



**QM-C-8.1/CASNUB BOGIE/0123A**

**INSPECTION CHECK SHEET FOR CASNUB BOGIE SIDE FRAME (DRG.-WD-89067-S/3)**

RDSO Specification No. WD-21-CASNUB-22NLB Bogie-93, Rev-2)  
WD-17-CASNUB-22HS-BOGIE-92, Rev -3)  
WD-34-CASNUB-22HS (MOD-I)-BOGIE-2004  
WD-39-CASNUB-22HS (MOD-II)-BOGIE-2009

- 
- 1 Name of Manufacturer :
  - 2 Address of works :
  - 3 Date of offer :
  - 4 RDSO File No :
  - 5 Description of material :
  - 6 Drawing and Alt. No :
  - 7 Specification and grade :
  - 8 P.O. No and Date :
  - 9 Total quantity Ordered :
  - 10 Quantity Earlier passed :
  - 11 Quantity now offered:
  - 12 Consignee :
  - 13 D.P :

- a. Date of inspection
- b. Quantity accepted
- c. Quantity rejected
- d. Balance order

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**Note:**

These check sheets do not detail all the dimensions or technical requirements of respective Bogie assemblies/components.

These check sheets are issued only for General Guidance & assistance of inspecting officials. Notwithstanding the above, the inspecting officials are advised to refer to relevant drawings and/or relevant specifications to confirm conformity to the specified dimensions and technical details.

**1. A) DETAIL OF SIDE FRAME CASTINGS OFFERED**

S. No. of Side Frame Casting Offered	Heat No.	Date of Cast	Date of heat Treatment	Date of heat clearance by RDSO

**1. B) DETAIL OF WELD REPAIR OF SIDE FRAME CASTINGS**

S. No. of Side Frame Castings repaired	Heat No.	DPT done yes/no	heat Treatment done
<b>Detail of DPT Agents Used in Crack Detection of Side Frame</b>			
Agent	Make		Expiry Date
CLEANER			
PENETRANT			
DEVLOPER			

**1. C) VISUAL/PHYSICAL EXAMINATION**

	<b>Specified</b>	<b>Observations</b>				
Surface defect	Inclusion, sand fusion, blow holes, folds, cracks, misruns, surface imperfections, unfused chaplets, porosity.					
Surface finish	Surface finish check by SCRATA Comparators.					
Marking Details	As per Marking drg.- WD-89067-S/3					
Weighment Details (5%)	Specified Side frame weight - 430 ± 5.5%					

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## 2. CHEMICAL, MICRO-EXAMINATION & MECHANICAL PROPERTIES TEST

### 2. A) CHEMICAL COMPOSITION (AS PER M&C HEAT CLEARANCE REGISTER)

Element\ Heat No.											
C - 0.2-0.3%											
Mn- 0.6-1.1%											
Si - 0.3-0.5%											
S - 0.04% (Max)											
P - 0.4% (Max.)											
S+P-0.07% Max											

### 2. B) MICRO-EXAMINATION (AS PER M&C HEAT CLEARANCE REGISTER)

Heat No											
Grain Size 4 Min											
Microstructure Normalized											

### 2. C) MECHANICAL PROPERTIES (AS PER THE HEAT REGISTER)

Specified Value (N/mm <sup>2</sup> )											
UTS-500 (Min)											
YS-300 (Min)											
El %- 20 (Min)											
RA%-30 (Min)											
IMP-25 J (Min)											
Date of heat clearance											

## 3. GAUGING FOR INDIVIDUAL SIDE FRAME CASTING - 5%

Sr. No.	DESCRIPTION	RDSO GAUGE DRAWING NO.	OBSERVATION			
1	Central opening height gauge (GO & NO GO )	WD – 98022 – S/2				
2	Distance between friction liner & dimension 470 mm	WD – 98022 – S/3, 3A				
3	Bolster Anti Rotation control lug gauge (GO & NO GO )	WD – 98022 – S/4				
4	Column side width - cum off set check	WD – 98022 – S/5				
5	Central opening bottom distance gauge ( GO & NO GO )	WD – 98022 – S/6				
6	Central opening bottom profile ( GO / NO GO )	WD – 98022 – S/7				
7	Spring plank seat profile gauge	WD – 98022 – S/8				

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8	Pedestal roof profile & width check	WD – 98022 – S/9				
9	Pedestal jaw lug vertical profile check	WD – 98022 – S/10				
10	Pedestal jaw lug transverse profile check	WD – 98022 – S/11				
11	Pedestal jaw gap check ( GO/ NO GO )	WD – 98022 – S/12				
12	Pedestal to key slot distance limit gauge	WD – 98022 – S/13,13A				
13	Brake beam pocket size check	WD – 98022 – S/20				
14	Brake beam pocket Nib hole check	WD – 98022 – S/21				
15	Jaw opening center marking device	WD – 98022 – S/22				
16	Rivet fit bolt hole position check gauge	WD – 98022 – S/23				
17	Column locater for side frame rivet	WD – 98022 – S/24				
18	Warp check gauge	WX – 01093 D				
19	Pedestal roof level distance check	WX – 01093 E				
20	Wheel base check cum pairing gauge	WX – 01093 F				
21	Central opening off set check	WX – 01093 G				
22	Brake beam location alignment check	WX – 01093 H				

#### 4. LUG ANALYSIS TEST

(Break one lug from any Side Frame)

	M&C Heat Register	RDSO Observation
<b>Specified Value</b>	SF Sl. No.	SF Sl. No.
	Heat No.	Heat No.
<b>1. Chemical</b>		
C - 0.2-0.3%		
Mn- 0.6-1.1%		
Si - 0.3-0.5%		
S - 0.04% (Max)		
P - 0.04% (Max.)		
S+P - 0.07% (Max.)		
<b>2. Grain Size ASTM 4 or finer</b>		
<b>3. Microstructure Normalized</b>		

#### Final Observations:

1. Chemical Composition is as per STR and RDSO observed values are comparable with M & C heat clearance register.
2. Checked H.T. Register & confirmed that all the serial no. offered have been properly heat treated as per H.T. register.

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**7. LOAD TESTING REPORT**

a) **Proof Load Test:**  
(1 in 50 castings)

Side Frame casting No.	Vertical load	Max. Deflection	Permanent set (Max)
	Specified - 117t	---	0.4mm

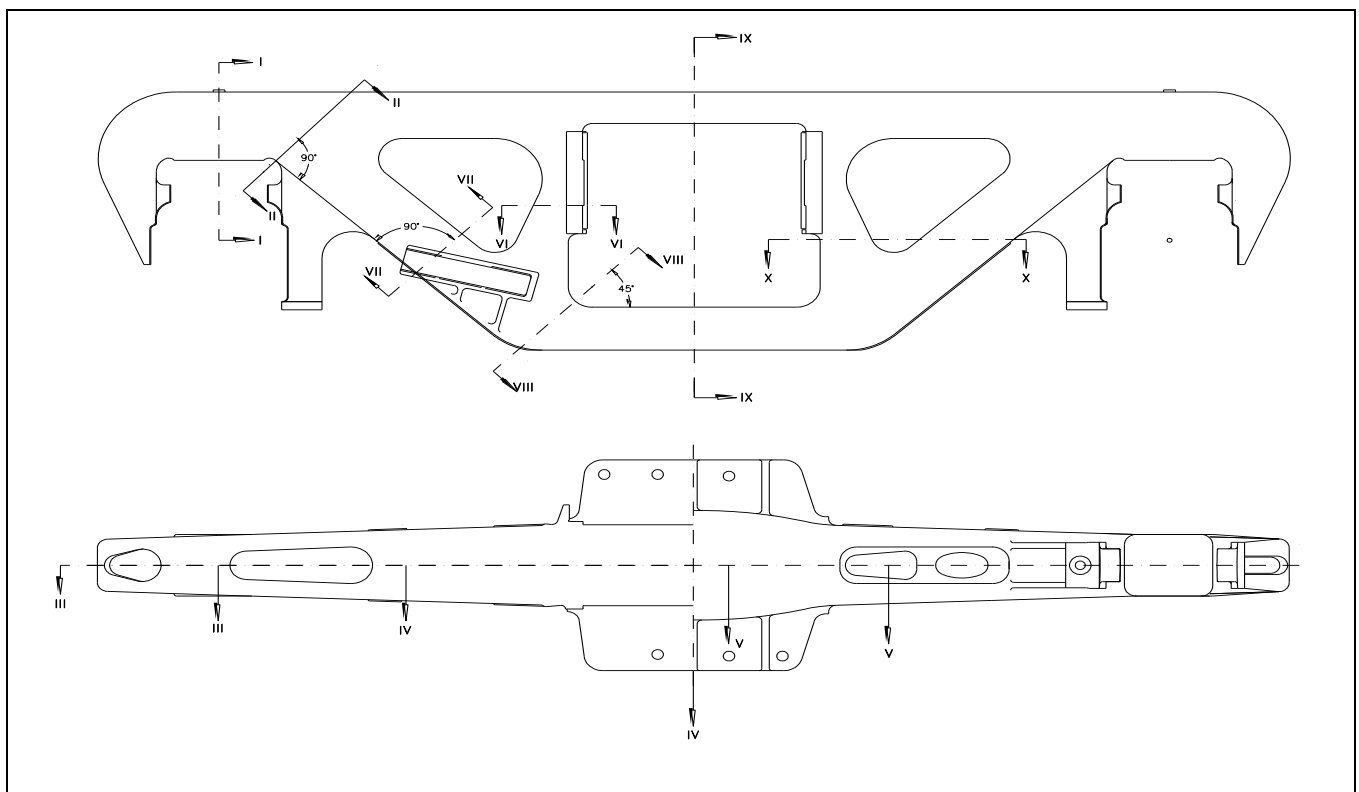
a) **Destructive Load Test -**  
(1 Side Frame in 100 bogies up to first 200 bogies thereafter 1 in 1000)

Side Frame casting No.	Vertical load	Observation
	Specified - 234t	No crack or fracture

NOTE: - Suitable crack detection test to be carried out before and after load testing.

**8. SECTIONING TEST -**

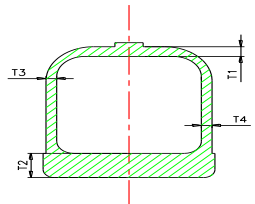
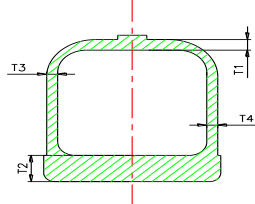
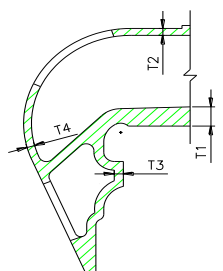
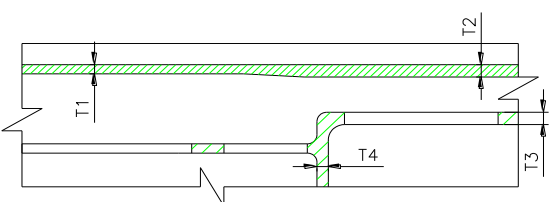
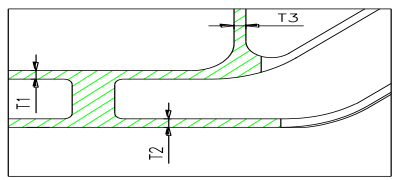
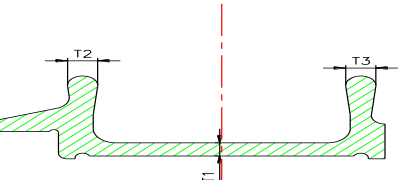
(Castings subjected to destructive test shall be sectioned as per sketch given in specification)



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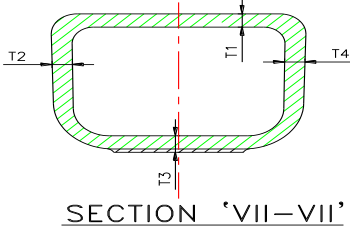
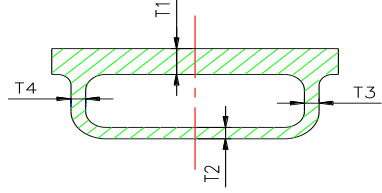
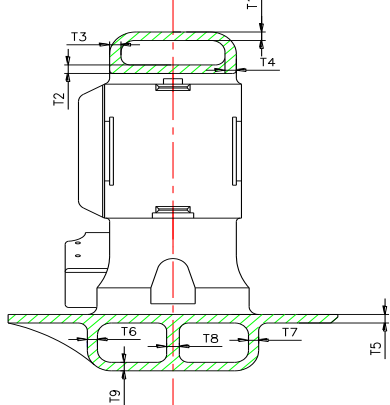
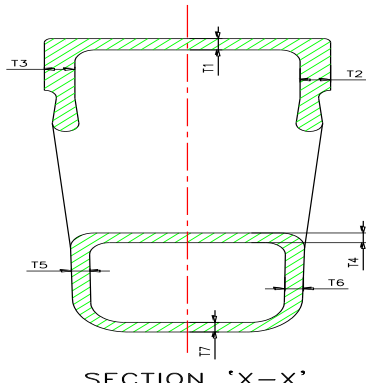


<b>I-I</b>	T1	16		 SECTION 'I-I'
	T2	29		
	T3	14		
	T4	14		
<b>II-II</b>	T1	16		 SECTION 'II-II'
	T2	31		
	T3	14		
	T4	14		
<b>III-III</b>	T1	29		 SECTION 'III-III'
	T2	16		
	T3	16		
	T4	16		
<b>IV-IV</b>	T1	21		 SECTION 'IV-IV'
	T2	16		
	T3	21		
	T4	15		
<b>V-V</b>	T1	20		 SECTION 'V-V'
	T2	20		
	T3	15		
<b>VI-VI</b>	T1	15		 SECTION 'VI-VI'
	T2	24		
	T3	24		

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<b>VII-VII</b>	T1	15		 <p style="text-align: center;">SECTION 'VII-VII'</p>
	T2	16		
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	T4	16		
<b>VIII-VIII</b>	T1	48		 <p style="text-align: center;">SECTION 'VIII-VIII'</p>
	T2	20		
	T3	21		
	T4	21		
<b>IX-IX</b>	T1	21		 <p style="text-align: center;">SECTION 'IX-IX'</p>
	T2	21		
	T3	21		
	T4	21		
	T5	20		
	T6	20		
	T7	20		
	T8	20		
	T9	20		
<b>X-X</b>	T1	15		 <p style="text-align: center;">SECTION 'X-X'</p>
	T2	16		
	T3	16		
	T4	15		
	T5	16		
	T6	16		
	T7	19		

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