

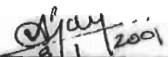
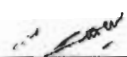
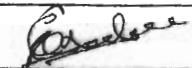
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GOVERNMENT OF INDIA
(Ministry of Railways)

SPECIFICATION FOR
HARD LINING WELDING
INSTRUCTIONS FOR
CHUCK HEAD JAWS

Issued by

MECHANICAL DRAWING OFFICE
WHEEL & AXLE PLANT
YELAHANKA, BANGALORE-560 064
I N D I A

		
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**HARD LINING WELDING INSTRUCTION FOR
CHUCK HEAD JAWS**

CHUCK HEAD JAWS

Proper forging result depends upon the careful manufacture and upkeep of chuckhead jaws. The jaws are fixed on the chuckheads to the chuck lever and held suitably by pins.

The jaws are to be manufactured and reconditioned as per WAP Drawings.

DESIGN AND WELDING INSTRUCTION FOR CHUCK HEAD JAWS:

The jaws are made of IS:1875 C1-4 Forged. The jaws hot contact area is to hold a billet of about 1200 °c hot and has to be reinforced with Udimet 520 or similar electrode.

WELDING INSTRUCTIONS:

I) PRE WELDING STRESS RELIEVING:

The jaws must be stress relieved at 550 °c for about 10-12 hours and cooled at a rate of 15 °c per hour in the furnace.

II) After stress relieving the jaws are to be cleaned thoroughly specially the hot surface contact area are to be cleaned metallic bright. For repair welding cracks and breaks if any are to be milled to a minimum depth of 10 mm for conducting Dye penetrant test for crack detection.

III) Conduct Dye penetrant test on the milled surface and continue removal of cracks by milling till surface is free from cracks.

IV) Welding of HOT CONTACT Layer Using UDIMET 520 or similar electrode:

Prior to welding with UDIMET 520 or similar electrode the jaws are to be metallic bright.

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Preheat the jaws inside the furnace to 350 c and maintain this temperature till the entire welding operation is completed by covering outside with asbestos or ceramic wool.

Apply the ARGON WELD 52 electrode in the TIG/MIG welding process. Welding on thickness has to be to the drawing dimensions plus min 3mm machining allowance. In case of any cracks observed after welding remove the cracks by milling and reweld till cracks disappear.

In the event of jaw opening is more than drawing size of 100mm the jaws are to be heated before post welding stress relieving and closed as per drawing dimension and if the width is less necessary opening has to be done in order to maintain the size.

POST WELDING PRE MACHINING STRESS RELIEVING:

The jaws must be stress relieved after complete welding in a electric furnace with temperature controlling facility. Stress relieving is to be done at 550 °c for about 10-12 hours and cooled at a rate of 15 °c per hour in the furnace.

MACHINING AFTER WELDING

If no cracks exists the jaws can be brought to size as per drawing by machining process like milling. Final check on dimensions and D.P Test will be carried out before despatch of sets. In the event of jaw opening is more than drawing dimensions the jaws are to be heated before post welding stress relieving and closed as per drawing dimension.

NUMBERING:

After machining, the jaws should be marked with the jaw number given by WAP by means of weld deposite of 3 mm. Letter size should not less than 1".

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STAGE INSPECTION:

Stage inspection will be carried out as mentioned below by WAP's Inspecting official and satisfactory completion report to be obtained:

1. Grooving before welding of buffer layer
2. During Welding of buffer and Tig layer
3. Final Inspection.

Records for pre and post welding stress relieving is to be submitted to WAP's Inspecting official and clearance obtained.

IV) Welding of Buffer Layer Using BO FOX SACA or similar electrode:

Preheat the jaws inside the furnace to 350 c and maintain this temperature till the entire welding operation is completed. (cover outside with asbestos or ceramic wool).

Fill the buffer layer with Bo Fox SACA electrode from bottom of the Hot contact area providing a depth of about 8 mm for welding of Hard facing layer and suitable machining allowance. Each welding fiend to be hammered immediately after welding.

The welding current intensity has to be adjusted in such a way that the electrode flows smoothly and equally .Too high current intensity causes overheating, and too low intensity a bad adhesion and interruption of the arc. Thew slag comes off easily.

The average current setting for 5mm dia electrode 180-190 amps current intensity.

Clean the welded area metallic bright after buffer layer welding and carry out DP Test for crack detection in case cracks are observed remove the area by milling and reweld till cracks disappear.

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AMENDMENT SHEET

ALT.	DATE	DESCRIPTION	JOB No	APPROVED BY	
				DESI.	SIGN.

<i>Ajay</i> 08/01/2001	<i>W</i> 08/01	<i>S</i>
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