



**Government of India
Ministry of Railways**

**CHECKSHEETS
FOR
BOGIE POL TANK WAGON (81.28 Tonnes)
TYPE – BTPN (VARIANT-A)**

Sl. No.	Month/Year of issue	Revision/Amendment	Page No.	Reason for Amendment
1.	November 2011	-	First issue

ISSUED BY

**RESEARCH DESIGNS & STANDARDS ORGANISATION
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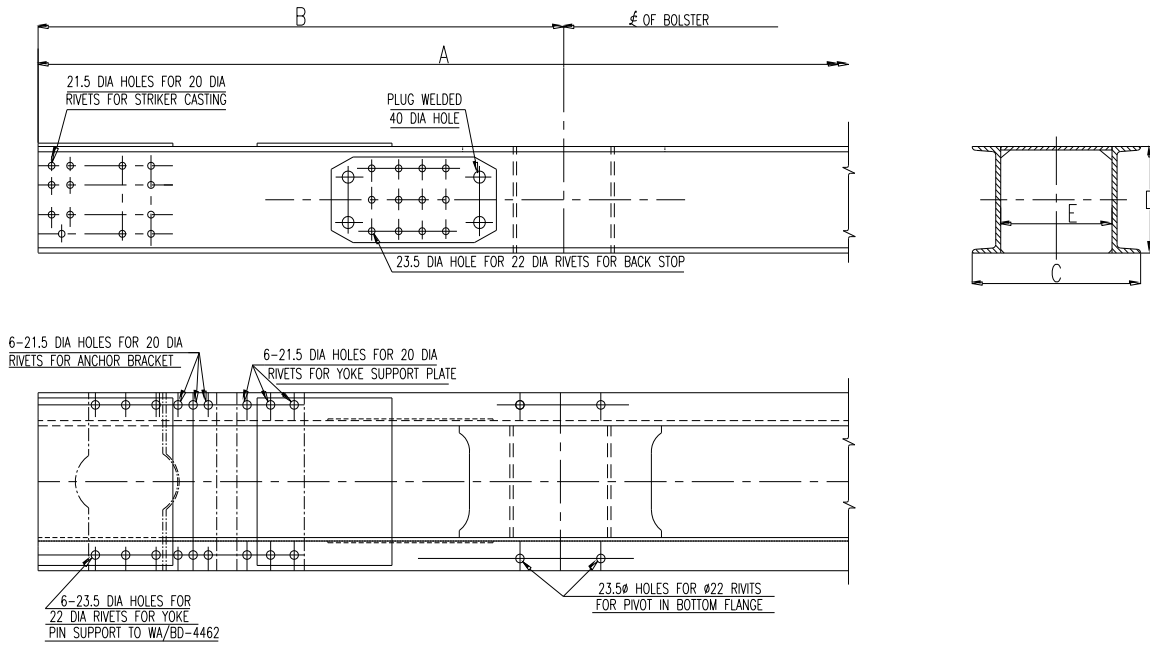
NOTE: These check sheets do not detail all the dimensions or technical requirements of respective wagon assemblies/ components. These check sheets are issued only for General Guidance & assistance of inspecting officials. Notwithstanding the above, the inspecting officials are advised to refer the relevant drawings and/ or relevant specifications to confirm conformity to the specified dimensions and technical details

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CENTRE SILL



Ref. Drg. No.- WD-86081-S-54

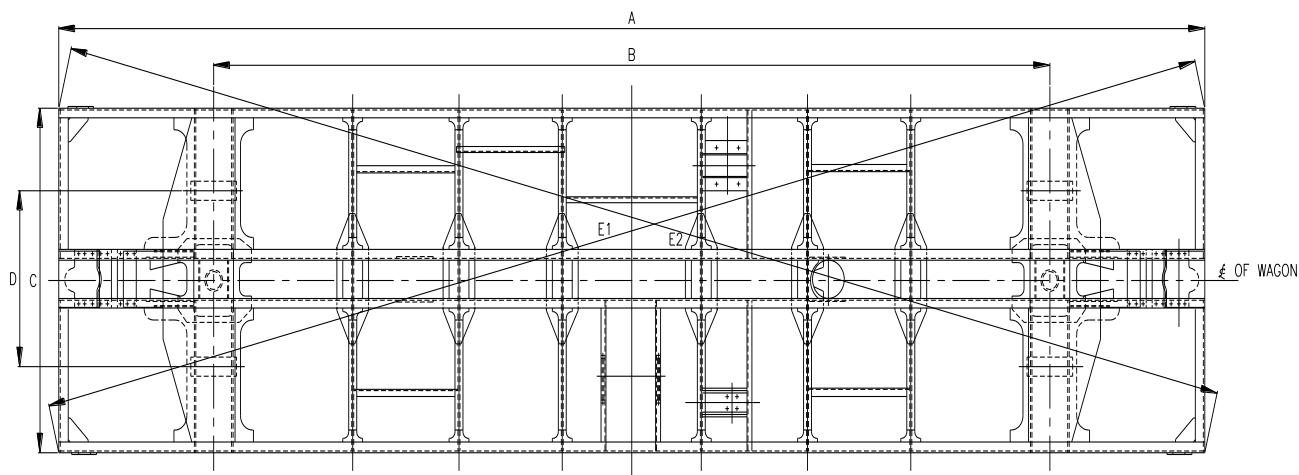
CENTRE SILL NO:			Date:			
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Riveting					
3.	Welding					
4.	Dressing					
5.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Length of centre sill	A	11491, +7,-3			
2.	Distance between headstock to bolster	B	1550			
3.	Width of centre sill	C	507			
4.	Height of centre sill	D	300			
5.	Inner distance of centre sill	E	327			

All dimensions are in mm

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

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UNDERFRAME



Ref. Drg. No.- WD-86081-S-53

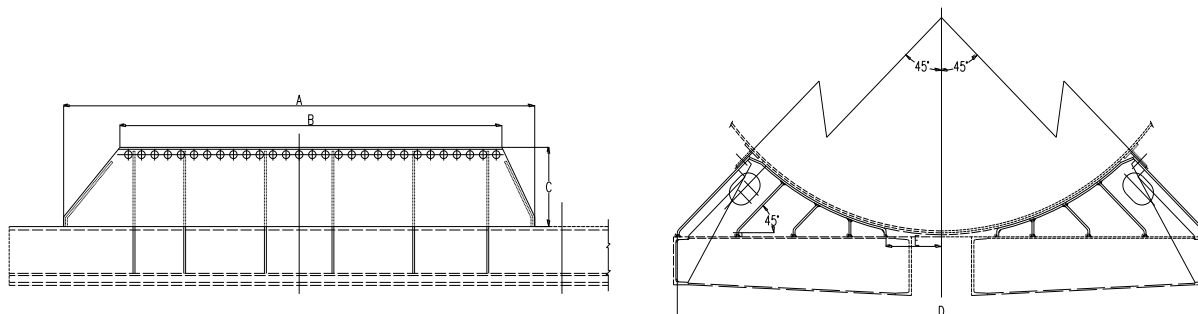
UNDERFRAME NO:		Date:				
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Length over head stock	A	11491, +7,-3			
2.	Width over sole bar	B	2860±3			
3.	Distance between bolster bogie centre	C	8391, +5, -2			
4.	Distance between side bearers centre	D	1474±2			
5.	Diagonal difference overhead stock	E1 & E2	≤5			
6.	Camber		4 mm at centre			

All dimensions are in mm

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

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CRADLE ASSEMBLY



Ref. Drg. No.- WD-86081-S-57

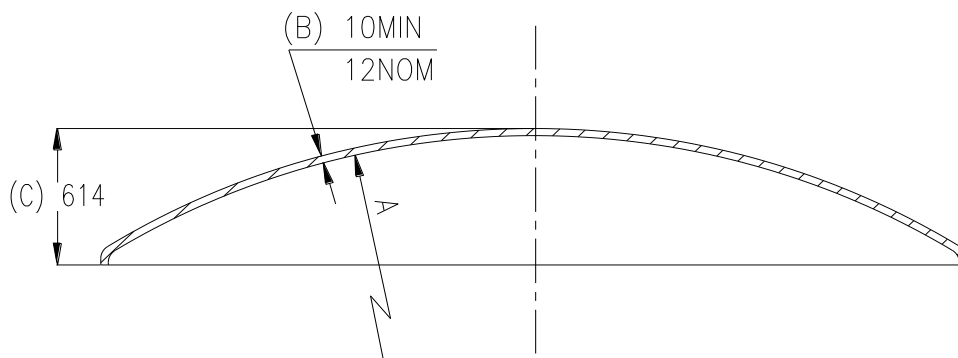
CRADLE ASSEMBLY NO:			Date:			
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Overall cradle length	A	2500±3			
2.	Cradle head length	B	2060±3			
3.	Vertical height of cradle at sole bar	C	420, +3, -2			
4.	Width of cradle	D	2820±2			
5.	Centre line to first pressing	E	300,+0,-5			

All dimensions are in mm

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

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DISH-END



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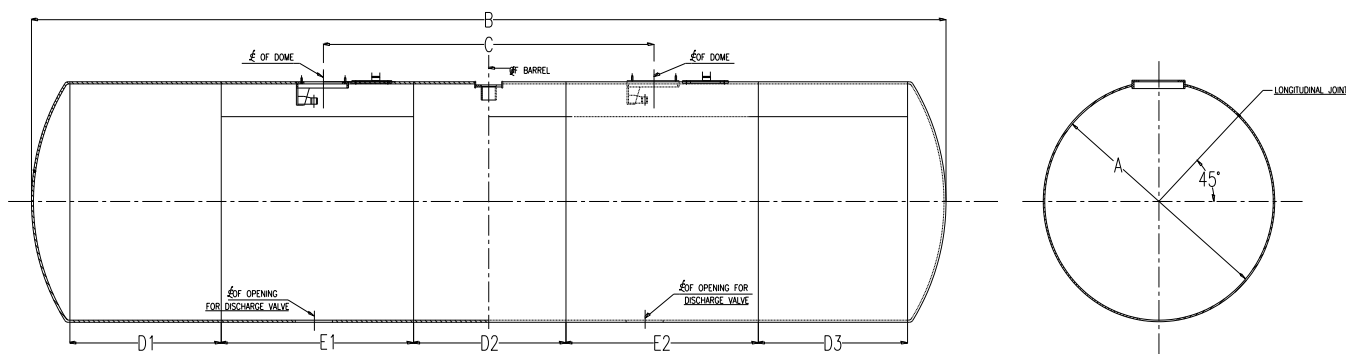
DISHEND NO.:		Date:				
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Dish-end inner dia.	A	2850±3			
2.	Dish-end thickness	B	12(nominal) 10(min. at radius)			
3.	Inner depth	C	614±2			
4.	Outside circumference	D	9030±3			

All dimensions are in mm

Works Inspector		RDSO Inspector	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
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BARREL



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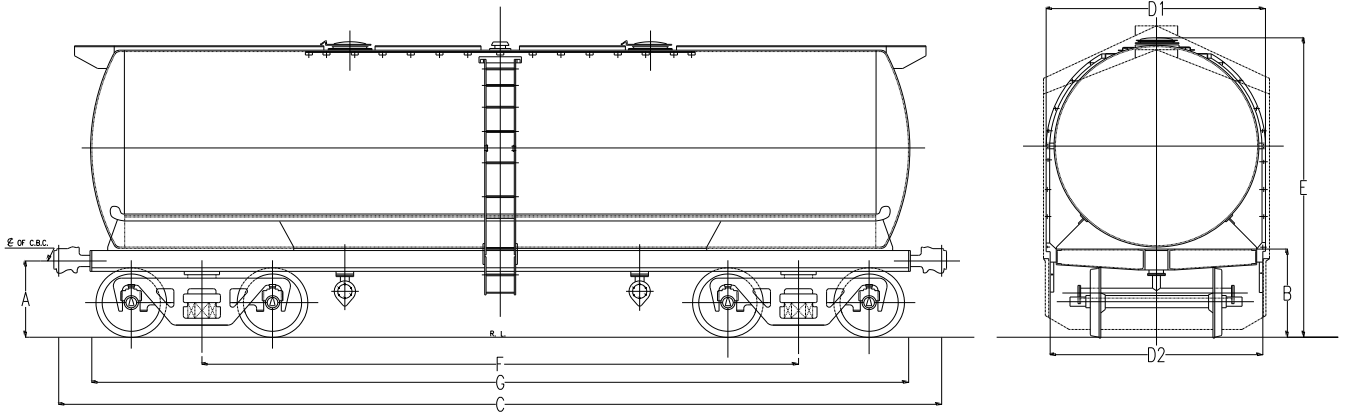
BARREL NO:		Date:				
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Welding					
3.	Dressing					
4.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Overall inside diameter	A	2850±3			
2.	Overall distance between dished end	B	11458,+7,-3			
3.	Distance between dome opening	C	2070+2070=4140,+0,-5			
4.	Barrel shell width	D1	1900±1.5			
		D2	1900±1.5			
		D3	1900±1.5			
5.	Barrel shell width	E1	2265±2			
		E2	2265±2			

All dimensions are in mm

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

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FINAL ASSEMBLY



Ref. Drg. No.- WD-86081-S-51

WAGON NO.:		U/F NO.:		Date:		
SL. NO.	ATTRIBUTE	Works Inspection		RDSO Inspection		Remarks
1.	Fitment of all components					
2.	Riveting					
3.	Welding					
4.	Operation of dome					
5.	Operation of coupler					
6.	Brake test:- i. Air brake test ii. Hand brake operation					
7.	Slot blasting (level SA2)					
8.	Painting					
9.	Lettering					
10.	Dimensions					
SL. NO.	LOCATION	Nominal Dimensions & Allowable Deviation		Actual Dimension		Remarks
				Works Inspection	RDSO Inspection	
1.	Coupler height from rail level	A	1105,-5,+0			
2.	Height from rail level to sole bar top	B	1010+250=1260±3			
3.	Length over coupler faces	C	12420,+7,-3			
4.	Overall width	D1	3126±3 over ladder (upper)			
		D2	3046±3 over ladder (lower)			
5.	Overall height (From R.L. to top of dome)	E	4265			
6.	Bogie centre	F	8391			
7.	Overall length over head stock	G	11491,+7,-3			

All dimensions are in mm

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

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**FINAL WAGON CHECKSHEET
TYPE-BTPN (VARIANT-A)**

1.	Wagon No.		2.	Date of offer	
3.	Underframe No.		4.	Name of the Wagon Manufacturer	
5.	Contract/P.O. No. and date		6.	Contract/P.O. placed by	
7.	Delivery period (upto)		8.	Return date	
9.	<u>RUNNING GEAR</u>				
	(a) Bearing Make & Serial Nos.		i.		ii.
			iii.		iv.
	(b) Wheel Make & Serial Nos.		i.		ii.
			iii.		iv.
	(c) Axle Make & Serial Nos.		i.		ii.
			iii.		iv.
	(d) Bogie Make & Serial Nos.		(e)	Date of SWTR unit calibration	
	(f) Date of air brake testing		(g)	Air Brake Make	
	(h) DV Make & Serial Nos.		(i)	SAB Make & Serial Nos.	
10.	Coupler Make & Serial Nos.				
11.	Shot Blasting/Manually Cleaned		12.	Tare Weight	
13.	D.M. Issue date		14.	TXR fit memo issue date	
15.	Date of hydraulic test		16.	Date of pneumatic test	
17.	Date of calibration				
18.	RAD availed				
19.	Defects Observed				

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

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PAINTING INSPECTION CHECKSHEET

PAINTING INSPECTION CHECKSHEET				Date:	
SL. NO. OF BODY					
TYPE OF WAGON					
ASSEMBLY DRG. NO.					
SL. NO.	ATTRIBUTE	CHARACTERISTIC/ PARAMETER	REFERENCE DOCUMENT/ SPECIFICATION	ACCEPTANCE CRITERIA	REMARKS
1.	Preparation of surface before painting	A. Decreasing B. Visual inspection of surface/welded areas	G-72(LATEST REVISION)	G-72(LATEST REVISION)	
2.	1 ST coat of	A. Finishing B. Paint thickness >40 microns	G-72(LATEST REVISION)	G-72(LATEST REVISION)	
3.	List coat	A. Finishing B. Paint thickness >80 microns	G-72(LATEST REVISION)	G-72(LATEST REVISION)	
4.	Finish coat	A. Finishing B. Paint thickness >110-120 microns	G-72(LATEST REVISION)	G-72(LATEST REVISION)	
5.	Marking	Visual	MARKING DIAGRAM	AS PER DRG.	

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

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PROCESS INSPECTION CHECKSHEET

NAME		JIGS AND FIXTURES TEMPLATES		
DATE				
DRAWING NO.				
SL. NO.	CHARACTERISTIC/ PARAMETER	REFERENCE DOCUMENT/ SPECIFICATION	ACCEPTANCE CRITERIA	REMARKS
1.	DIMENSION		G-72(LATEST REVISION)	
2.	IDENTIFICATION		G-72(LATEST REVISION)	
3.	GENERAL CONDITION		G-72(LATEST REVISION)	
4.	DATE OF CALIBRATION		G-72(LATEST REVISION)	
5.	DUE DATE OF CALIBRATION		G-72(LATEST REVISION)	

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

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**AIR BRAKE TESTING CHECKSHEET
TYPE-BTPN (VARIANT-A)**

WAGON NO.:-

U/F NO.:

DATE:-

SL. NO.	ATTRIBUTE	ACCEPTANCE LIMIT	WORK INSPECTION	RDSO INSPECTION
1.	<u>AIR BRAKE & SLACK ADJUSTER</u>			
1.1	Distance between the control rod head and adjuster barrel (A)	Must be 70, +2,- 0		
1.2	Dimension (E) i.e. the distance between the end of protection tube and fixed mark on the slack adjuster pull rod	575 ±10 mm.		
1.3	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)		
1.4	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		
1.5	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		
2.	<u>AIR BRAKE EQUIPMENT</u>			
2.1	Pressure in B.P.	5±0.1 Kg/cm ²		
2.2	Pressure in A.R.	5±0.1 Kg/cm ²		
2.3	Full service application			
2.4	Leakage from the system in one minute	0.1 Kg/cm ² (max.)		
2.5	Brake cylinder filling time (Pressure rise from 0 to 3.6 Kg/cm ²)	Empty 18 to 30 seconds Loaded 18 to 30 seconds		
2.6	Maximum B.C. pressure in Kg/ cm ²	Empty 3.8 ± 0.1 Kg/ cm ² Loaded 3.8 ± 0.1 Kg/ cm ²		
2.7	Reduction in B.P. pressure required for full service application	1.3 to 1.6 Kg/ cm ²		
2.8	<u>RELEASE AFTER FULL SERVICE APPLICATION</u> Draining time B.C pressure to fall to 0.4 Kg/cm ² from 3.8 Kg/cm ²	a) Empty 45 to 60 seconds b) Loaded 45 to 60 seconds		
3.	<u>Piston stroke in mm</u>	a) Empty 85 ± 10 b) Loaded 130 ± 10		

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

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**AIR BRAKE TESTING CHECKSHEET
TYPE-BTPN (VARIANT-A)**

WAGON NO.:-

U/F NO.:

DATE:-

SL. NO.	ATTRIBUTE	ACCEPTANCE LIMIT	WORK INSPECTION	RDSO INSPECTION
4.	<u>EMERGENCY APPLICATION</u> Emergency application Brake cylinder filling time (pressure rise from 0 to 3.6 kg/ cm ²)	a) Empty 18 to 30 seconds b) Loaded 18 to 30 seconds		
4.1	Maximum B.C. pressure in kg/ cm ²	a) Empty 3.8 ± 0.1 Kg/cm ² b) Loaded 3.8 ± 0.1 Kg/cm ²		
4.2	Leakage from B.C.	0.1 Kg/cm ² max. in 5 minutes.		
5.	<u>SENSITIVITY OF BRAKES</u> Isolate brake pipe from mainline. 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		
6.	<u>INSENSITIVITY OF BRAKES</u> 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		
7.	<u>QUICK RELEASE AND ISOLATION</u>			
7.1	After emergency brake application operate quick release valve	Brake cylinder and control reservoir should also exhaust automatically.		
7.2	Bring isolating valve of distributor to off piston	Auxiliary reservoir should also exhaust.		
8.	<u>APD CHECKING</u> Check any twenty (minimum) number of APD fittings (refer RDSO Drg. No. 4020/24).	Both legs of cotter are split at 90 degree (approx.). Split pin legs are opened at 180 degree (approx.). Tack welding of cotter/split pin with washer/nut with bolts is adequate.		

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

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**HAND BRAKE TEST CHECKSHEET
TYPE-BTPN (VARIANT-A)**

WAGON NO.:-

U/F NO.:

DATE:-

SL. NO.	ATTRIBUTE	ACCEPTANCE LIMIT	WORK INSPECTION	RDSO INSPECTION
1.	Check for paint thickness & finish.	Thickness 80 (Shot Blasted) 120 microns (manual cleaning paint surface free from blistering brush marks & peeling).		
2.	Lettering & marking for size, location & punch mark.	As per Drg. No.WD-86081-S-75.		
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 striking 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			
	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.		

Works Inspector		RDSO Inspector	
Signature:		Signature:	
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