



QM-C-8.1/CASNUB BOGIE/0001B

INSPECTION CHECK SHEET FOR NLB/NLC BOGIE BOLSTER(Drg No.-WD-89067-S/4)

(RDSO specification No. WD-21-CASNUB-22NLB Bogie-93, Rev-2)

-
- 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 :
 - 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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RDSO Representative
Name Designation & Stamp



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 Bolster castings offered

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

B) Detail of weld repair of Bolster castings

S. No. of Bolster Castings repaired	Heat No.	DPT done yes/no	heat Treatment done

Detail of DPT Agents Used in Crack Detection of Bolster

Agent	Make	Expiry Date
CLEANER		
PENETRANT		
DEVLOPER		

C) Visual/Physical Examination

	Specified	Observations				
Surface defect	Free from 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 drawing WD-89067-S/4					
Weighment Details (5%)	Specified Bolster weight - $565 \pm 4.5\%$					

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1. Chemical, Micro-examination & Mechanical Properties Test

A) Chemical Composition (As Per M&C Heat Clearance Register)

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

B) Micro-examination (As Per M&C Heat Clearance Register)

Grain Size ASTM 4 or finer										
Microstructure Normalized / Normalized & Tempered and should be Non-dendritic										

C) MECHANICAL PROPERTIES (AS PER THE HEAT REGISTER)

Specified Value Mpa)										
UTS-500(Min)										
YS-300(Min)										
El in 2 inch % - 20 (Min)										
RA%-30 (Min)										
IMP-25 J (Min)										

2. GAUGING FOR INDIVIDUAL BOLSTER CASTING - 5%

S. NO.	DESCRIPTION	RDSO GAUGE DRAWING NO.	OBSERVATION			
1	Limit gauge for lateral lug gap (GO/ NO GO)	WD – 97031 – S/2				
2	Snubber pocket width check (GO/NO GO)	WD – 97031 – S/3				
3	Pocket & Lug alignment check (GO/NO GO)	WD – 97031 – S/4				
4	Lug Edge distance check (GO/NO GO)	WD - 97031 – S/5				

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5	Bolster top spring height gauge	WD – 97031 – S/8				
6	Bolster top side bearer height check	WD – 97031 – S/9				
7	Spring spigot location check	WD – 97031 – S/10				
8	Snubber pocket angle check	WD – 97031 – S/11				
9	Wedge wing profile check	WD – 97031 – S/12				
10	Bolster spigot height check	WD – 97031 – S/13				
11	Span squareness & co - axiality check	WX – 01093 AB				
12	Co - planarity check	WX – 01093 CC				

3. LUG ANALYSIS TEST

Break one lug from any Bolster

	M&C Heat Register		RDSO Observation	
Specified Value	Bolster Sl. No.		Bolster Sl. No.	
	Heat No.		Heat No.	
1. Chemical				
C - 0.2 to 0.3%				
Mn- 0.6 to 1.1%				
P - 0.04 (Max)				
S - 0.04 (Max)				
Si - 0.3 to 0.5%				
S+P -0.07%Max				
2. Grain Size ASTM 4 or finer				
3. Microstructure Normalized / Normalized & Tempered (should be Non-dendrites)				

Final Observation:

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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4. MAGNETIC PARTICLE TEST

**NOTE - 100% MPI has to be done at locations given in sketch of the specification.
5% counter check to be done by RDSO.**

Heat No.	Casting Serial No.	OBSERVATION	REMARKS

5. RADIOGRAPHIC TEST- (1 in 100 Bogies up to 300 bogies thereafter 1 in 500 bogies) Bolster Locations as per sketch given in specification

Casting SL. No.	Location	Accepted level of severity as per ASTME - 446 -81 or E - 71	Observation
	Location-1	Shrinkage - Level 3 (In CB& CD cat.) Level 4 (In CA& CC cat.)	
	Location-2		
	Location - 3	Shrinkage - Level 4 (In CB& CD cat.) (In CA& CC cat.)	

6. LOAD TESTING OF BOLSTER -

a) Static Proof Load Test - (1 in 50 Bolster castings)

Bolster casting No.	Vertical load at CP	Max. Deflection	Permanent set (Max)
	Specified - 117t	---	0.7mm

b) Destructive Load Test -

(1 in 100 Bolster castings up to first 200 bogies there after 1 in 1000)

Bolster casting No.	Vertical load at CP	Observation
	Specified - 254t	No crack or fracture of bolster

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

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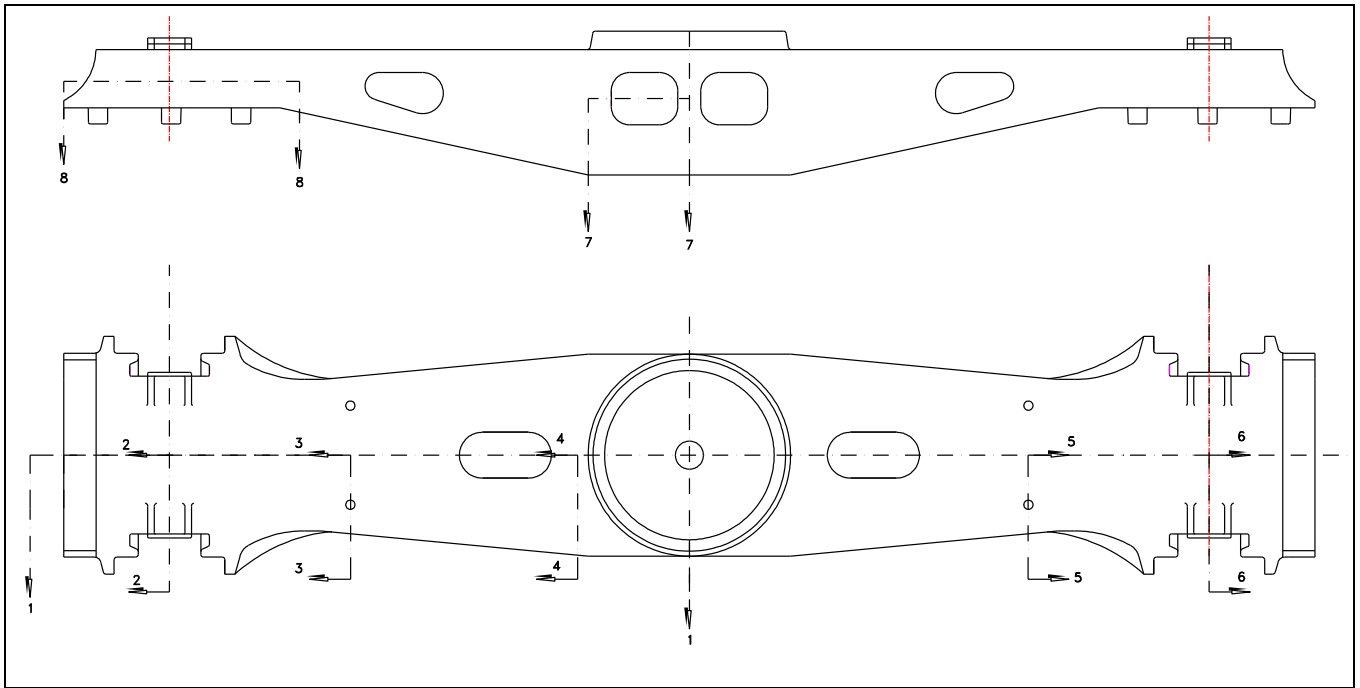
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7. Sectioning Test-

Each bolster undergone destructive load test

Wall thickness range	Maximum Variation allowed
6 mm up to not including 11 mm	+ 3 mm to -1 mm
11 mm and Above	+ 3 mm to -2 mm
Solidity should be checked by etching the sectioned surface over ¼ thickness as distributed in the sketches.	



Section	Nominal	Actual		
1-1	T1	22		
	T2	18		
	T3	25		
	T4	13		
	T5	25		
	T6	16		
	T7	19		
2-2 & 6-6			2-2	6-6
	T1	16		
	T2	14		
	T3	20.5		
	T4	16/2		

SECTION '1-1'

SECTION - '2-2'

SECTION - '6-6'

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		3-3	5-5	
3-3 & 5-5	T1	25		<p>SECTION 3-3 SECTION 5-5</p>
	T2	14		
	T3	22		
	T4	13		
4-4	T1	25		<p>SECTION '4-4'</p>
	T2	25		
	T3	32		
	T4	32		
	T5	20		
	T6	13		
7-7	T1	22		<p>SECTION '7-7'</p>
	T2	22		
	T3	13		
	T4	13		
	T5	13		
8-8	T1	14		<p>SECTION '8-8'</p>
	T2	14		
	T3	14		
	T4	14		
	T5	16/2		
	T6	16/2		

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