

INSTALLATION MANUAL

REF NO.	BT00045
DATE	Nov. 20, 2000

Page 1 of 20

SUBJECT: IMPROVING CLOGGING-RESISTANCE OF RADIATOR CORE ON WA800-3

PURPOSE: To introduce a newly prepared clogging-resistant radiator and its installation procedures for use on WA800-3 wheel loaders

APPLICATION: WA800-3 Wheel Loaders, Serial Nos. 50001 and up.

FAILURE CODE: 031165

DESCRIPTION:

1. Introduction

This Installation Manual will introduce a newly prepared D type copper finned radiator with improved clogging resistance for use on the WA800-3 wheel loaders operating in sandy areas.

Meanwhile, we have provided cleaning windows which are to be supplemented, concurrently with the installation of the new radiator, to both sides of the radiator guard so that cleaning work at time of the radiator core being clogged is facilitated.

Since D type radiators are slightly inferior in the heat radiation performance as compared with G type radiators, we have compensated this disadvantage by improving the cleaning ease.

When locally installing this new radiator, follow the installation procedures outlined in this document.

CONTENTS

- | | |
|---|--------------|
| 2. Lists of parts | P2 thru P4 |
| 3. Contents of the modification | P5 |
| 4. Removing the parts and structures which need to be removed for this modification | P6 thru P8 |
| a. Removing the exterior parts | |
| b. Removing the radiator accessories and water pipings | |
| c. Removing the hydraulic oil cooling circuit pipings | |
| d. Removing the radiator | |
| 5. Reworking procedures | P9 thru P12 |
| a. Reworking with the radiator guard | |
| b. Reworking with the top hood | |
| c. Reworking with the hydraulic oil cooler | |
| 6. Installation procedures | P13 thru P20 |
| a. Installing the air cooling type hydraulic oil cooler to the radiator | |
| b. Installing the radiator | |
| c. Installing the radiator accessories and water pipings | |
| d. Installing the hydraulic oil cooling circuit pipings | |
| e. Installing the muffler covers | |
| f. Installing the radiator guard and baffle plates | |
| g. Installing the exterior parts | |

2. List of parts

Part No.	Part Name	Q'ty	Remarks
4270321911 (4270311303)	Radiator ass'y (Radiator ass'y)	1 (1)	D 7, copper finned radiator (w/o hydraulic oil cooler)
0101081290	Bolt	20	} Hydraulic oil cooler mounting parts
0164331232	Washer	20	
4270321921	Spacer	2	
4270321931	Bracket	2	
4270321941	Spacer	2	
4270321951	Spacer	1	
4270321810	Bracket L.H.	1	
4270321820	Bracket R.H.	1	
4270321830	Cover L.H.	1	
4270321840	Cover R.H.	1	
4270321850	Sheet	2	
4270321860	Sheet	2	
4270321870	Sheet	2	
4270321890	Baffle, lower	1	
0101081225	Bolt	6	
0164331232	Washer	4	
0143501016	Bolt	8	
4270321990	Plate	2	Parts necessary for reworking of the oil cooler
07000E3045	O-ring	4	} Piping parts for the hydraulic oil cooler
4276225621	Tube	1	
4276225621	Tube	1	} Parts necessary for reworking of the radiator guard
4275425451	Door	2	
4275425690	Plate	2	
4248751160	Seat	2	
1755486270	Boss	8	
0157101016	Seat	2	
08086C2845	Clip	6	

Part No.	Part Name	Q'ty	Remarks	
4275425411	Baffle L.H.	1	} Radiator guard baffling parts	
4275425531	Seal	1		
4275425421	Baffle R.H.	1		
0101081016	Bolt	8		
0164331032	Washer	8		
4275425431	Baffle L.H.	1		
4275425441	Baffle R.H.	1		
4275425630	Plate	1		
4275425640	Plate	1		
4275425650	Plate	2		
0143500816	Bolt	4		
4275425550	Seal	2		
4275425560	Seal	2		
0101081016	Bolt	4		
0164331032	Washer	4		
4275425491	Rubber	4		
4275425520	Plate	8		
3625641740	Rivet	16		
4175424470	Cushion	8		
0808601814	Clip	2		
0143501016	Bolt	2		
4254412570	Plate	2		
0101081225	Bolt	4		
0164331232	Washer	4		
4275425660	Baffle L.H.	1		} Top hood mounting parts
4275425670	Baffle R.H.	1		
0143501016	Bolt	8		
4275422940	Plate	1		
4275422950	Plate	1		
0143501210	Bolt	8		

Part No.	Part Name	Q'ty	Remarks
0158001210	Nut	8	Parts necessary for reworking of the top hood
4270221120	Cover, front	1	} Muffler cover
4270221130	Cover, rear	1	

<https://hespareparts.com/>

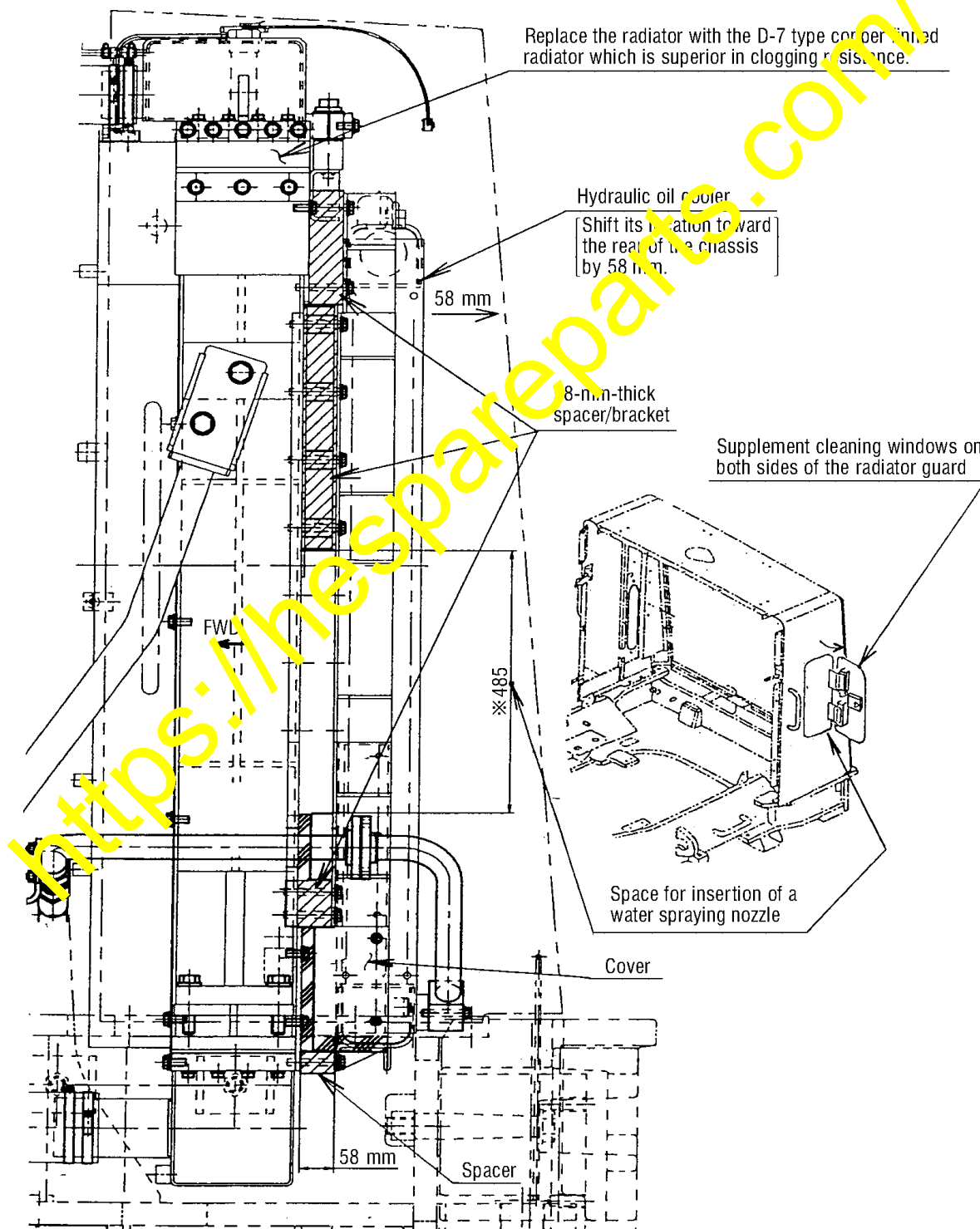
3. Contents of the modification

① Changing the radiator

- The current radiator is to be replaced with the D-7 type copper finned radiator.

② Supplementing the cleaning windows on both sides of the radiator guard to facilitate the cleaning work for the radiator cores.

- By shifting the hydraulic oil cooler behind the radiator toward the rear of the chassis by 58 mm, insertion of a water spraying nozzle or air blow nozzle into the space (at area marked ※) between the radiator core and the hydraulic oil cooler, thus facilitating the cleaning work.



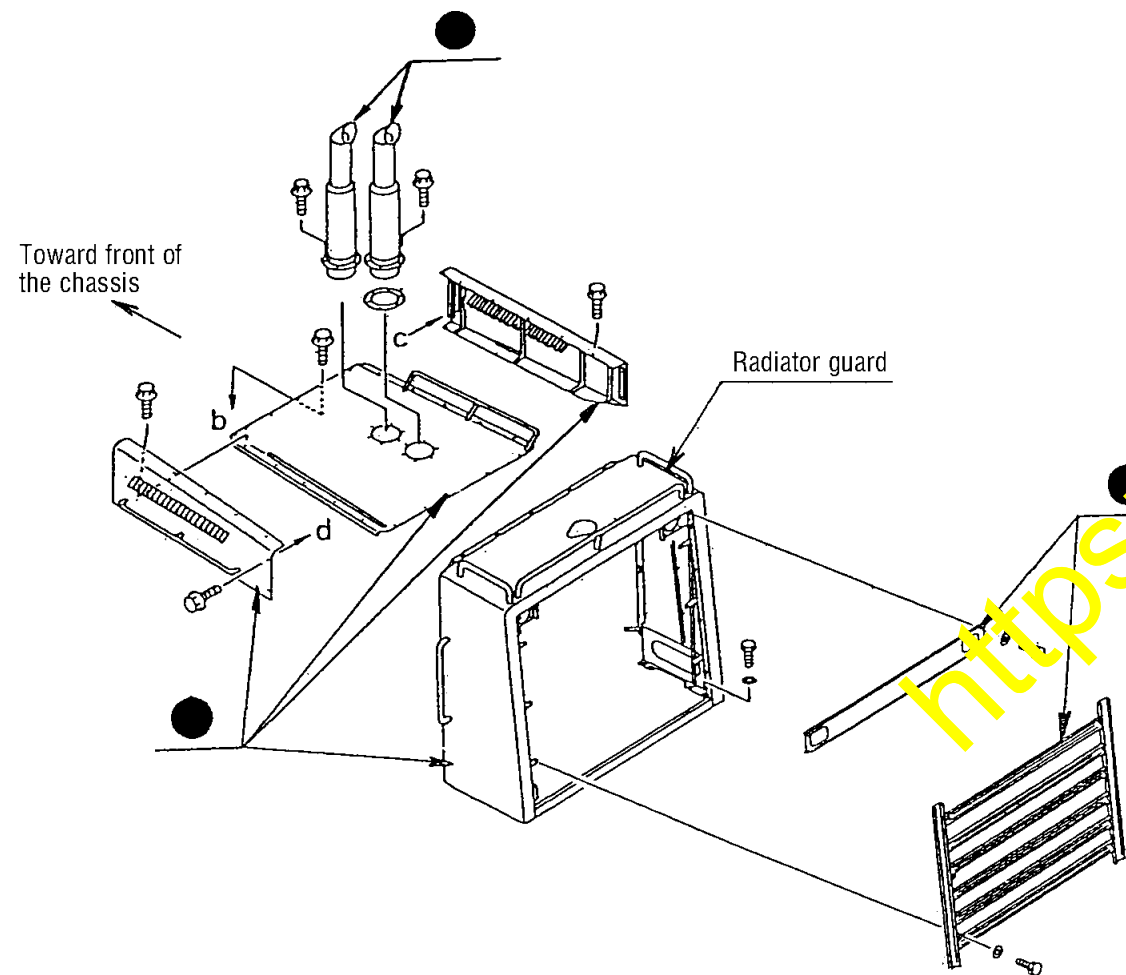
4. Removing the parts and structures which need to be removed for this modification.

- Remove those parts and structures which are marked ● in the schematic diagrams indicated below.

a. Removing the exterior parts

(Note)

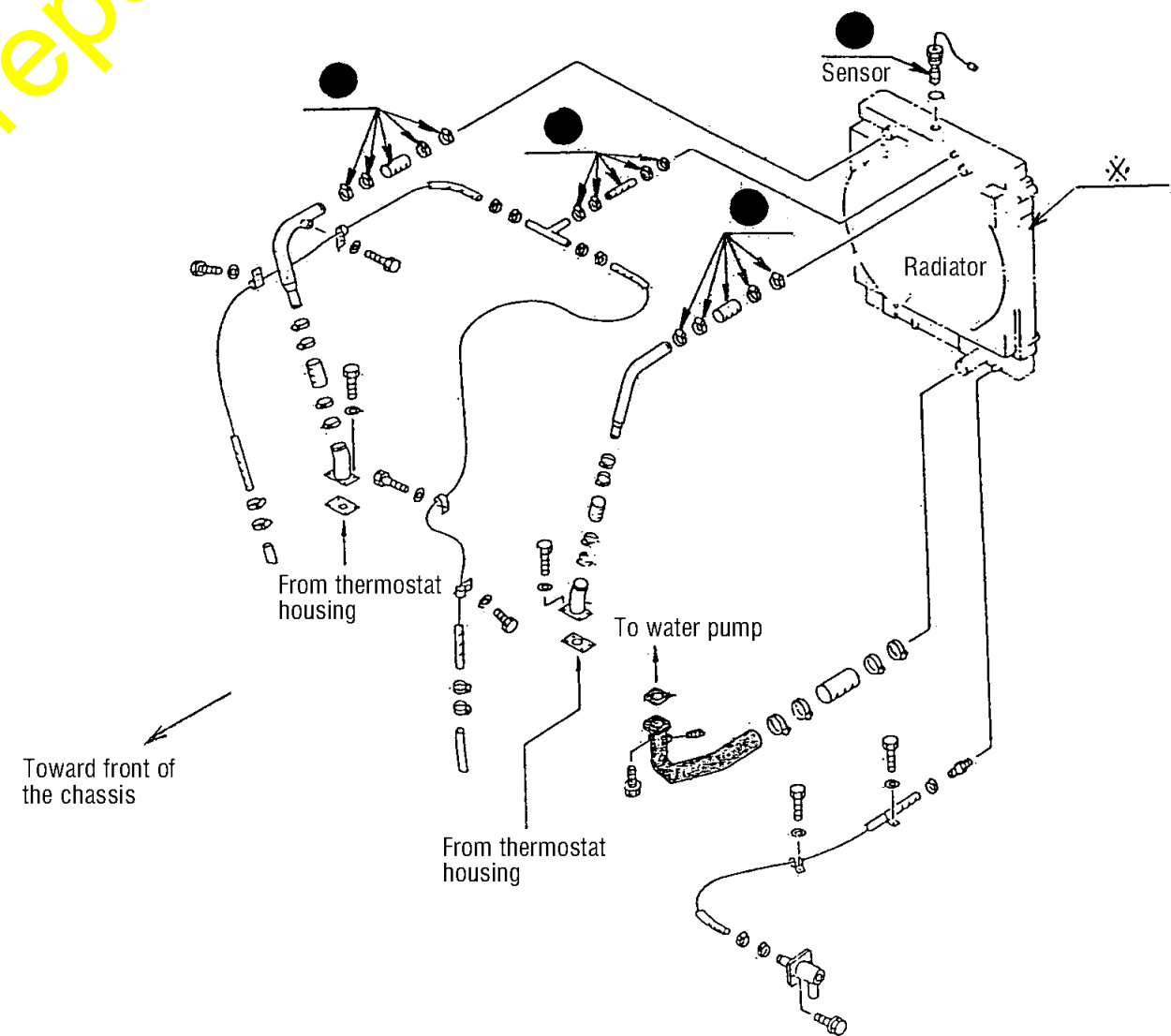
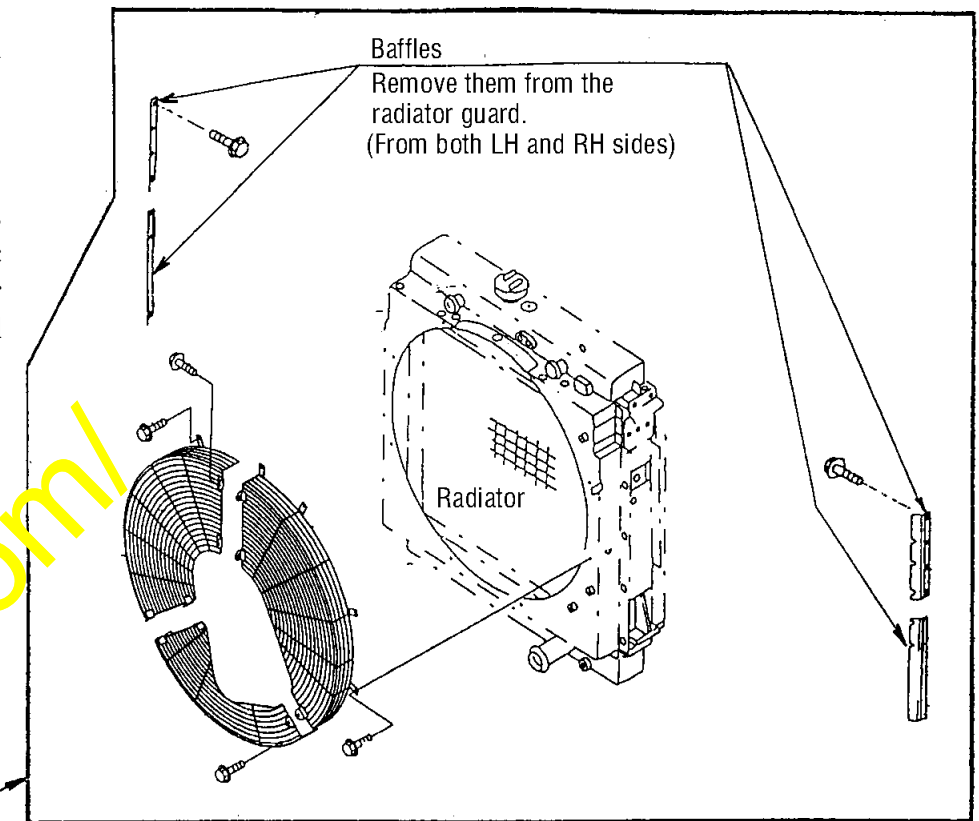
- The radiator guard is being reworked according to the instructions given on pages 9 and 10.
- Since the parts and structures marked ● are being reused, store them carefully.
- The top hood is being reworked according to the instructions given on page 11.



b. Removing the radiator accessories and water pipings

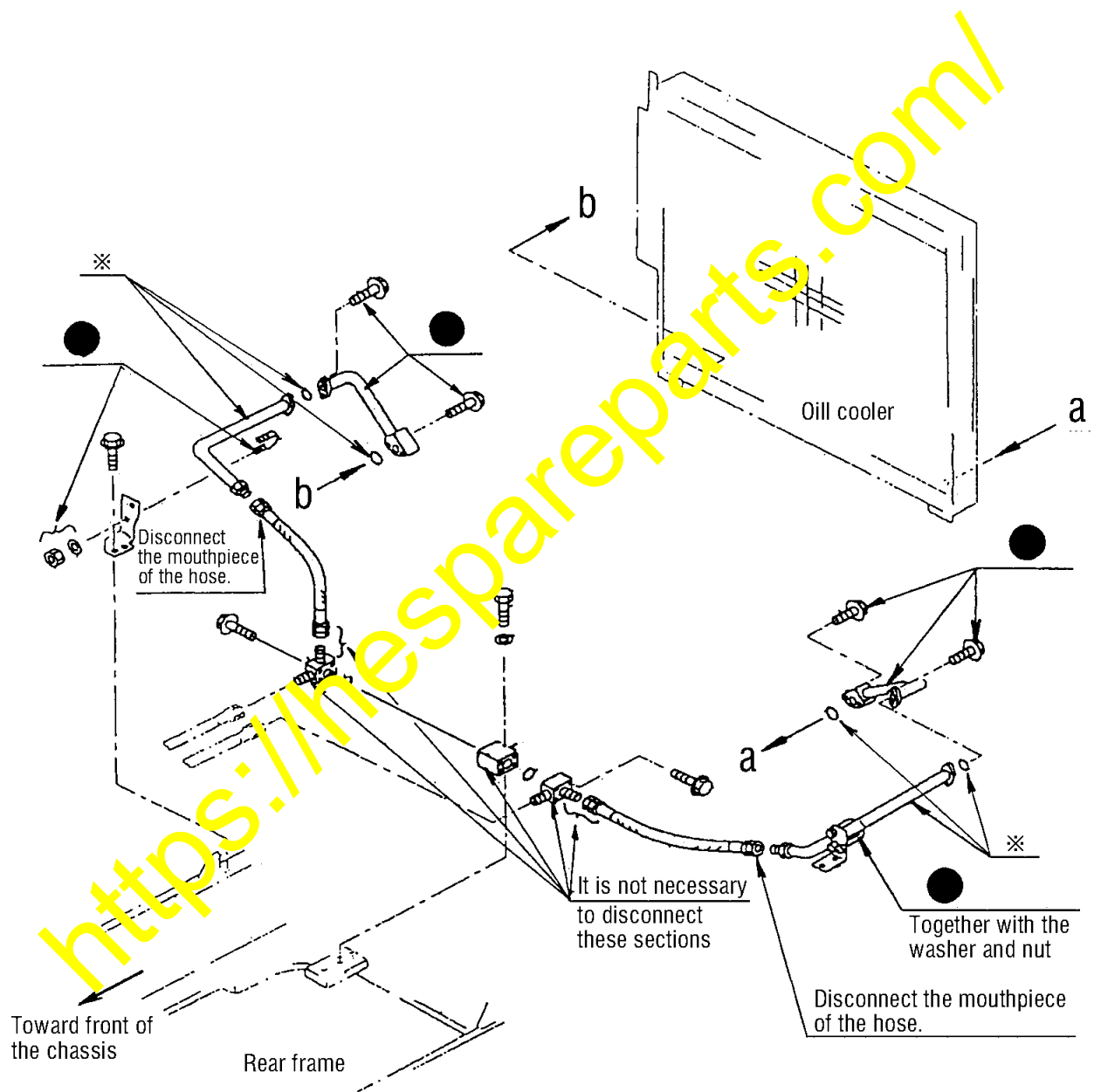
(Notes)

- Drain the coolant and hydraulic oil.
- Remove those parts and structures which are marked ● in the schematic diagrams indicated below. Since other parts and structures than those marked ※ are being reused, store them carefully.



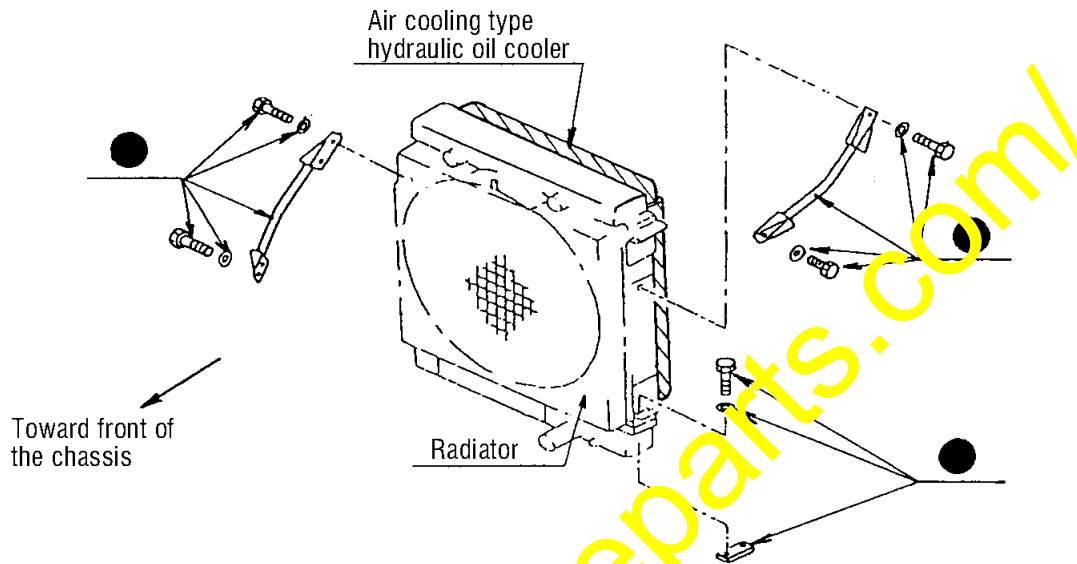
c. Removing the hydraulic oil cooling circuit pipings

- Remove those parts and structures which are marked ● in the schematic diagram indicated below. Since other parts and structures than those marked ※ are being reused, store them carefully.

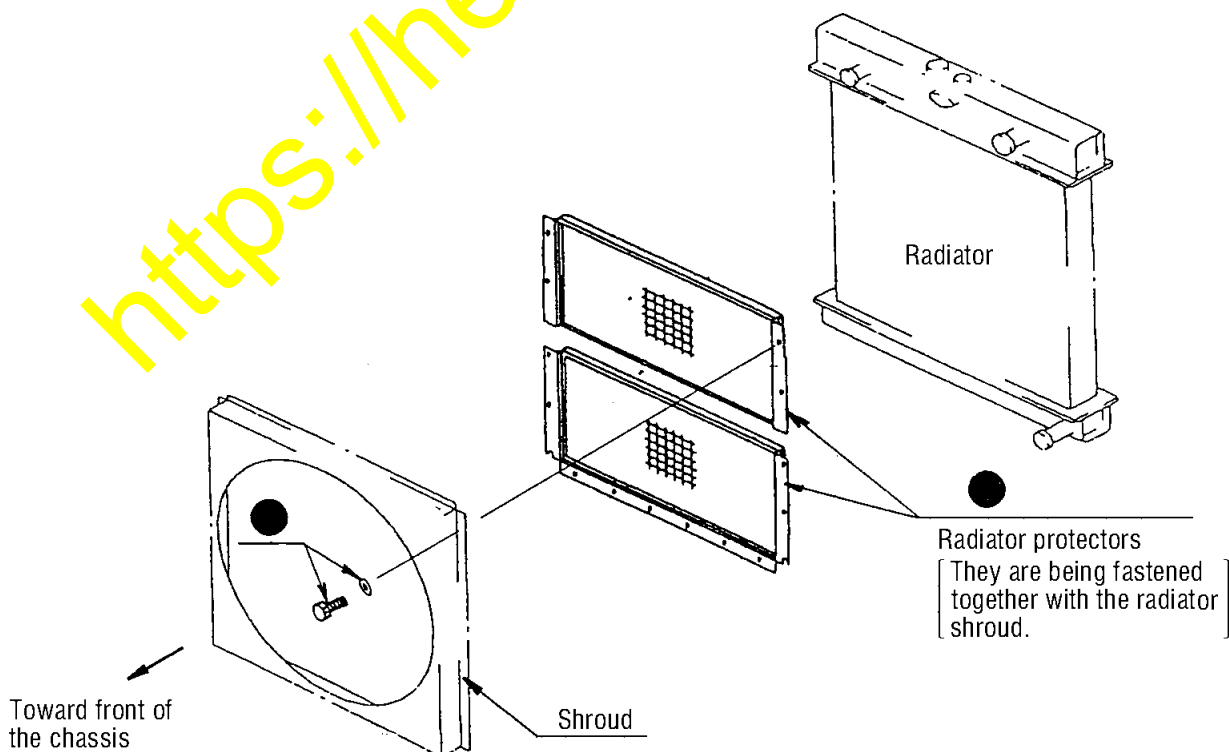


d. Removing the radiator

- Remove those parts and structures which are marked ● in the schematic diagrams indicated below. Since other parts and structures than the radiator are being re-used, store them carefully.
- Also, since the air cooling type hydraulic oil cooler (installed to the rear section of the radiator) is being reused, remove it from the radiator and wash it after removal.



(Note) • In case of machines equipped with the radiator protector, detach the shroud and remove both of the upper and lower protectors. Parts marked ● are being re-used.

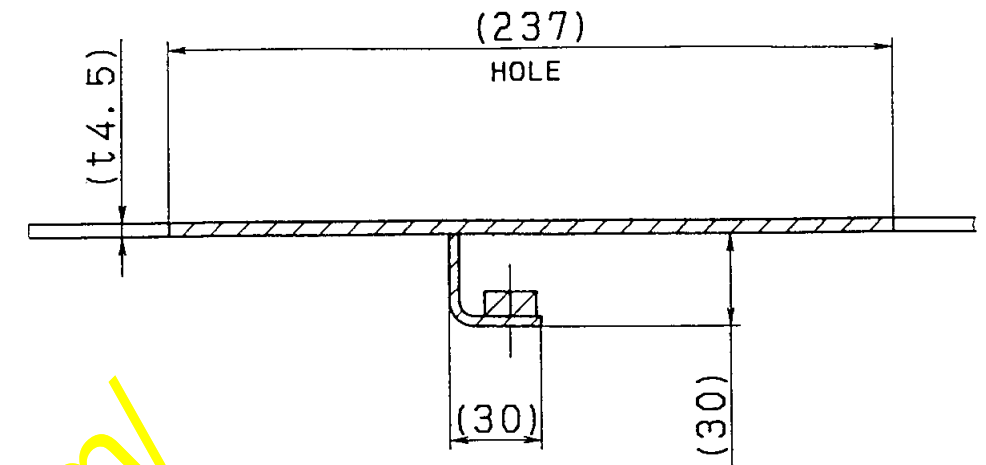


5. Reworking procedures

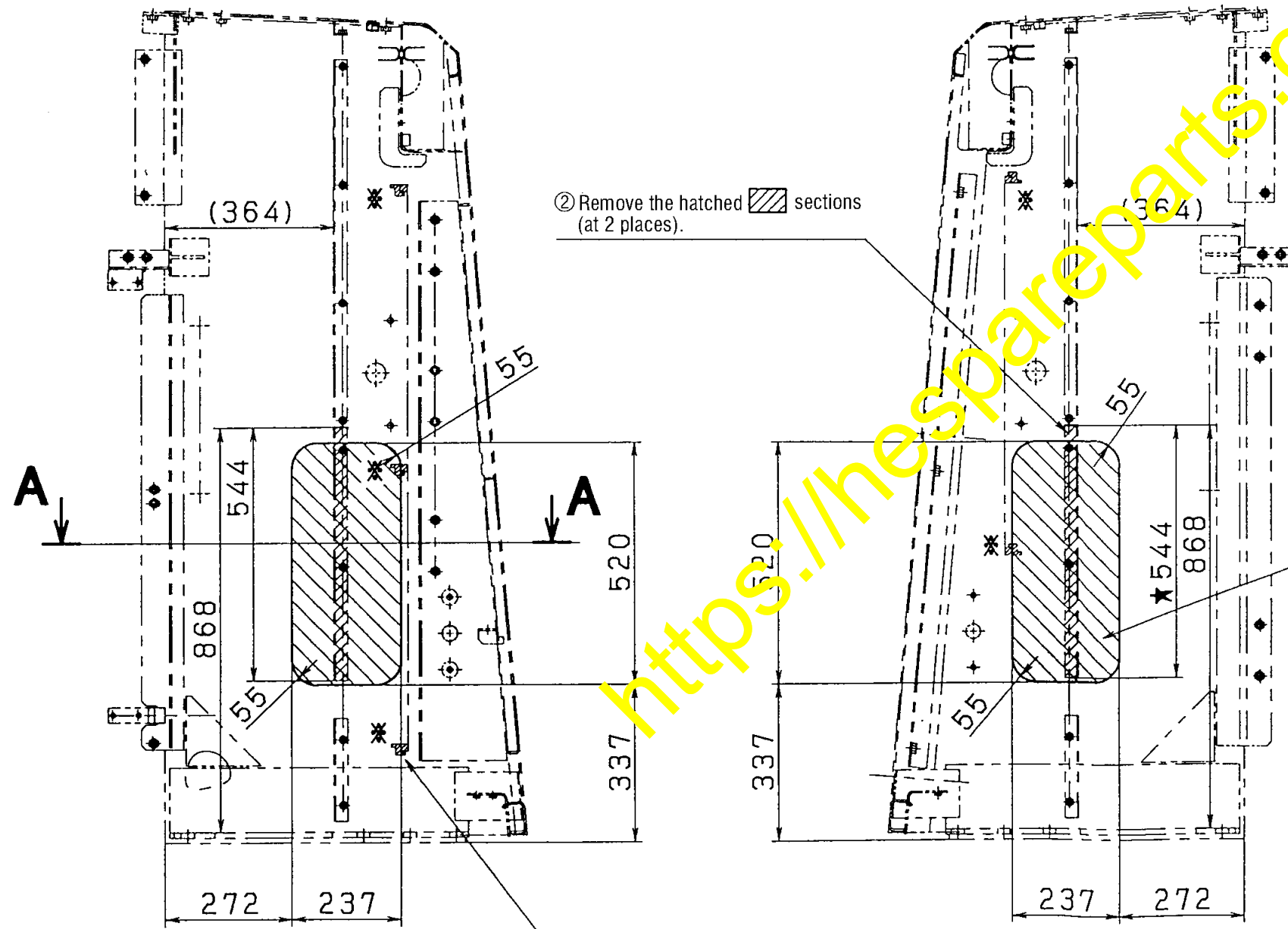
a. Reworking with the radiator guard

Execute the following reworks.

- ① Cut the baffle plate mounting angle by the dimensions (Marked ★) instructed in the drawings.
- ② Supplement holes in the LH and RH radiator guards.
- ③ Remove the welded clips (at 5 places).



A-A (2 PLACES)



② Remove the hatched sections (at 2 places).

① Cut the hatched openings (at 2 places).

③ Remove the clips (at 5 places marked *).

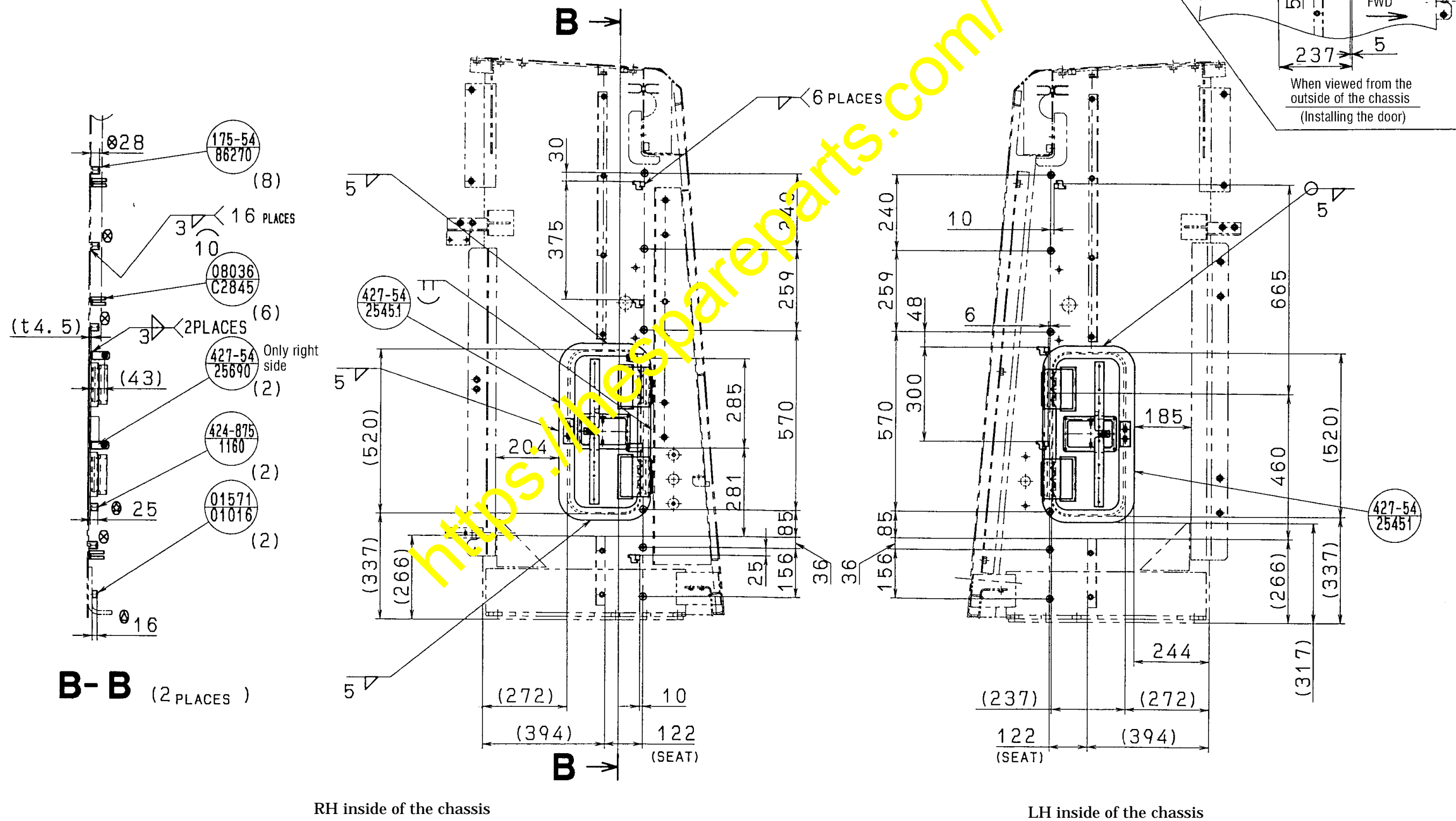
RH inside of the chassis

LH inside of the chassis

④ Weld the doors (427-54-25451) to the inside surfaces at LH and at RH of the radiator guard.

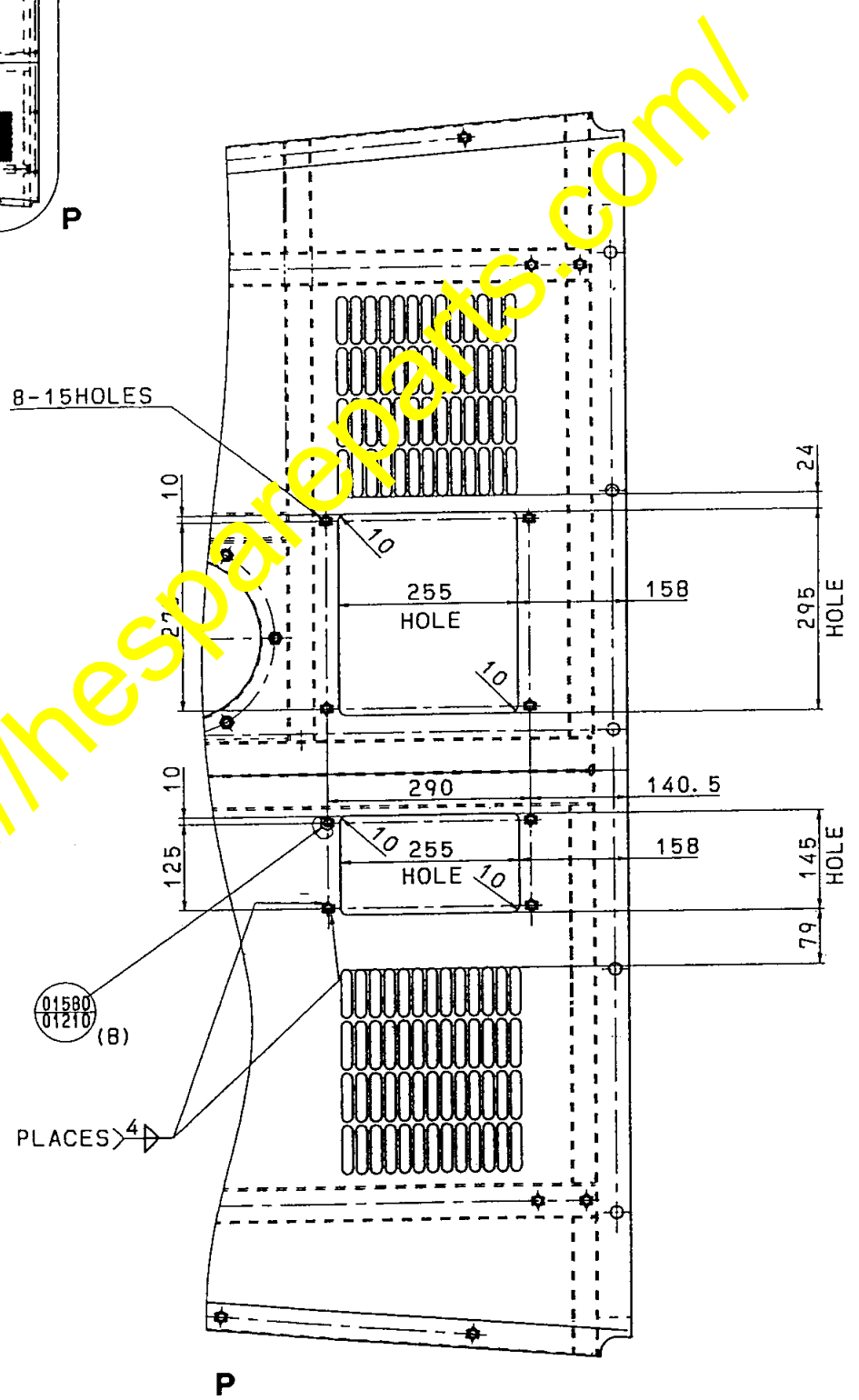
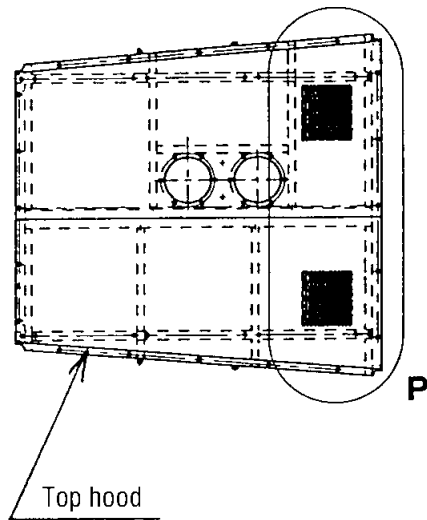
⑤ Weld the seats and clips to the inside surface of the radiator guard.

(Note) Apply corrective painting after finishing the above reworking.



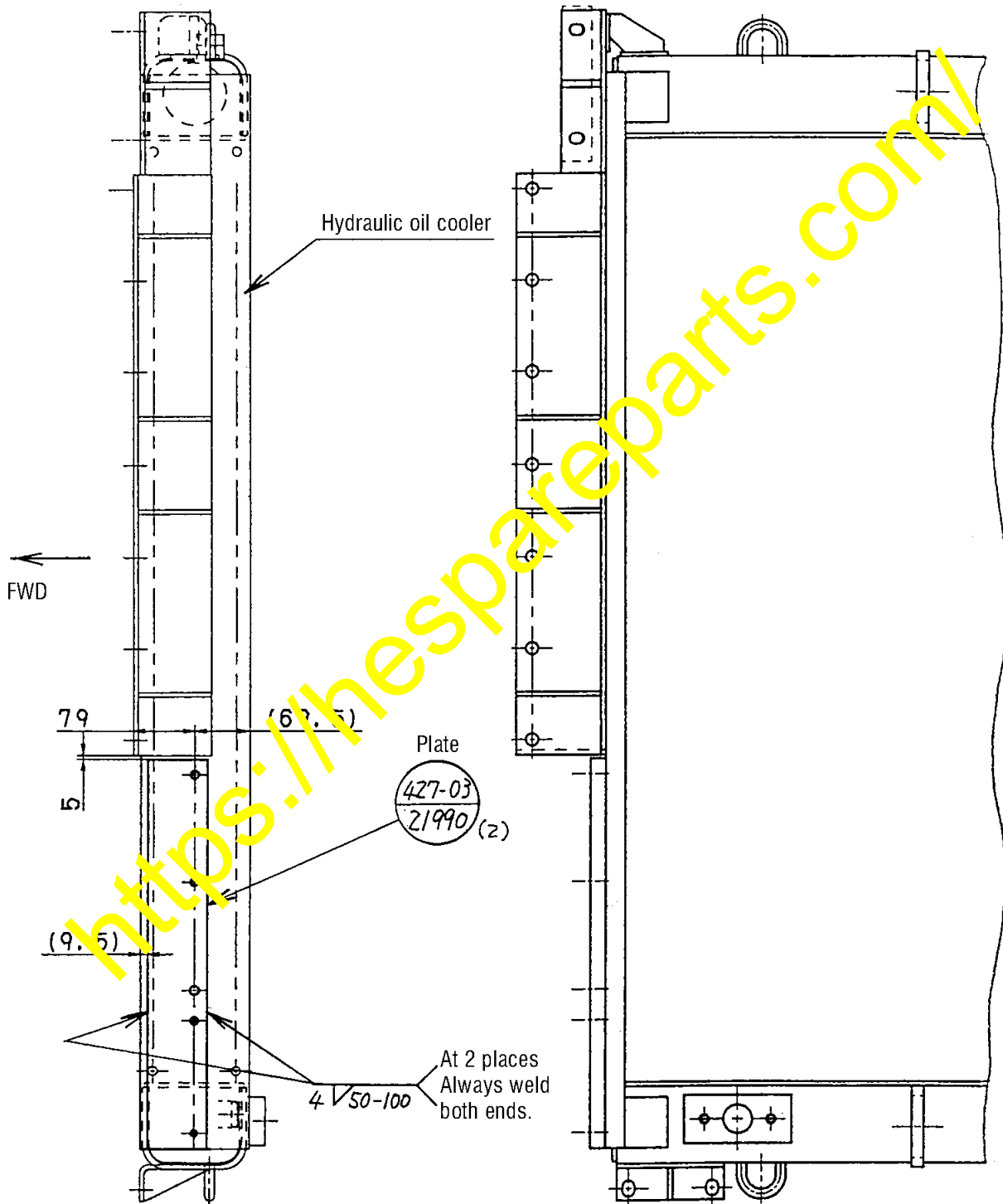
b. Reworking with the top hood

- ① Open the air intake holes.
- ② Drill holes for installation of the cover and weld the rear nuts.



c. Reworking with the hydraulic oil cooler

- Weld the plate to the side surfaces (LH and RH) of the hydraulic oil cooler as indicated below.



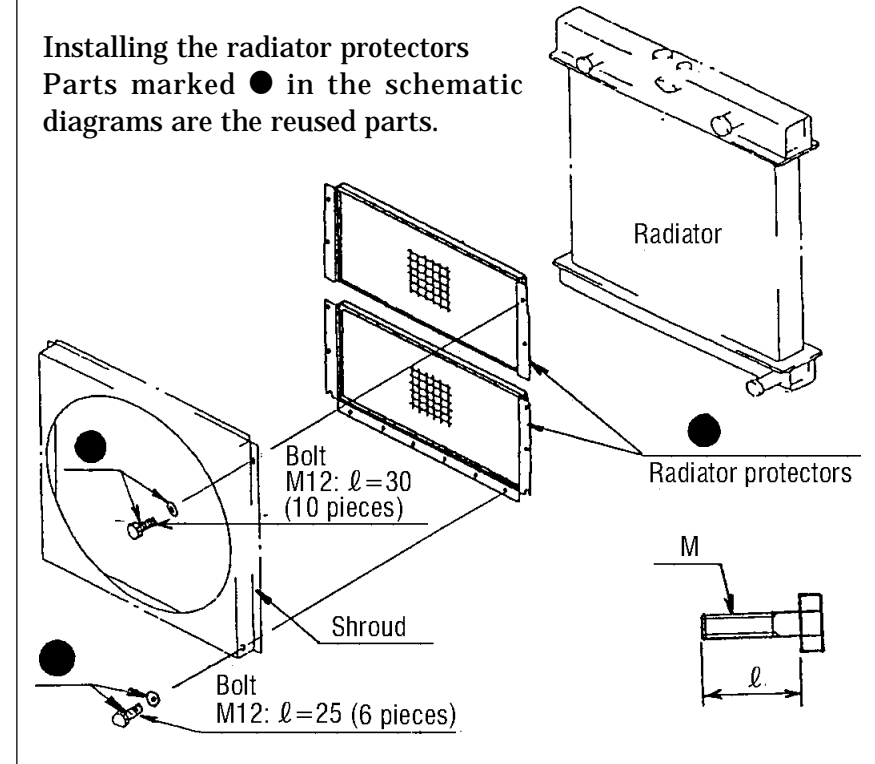
6. Installation procedures

- a. Installing the air cooling type hydraulic oil cooler to the radiator
- Install the air cooling type hydraulic oil cooler to the radiator.
As shown below, supplement spacers between the radiator and the air cooling type hydraulic oil cooler before fastening them together. (Replace the bolts with the ones of the part number given in the schematic diagrams.)

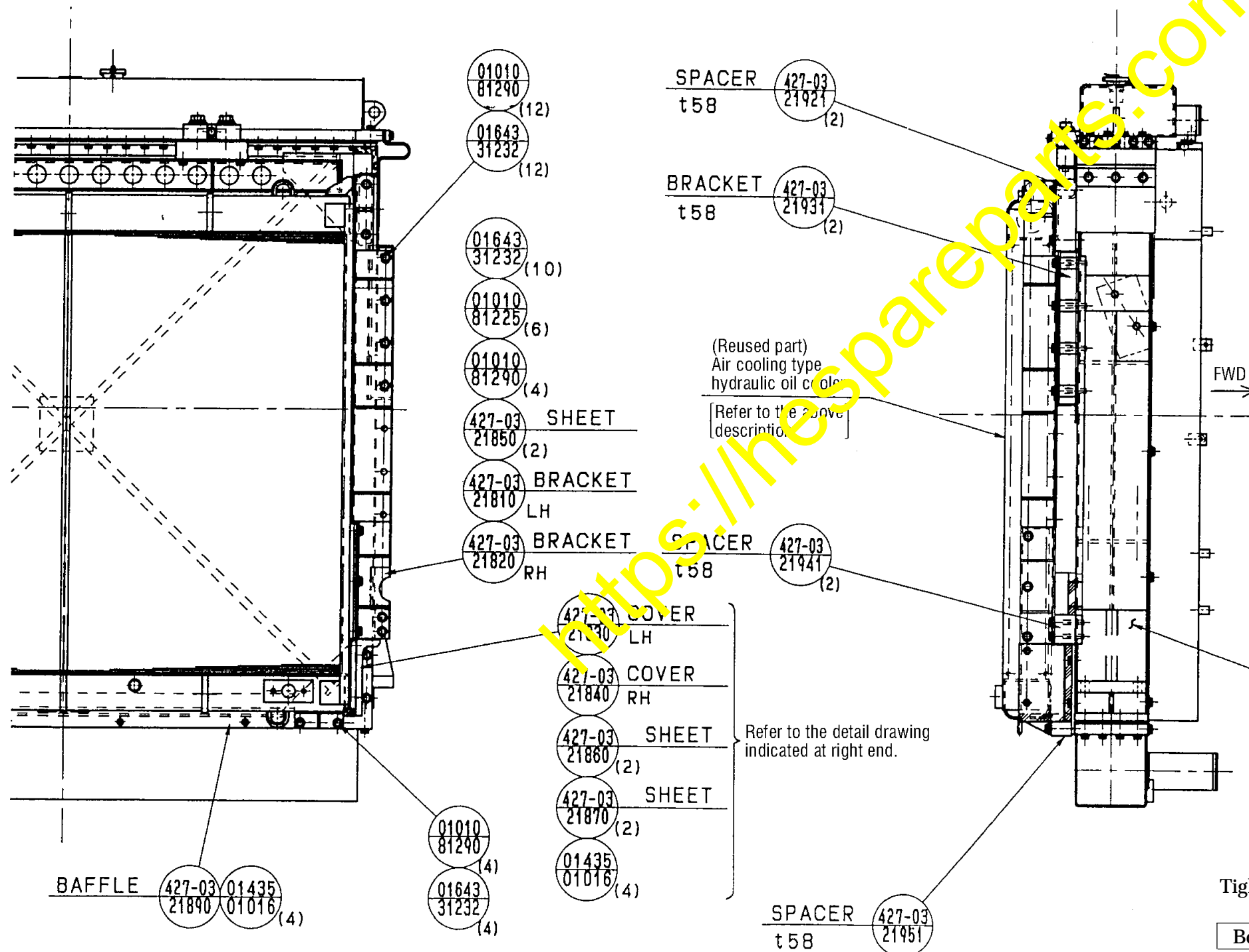
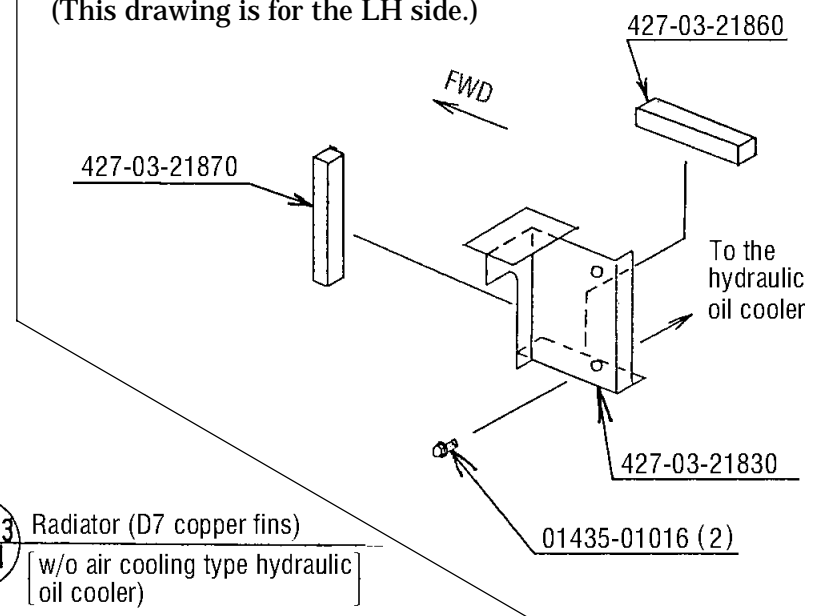
(Note)

- In case of machines equipped with the radiator protector, detach the shroud and install the upper and lower protectors. (Refer to the schematic diagram indicated at right end.)

Installing the radiator protectors
Parts marked ● in the schematic diagrams are the reused parts.



Detail drawing for the section to install the cover.
(This drawing is for the LH side.)



Tightening torque

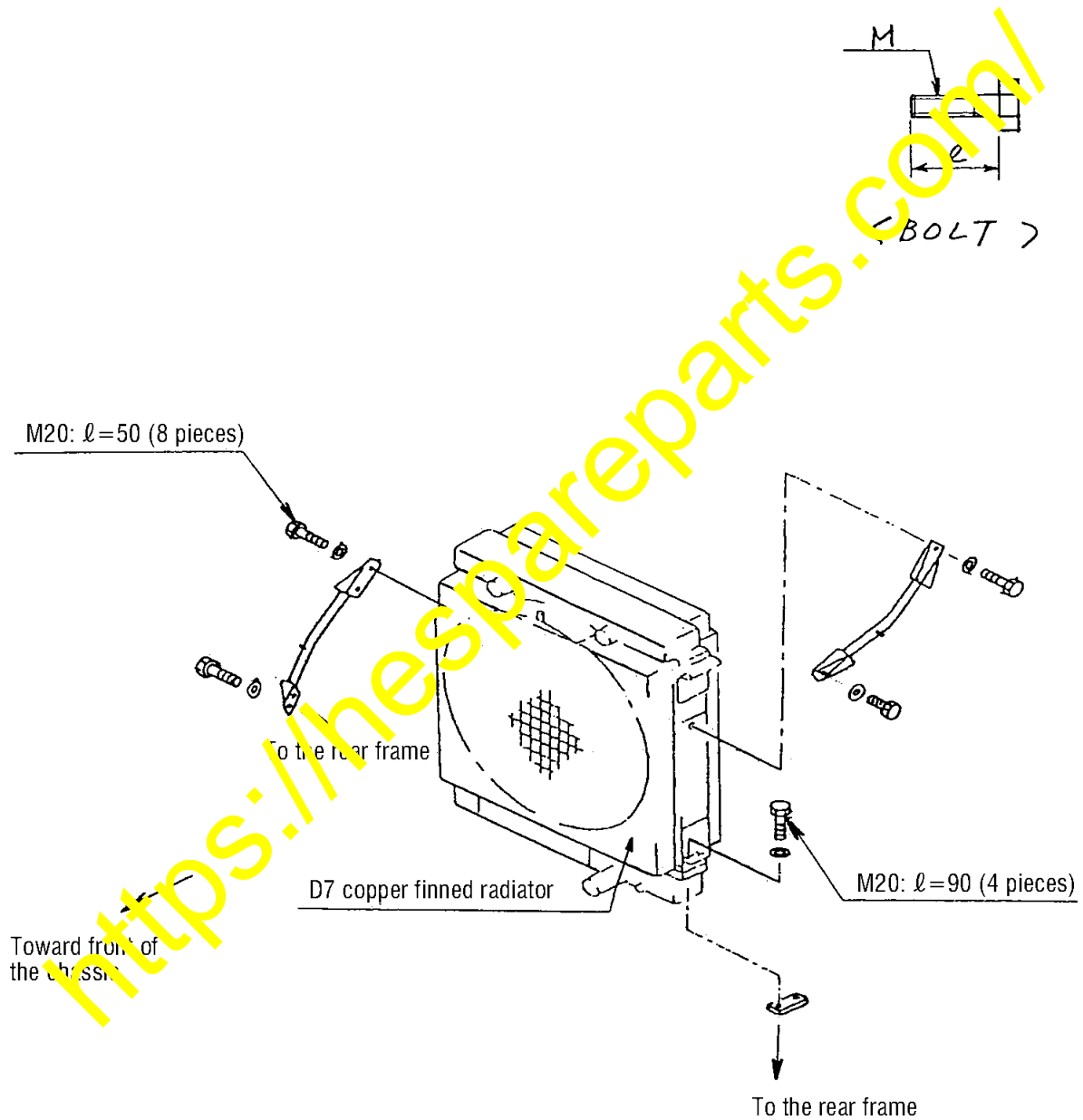
Bolt (M12)	Tightening torque range (when using a torque wrench)	
	10.0 - 12.5 kgm	98 - 123 Nm

b. Installing the radiator

- Install the radiator to the chassis reusing the parts removed on previous pages.

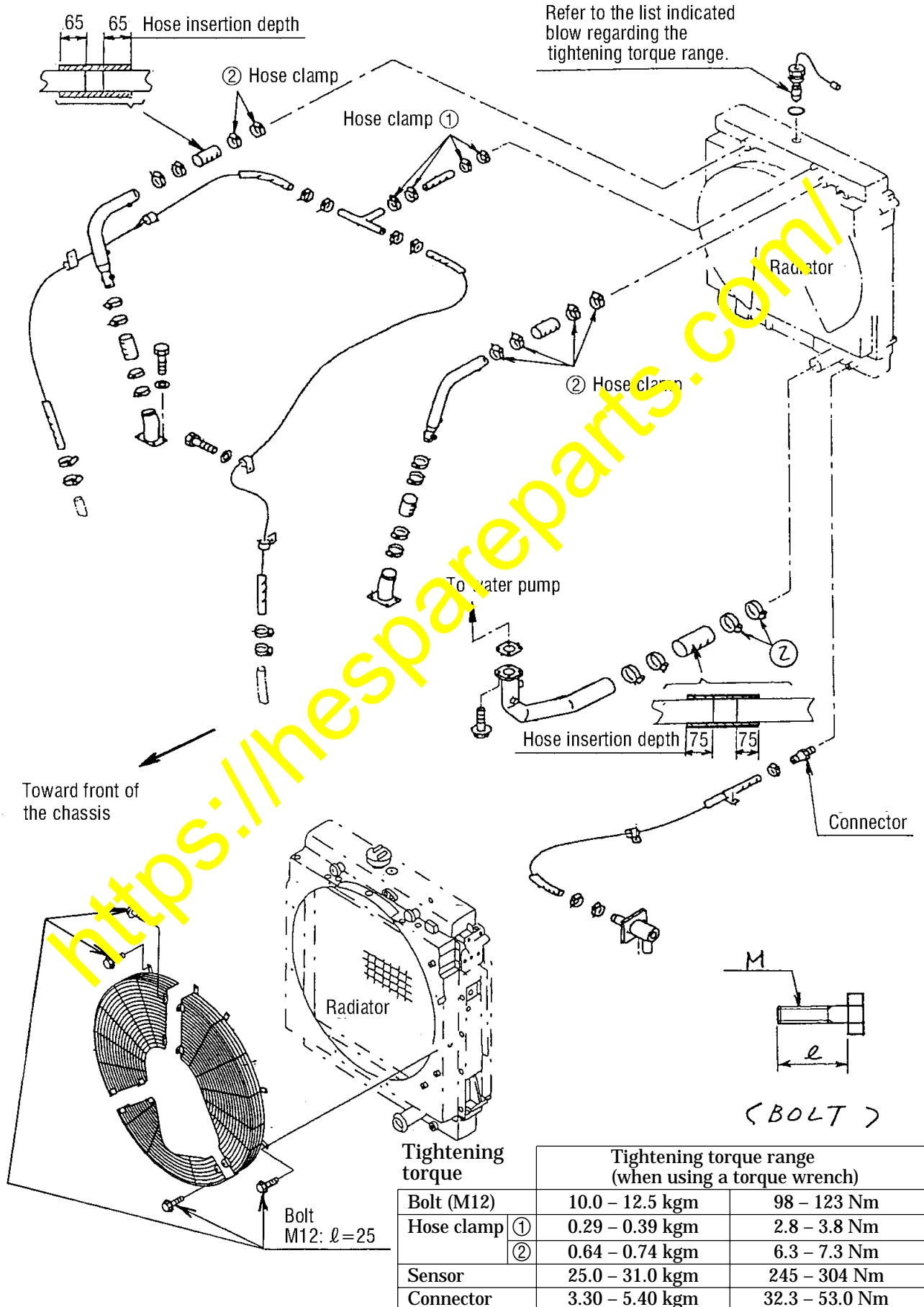
Tightening torque

	Tightening torque range (when using a torque wrench)	
Bolt (M12)	50.0 – 62.0 kgm	490 – 608 Nm



c. Installing the radiator accessories and water pipings

- Install the radiator accessories and water pipings reusing the parts removed on previous pages.



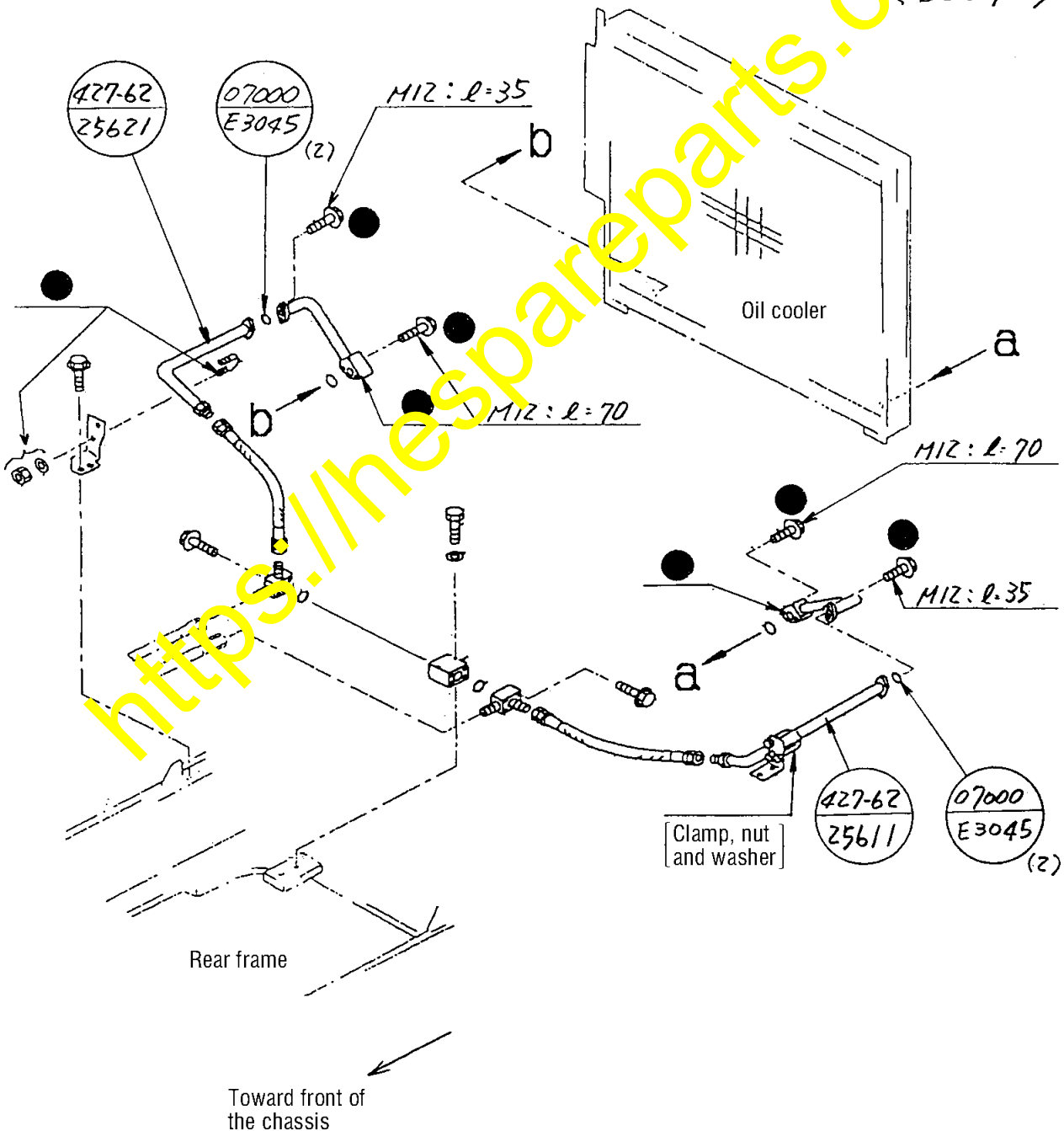
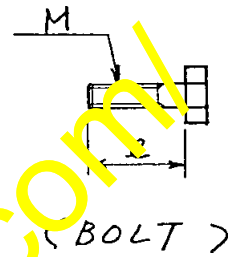
d. Installing the hydraulic oil cooling circuit pipings

- ① Install the hydraulic oil cooling circuit pipings reusing the parts (parts marked ● below) which have been removed on previous pages.

As for the O-ring, use the newly prepared part.

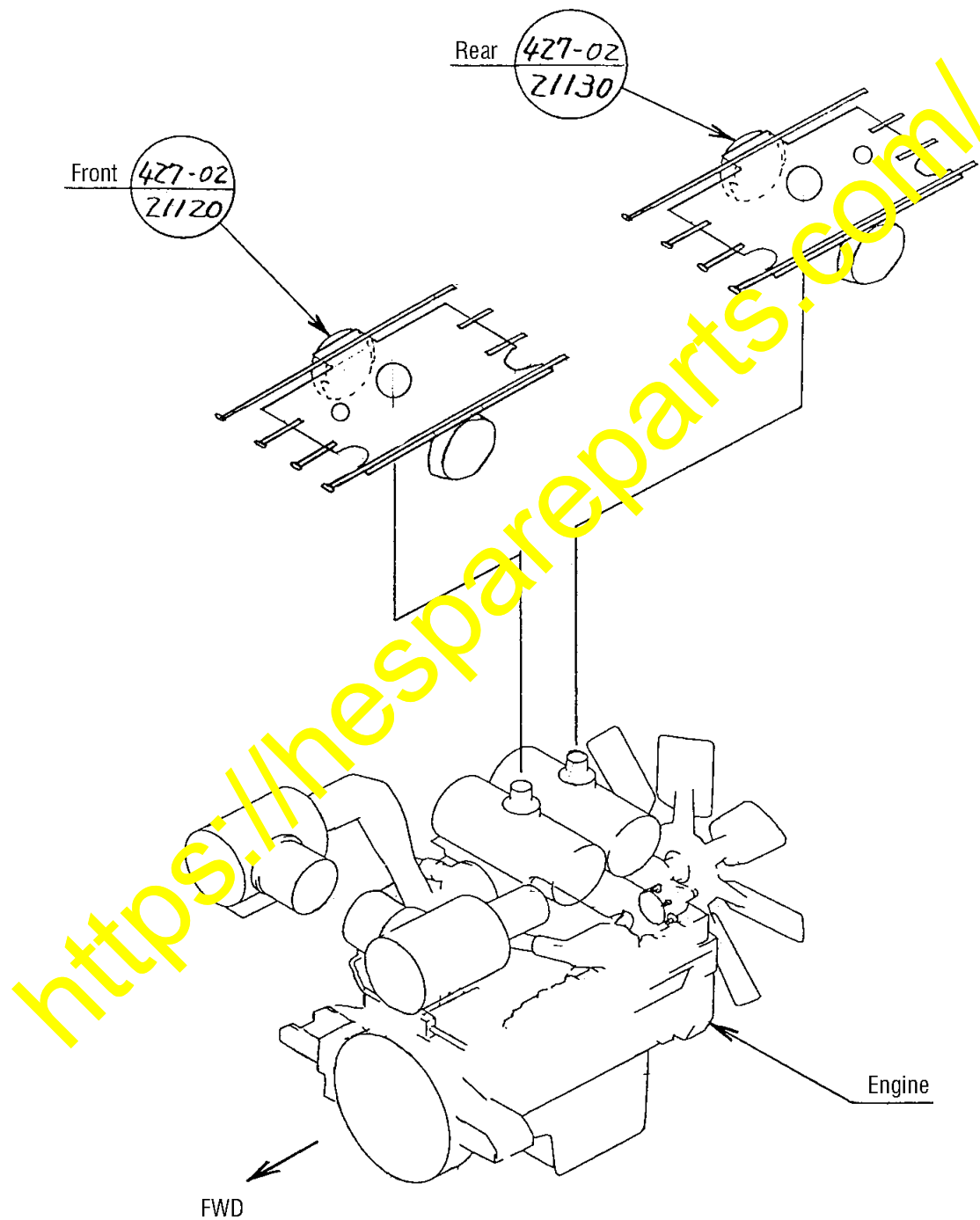
Tightening torque

	Tightening torque range (when using a torque wrench)	
Bolt	10.0 – 12.5 kgm	98 – 123 Nm
Hose	25.0 – 35.0 kgm	245.2 – 343.2 Nm
U-clamp	1.10 – 2.70 kgm	10.8 – 26.5 Nm



e. Installing the muffler covers

Install the covers to the mufflers located above the engine.




f. Installing the radiator guard and baffle plates

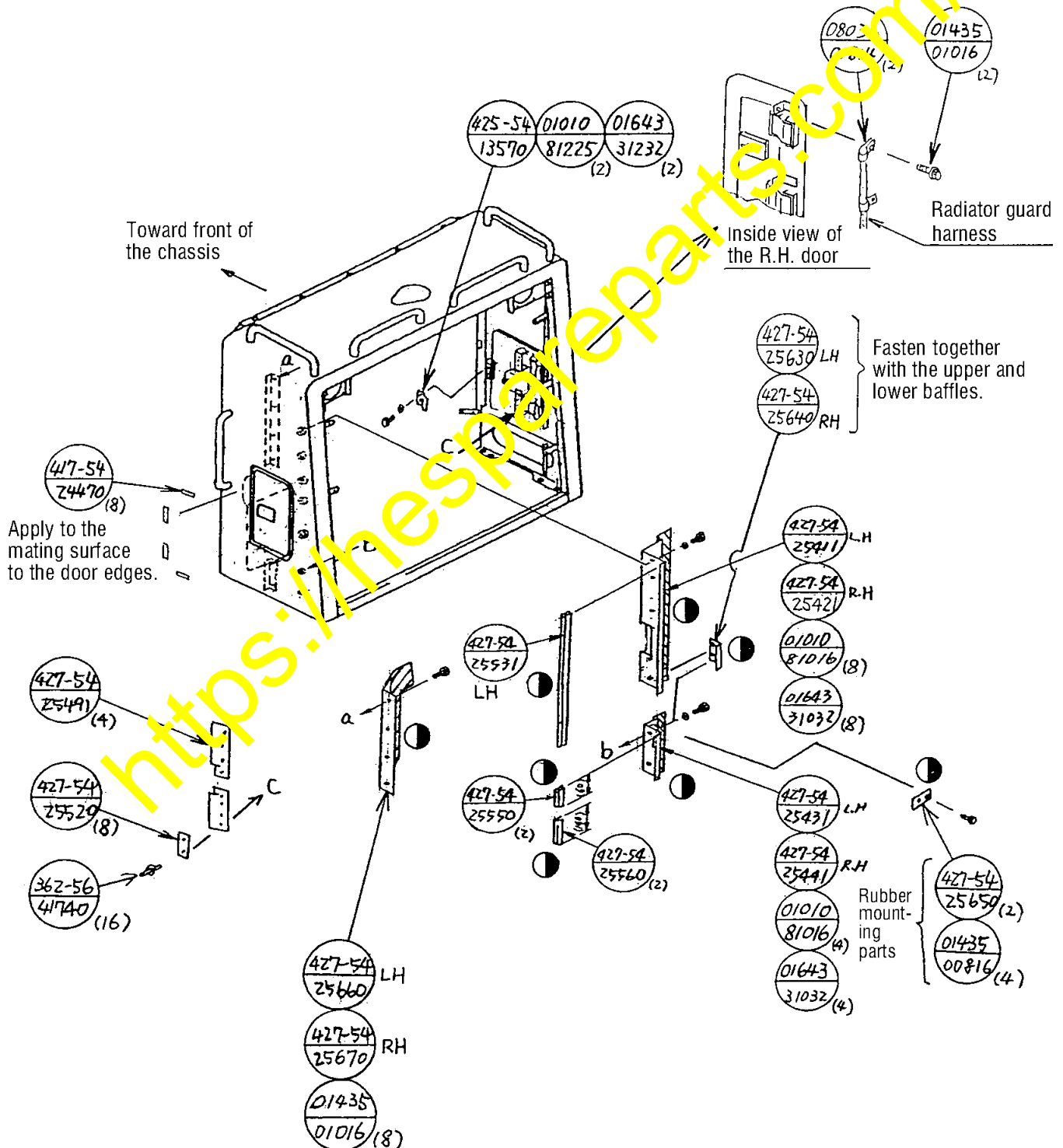
- Install newly prepared parts (baffles and door latch) to the radiator guard.

Tightening torque

	Tightening torque range (when using a torque wrench)	
Bolt (M10)	6.0 – 7.5 kgm	59 – 74 Nm
Bolt (M12)	10.0 – 12.5 kgm	98 – 123 Nm

(Note)

Install the parts marked  to the radiator guard before installing the radiator guard on the chassis.

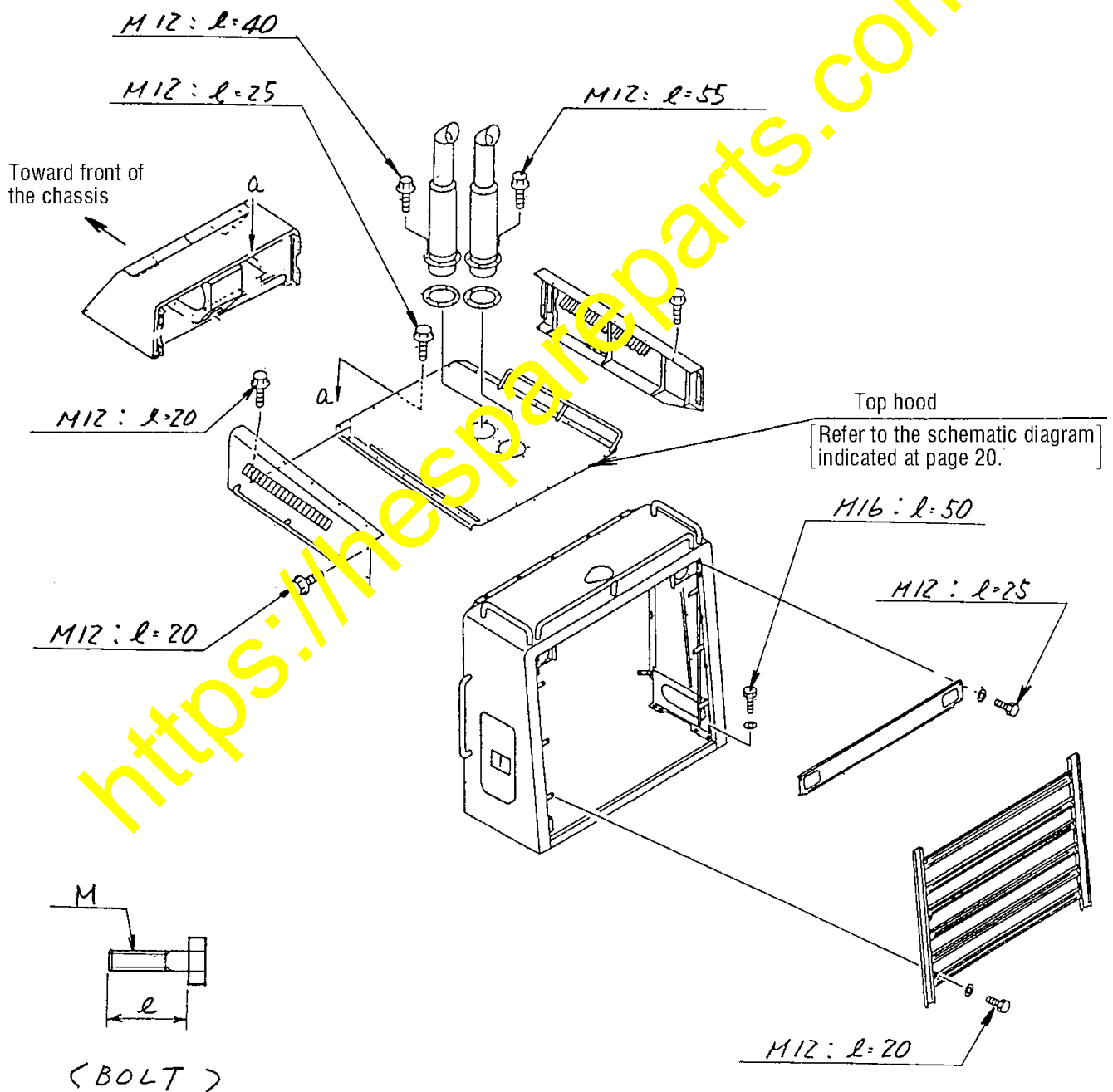


g. Installing the exterior parts

- Install the exterior parts which have been removed on page 6.

Tightening torque

	Tightening torque range (when using a torque wrench)	
Bolt (M12)	10.0 – 12.5 kgm	98 – 123 Nm
Bolt (M16)	25.0 – 31.5 kgm	245 – 309 Nm



Installing the top hood covers (plates)

Install the top hood cover plates to the top hood which has been reworked according to Section 5-b, fitting to the opened holes.

