

PARTS & SERVICE NEWS

REF NO.	AT03152
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SUBJECT: REPAIR PROCEDURE OF BUCKET ON WA1200-3

PURPOSE: To introduce modification procedure to reinforce the bucket on WA1200-3 wheel loaders

APPLICATION: WA1200-3 Wheel Loaders, Serial Nos. 50001 thru 50013
Except the buckets made locally by other than Komatsu.

FAILURE CODE: 7740HA

DESCRIPTION:

1. Introduction

When the bucket on the WA1200-3 wheel loaders are used for high digging loads (for example, pit excavation work, digging up of large stones, soil surface scraping work, digging work of unblasted natural ground and unloosening of natural ground, etc.), and also, quite frequently, cracks may occur in the wear plate at the bottom section of the bucket, in the welded section of the tooth adaptors and in the welded section of the protector mounting bosses.

This Service News introduces a procedure to reinforce the bucket.

2. List of parts

Part No.	Part Name	Q'ty	Remarks
42C-70-12222 (42C-70-12221)	Plate (Plate)	2 (2)	} For the 20 m ³ bucket
42C-70-12260	Plate	2	
42C-831-1251 (42C-831-1250)	Plate (Plate)	2 (2)	} For the 18 m ³ bucket
42C-70-12260	Plate	2	
42C-V63-1221 (42C-V63-1220)	Plate (Plate)	2 (2)	} For the 32 m ³ bucket
42C-V63-1230	Plate	2	

Bucket bottom wears plate

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 and the tooth, and the repair procedure Page 10

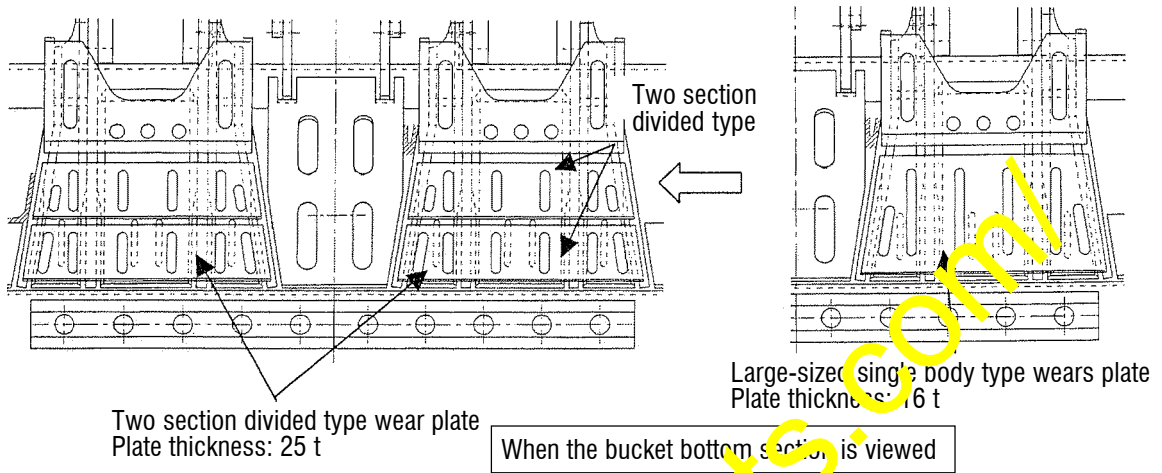
<https://hespareparts.com/>

4. Details of the modification

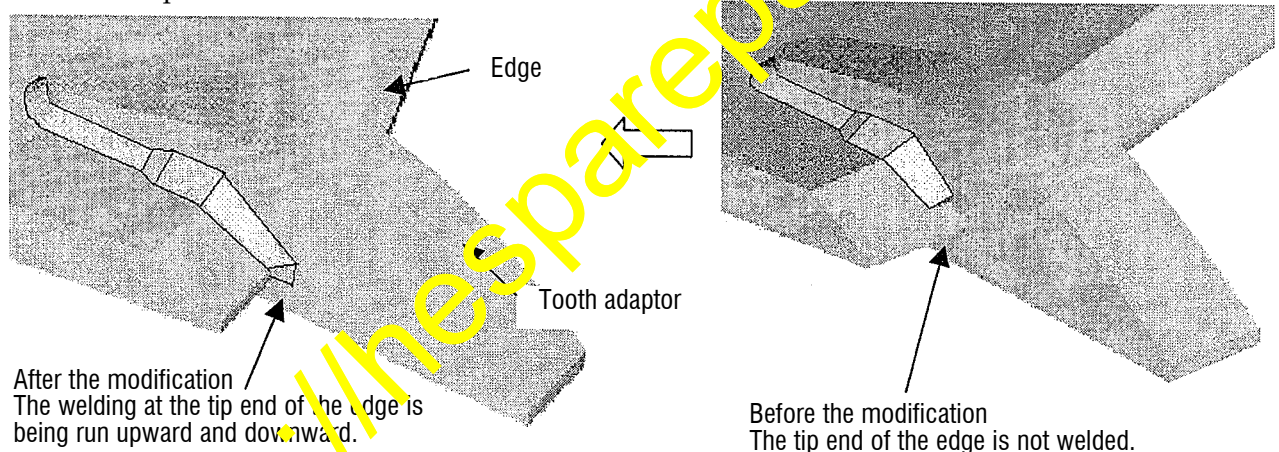
4-(1) Dividing the wear plate into two sections

So that the wear plate may be able to follow the deformations occurring in the bucket, the wear plate have been modified from the current large-sized single body type into two section divided type.

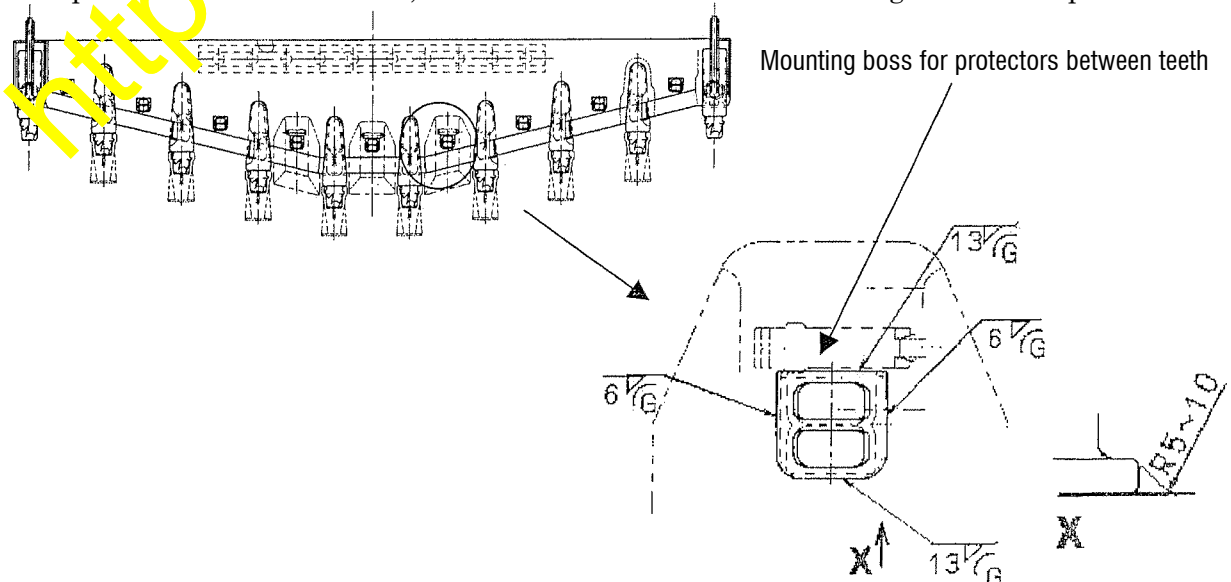
Also, the plate thickness of the wear plate has been increased from t 16 to t 25 for reinforcement.



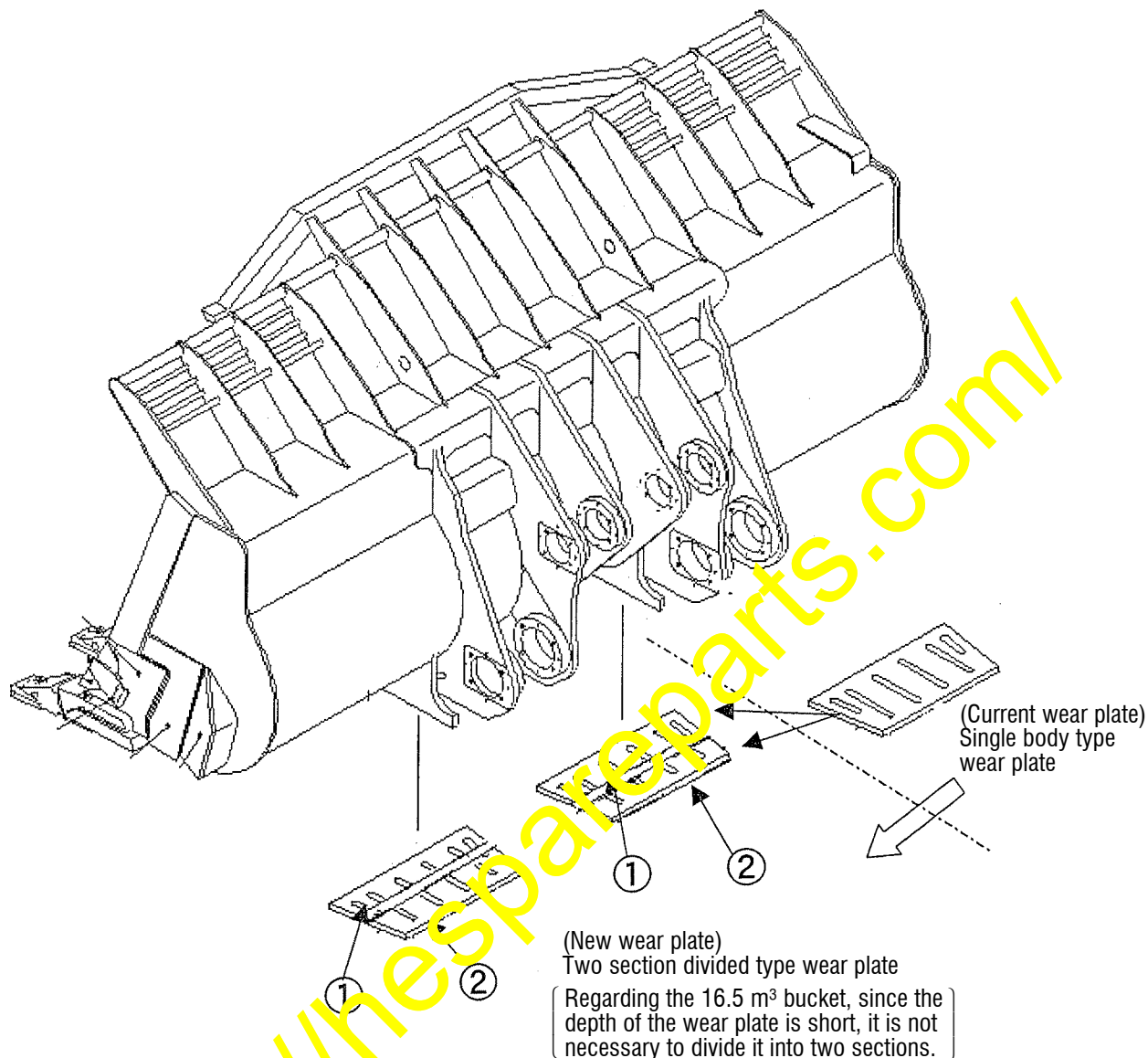
4-(2) The welding method for the tooth adaptor has been changed. By running the welding at the tip end of the edge upward and downward, stress concentration to the welding end can be prevented.



4-(3) By adding the grinder finishing process to the welded section of the mounting bosses for the protectors between teeth, stress concentration to the welding end can be prevented.



5. List of part numbers of the wear plates to use for this modification



Bucket capacity (m ³)	Part No. of the bucket weld	Part No. of the bucket bottom wear plate	
		①	②
32	42C-V63-1113	42C-V63-1221	42C-V63-1230
	Width × Depth	1457 × 578 (mm)	1259 × 578 (mm)
	Weight	125.8 kg	105 kg
20	42C-70-12117	42C-70-12222	42C-70-12260
	Width × Depth	1270 × 290 (mm)	1166 × 290 (mm)
	Weight	57.8 kg	53.4 kg
18	42C-831-1114	42C-831-1251	42C-70-12260
	Width × Depth	1237 × 190 (mm)	1166 × 290 (mm)
	Weight	38.4 kg	53.4 kg
16.5	42C-V77-1112	42C-V77-1220	---
	Width × Depth	1180 × 335 (mm)	---
	Weight	43.3 kg	---

6. Modification procedure

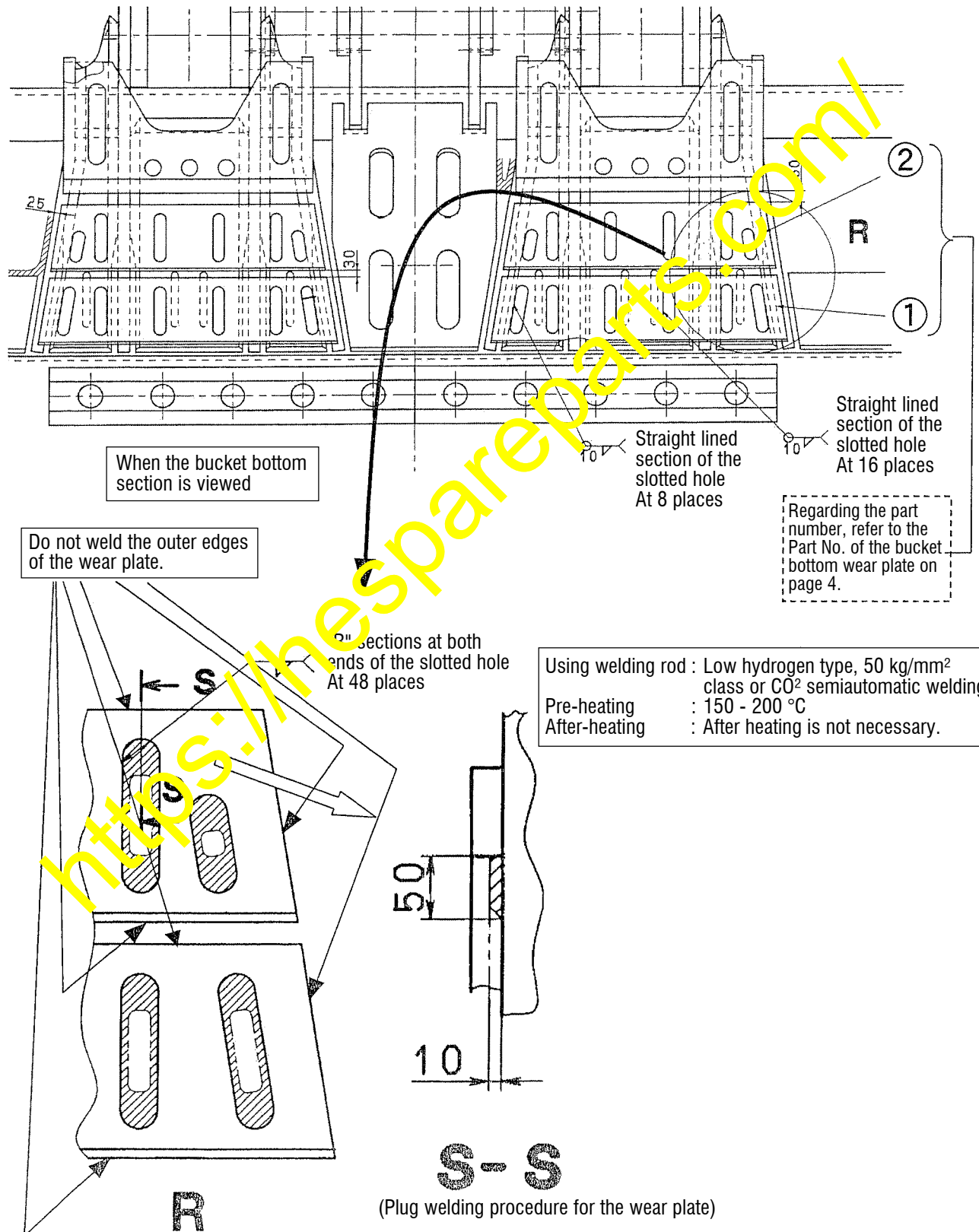
6-(1) Dividing the wear plate into two sections

6-(1)-① Remove 1 piece each of the wear plate on the LH side and on the RH side by gouging.

6-(1)-② Check that the runner plate (refer to the drawing below) is not cracked by use of the color checking method. In case cracks are found, remove the cracked section by gouging and make the repair by welding.

6-(1)-③ Weld the wear plates as per the instructions given in the drawing shown below.

- When welding the wear plate, carry out plug welding only.
- Do not weld the outer edges.

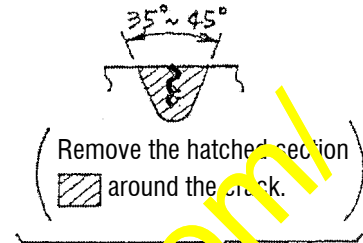


6-(2) Changing the welding method for the tooth adaptor

6-(2)-① Before starting the welding work, check that the welded section of the tooth adaptor is not cracked by use of the color checking method.

In case cracks are found, take the following measures. (Refer to page 3)

6-(2)-② Measures to take when cracks are found



(a) Remove the cracked section by use of a grinder (or by gouging).
At this time, adjust the size of the removing concave to a size possible to make welding.

(b) Carry out the color checking once again to confirm that the crack has been removed completely.

(c) Fill the gouged section by welding.
Using welding rod: Low hydrogen type, 50 kg/cm² class (JIS D5816 type or AWS E8016-G type)

Pre-heating : 150 - 200 °C Check the pre-heating temperature by use of a thermistor or a thermo chalk.

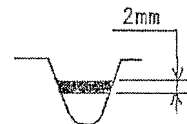
After-heating : After heating is not necessary.

Peening, etc. : The welding height for a single welding process should be about 2 mm in order to prevent occurrence of welding defects and cracks.

Also, immediately after finishing welding of each welding layer, carry out peening by use of the jet chisel, etc.

(d) Finish the welded section smoothly by use of a grinder and carry out the color checking once again.

The welding height for a single welding process

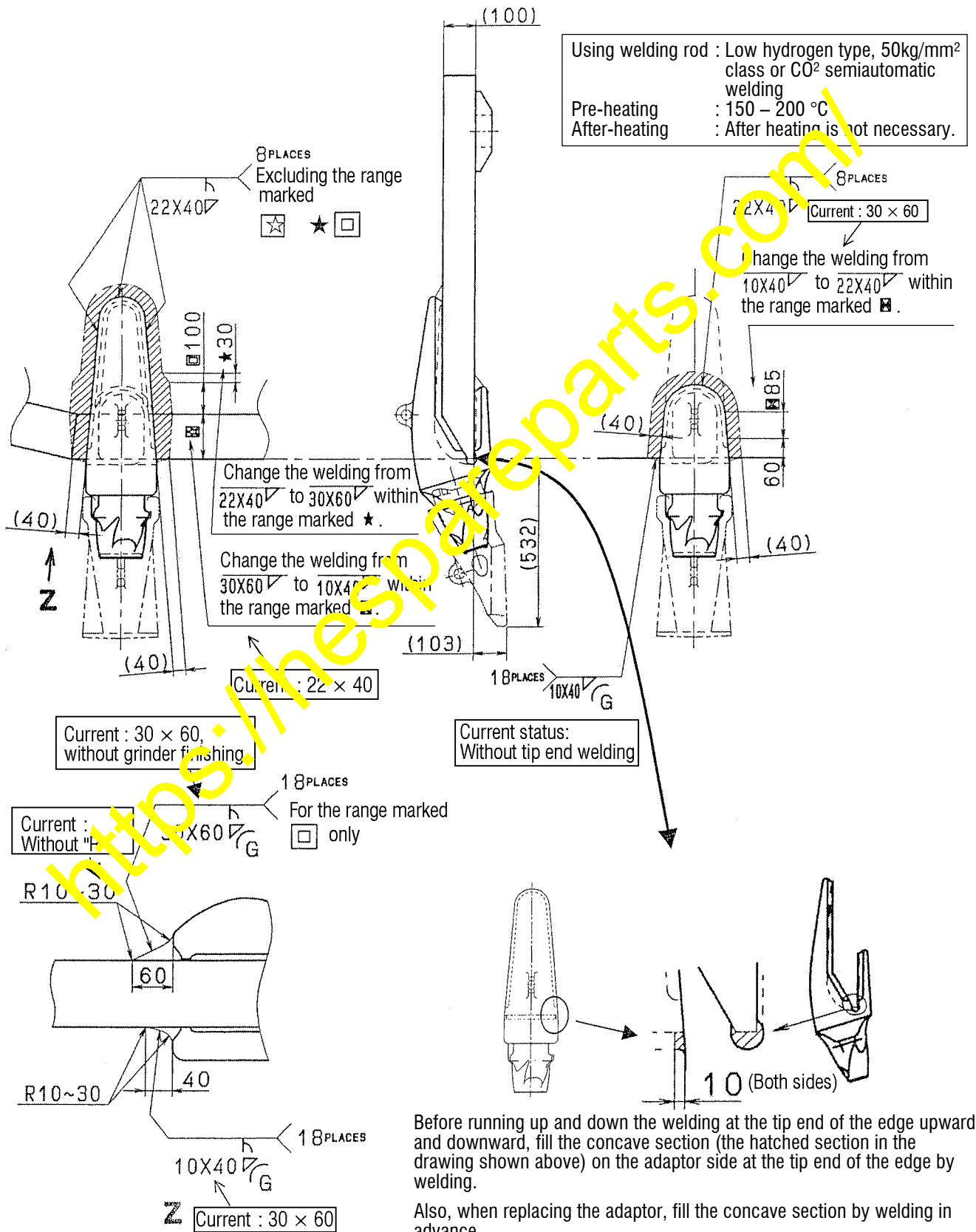


6-(2)-③ Changing the welding method for the bucket tooth adaptor

Change the welding leg length for the bucket tooth adaptor as per the instructions given in the drawing shown below and run up and down the welding at the tip end of the edge upward and downward.

(Undercut should not occur at the end section of the welding beads and remove overlap by use of a grinder.)

After finishing the welding work and after the welded section has cooled down, check that the cracks are not remaining in the welded section.

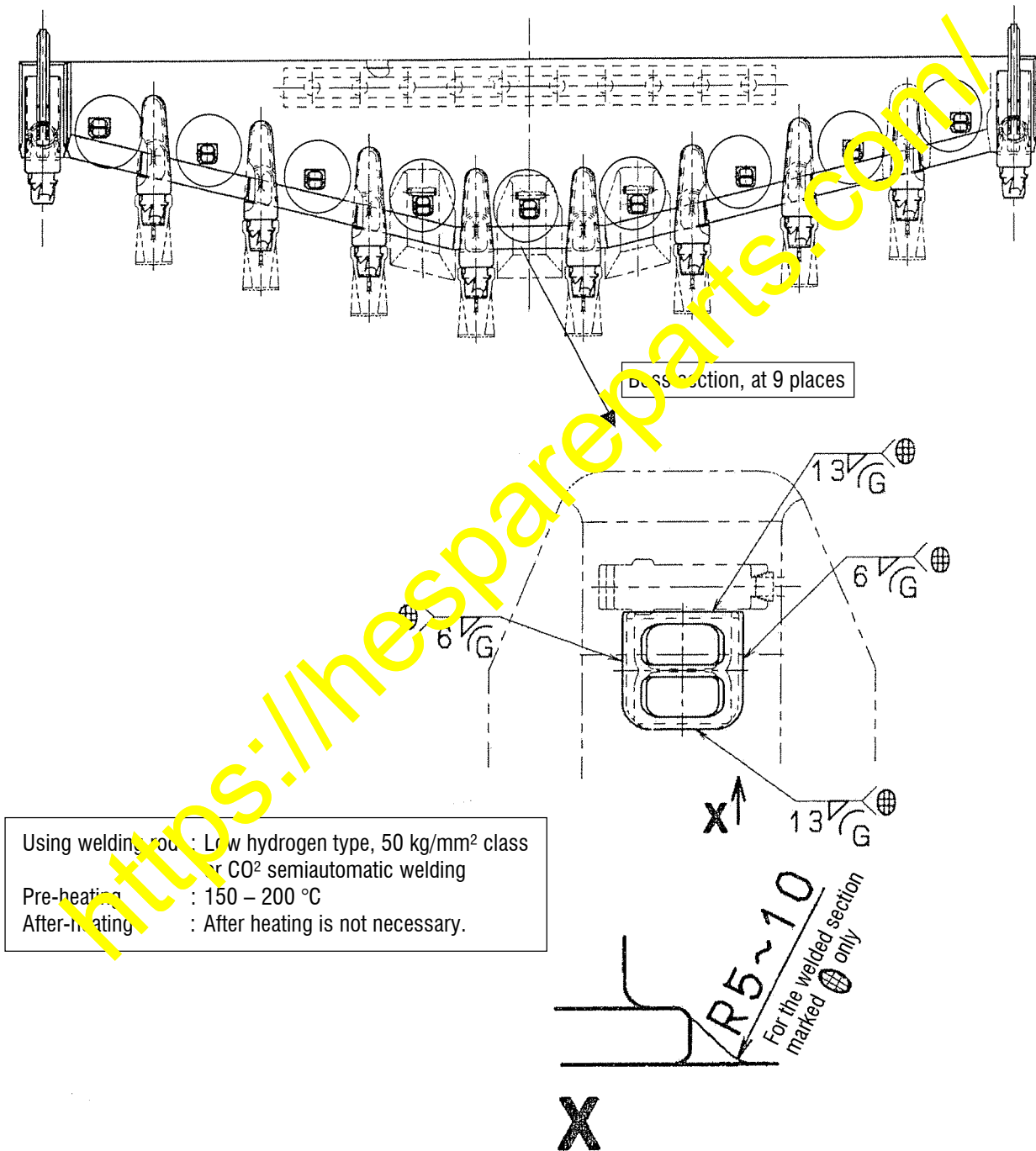


6-(3) Adding the grinder finishing process to the welded section of the mounting bosses for the protectors between teeth

6-(3)-① Before starting the welding work, check that the welded section of the mounting bosses for the protectors between teeth is not cracked by use of the color checking method.

In case cracks are found, repair the cracks by the measures to take when cracks are found as per the above Section 6-(2)-②.

6-(3)-② Add grinder finishing to the welding of the outer circumference of the boss as per the instructions given in the drawing shown below.



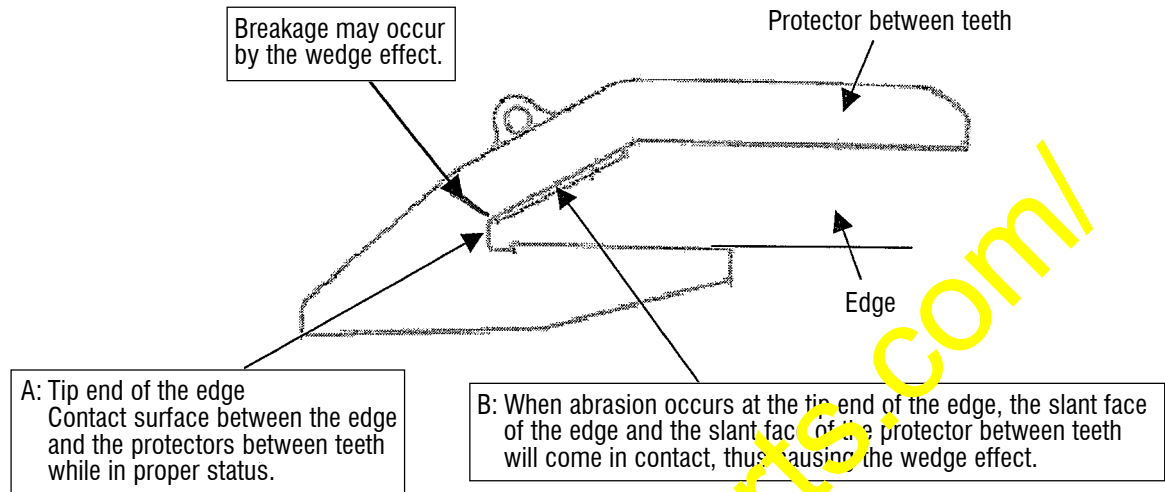
7. Regarding the maintenance

Even after this modification has been implemented, perform inspections of the cracks at every 3,000 hours or after one year and carry out the necessary repair work.

Regarding the inspection method and repair method, refer to this modification manual.

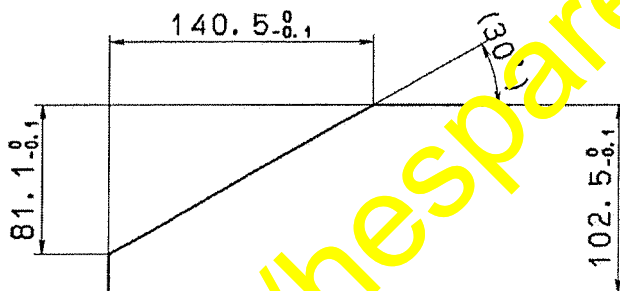
8. Inspection procedure for the wear and fatigue at the tip end section of the edge

- 8-(1) While the machine is being used, abrasion will occur in the section "A" at the tip end section of the edge, and the protectors between teeth and the tip end section of the edge will not come in contact any more (per section "A" in the drawing shown below), instead, the slant face of the edge and the protectors between teeth will come in contact (per section "B" in the drawing shown below), thus causing the wedge effect. By this wedge effect, cracks may occur in the protectors between teeth.



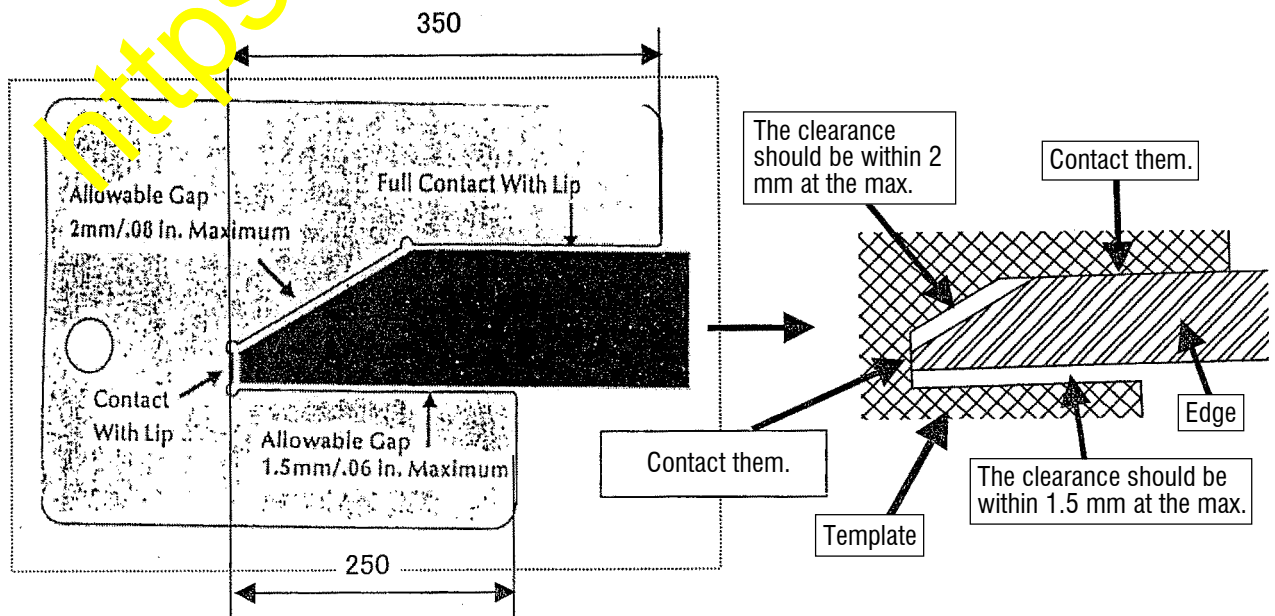
- 8-(2) To prevent occurrence of the aforementioned failure, carry out template checks at every 3,000 hours or after one year and if cracks are found, repair the cutting edge by the build-up welding and grinder finishing.

- Make out the template at the dimensions indicated below.

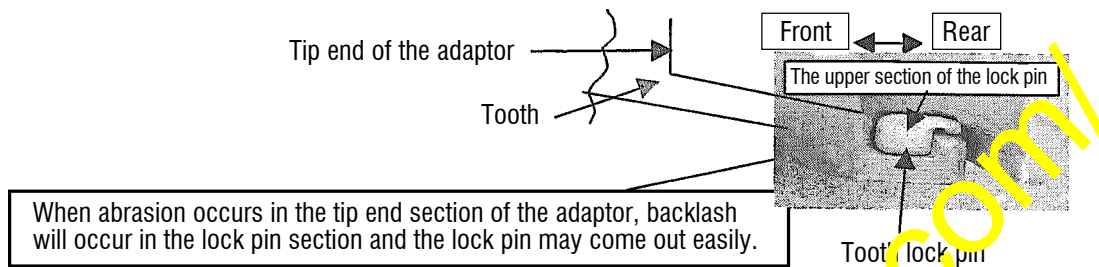


Using welding rod : Low hydrogen type, 60 kg/mm² class or CO₂ semiautomatic welding
 Pre-heating : 150 – 200 °C
 After-heating : After heating is not necessary.

- Check the clearance by use of the template as per the instructions given in the drawing shown below, and if the clearance is not within the specification, carry out the build-up welding for repair.

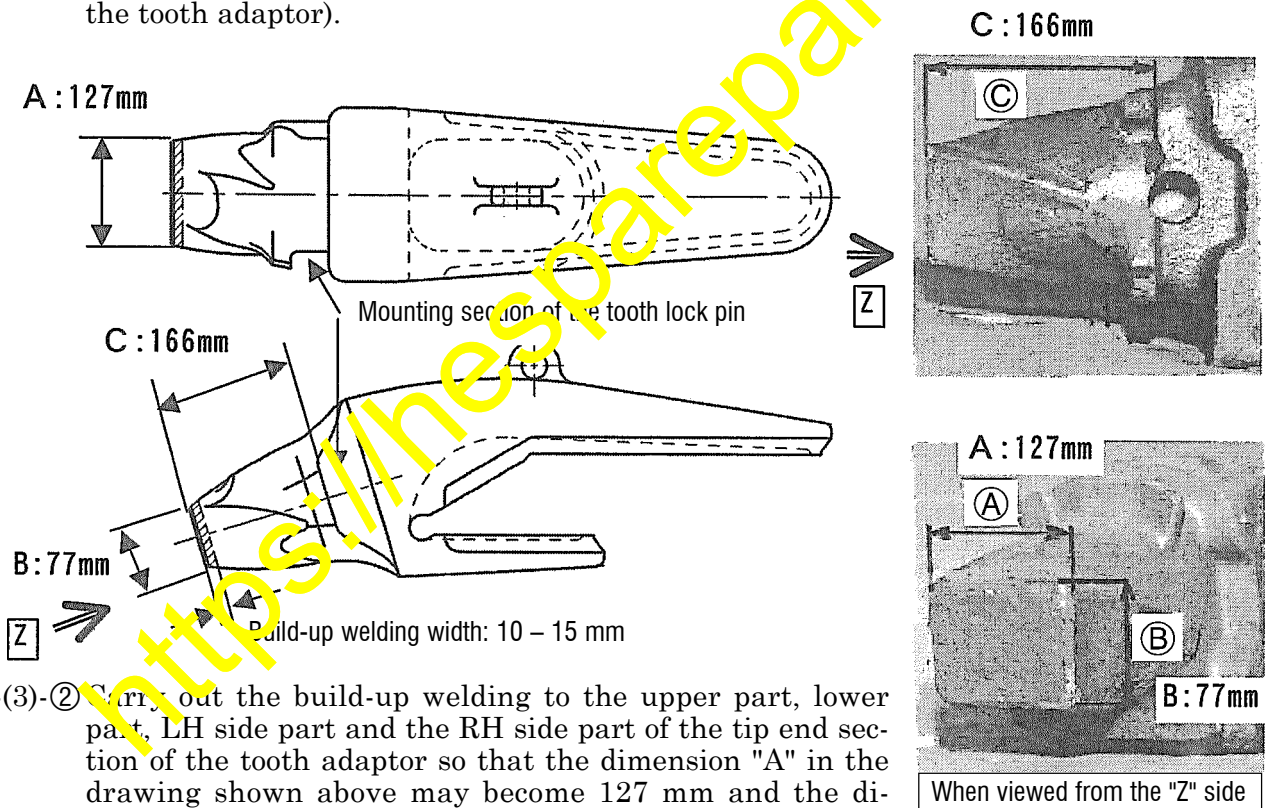


9. Inspection procedure (dimension checks) for the contact section between the tooth adaptor and the tooth, and the repair procedure
- 9-(1) While the machine is being used, abrasion will occur in the contact section between the tooth and the tooth adaptor, and the lock pin may come out.
- 9-(2) When the tip end section of the tooth adaptor wears, the setting depth of the tooth lock pin becomes shorter and the tooth lock pin may come out. In these cases, although it is recommended to replace the tooth adaptor, if it is desired to make a necessary repair by carrying out the build-up welding to the tip end section, follow the procedure described below.
 Make checks of the contact section regularly when replacing the tooth.



9-(3) Repair procedure

- 9-(3)-① Carry out the build-up welding to the tip end section of the tooth adaptor so that the dimension "C" in the drawing shown below may become 166 mm (dimension between the front side of the mounting section of the tooth lock pin and the tip end section of the tooth adaptor).



- 9-(3)-② Carry out the build-up welding to the upper part, lower part, LH side part and the RH side part of the tip end section of the tooth adaptor so that the dimension "A" in the drawing shown above may become 127 mm and the dimension "B" in the drawing shown above may become 77 mm.
 The build-up welding width should be 10 - 15 mm.

Since this section is being twisted, check the shape and contact by the new tooth while carrying out the build-up welding.

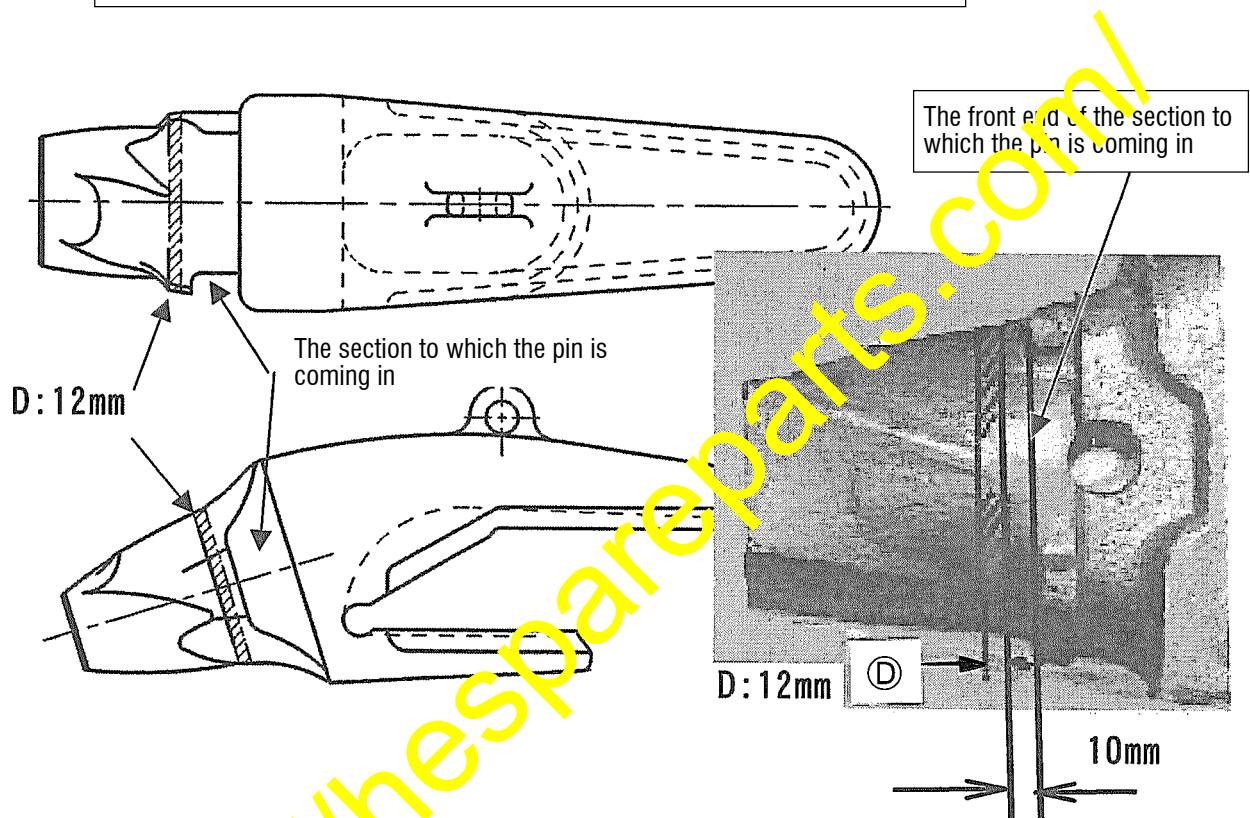
After finishing the above repair work, check that the pin will not come out after using the machine for 8 hours.

Using welding rod	: Low hydrogen type, 60 - 80 kg/mm ² class
Pre-heating	: 150 - 200 °C
After-heating	: After heating is not necessary.

- 9-(3)-③ Carry out welding all around the cylindrical section of the adaptor starting from the point 10 mm away the front end (refer to the drawing shown below) of the groove section of the adaptor to which the pin is coming in (the section "D" per the drawing shown below). (At a width of 12 mm)

Regarding the build-up welding height, match to the new tooth.

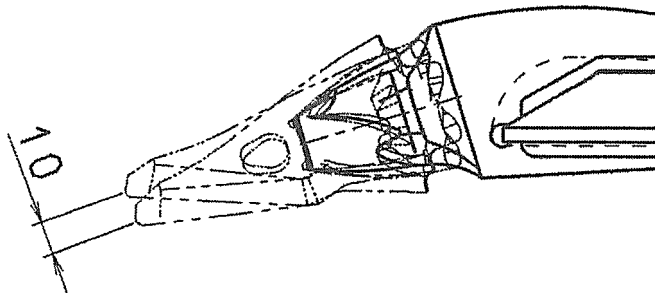
Using welding rod	: Low hydrogen type, 60 – 80 kg/mm ² class or HF600 class hardened build-up-welding rod (in case abrasion is deep)
Pre-heating	: 150 – 200 °C
After-heating	: After heating is not necessary.



- 9-(3)-④ Install the new tooth on the build-up-weld to check the contact.

Check that the deviation in the vertical direction at the tip end section of the tooth is within 10 mm. (Refer to the drawing below.)

The deviation in the vertical direction at the tip end section of the tooth should be within 10 mm.



- 9-(3)-⑤ After finishing the above repair work for the adaptor by welding, check that the tooth and the lock pin will not come out after using the machine for 8 hours.