



**Government of India  
Ministry of Railways**

**CHECKSHEETS  
FOR  
Bogie Hopper Wagon Type BOBSN With BMBS**

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**ISSUED BY**

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

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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.

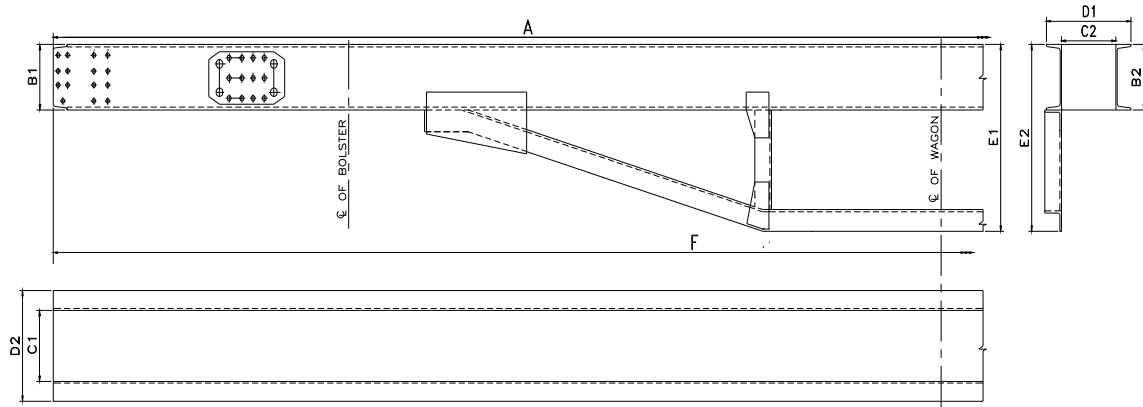
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**Centre Sill**



**WD-12027-S-05**

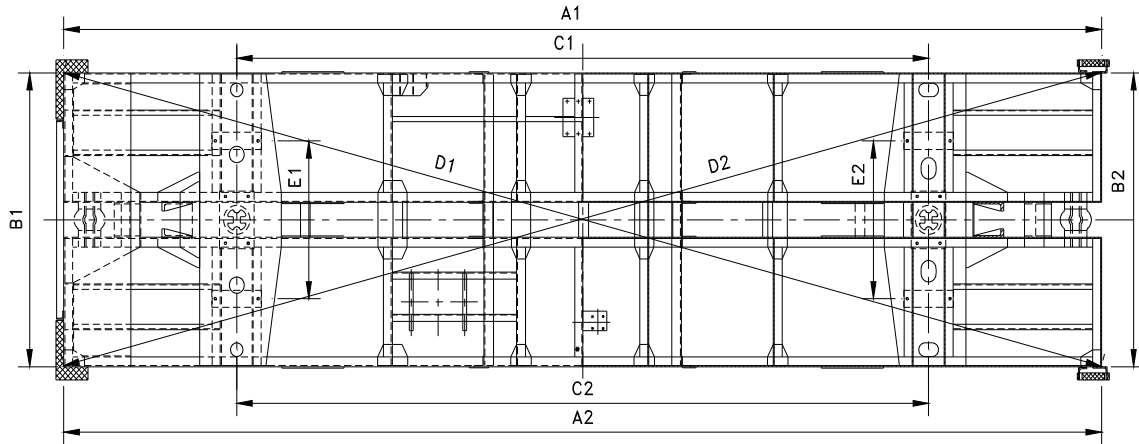
CENTRE SILL NO:			Date:			
SL. NO.	STAGE	Works Inspection		RDSO Inspection		Remarks
2.0	Fabrication of Centre Sill					
2.1	Fitment of all components					
2.2	Welding					
2.3	Dressing					
2.4	Riveting					
3.	Dimensions			As follows		
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Length of centre sill	A	10648, +2,-2			
ii	Overall height of centre sill	B1/B2	300			
iii	Inside width of centre sill	C1,C2	327, +1.5, -0			
iv	Overall width of centre Sill bottom flange	D1	511, +1.5, -0			
		D2	511, +1.5, -0			
v	Height of sole bar assly.	E1	857			
		E2	857			
vi	Length of sole bar assly.	F	10648,+2, -2			
vii	Draft gear pocket	X	625.5, +0, -1.5			
		Y	327, +1.5, -0			

All dimensions are in mm

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

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**UNDERFRAME**



**WD-12027-S-04**

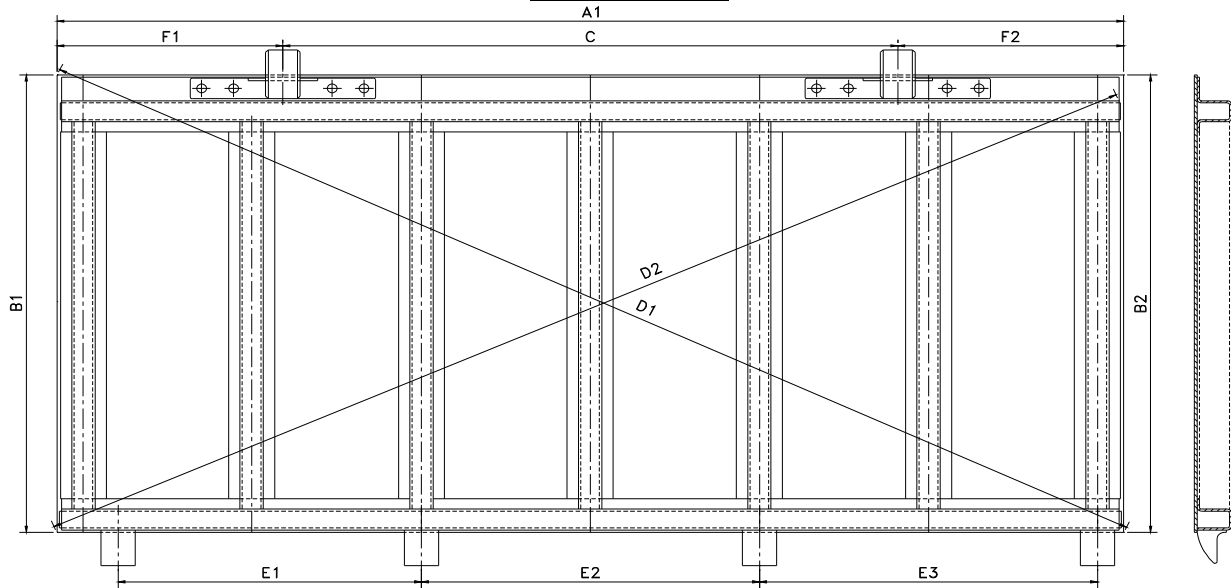
UNDERFRAME NO:			Date:			
SL. NO.	STAGE	Works Inspection		RDSO Inspection	REMARKS	
1.	Fitment of all components					
2.	Welding					
3.	Riveting					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Length over head stock	A1	10668, +7,-3			
		A2				
ii.	Width over sole bar	B1	2743 ±3			
		B2				
		B3				
iii.	Distance between bolster bogie center	C1	7112 ±2			
		C2				
iv.	Diagonal difference overhead stocks	D1-D2	≤ 5			
v.	Distance between side bearers Centre	E1	1474±2			
		E2				
vi.	Draft gear pocket	X	625.5, +0,-1.5			
		Y	327, +1.5, -0			
vii.	Camber		8±2mm			The camber value 8±2mm 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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**DOOR DETAILS**



**WD-12027-S-16**

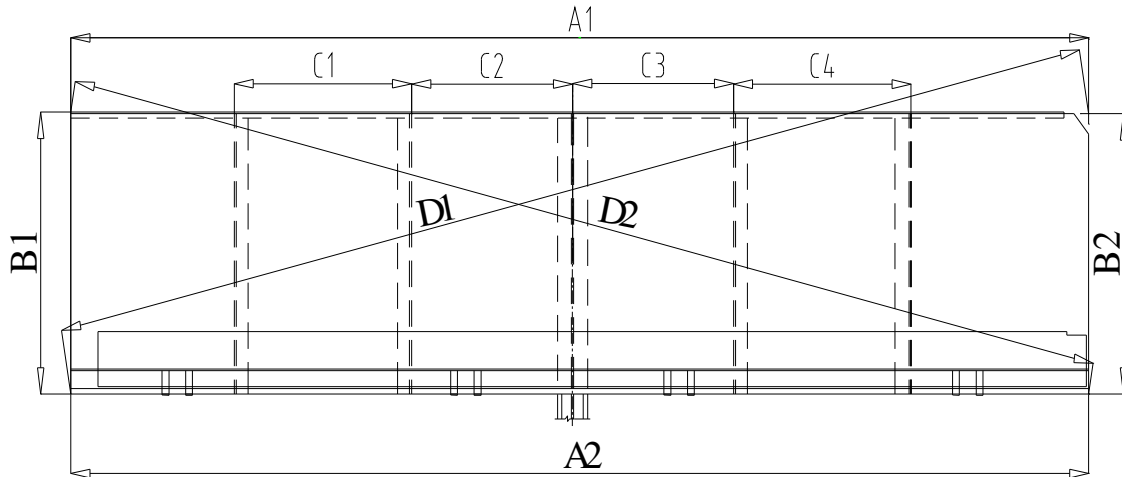
DOOR DETAILS NO:		Date:				
SL. NO.	STAGE	Works Inspection	RDSO Inspection	REMARKS		
1.	Fitment of all components					
2.	Welding					
3.	Riveting					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Overall length	A1	2338, +5,-0			
		A2				
ii.	Overall height	B1	1114, +5,-0			
		B2				
		B3				
iii.	Distance between door hinges	C	1348, ±1.5			
iv.	Diagonal difference overhead stocks	D1/D2	≤ 3			
v.	Distance between door lip extension pieces	E1	665, ±1.5			
		E2	741, ±1.5			
		E3	741, ±1.5			
vi.	Distance between end to door hinge	F1	495,±1.5			
		F2				

All dimensions are in mm

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

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**BODY SIDE**



**WD-12027-S-77**

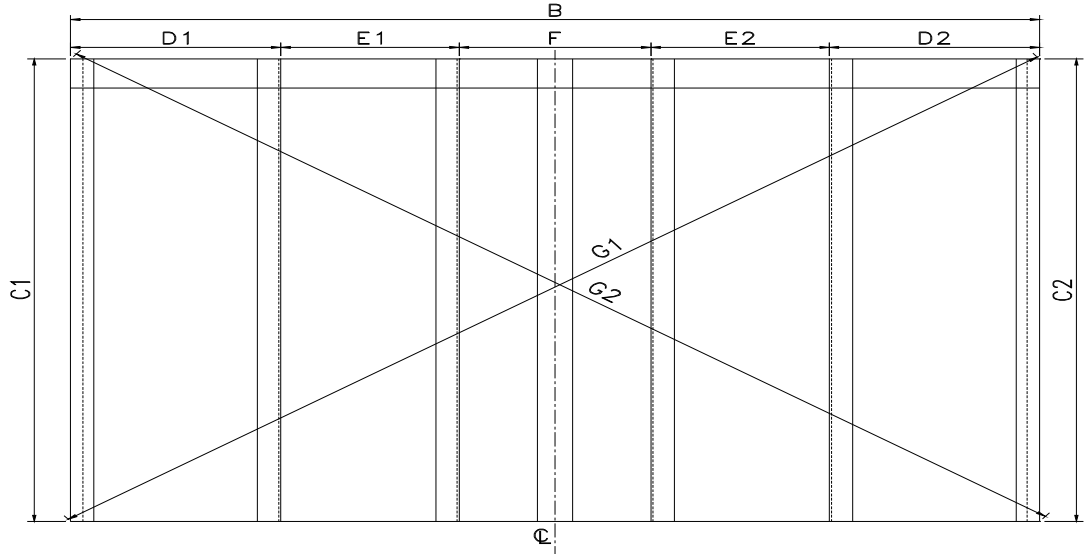
BODY SIDE NO:		Date:				
SL. NO.	STAGE	Works Inspection	RDSO Inspection	Remarks		
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Distance between side plate end to end	A1	4755±3			
		A2				
ii.	Side wall overall height	B1	952,±3			
		B2				
iii.	Distance between stanchions	C1	829, ±3			
		C2	752, ±3			
		C3	752, ±3			
		C4	829, ±3			
iv.	Diagonal difference	D1/D2	≤ 5			

All dimensions are in mm

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

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**BODY END**



**WD-12027-S-78**

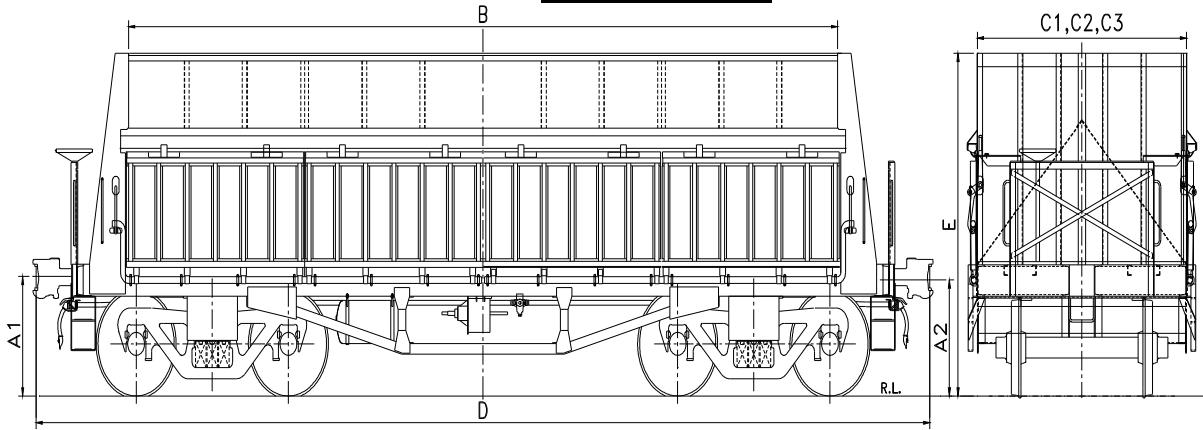
BODY END NO:			Date:			
SL. NO.	STAGE	Works Inspection	RDSO Inspection	Remarks		
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Width over corner stanchions	B	2743±3			
ii.	End wall overall height (from end plate bottom to top coping)	C1	2022 ±3			
		C2				
iii.	Distance between corner to outer stanchions	D1	595 ±1.5			
		D2				
iv.	Distance between outer to inner stanchion	E1	505 ±1.5			
		E2				
v.	Distance between inner to inner stanchion	F	543 ±1.5			
vi.	Diagonal difference over corner stanchions	G1/G2	≤ 5			

All dimensions are in mm

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

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**FINAL ASSEMBLY**



**WD-94035-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 (ExcpLever SAB)					
9.	Painting in second coat >80 micron					
10.	Lettering					
11.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
i.	Coupler height from R.L.	A1 A2	1105, +0, -5			
ii.	Length Inside	B	9296, +7, -3			
iii.	Width Inside	C1	2743, ± 3			
		C2				
		C3				
iv.	Length over coupler face	D	11597, +7, -3			
v.	Side bearer clearance		Nil			
vi.	Height Overall from R.L.	E	3301 ±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 Bogien Hopper Wagon Type BOBSN**

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. (Up to)	
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)	Brake Cylinder Make & Sr. No. (1) Without Hand Brake (2) With Hand Brake	
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 WITH BMBS SINGLE PIPE / TWIN PIPE**

Wagon No..... Bogie Make.....DV Make.....

S.No.	Check	Specified	Actual
1	Pressure in BP	5 ± 0.1 kg/sq.cm.	
1.a	Pressure in FP	6 ± 0.1 kg/sq.cm.(twin pipe)	
2	Pressure in AR	5 ± 0.1 kg/sq.cm.(for single pipe) 6 ± 0.1 kg/sq.cm.(twin pipe)	
3	Leakage from the system in one minute.	0.1 kg/sq. cm.(max.)	
4	Full service application after charging		
4.1	Brake cylinder filling time a) Empty (Pressure rise from 0 to 2.1 kg/sq.cm.) b) Loaded (Pressure rise from 0 to 3.6 kg/sq.cm.)	18 to 30 sec 18 to 30 sec.	
4.2	Maximum brake cylinder pressure a) Empty b) Loaded	2.2 ± 0.25 kg/sq.cm. 3.8 ± 0.1 kg/sq.cm.	
4.3	Reduction in BP pressure required for full service application.	1.3 to 1.6 kg/sq.cm.	
5	Release after full service application.		
5.1	Draining time (Brake cylinder pressure to fall from 2.2 ± 0.25 kg/sq.cm. to 0.4kg/sq.cm in empty condition and 3.8±0.1kg/sq.cm. to 0.4kg/sq.cm in loaded condition) a) Empty b) Loaded	45 to 60 sec 45 to 60 sec.	
6	Sensitivity of brakes. Isolate brake pipes from mainline. Check the response of brakes when brake pipe pressure is reduced at the most equal to 0.6 kg/sq.cm. in 6 sec.	Brake should apply within 6 sec.	
7	Insensitivity of brakes, isolate brake pipe from mainline. Check the pressure of brakes when brake pipe pressure is reduced at least equal to 0.3 kg/sq.cm. in 60 sec.	Brake should not apply	
8	Emergency application:		
8.1	Brake cylinder filling time a) Empty (Pressure rise from 0 to 2.1 kg/sq.cm.) b) Loaded (Pressure rise from 0 to 3.6 kg/sq.cm.)	18 to 30 sec. 18 to 30 sec.	
8.2	Maximum brake cylinder pressure a) Empty b) Loaded	2.2 ± 0.25 kg/sq.cm. 3.8 ± 0.1 kg/sq.cm.	
9	Piston stroke Empty condition *	54±10 mm	
10	Leakage from brake cylinder after emergency application.	0.1 kg/sq.cm. (max.) within 5 minutes	
11	Automatic exhausting of brake cylinder and control chamber.		
11.1	Apply emergency brakes (i.e. BP=0kg/sq.cm). Check the brake cylinder pressure after giving a brief pull to release hook.	Brake cylinder and control reservoirs should exhaust automatically.	

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

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S.No.	Check	Specified	Actual
12	Empty load change over by APM Device		
12.1	Unrestricted movement of lever arm APM Device.	Brake cylinder pressure 2.2± 0.25 kg/sq.cm.	
12.2	Restrict the movement of lever arm of APM Device by more than 25 mm (by putting a block of 25 mm thickness) from its initial position.	Brake cylinder pressure 3.8 ± 0.1kg/cm <sup>2</sup>	
12.3	APM arm movement from fully retracted position to Bogie side frame top.	88 +1/-0 mm	
12.4	Brake cylinder pressure with unrestricted movement of lever arm of APM Device.	Brake cylinder pressure 2.2± 0.25 kg/sq.cm.	
12.5	Restrict the movement of lever arm of APM Device with 9 mm block placed on bogie frame.	Brake cylinder pressure 3.8 ±0.1kg/cm <sup>2</sup>	
12.6	Restrict the movement of lever arm of APM Device with 7 mm block placed on bogie frame	Brake cylinder pressure 2.2±0.25 kg/sq.cm.	
13	Hand Brake		
13.1	Apply hand brakes(by one person only and strike all wheels with hammer)	There should not be ringing sound	
14.	AR Charging time (Pressure rise from 0 to 5.0 kg/sq.cm.)	175 ± 30 Sec for C3W D.V	
		60 to 120 Sec for KEO for Knorr D.V.	
15	CR Charging time (Pressure rise from 0 to 4.8 kg/sq.cm.)	165 ± 20 Sec for C3W D.V	
		160 to 210 Sec for KEO D.V	

\* However, if in a few cases, the piston stroke at empty pressure during testing on SWTR exceeds the specified range, the piston stroke is to be tested by locking the wheels with wedges.

S.No. 14 and 15 to be checked at the time of prototype wagon only

Works Inspector  
Date: -

RDSO Inspector  
Date:-

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

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**BMBS CLEARANCE IN ASSEMBLED CASNUB BOGIE  
(BRAKE IN RELEASED CONDITION)  
(Reference RDSO Drawing No.-WD-08093-S-02)**

Wagon No.  
Bogie No.(1)

Sr. No.	Description	Minimum value (mm)	Measured value.	
			L	R
1.	Clearance between push rod and spring plank.	10	L	
			R	
2.	Total clearance between bell crank levers and wheel face (i.e. Total of left & right side).	80 Min20 (if measured on any one side)	L	
			R	
			Total	
3.	Total clearance(i.e. sum of clearances) between 3.1 Spring plank & primary brake beam and 3.2 Spring plank & secondary brake beam.	77	L	
			R	
			Total	
4.	Clearance between brake cylinder & brake beam.	30	L	
			R	

Bogie No. (2)

Sr. No.	Description	Minimum value (mm)	Measured value.	
			L	R
1.	Clearance between push rod and spring plank.	10	L	
			R	
2.	Total clearance between bell crank levers and wheel face (i.e. Total of left & right side).	80 Min20(if measured on any one side)	L	
			R	
			Total	
3.	Total clearance(i.e. sum of clearances) between 3.1 Spring plank & primary brake beam and 3.2 Spring plank & secondary brake beam.	77	L	
			R	
			Total	
4.	Clearance between brake cylinder & brake beam.	30	L	
			R	

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

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