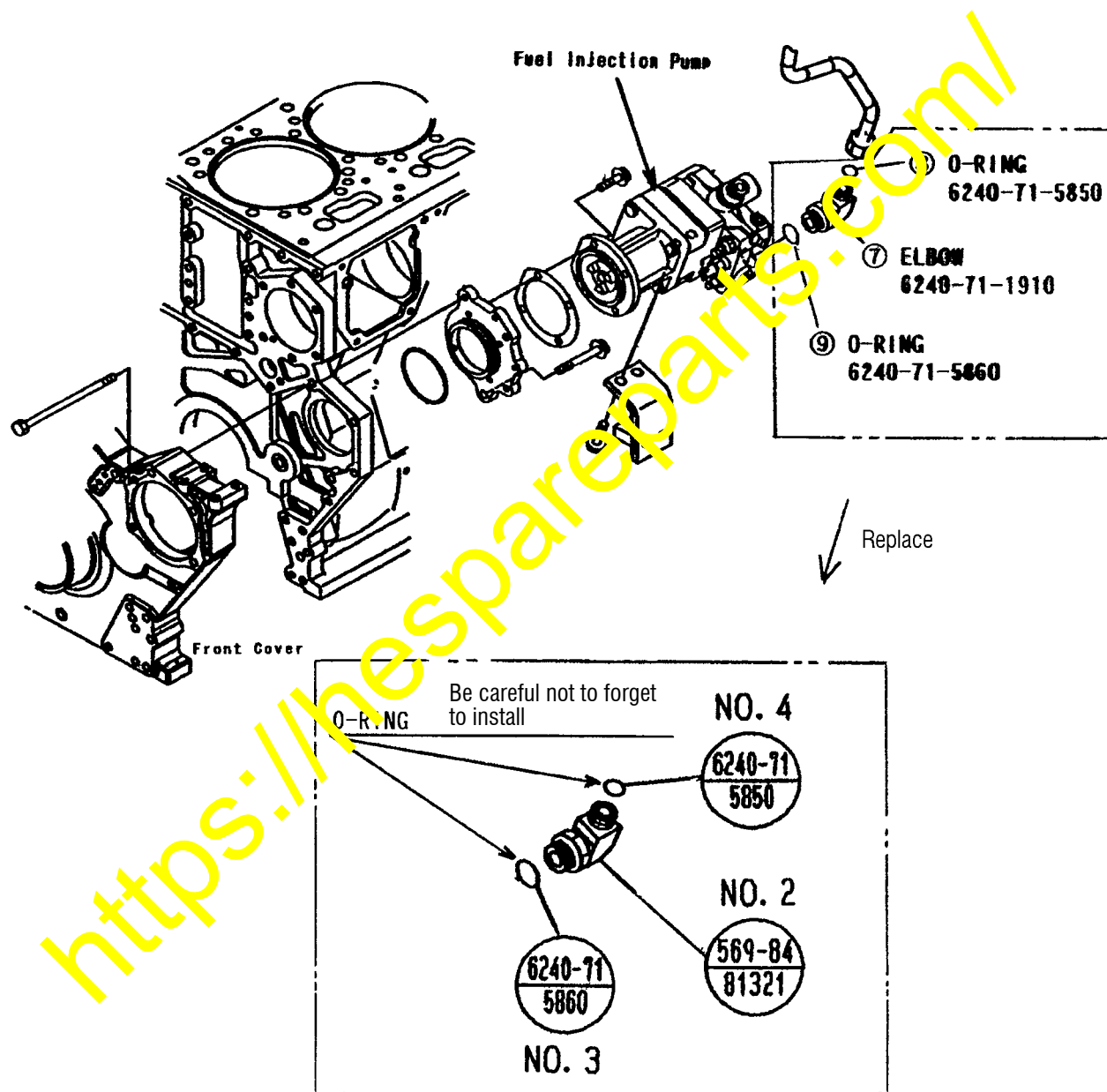


Fig. 4

4-6 Replacement procedure for the fuel suction hose

- (1) Close the valve (07700-51075) located at the lower section of the fuel tank.
- (2) Replace the suction hose ① (569-04-81210) connecting the filter ass'y (569-04-81260) and the engine fuel filter with the new hose No. 5 (421-09-31230).
- (3) Connect the front end of the new hose No. 5 (421-09-31230) to the new joint No. 27 (569-84-81341). Refer to Fig. 9 for details.
- (4) At this time, be careful not to forget to install the O-rings.
- (5) Among the related parts for the fuel hose ① (569-04-81210), related parts for the fuel return hose ⑤⑩ (02762-00645) and related parts for the intermediate clips of the engine harness ④① (569-06-83311), remove the parts marked Δ in the drawing shown below, and also, described in Table 2 below. After removal of these parts, install the new brackets No. 19 (569-84-81420) and No. 22 (569-84-81410) and install the reusing parts and replacing new parts as per the instructions given in Fig. 6 and Fig. 7.
Among the removed parts, parts marked Δ are to be discarded and all other parts are being reused.
- (6) Install the fuel return hose ⑤⑩ (02762-00645) and related parts for the intermediate clips 29 (04434-53412) and 31 (07095-20627) which have been removed as per the above process onto the new brackets No. 19 (569-84-81420) and No. 22 (569-84-81410).
Replace the clip 43 (04434-51810) with the new clip 63 (04434-52112) and install the new clip onto the new bracket No. 19 (569-84-81420).
Refer to Fig. 8 and Fig. 9 for details.

Table 2
Parts marked Δ (Removing and discarding parts)

No.	Part name	Part No.	Q'ty
5	Bracket	569-04-81921	1
6	Bolt	01435-01230	1
7	Clip	419-09-11150	1
8	Cushion	07095-01034	1
9	Collar	428-64-15110	1
10	Bolt	01435-01240	1
26	Bracket	569-04-81231	1
27	Bolt	01435-01220	1
28	Clip	419-09-11150	1
30	Cushion	07095-01034	1
42	Bolt	01435-01016	1
43	Clip	04434-51810	1

Table 3
Mounting position changing parts (Reusing parts)

No.	Part name	Part No.	Q'ty
9	Collar	428-64-15110	1
10	Bolt	01435-01240	1
29	Clip	04434-53412	2
31	Cushion	07095-20627	2

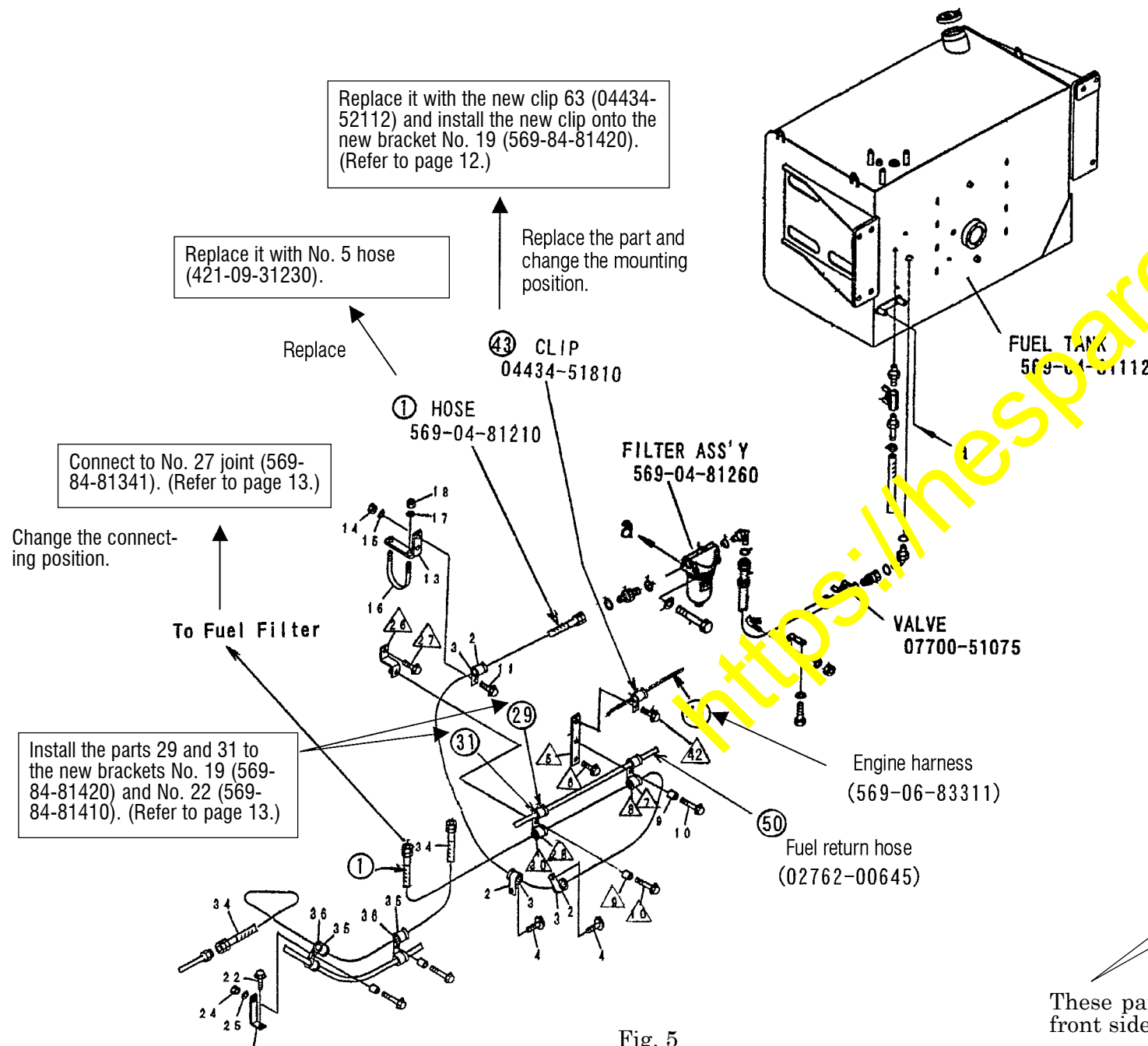


Fig. 5

These parts used on the rear side are being reused and these parts being used on the front side are to be discarded.

4-7 Installation procedure for the additional fuel filter mounting bracket related parts (1/2)

- (1) Install the additional fuel filter mounting bracket No. 6 (569-84-81310) to the main frame.
- (2) Install the fuel filter mounting bracket No. 9 (6240-71-6112) to the bracket No. 6 (569-84-81310).
- (3) Install the drain tube No. 13 (07270-40801) to the fuel filter cartridge No. 12 (600-311-3200) using the clip No. 14 (07285-00125).
- (4) Fill the fuel filter cartridge No. 12 (600-311-3200) with new fuel and install the fuel filter cartridge to the filter mounting bracket No. 9 (6240-71-6112).
(For details, refer to the section explaining about the replacement procedure for the fuel filter cartridge in the Operation and Maintenance Manual.)
- (5) Install the fuel filter cartridge protecting cover mounting bracket No. 15 (569-84-81350) to the steering circuit hydraulic piping.
- (6) To the places from which the clip mounting bracket 5 (569-04-81921) and bracket 26 (569-04-81231) have been removed as per the instructions given in Fig. 3, install the bracket No. 19 (569-84-81420) and bracket No. 22 (569-84-81410) to install the connection joint No. 27 (569-84-81341).
- (7) Replace the fuel filter cartridge installed to the LH side of the engine with the new cartridge No. 12 (600-311-3200) equipped with the water separator.
(In case of vehicles already equipped with the cartridge being equipped with the water separator, the above replacement work is not necessary.)

Refer to the next page for the detail drawing.

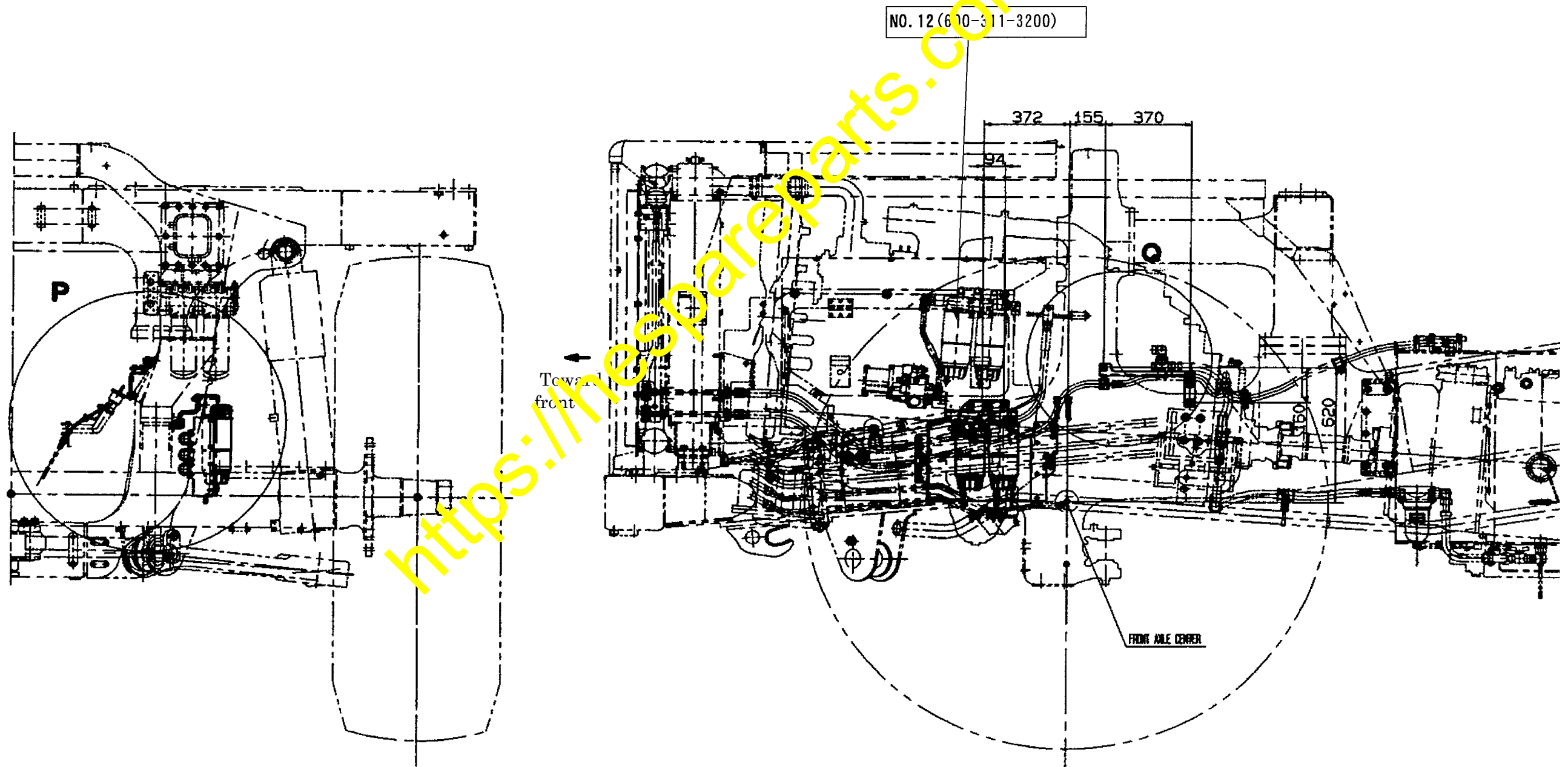


Fig. 6

LH side view

Installation procedure for the additional fuel filter mounting bracket related parts (2/2)

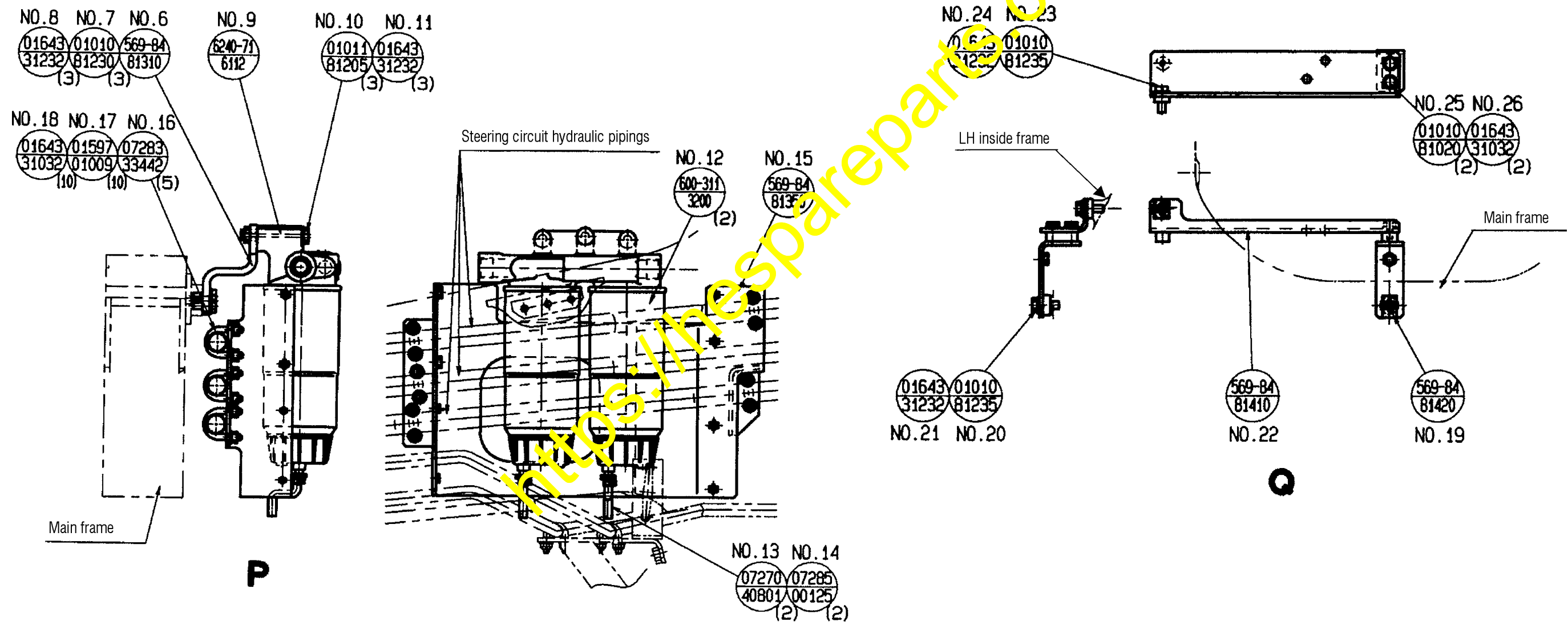


Fig. 7

4-8 Installation procedure for the additional fuel filter piping related parts (1/4) --- For reference, see the circuit diagrams shown on page 5 also.

- (1) Install the elbow No. 31 (6240-71-6740) to the joint No. 27 (569-84-81341) and install them to the bracket No. 22 (569-84-81410) which has been installed as per the instructions given in Fig. 7. At this time, be careful not to forget to install the O-rings (No. 28, No. 32 and No. 33).
- (2) Install the elbow No. 40 (6240-71-6740) and elbow No. 43 (6240-71-6740) to both ends of the additional fuel filter mounting bracket No. 9 (6240-71-6112) which has been installed as per the instructions given in Fig. 7.
At this time, be careful not to forget to install the O-rings (No. 41, No. 42, No. 44 and No. 45). (Refer to Fig. 11.)
- (3) Install the elbow No. 47 (6240-71-6740) to the tee No. 9 (6240-71-6112) at the suction port of the fuel injection pump which has been installed as per the instructions given in Fig. 4.
At this time, be careful not to forget to install the O-rings (No. 48 and No. 49). (Refer to Fig. 11.)
- (4) Connect the hose No. 5 (421-09-31230) which has been installed as per the instructions given in Fig. 5 to the joint No. 27 (569-84-81341).
- (5) Connect the elbow No. 31 (6240-71-6740) installed to the above joint No. 27 (569-84-81341) and the additional fuel filter by the hose No. 34 (569-04-81220). Be careful not to let this hose interfere with the engine or with the frame, etc.
- (6) Connect the above joint No. 27 (569-84-81341) and the fuel filter by the hose No. 34 (569-04-81220). Be careful not to let this hose interfere with the engine or with the frame, etc.
- (7) Connect the front side elbow No. 43 (6240-71-6740) installed to the bracket No. 9 (6240-71-6112) for the additional fuel filter and the elbow No. 47 (6240-71-6740) at the suction port of the fuel injection pump by the hose No. 46 (424-09-31110). Be careful not to let this hose interfere with the engine or with the frame, etc.
- (8) Install the clip No. 35 (419-09-11150) and cushion No. 36 (07095-01034) for the hose No. 34 (569-04-81220). (Refer to "B-F" in Fig. 9.)
- (9) Install the clip No. 54 (419-09-11150) and cushion No. 55 (07095-01034) for the hose No. 46 (424-09-31110). (Refer to the Section "R" in Fig. 11.)
Install the outer side clip mounting plate No. 50 (560-50-11461) to the steering hydraulic circuit piping.
Install the inner side clip to the steering hydraulic circuit piping clip mounting bracket together.
- (10) The current front side clip 29 (04434-53412) and the cushion 31 (07095-20627) for the fuel return hose which have been removed as per the instructions given in Fig. 5 are being reused and install them to the bracket No. 22 (569-84-81410) using the new spacer No. 61 (421-06-12780) and the bolt No. 62 (01434-01045).
- (11) The current rear side clip 29 (04434-53412) and the cushion 31 (07095-20627) for the fuel return hose which have been removed as per the instructions given in Fig. 5 are being reused but replace the clip 43 (04434-51810) for the engine harness with the new clip No. 63 (04434-52112) and install it to the bracket No. 19 (569-84-81420) using the current collar 9 (428-64-15110) and bolt 10 (01434-01240).
- (12) Install the fuel filter cover No. 56 (569-84-81360) to the bracket No. 15 (569-84-81350).

Refer to the next page for the detail drawing.

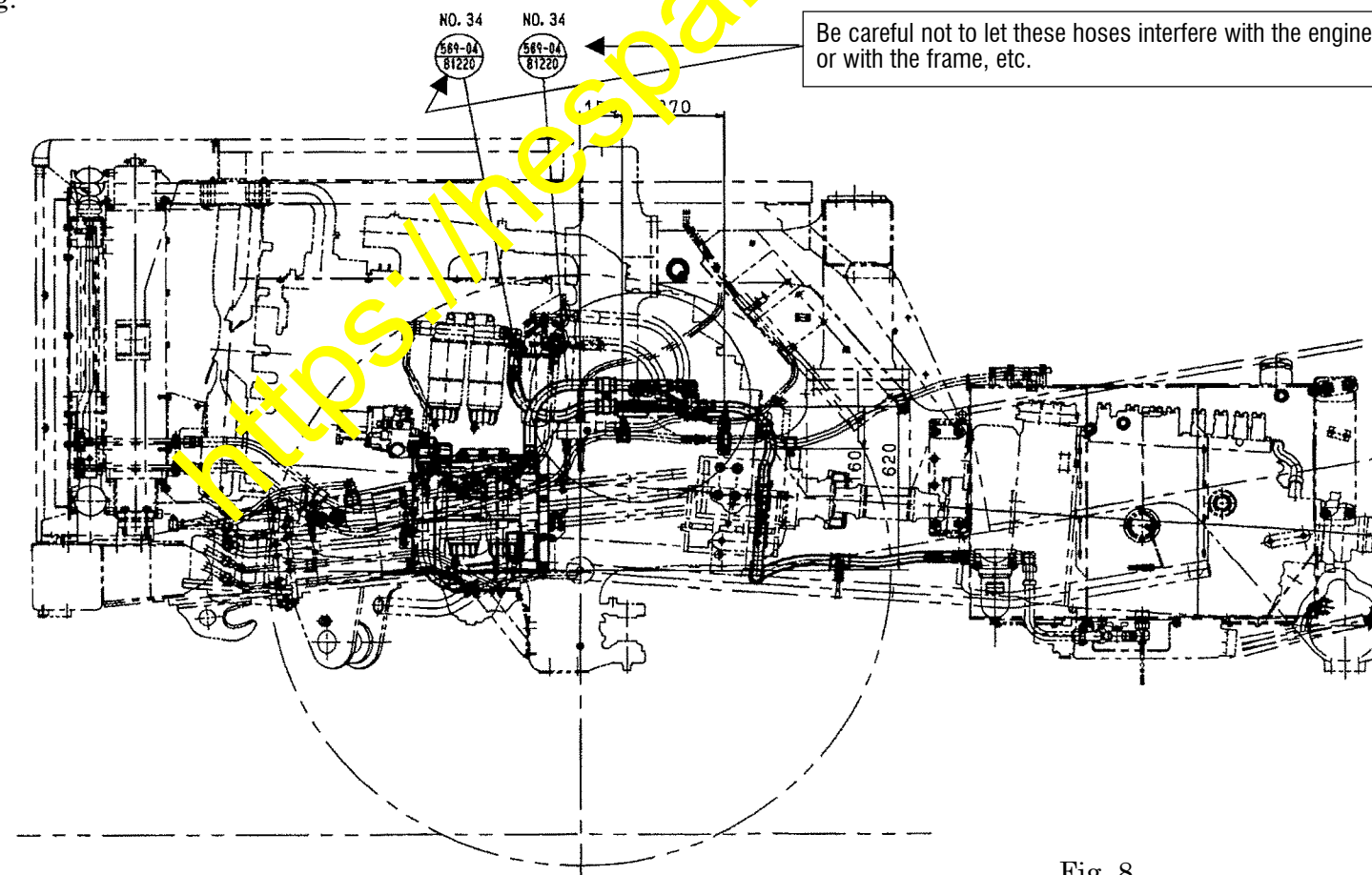


Fig. 8

Installation procedure for the additional fuel filter piping related parts (2/4) --- For reference, see the circuit diagrams shown on page 5 also.

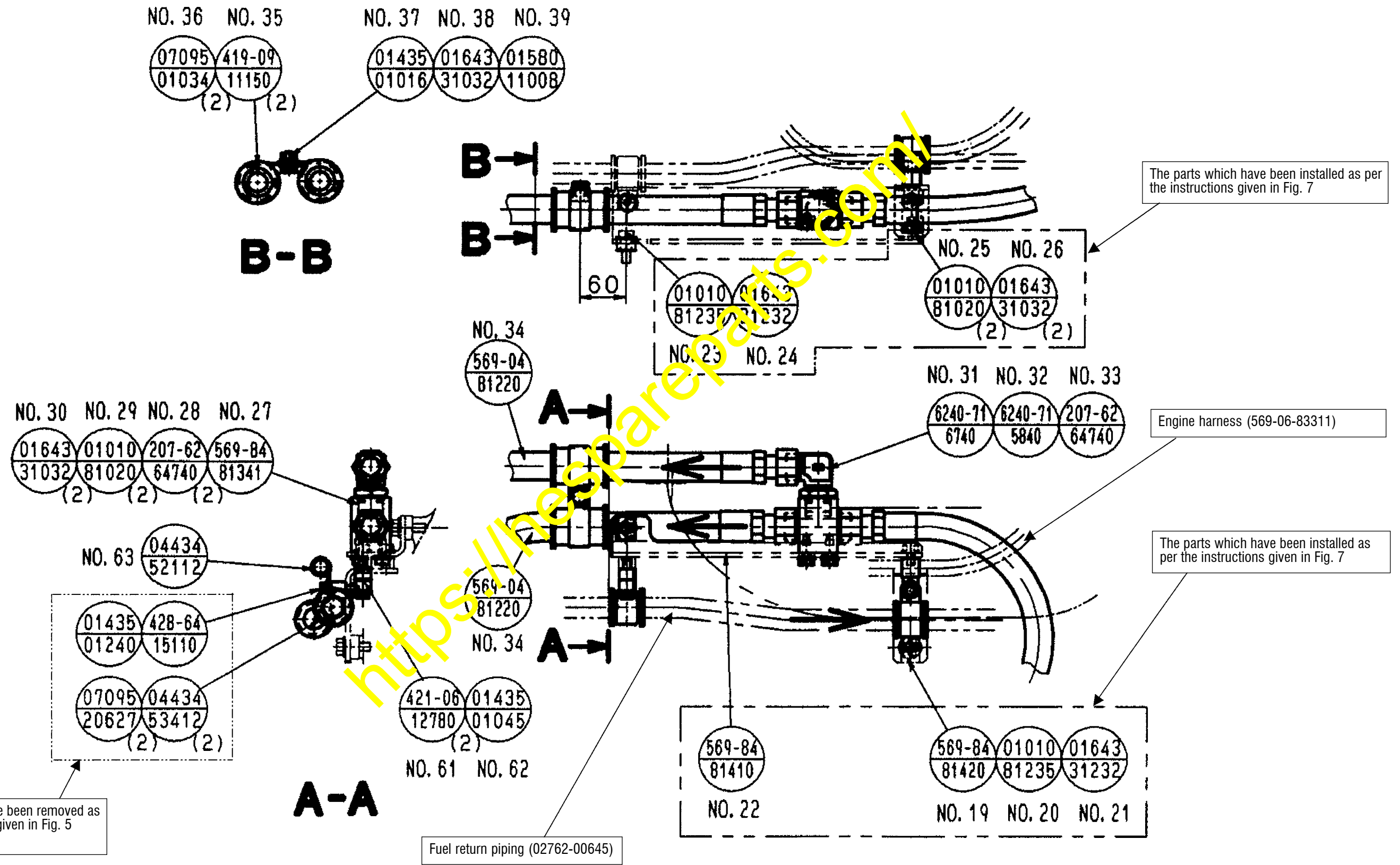
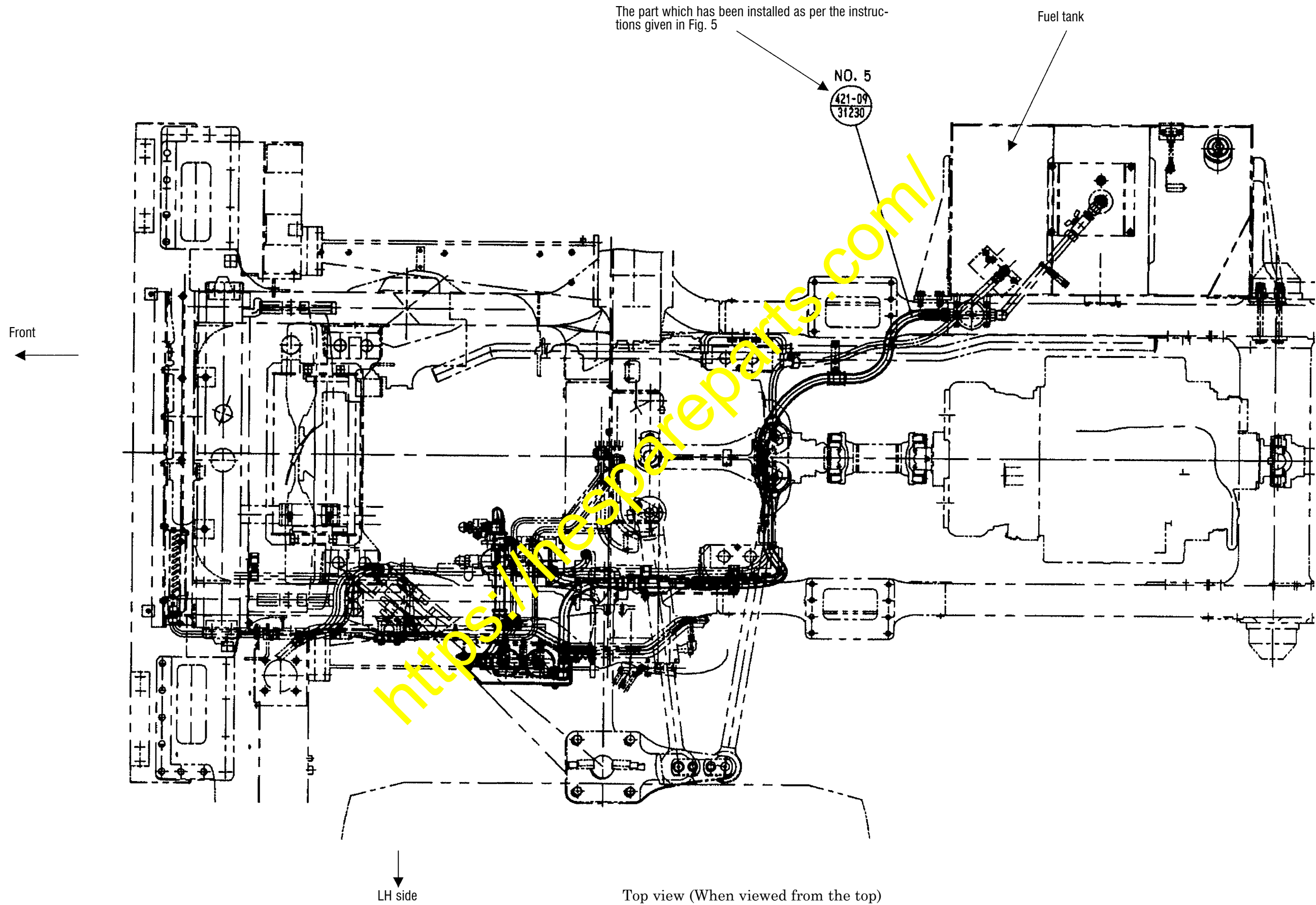


Fig. 9

Installation procedure for the additional fuel filter piping related parts (3/4)



The part which has been installed as per the instructions given in Fig. 5

Fuel tank

NO. 5
421-09
31230

Front

LH side

Top view (When viewed from the top)

Fig. 10

Installation procedure for the additional fuel filter piping related parts (4/4)

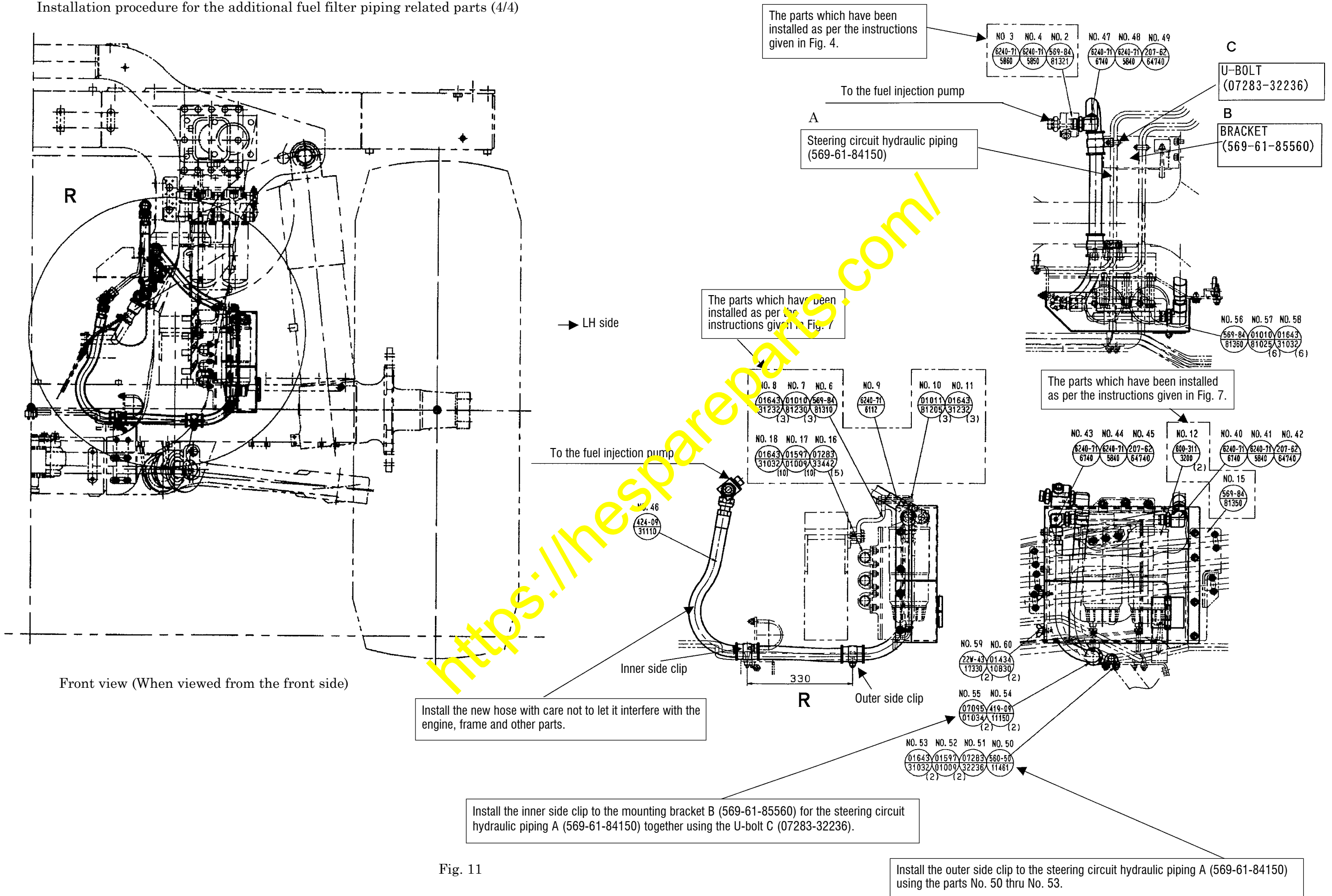


Fig. 11

4-9 Replacing the LH side brake circuit hoses with the new hoses with the protective wire

- (1) Replace the two LH side brake circuit hoses 23 (02765-00310) with the new hoses with the protective wire No. 64 (02765-20310).
- (2) Be careful not to forget to install the O-rings.
- (3) Replace the insulators 14 (581-35-23540) for the brake circuit hoses with the new insulators No. 65 (566-06-41290). (Replace 4 pcs. of the current insulators.)
- (4) Other parts then the removed insulators 14 (581-35-23540) and the hoses 23 (02765-00310) are not changed.

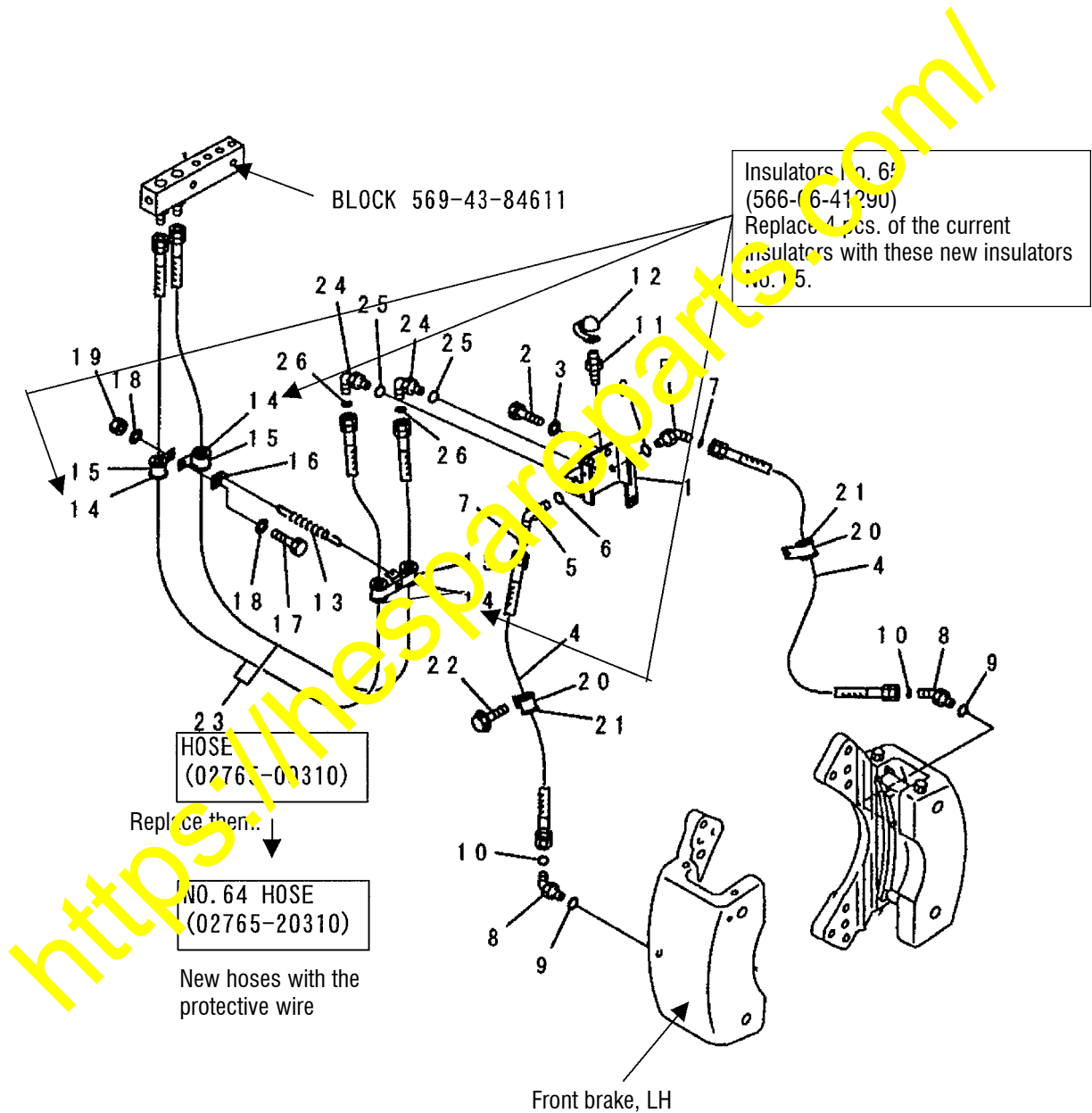


Fig. 12

5. Regarding the handling methods of the additional fuel filter

Regarding the fuel filter having been added this time and regarding the fuel filter equipped with the water separator located on the LH side of the engine, carry out the maintenance work for these fuel filters as per the instructions given below.

(1) Daily maintenance

- The fuel filter located on the LH side of the engine: Check the plastic cap located on the lower side of the filter, and if water is being dissociated, open the drain valve to drain the dissociated water.
- The additional fuel filter: Loosen the wing nut (No. 60) located at the lower side of the filter cover to open the cover.

Check the plastic cap located on the lower side of the filter, and if water is being dissociated, open the drain valve to drain the dissociated water.

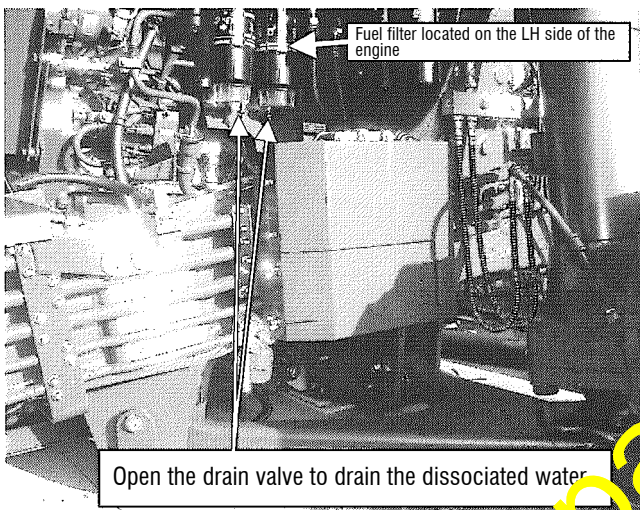


Photo. 1

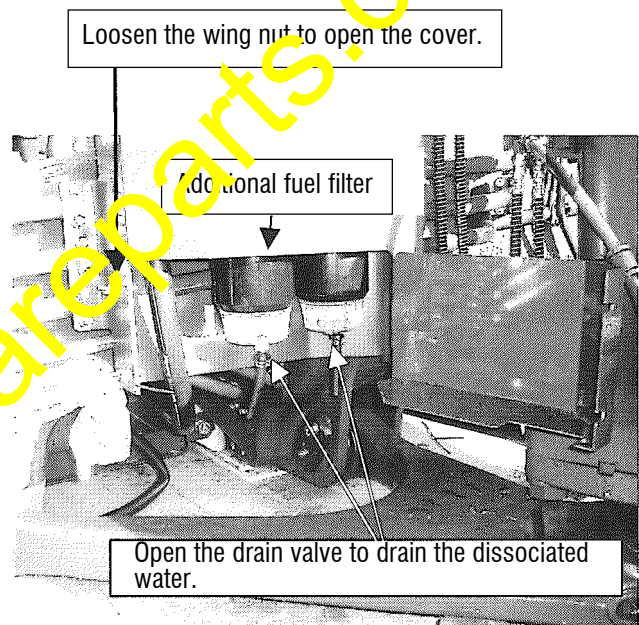


Photo. 2

(2) 500 h servicing

- Change the 4 pcs. of the filter elements.

(Part No. to use when ordering the spare filter elements: 600-311-3240)

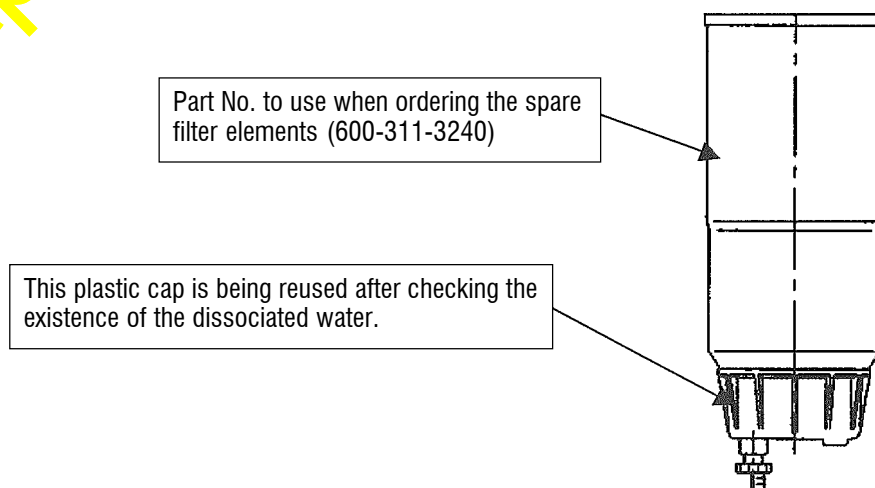


Fig. 13