



**Government of India
Ministry of Railways**

**CHECKSHEETS
FOR
Bogie Open Rapid Discharge Hopper Wagon Type BOBYN / BOBYNHS**

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**RESEARCH DESIGNS & STANDARDS ORGANISATION
MINISTRY OF RAILWAYS
MANAK NAGAR, LUCKNOW-226011**

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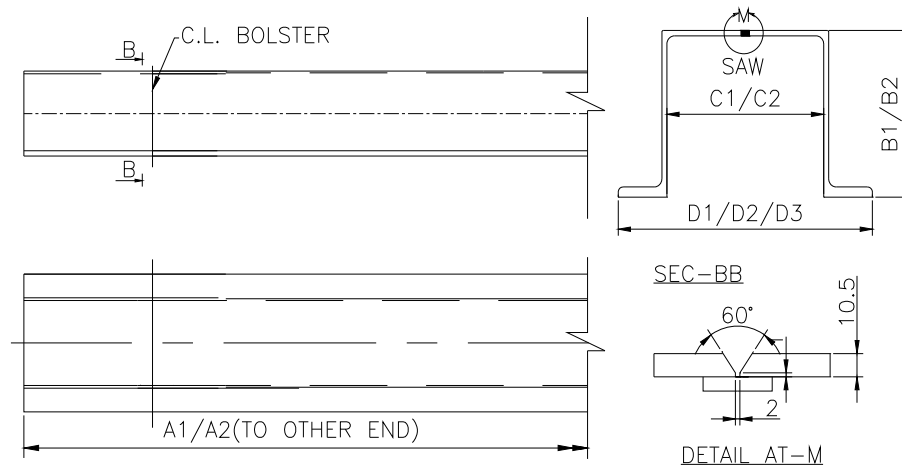
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Centre Sill



SK-77544-2

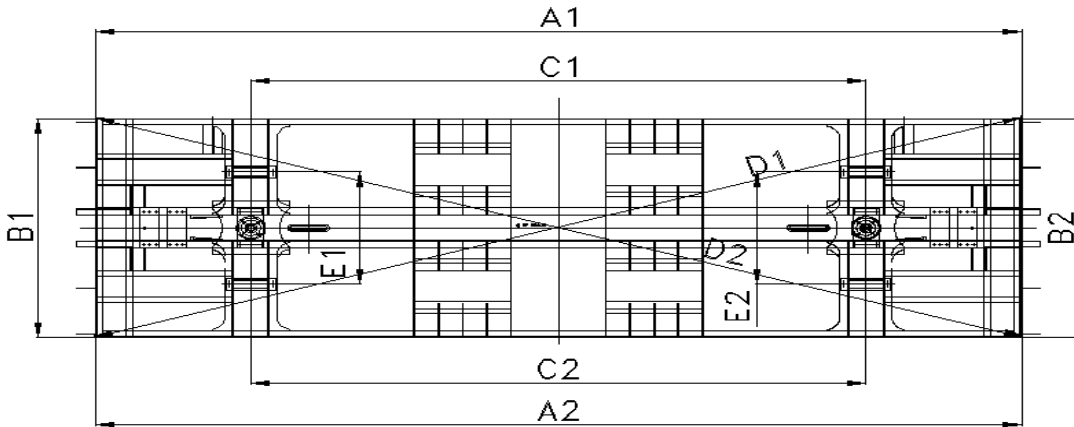
CENTRE SILL NO:			Date:			
SL. NO.	STAGE	Works Inspection		RDSO Inspection		Remarks
2.0	Fabrication of Centre Sill					
2.1	Fitment of all components					
2.2	Welding					
2.3	Dressing					
2.4	Riveting					
3.	Dimensions			As follows		
	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Overall Length	A1	10718, +2,-2 mm			
		A2				
ii.	Overall height and inside width of Centre Sill	B1/B2	327, +1.5, -0			
		C1/C2		327, +1.5, -0		
iii.	Overall width of Centre Sill bottom flange	D1	530, +1.5, -0			
		D2		530, +1.5, -0		
		D3		530, +1.5, -0		
iv.	Draft Gear Pocket	X	625.5, +0, -1.5			
		Y		327, +1.5, -0		
v.	Camber		10±3mm			The camber value 10±3mm shall be achieved in final wagon

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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UNDERFRAME



WD-96021-S-04

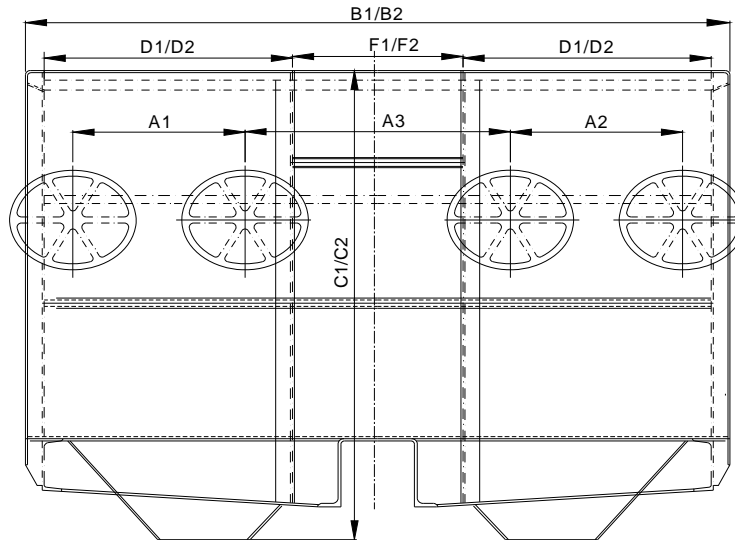
UNDERFRAME NO:		Date:				
SL. NO.	STAGE	Works Inspection		RDSO Inspection	REMARKS	
1.	Fitment of all components					
2.	Welding					
3.	Riveting					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Length over head stock	A1	10718, +7,-3			
		A2				
ii.	Width over solebar	B1	2875 ±3			
		B2				
		B3				
ii.	Distance between bolster bogie centre	C1	7470, +2,-2			
		C2				
iv.	Diagonal difference over head stocks	D1-D2	≤ 5			
vi.	Distance between side bearers centre	E1	1474±2			
		E2				
vii.	Draft Gear Pocket	X	625.5, +0,-1.5			
		Y	327, +1.5, -0			
viii.	Camber		10±3mm			The camber value 10±3mm shall be achieved in final wagon

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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BODY END



SK-77534, 35 & 36

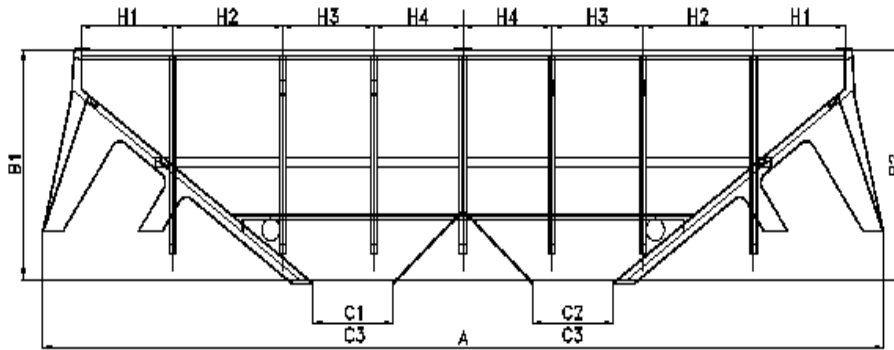
BODY END NO:			Date:			
SL. NO.	STAGE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Distance between outer wheel to inner wheel	A1	746			
		A2				
ii.	Distance between inner wheel	A3	1164			
iii.	Width over corner stanchion	B1/B2	3025 ±3			
iv.	End wall overall height(from end wall bottom to top of end top coping)	C1	2511 ±3			
		C2				
v.	Distance between stanchion (Non- operating end)	D1	909.5 ±1.5			
vi.	Distance between stanchion (Operating end)	D2	1071.5,±1.5			
vii.	Distance between inner to inner stanchion(Non-operating end)	F1	1044 ±1.5			
viii.	Distance between inner to inner stanchion (Operating end)	F2	720 ±1.5			

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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BODY SIDE ARRANGEMENT



SK-77534 & 35

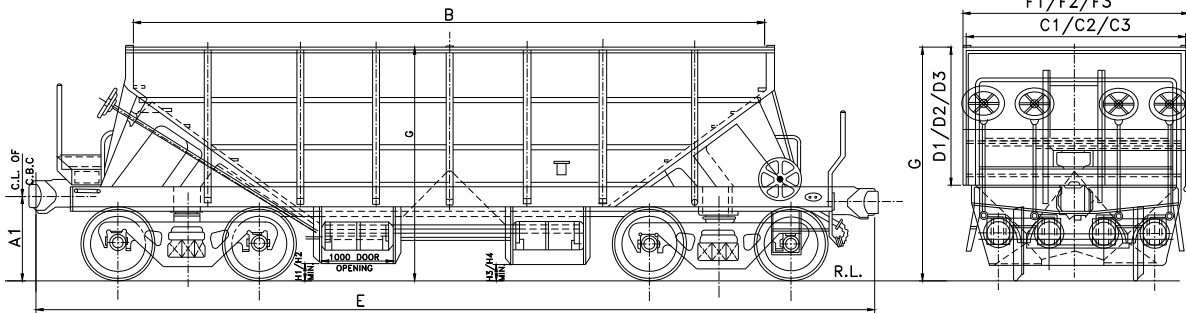
BODY SIDE NO:			Date:			
SL. NO.	STAGE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions			As follows		
	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Side wall overall height (Pressing edge to top coping)	B1	2490 ±3			
		B2				
ii.	Door opening (Horizontal)	C1	1000, +0, -3			
		C2				
		C3				
		C4				
iii.	Distance between corner stanchion	A	9918 +7,-3			
iv.	Distance between body side stanchion	H1	1075 ±3			
		H2	1300 ±3			
		H3	1075 ±3			
		H4	1050 ±3			

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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FINAL ASSEMBLY



WD-96021-S-02

Wagon No.: _____ U/F No.: _____ Date: _____

SL. NO.	STAGE	Works Inspection	RDSO Inspection	Remarks	
1.	Fitment of all components				
2.	Riveting				
3.	Welding				
4.	Operation of Doors				
5.	Operation of Couplers				
6.	Under gear Examination				
7.	Brake test i) Air brake ii) Hand brake				
8.	Shot Blasting(Excp Lever SAB)				
8.	Painting in second coat>80 micron				
9.	Lettering				
10.	Dimensions	As follows			
	LOCATION	Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
			Works Inspection	RDSO Inspection	
i.	Coupler height from R.L.	A1	1105, +0, -5		
		A2			
ii.	Length Inside	B	9000, +7, -3		
iii.	Width Inside	C1	2863, ± 3		
		C2			
		C3			
iv.	Height Inside (Floor level to top)	D1	2018, ± 3		
		D2			
		D3			
v.	Length over coupler face	E	11647, +7, -3		
vi.	Side bearer clearance	-	Nil		
vii.	Width over stanchion	F1	3025, ± 3		
		F2			
		F3			
viii.	Height of door from R.L.(L.V.)	H1	180(Min)		
		H2	180(Min)		
		H3	180(Min)		
		H4	180(Min)		
ix.	Height overall from R.L.	G	3293 ±3		

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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FINAL WAGON

RDSO

Check Sheet for BOBYN / BOBYNHS type Wagon (WITH CONVENTIONAL AIR BRAKE SYSTEM)

1.	a) Wagon No.		2.	Date of offer	
	b) Return Date:				
3.	Underframe No.		4.	Name of the Wagon Manufacturer:	
5.	Contract/P.O. placed by		6.	Contract/P.O. No. and date and D.P. (Upto)	
7.	Running Gear				
a)	Bearing Make			Serial Nos.	
b)	Wheel Make			Serial Nos.	
c)	Axle Make			Serial Nos.	
d)	Bogie Make & Sr. Nos.		e)	Air Brake Make	
f)	DV Make & Sr. no.		g)	SAB Make & Sr. No.	
h)	Date of air brake testing		i)	Date of SWTR unit calibration	
8.	Coupler Make & Sr. Nos.		9.	Draft Gear Make & Sr. Nos.	
10.	Tare Weight		11.	Shot blasting/manually cleaned	
12.	D.M. Issue date		13.	TXR fit memo issue date	

14. RAD availed _____

15. Defects Observed _____

16. Remarks _____

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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PROFORMA FOR SINGLE WAGON AIR BRAKE TEST

Wagon No.:		U/F No.:	Date:	
S N.	ATTRIBUTES	ACCEPTANCE LIMIT	WORKS INSPN.	RDSO INSPN.
1.	Check paint- for thickness & finish	Thickness >40 micron (DFT for primary paint) > 80 micron (DFT for finish paint). Total DFT after shall be minimum 120 micron. Paint surface to be free from blistering, brush marks & peeling.(As per G-72 Rev.3 or latest Revision)		
2.	Lettering & marking- for legibility, size, location & punch mark.	As per Drg No.WD-09090-S-04		
3.	COUPLER			
3.1	Height from Rail Level	1105 , +0, - 5		
3.2	Operation of knuckle with operating handle	Full knuckle throw lock to lock		
3.3	Articulation of coupler body	Free movement		
4.	HAND BRAKE			
4.1	Apply hand brake (by one person only and strike all wheels with a Hammer)	There should not be ringing sound		
4.2	Release the hand brake and apply crow bar on one end of brake block to take up all slack	All brake blocks must be released. Gap between the brake block and wheel tread not to be less than 23.6 mm (5.9 x 4)		
5.	EMPTY LOAD BOX.			
5.1	Operate the mechanism from any end in empty and loaded positions	Empty tie rod & loaded tie rod must engage. In loaded position the empty tie rod pins must be loose. In empty position the loaded tie rod pins must be loose		
6.	AIR BRAKE & SLACK ADJUSTER			
6.1	Distance between the control rod head and adjuster barrel (A)	27 +2, - 0		
6.2	Dimension (e) i.e. the distance between the end of protection tube and fixed mark on the slack adjuster pull rod	575, ±10 mm		
6.3	Apply air brake and then release the same. Apply crow bar on one end of brake block to take up all slack	Gap should not be less than 23.6 mm (5.9 x4)		
6.4	Rotate the brake slack adjuster in clock-wise direction (looking from control rod end) to decrease the slack. Apply and release the air brake twice.	Gap between the brake block and wheel tread as measured should be 23.6, +1-0		
6.5	Now, rotate the barrel in anticlockwise direction. Apply and release the air brake once	Gap between the brake block and wheel tread as measured should be 23.6, +1,-0		
7.	AIR BRAKE EQUIPMENT			
	Full service application			
7.1	Pressure in B.P.	5 Kg/cm ²		
7.2	Pressure in A.R.	5 Kg/cm ²		
7.3	Leakage from the system	0.1 Kg/cm ² in 1 minute		

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
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SL NO.	ATTRIBUTES	ACCEPTANCE LIMIT	WORKS INSPN.	RDSO INSPN.
7.4	B.C filling time in empty condition pressure rise from 0 to 2.1 Kg/cm ²)	Empty 18 to 30 seconds		
	B.C filling time in loaded condition pressure rise from 0 to 3.6 Kg/cm ²)	Loaded 18 to 30 seconds		
7.5	Maximum B.C. pressure in Kg/ cm ²	Empty 2.2 ±0.25 Kg/ cm ² Loaded 3.8 ± 0.1 Kg/ cm ²		
7.6	Decrease in B.P. pressure required for full service application	1.3 to 1.6 Kg/ cm ²		
8.	RELEASE AFTER FULL SERVICE APPLICATION			
8.1	Draining time- B.C pressure to fall from 2.2 ± 0.25 to 0.4 Kg/cm ²	Empty 45 to 60 seconds		
	Draining time- B.C pressure to fall from 3.8 ± 0.1 to 0.4 Kg/cm ²	b) Loaded 45 to 60 seconds		
9.	Piston stroke in mm	a) Empty 100 ±10 b) Loaded 110 ± 10		
10.	EMERGENCY APPLICATION			
10.1	Emergency application- BC filling time a) EMPTY:-Pressure rise from 0 to 2.1 Kg/cm ²	a) Empty 18 to 30 seconds		
	b) LOADED:- Pressure rise from 0 to 3.6 Kg/cm ²	b) Loaded 18 to 30 seconds		
10.2	Maximum B.C pressure in Kg/cm ²	a) Empty 2.2 ± 0.25 Kg/cm ² b) Loaded 3.8 ± 0.1 Kg/cm ²		
10.3	Leakage from B.C.	0.1 Kg/cm ² in 5 minute		
11.	SENSITIVITY OF BRAKES			
11.1	Isolate brake pipe from main line check the response of brakes when brake pipe pressure is reduced at the most equal to 0.6 Kg/cm ² in 6 seconds	Brake should apply within 6 seconds		
12.	INSENSITIVITY OF BRAKES			
12.1	Isolate brake pipe from main line. Check the response of brakes when brake pipe pressure is reduced at least equal to 0.3 Kg/cm ² in 60 seconds	Brake should not apply		
13.	QUICK RELEASE AND ISOLATION			
13.1	After emergency brake application operate quick release valve	Brake cylinder and control reservoir should exhaust automatically.		
13.2	Bring isolating valve of distributor to off position.	Auxiliary reservoir should also exhaust.		
FOLLOWING POINTS TO BE CHECKED ONLY AT THE TIME OF PROTOTYPE WAGON ONLY.				
14	AR Charging time Pressure rise from 0 to 5.0 Kg/cm ²	175 ± 30 Sec. for C3W DV 60 to 120 Sec. for KEO DV		
15	CR Charging time Pressure rise from 0 to 4.8 Kg/cm ²	165 ± 20 Sec. for C3W DV 160 to 210 Sec. for KEO DV		

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

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