



**QM-C-7.1/BOGIE/0002**

**Inspection Plan(Check Sheet)**

**Item:** Cast Steel Bogies for CONCOR Flat Wagons  
**Specn. :** CONTR. LCCF 20 (C)-96, Rev.2  
**Amd.:** 1 of Feb. 2010  
**Drg. No. & Alt.:** CONTR. 9404-S-2, Alt.7 for BLCA/BLCB & BLLAB/BLLB

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

1. Date of inspection  
2. Quantity accepted  
3. Quantity rejected  
4. Balance order

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**METALLURGICAL REPORT OF CONCOR SIDE FRAME**

**1.(A)CHEMICAL COMPOSITION (as per M&C Heat Clearance Register)**

Heat No.						
Casting Sl.No. Offer						
Qty.Cast						
Qty. Passed						
Qty. Offered						
Qty. Balanced						
%Spec						
C - 0.2-0.3						
Mn - 0.6-1.1						
Si - 0.3-0.5						
S - 0.04max						
P - 0.04max						
S&P - 0.07max						

**(B) MECHANICAL PROPERTIES (AS PER THE REGISTER)**

SPEC.N/mm <sup>2</sup>						
UTS-500						
YS-300						
EL%-20min						
RA%-30min						
IMP-25 J						
Date of heat clearance						

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**METALLURGICAL REPORT OF CONCOR BOLSTER**

**1(A) CHEMICAL COMPOSITION (as per M & C Heat Clearance Register)**

Heat no.					
Casting Sl. No. Offer					
Qty. Cast					
Qty. passed					
Qty. offered					
Qty. Baln.					
%age SPEC					
C - 0.2-0.3					
Mn - 0.6-1.1					
Si - 0.3-0.5					
S - 0.04max					
P - 0.04max					
S&P - 0.07max					

**(B) MECHANICAL PROPERTIES (as per the Register)**

SPEC.N/mn2					
UTS-500					
YS-300					
EL%-20min					
RA%-30min					
Imp 25 J					

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### LUG ANALYSIS

Break one lug .one each from any S/frame and Bolster

Requirements	M&C Test		RDSO Observation	
	SF Sl. No. Heat No.	Bol. Sl. no. Heat No.	SF Sl. No. Heat No.	Bol Sl. No. Heat No.
1. Chemical				
C % 0.2 to 0.3%				
Mn % 0.6 to1.1 %				
Si % 0.3 to 0.5%				
P% 0.04% max				
S% 0.04 %max				
S&P 0.07 %max				
2 . Grain Size 4 Min.				
3.Microstructure Normalized				

Final Observation :

1. Chemical Composition is as per STR.
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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## GAUGE FOR INDIVIDUAL CASTING – 5%

### A) SIDE FRAME

S.NO	DESCRIPTION	DRAWING NO	OBSERVATION			
1	Opening Vertical Height gauge (GO & NO GO )	FAS/9404/S3A				
2	Pedestal Roof key Slot Depth gauge (GO & NO GO )	FAS/9404/S3B				
3	Side frame rivet hole centre check GO gauge	FAS/9404/S3C				
4	Side Frame Warp gauge	FAS/9404/S3D				
5	Pedestal gap (GO & NO GO)	FAS/9404/S3E				
6	Pedestal Jaw to Bolster Opening gauge	FAS/9404/S3F				
7	Brake Shoe Pocket GO gauge	FAS/9404/S3G				
8	Pedestal Jaw to key Bolt Pole Distant Check gauge	FAS/9404/S3H				
9	Brake Beam Slot Depth gauge for Side Frame	FAS/9404/S3J				
10	Bolster Opening Lug Distance & Alignment Gauge	FAS/9404/S3K				
11	Width of Jaw Adapter Area gauge	FAS/9404/S3L				
12	Liner Plate Vertical Wall Width thickness gauge	FAS/9404/S3M				
13	Brake shoe liner position check gauge	FAS/9404/S3N				
14	Composite gauge for centre opening 550 mm	FAS/9404/S3O				
15	Side Frame & Bogie opening Horizontal go & no go (WITH & WITH OUT LINERS)	FAS/9404/S3P				
16	Brake Beam slot gauge for Side Frame	FAS/9404/S3Q				
17	Composite gauge for Journal roof to spring seat & 14° Angle	FAS/9404/S3R				
18	Opening Bottom profile gauge	FAS/9404/S3S				
19	Spring plank & spring plank seat GO gauge	FAS/9404/S3T				
20	Side Frame opening bottom GO & NO GO gauge	FAS/9404/S3V				
21	Bolster control lug gauge (GO & NO GO)	FAS/9404/S3W				

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## GAUGE FOR INDIVIDUAL CASTING – 5%

### B) BOLSTER

S.NO	DESCRIPTION	DRAWING NO	OBSERVATION			
1	Limit gauge for lateral lug gap for Bolster ( GO & NO GO )	FAS/9404/S5A				
2	Lug & snubber pocket Alignment gauge for bolster ( GO & NO GO)	FAS/9404/S5B				
3	Spring seat gauge hole for Bolster	FAS/9404/S5C				
4	L Sq. of Spring seat & Side bearer & Bolster	FAS/9404/S5D				
5	GO & NO GO Angle gauge for snubber	FAS/9404/S5E				
6	Pocket of bolster GO Gauge	FAS/9404/S5E				
7	Limit gauge for snubber pocket of Bolster	FAS/9404/S5F				
8	Controlling lug CO & NO GO gauge for Bolster pocket of Bolster	FAS/9404/S5G				
9	Straight edge for bogie bolster	FAS/9404/S5H				
10	Centre pivot top inner $\emptyset$ check gauge	FAS/9404/S5J				
11	Side bearer distance checking gauge	FAS/9404/S5K				
12	Centre pivot liner checking gauge	FAS/9404/S5L				

### C) WEDGE

1	Squareness & slope checking gauge	WD – 097031 – S/16				
2	Wedge height & centre point location gauge	WD – 097031 – S/17				
3	Wing profile & R – 1500 ( GO ) width check gauge	WD – 097031 – S/18				

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## GAUGE FOR INDIVIDUAL CASTING – 5%

### C) CENTRE PIVOT TOP

S.NO	DESCRIPTION	DRAWING DIM.	OBSERVATION			
1	Length	590 ± 5.0				
2	Width	420± 5.0				
3	Thickness	20.0				
4	Outer dia	360				
5	Inner dia	320				
6	Total height	66				
7	Bore dia	60				
8	Counter bore dia	80				
9	Counter bore dia depth	3				
10	CRS	510				
11	CRS	450				
12	CRS	117.5				

#### A. OTHER CHECKS :

- Check any notch mark/cut mark/cross joint is visible in the vulnerable areas of the bogies.
- Whether any porosity , pinholes ,sand fusion ,excess sand sticking beyond acceptable limits are notices.?
- Whether surface finish is with in acceptable limit.?
- Whether springs of same colour code are used in same bogie.?
- Whether prior permission for welding at critical zone is obtained ( if any welding is done)?
- Whether centre pivot top and side bearer – housing areas are machined?

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**LOAD TESTING OF CONTR BRAKE BEAM – 5%**

**BRAKE BEAM – CONTR – 9404 – S/17**

S.NO	PLACE	BEFORE LOAD	UNDER 12 TONE LOAD	AFTER RELESING LOAD	DEFLACTION UNDER 12 T LOAD (3.0 mm)	PARMANENT SET (0.2 mm Max)
1	R					
	L					
	C					
2	R					
	L					
	C					
3	R					
	L					
	C					
4	R					
	L					
	C					
5	R					
	L					
	C					

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**INSPECTION SHEET FOR ASSEMBLED BOGIES**

1. Serial Nos. of bogies offered

S.No	Bogie Sl. No			S.No	Bogie Sl. No		
1		S.F. NO. 1	B.S.NO. 1	2		S.F. NO. 1	B.S.NO. 1
		S.F.NO. 2				S.F.NO. 2	
3		S.F. NO. 1	B.S.NO. 1	4		S.F. NO. 1	B.S.NO. 1
		S.F.NO. 2				S.F.NO. 2	
5		S.F. NO. 1	B.S.NO. 1	6		S.F. NO. 1	B.S.NO. 1
		S.F.NO. 2				S.F.NO. 2	
7		S.F. NO. 1	B.S.NO. 1	8		S.F. NO. 1	B.S.NO. 1
		S.F.NO. 2				S.F.NO. 2	
9		S.F. NO. 1	B.S.NO. 1	10		S.F. NO. 1	B.S.NO. 1
		S.F.NO. 2				S.F.NO. 2	

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**LOAD TESTING REPORT OF CONCOR SIDE FRAME AND BOLSTER**

ITEM	S.NO	FREQUENCY OF TESTING	LOAD APPLIED	MAXIMUM DEFLECTION	PERMANENT SET MAX. AT CENTRE
<b>SIDE FRAME</b>		1 IN 50	117 T	-----	0.4 mm
		1 IN 100	234 T		

ITEM	S.NO	FREQUENCY OF TESTING	LOAD APPLIED	MAXIMUM DEFLECTION	PERMANENT SET MAX. AT CENTRE
<b>BOLSTER</b>		1 IN 50	117 T	-----	0.7 mm
		1 IN 100	254 T		

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## LOAD TEST CHART FOR ASSEMBLED CONCOR BOGIE

S.F. NO.	BOL NO.
S.F. NO.	

SL. NO	DETAILS OF ITEM CHECKED	SPECIFIED ( MM )					OBSERVED (MM)				
1	a) Diagonal b) Max diff. Between two diagonals c) Max diff. Of half diagonals	a) 3018 +/-4.5 b) 3.5 c) 4.0									
2	a) Wheel base b) Max diff. Between two wheels base c) Button no.	a) 2000+/-5 b) 2 but should be of same button. c) 1,2,3,4,&5									
3	a) Journal center b) Max diff. Between two J.C	a) 2260 +/-1.5 b) 1									
4	a) Dis. Between RL to bottom of Side Frame	a) 149 +0/-5									
5	Distance between Side Bearer Centers	1750±5									
6	Distance between bolster top to Centre pivot top	71 + 2 - 0									
	LOAD TEST	LIGHT BOGIE	TARE LOAD UNDER 4.7 T	GROSS LOAD UNDER 35.2 T	50% OVER LOAD UNDER 50.5 T	LIGHT BOGIE	TARE LOAD UNDER 4.7 T	GROSS LOAD UNDER 35.2 T	50% OVER LOAD UNDER 50.5 T	HEIGHT AFTER REALEASE	
7	Center pivot Ht From RL	741+3 - 8	715 +3 -8	673 +3 -8	654 +3 -8						
8	A) Side Bearer Bottom Ht From RL	670 +3 - 8	644 +3 -8	602 +3 -8	583 +3 -8						
9	Spring group height	276±2	250 ± 2	208 ± 2	189 ± 2						
10	Bolster clearance	38 +8 -2	64 +8 -2	106 +8 -2	125 +8 -2						

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## WEIGHT OF SIDE FRAME, BOLSTER AND BRAKE BEAM

ITEM NAME	CASTING SL . NO.	SPECIFIED WEIGHT (Kg)	OBSERVED WEIGHT ( Kg )
Side frame		450 +/- 5.5%	
Bolster		670 +/-4.5%	
Brake beam	Fabricated	75± 6%	

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**DYE PENETRATION TEST**

AGENT	MAKE	EXPIRY DATE
CLEANER		
PENETRANT		
DEVLOPER		

SL.NO	ITEM	DESCRIPTION OF OPERATION	OBSERVATION	REMARKS

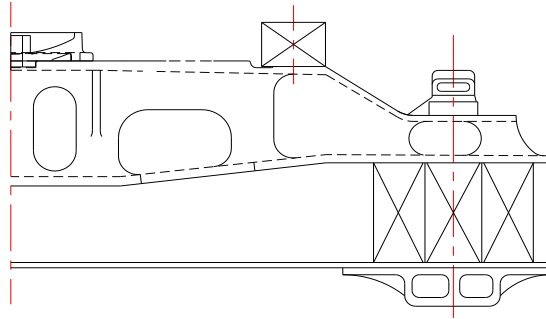
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**CHECK SHEET FOR CONTR ASSEMBLED BOGIE**

**BOGIE NO:**



	<b>SF No.</b>		<b>SF No.</b>	
		<b>BOL No.</b>		

<b>BOGIE CLEARANCES</b>						
<b>AS PER DRAWING</b>	<b>12.5 <sup>+1.5</sup></b>	<b>2 <sup>+1.5</sup> -0.0</b>	<b>5+2.5/ 0.0</b>	<b>5+2.5/ -0.0</b>	<b>12.5 +2.5/-0.0</b>	<b>12.5 +2.5/-0.0</b>

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