

**PRASA PROJECT**



# SELF INSPECTION SHEET

**CONFIDENTIAL INFORMATION**

This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

**APPLICATION REFERENCE**

MOUNTING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
			TC1	M4	M1	M2	M3	TC2			
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING M CAR	FT1140		1	1	<i>X</i>	1		PRA.FT1140.04	YES
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1					1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1	1	1	1	1	1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1	1	1	1	1	1	PRA.FT1140.05	YES
<input type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
7	2/11/2020	UPDATE OF AIR TIGHTNESS TEST TIME FROM 4 MIN TO 5 MIN. ADD PANTOGRAPH AIR TIGHTNESS.	APPROVER	GIVEN SILOWA	2/11/2020
			CHECKER	SIMON MOKOENA	2/11/2020
			COMPILER	COMFORT MALATJI	2/11/2020
8	9/13/2021	ADDING GAUGE MEASUREMENT CHECK ON THE SI.	APPROVER	MAKOFANE LUCY	9/13/2021
			CHECKER	RATAU EDISON	9/13/2021
			COMPILER	TSAKANI KHOSA	9/13/2021
9	5/31/2022	pressure valve (APV) Isolation	APPROVER	MAKHURUPETJI THABANG	5/31/2022
			CHECKER	HAZEL MGIBA	5/31/2022
			COMPILER	RATAU EDISON	5/31/2021

TUE	CAR	OPERATOR NAME	DATE	SELF INSPECTION NUMBER	PAGES
TS 022	M2	P. Sengiso	13/05/24	SI.FT1140.52	01/08



# SELF INSPECTION INDUSTRIAL QUALITY

Rev:09

Date:

5/31/2022

Projet:  
PRASA

SI.FT1140.52

Car:

NCR:

Work Station


FT1140




Safety Related

## I - Document and Instrument Control

### I.1 - Documents control

Document	TC1	M1	M2	M3	M4	TC2	Revised	Remark	OK	Signature/Date
PRA.FT1140.04										
PRA.FT1140.05			X						A	 13/05/24
PRA.FT1140.05										

### I.2 - Instruments Control - Monitoring and Measuring Instrument Control (Used for all instrument with calibration needed)

Instruments description	Serial number	Calibration or Verification Validation Date	OK	Signature/Date
Measuring tape	GIBTA 0276	26/10/23-24/10/24	-	
Vernier Calliper	GIBUR 0056	06/06/23-06/06/24	-	
Torque Wrench 35Nm	D2511023	19/12/23-19/12/24	✓	 13/05/24
Torque Wrench 150Nm	D28622009	19/12/23-19/12/24	-	
Torque Wrench 320Nm	A9650027	21/12/23-21/12/24	✓	



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## II - Self Inspection - Items to Check

### II.1 - Items to Check

Item	Picture/Sketch	Description	Criteria/Record	OK	Not OK	Signature/Date
01		Ensure that the average pressure valve (APV) is isolated by capping the two input pipes at the fittings installing the blanking fitting on the pipes highlighted		✓		 13/05/24
02		Check underframe pipe system Air tightness. Test performance according to WI PRA FT1130.15.	The test was performed and no leak was observed. Initial pressure (IP): 10.01 bar Final pressure (FP): 9.97 bar FP - IP = 0.04 bar  APPROVAL CRITERIA: After 5 minutes the pressure cannot drops more than 0,2 bar	✓		 13/05/24
03		Movement performed at least 50m to shudder the car. And position on the leveled load cell, with wheels on the center.		✓		 13/05/24
04		Measurement inspection was done with car on condition AWD and the rail leveled  (The load cells system must be leveled and calibrated)	Calibration Validation Date  _ / _ / _	✓		 13/05/24
05		In case of the equipments not installed, equivalent weight of the item should be added in the same place to simulate the equipment  (Any simulated weight, add on pending list)	EQUIPMENT DESCRIPTION GIRARRETTA WEIGHT (kg) 360	✓		 13/05/24
06		The pressure difference between air spring on each bogie when raise the pressure was maintained < 0.3 bar.		✓		 13/05/24
07		Measurement recorded with empty suspension and loaded are on conformity with tolerances of the project.		✓		 13/05/24
08		All leveling measurements are according to the reference.  (Values out of reference must be recorded on 'Description of defects')		✓		 13/05/24



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Item	Picture/Sketch	Description	Criteria/Record	Pass	Signature/Date
09		Check that the leveling rods are torqued and have torque marker.		✓	 13/05/24
10		The difference of weight between the left and right wheels of each axis, must be $\leq 4\%$ . (Verify on the T&C equipment if all arrows are in green).		✓	 13/05/24
11		Remove the car, move back onto the load cells and repeat the step 09. Confirm if both are in the tolerance of $\leq 4\%$ .		✓	 13/05/24
12		1 - Record shims thickness used on rod. 2 - All screws were torqued and have torque marker.	THICKNESS (mm) I 0 II 0 III 0 IV 0	✓	 13/05/24
13		Pivot fixation	1- M20 x 90 screws with application of torque according to PRA.FT1140.04 / 05	✓	 13/05/24
14		FOR TC CARS F= Height of the center of Automatic coupler F = 895mm (+5 / -10mm) (Using leveled rail)	TC CAB #1= _____ mm		N/A
15		FOR TC CARS Height of Eurobalise Antenna = 205mm(+/-10mm) (Using leveled rail)	TC CAB #1= _____ mm		N/A
16		Check pantograph piping air tightness. Test performance according to WI PRA.FT1140.17.	The test was performed and no leak was observed. -Roof piping connection fittings -Room piping connection fittings(Roof arch and door trimming)	✓	 13/05/24
17		Pantograph does not come in contact with the higher height gauge when passing through.	No Contact with Pantograph and Gauge -GO Contact with Pantograph and Gauge - NO GO	✓	 13/05/24
18		Car does not come into contact with the gauge.	No Contact with Car and Gauge -GO Contact with Car and Gauge - NO GO	✓	 13/05/24



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**DRAFT TO MEASUREMENTS DURING LEVELLING (ALL UNITS MUST BE IN mm/bar/kg)**

DESCRIPTION	TOLERANCE	LEFT SIDE						RIGHT SIDE						
		6	5	4	3	2	1	1	2	3	4	5	6	
AIR SPRING HEIGHT (EMPTY)	N/A	A`ii	/	/	/	/	/	/	/	/	/	/	/	A`i
AIR SPRING HEIGHT (FULL)	min 254 max 261	A`ii	/	/	/	/	256 252	256 256	/	/	/	/	/	A`i
FLOOR COVERING HEIGHT	min 1096 max 1116	E`ii	/	/	/	/	1105 1103	1110 1110	/	/	/	/	/	E`i
AIR SPRING PRESSURE	≤ 0.3 (O1 - O2)	C`ii	/	/	/	/	2,87 2,67	3,18 3,01	/	/	/	/	/	C`i
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D3	/	/	/	/	/	/	/	/	/	/	/	D1
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D4	/	/	/	/	/	/	/	/	/	/	/	D2
PIVOT VERTICAL GAP	min 25 max 32	K`ii	/	/	/	/	/	/	/	/	/	/	/	K`i
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (A1 - A2)	J`ii	/	/	/	/	/	/	/	/	/	/	/	J`i
QTY OF TURNS OF LEVELLING ROD	N/A	X`ii	/	/	/	/	7/8	0	/	/	/	/	/	X`i
SHIMS OF ANTI-ROLL BAR	N/A	Y`ii	/	/	/	/	/	/	/	/	/	/	/	Y`i
<b>DESCRIPTION</b>	<b>TOLERANCE</b>		6	5	4	3	2	1	1	2	3	4	5	6
AIR SPRING HEIGHT (EMPTY)	N/A	A`iii	/	/	/	/	/	/	/	/	/	/	/	A`iv
AIR SPRING HEIGHT (FULL)	min 254 max 261	A`iii	/	/	/	/	258 264	258 257	/	/	/	/	/	A`iv
FLOOR COVERING HEIGHT	min 1096 max 1116	E`iii	/	/	/	/	1103 1110	1110 1110	/	/	/	/	/	E`iv
AIR SPRING PRESSURE	≤ 0.3 (Ov - O2)	C`iii	/	/	/	/	2,98 3,15	2,51 2,67	/	/	/	/	/	C`iv
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D5	/	/	/	/	/	/	/	/	/	/	/	D7
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D6	/	/	/	/	/	/	/	/	/	/	/	D8
PIVOT VERTICAL GAP	min 25 max 32	K`iii	/	/	/	/	/	/	/	/	/	/	/	K`iv
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (Av - An)	J`iii	/	/	/	/	/	/	/	/	/	/	/	J`iv
QTY OF TURNS OF LEVELLING ROD	N/A	X`iii	/	/	/	/	1 1/2	0	/	/	/	/	/	X`iv
SHIMS OF ANTI-ROLL BAR	N/A	Y`iii	/	/	/	/	/	/	/	/	/	/	/	Y`iv

COMPARE EACH TENTATIVE WITH THE TOLERANCE AND IDENTIFY EACH MEASURE AS BELOW

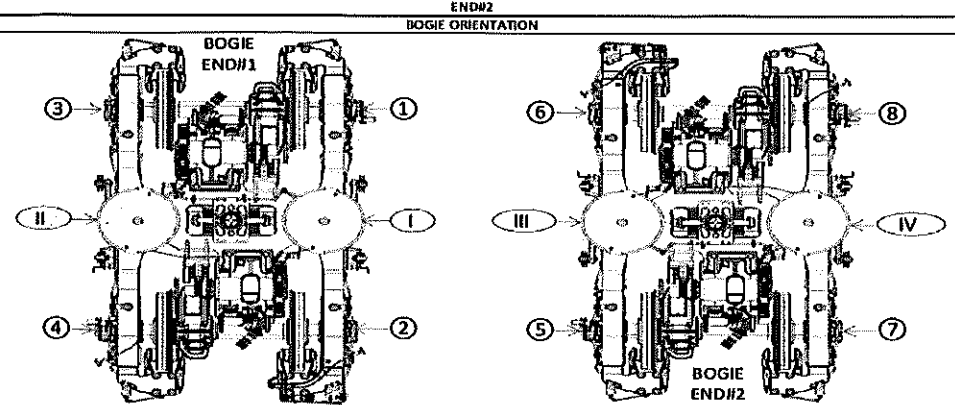
GOOD	LOWER	HIGHER
✓	↓	↑

WEIGHT COMPENSATION

EQUIPMENT	
WEIGHT	
EQUIPMENT	
WEIGHT	

SECONDARY MEASUREMENTS (ONLY TO CARDS)

AUTOMATIC COUPLER HEIGHT	
ANTENNA HEIGHT	





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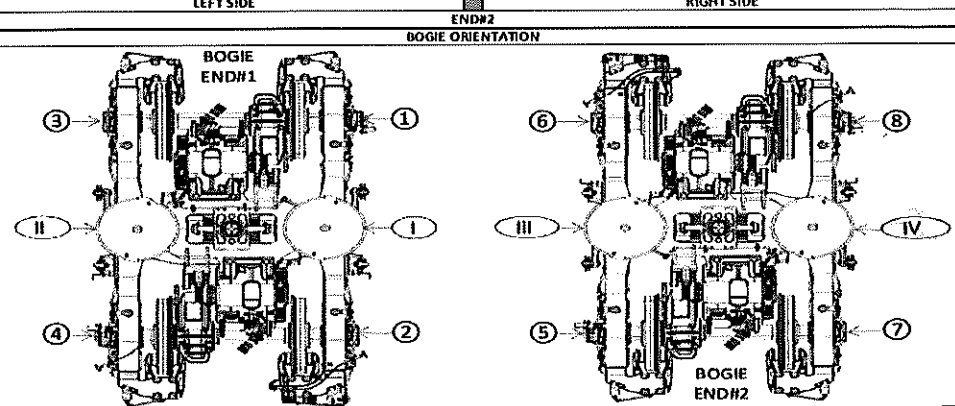
SI.FT1140.52

**DRAFT TO MEASUREMENTS DURING LEVELLING (ALL UNITS MUST BE IN mm/bar/kg)**

DESCRIPTION	TOLERANCE	LEFT SIDE						RIGHT SIDE							
		6	5	4	3	2	1	1	2	3	4	5	6		
AIR SPRING HEIGHT (EMPTY)	N/A	A <sup>II</sup>												A <sup>I</sup>	
AIR SPRING HEIGHT (FULL)	mn 254 max 261	A <sup>II</sup>												A <sup>I</sup>	
FLOOR COVERING HEIGHT	mn 1096 max 1116	E <sup>II</sup>												E <sup>I</sup>	
AIR SPRING PRESSURE	± 0.3 (Q <sup>I</sup> - Q)	C <sup>II</sup>												C <sup>I</sup>	
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D <sup>3</sup>												D <sup>1</sup>	
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D <sup>4</sup>												D <sup>2</sup>	
PIVOT VERTICAL GAP	mn 25 max 32	K <sup>II</sup>												K <sup>I</sup>	
PIVOT LATERAL STOP GAPS DIFFERENCE	± 4 (N - A)	J <sup>II</sup>												J <sup>I</sup>	
QTY OF TURNS OF LEVELLING ROD	N/A	X <sup>II</sup>												X <sup>I</sup>	
SHIMS OF ANTI-ROLL BAR	N/A	Y <sup>I</sup>												Y <sup>I</sup>	
DESCRIPTION	TOLERANCE		6	5	4	3	2	1	1	2	3	4	5	6	
AIR SPRING HEIGHT (EMPTY)	N/A	A <sup>III</sup>													A <sup>IV</sup>
AIR SPRING HEIGHT (FULL)	mn 254 max 261	A <sup>III</sup>													A <sup>IV</sup>
FLOOR COVERING HEIGHT	mn 1096 max 1116	E <sup>III</sup>													E <sup>IV</sup>
AIR SPRING PRESSURE	± 0.3 (Q <sup>V</sup> - Q <sup>II</sup> )	C <sup>III</sup>													C <sup>IV</sup>
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D <sup>5</sup>													D <sup>7</sup>
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D <sup>6</sup>													D <sup>8</sup>
PIVOT VERTICAL GAP	mn 25 max 32	K <sup>III</sup>													K <sup>IV</sup>
PIVOT LATERAL STOP GAPS DIFFERENCE	± 4 (N <sup>V</sup> - N <sup>II</sup> )	J <sup>III</sup>													J <sup>IV</sup>
QTY OF TURNS OF LEVELLING ROD	N/A	X <sup>III</sup>													X <sup>IV</sup>
SHIMS OF ANTI-ROLL BAR	N/A	Y <sup>III</sup>													Y <sup>IV</sup>

COMPARE EACH TENTATIVE WITH THE TOLERANCE AND IDENTIFY EACH MEASURE AS BELOW:

GOOD	LOWER	HIGHER
✓	↓	↑
WEIGHT COMPENSATION		
EQUIPMENT		
WEIGHT		
EQUIPMENT		
WEIGHT		
SECONDARY MEASUREMENTS (ONLY TO CAR)		
AUTOMATIC COUPLER HEIGHT		
ANTENNA HEIGHT		





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Table 1 - Reference Values and Measurement Tolerances for the Car Levelling.

ITEM	THEORETICAL VALUES																	
	T03 CAR		M4 CAR		M1 CAR		M2 CAR		M3 CAR		M3 CAR		T02 CAR					
	T03c1	T03c2	M4c1	M4c2	M1c1	M1c2	M2c1	M2c2	M3c1	M3c2	M3c1	M3c2	T02c1	T02c2				
Pivot lateral stop gaps difference [mm]	Fig. 4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	≤4	
Air Spring height [mm]	Fig. 5	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	255 <sup>+0</sup> <sub>-1</sub>	
Air spring pressure at AVO [Bar]	Fig. 5	3,76	2,82	2,87	2,83	3,02	2,91	3,07	2,85	2,88	2,87	2,83	2,88	2,83	2,83	2,83	3,76	
Primary Suspension gaps [mm]	C <sub>1</sub> -C <sub>2</sub>	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	
	C <sub>3</sub> -C <sub>4</sub>	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	0,3 Max.	
	D <sub>3</sub> :D <sub>5</sub>	Fig. 6	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	
	D <sub>3</sub> :D <sub>4</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	35 <sup>+0</sup> <sub>-5</sub>	
Carbody Floor height [mm]	Fig. 7	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	1106 <sup>+0</sup> <sub>-10</sub>	
Bolster height [mm]	Fig. 7	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	850 <sup>+0</sup> <sub>-5</sub>	
Coupling End height [mm]	Fig. 8	895	760	760	760	760	760	760	760	760	760	760	760	760	760	760	895	
Coupling End height [mm]	Fig. 9	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	
	Fig. 10	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	
Pivot Vertical gap [mm]	Fig. 10	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	30 <sup>+0</sup> <sub>-5</sub>	



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Leveling report from Production (Final measurements after Leveling and Weighting fine)

References for secondary suspension empty

A'n Air spring height empty

References for secondary suspension full

- An Air spring height
- Bn Difference between measurement A'n and An
- En Floor covering height
- Cn Air spring pressure
- Dn Primary suspension
- Kn Pivot Vertical gap
- Jn Pivot Lateral stop gaps difference

Item	Reference [mm]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
A'n	N/A	A'1 238	A'n 240	A'2 242	A'v 242
An	254 to 261	A1 258	A11 258	A12 258	A1v 259
Bn = An - A'n	N/A	B1 20	B11 18	B12 16	B1v 17
En	1106 ±10 mm	E1 1110	E11 1105	E12 1103	E1v 1110

Item	Reference [bar]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
Cn	Table 02 (°)	C1 2.94	C11 2.97	C12 2.81	C1v 2.74
Cn - Cn+1	Diference ≤ 0,3	C1 - C11 0,03		C12 - C1v 0,07	
Gauge serial number	N/A	91B05873	91B05873	91B05873	91B05873

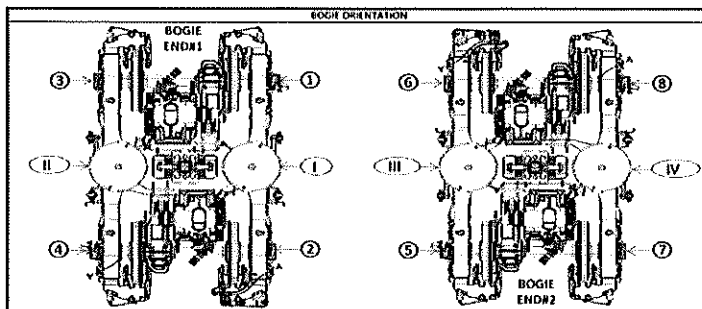
  

Item	Reference [mm]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
Dn	Table 01 (°)	D1 43.76	D11 44.50	D12 44.37	D1v 45.95
		D2 45.58	D21 43.87	D22 46.07	D2v 46.62
Kn	25 to 45	K1 32.07		K11 35.21	
Jn	Diference ≤ 4	J1 24.88	J11 26.06	J12 25.05	J1v 25.52

(\*) Reference, only include values, isn't approval criteria.

Table 01 D Theoretical Values	TC1		M4		M1		M2		M3		TC2	
	Tbex	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Mb1	Tbin	Tbex
D=	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$	$35 \pm \frac{+12}{-5}$

Table 02 C Theoretical Values	TC1		M4		M1		M2		M3		TC2	
	Tbex	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Mb1	Tbin	Tbex
C=	3.76	2.82	2.87	2.83	3.02	2.91	3.07	2.85	2.83	2.87	2.83	3.76



Weighting report from Test and Commissioning (Final measurements after Leveling and Weighting fine)




Gibela Rail Transport Consortium RF (Pty)  
 Ltd  
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 Dunnettar X7  
 Ekurhuleni, 1590, South Africa  
 Reception: +27 (0)10 600 0651




TRAIN SET 222 REF: GIB000001672\_ID PRASA WEIGHT BALANCE EN  
 PC09 WEIGHING REPORT

Balance across front and rear bogies		Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%
		18.62	17.88	2.03%	PASS
Weight Measured vs Predicted		Weight Measured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]
		36.50	37.06	1.52%	1.37%
					Criteria Min-Diffs/Max

Name	Company	Department	Signature	Date
Thabo Masi	GIBELA	EOC	<i>[Signature]</i>	14/5/2024

Company Gibela	Name of the requester Joshua Nemanashe	Function PME	Date 7 May 2024	Visa 	Request N° PRASA-DERSU-1096																																										
			Plant Country	Gibela South Africa																																											
Project	PRASA PROJECT		Customer	PRASA																																											
Product name Reference	TS161 to TS210 TC1,M4,M1,M2,M3,TC2		Drawing number and Revision	DT00000207673																																											
Temporary <input checked="" type="checkbox"/> Until : TS161 to TS210	Quantity : 80 Train sets	Serial Numbers / Batch: TS211 to TS290			Permanent <input type="checkbox"/>																																										
<p><b>Requirement:</b> According to GIB0000001672 prasa weight balance EN . TC1/TC2:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.62%. M1/M2:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.37%. M3/M4:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.36%.</p> <p><b>Non-conformity description:</b> The average weights measured from TS120 up to 162 has shown a deviation from the acceptance criteria. However, after discussions with BARRABES-PRADAL Daniel an additional 0.5% deviation from the acceptance criteria will not have an impact. Should we had this to the acceptance tolerance then all the cars will pass. <b>“these trains are equivalent in terms of mass (we have seen a gap around 0,5)”</b></p> <p>See below min and max weight measured for TS120-162 and the average tolerances (We expect the same deviation for the next 80 train sets):</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>TC2</td> <td>33.9</td> <td>34.6</td> </tr> <tr> <td>M3</td> <td>35.4</td> <td>35.9</td> </tr> <tr> <td>M2</td> <td>36</td> <td>37.1</td> </tr> <tr> <td>M1</td> <td>36.6</td> <td>37</td> </tr> <tr> <td>M4</td> <td>35.3</td> <td>36.6</td> </tr> <tr> <td>TC1</td> <td>33.9</td> <td>34.4</td> </tr> </tbody> </table>					Min	Max	TC2	33.9	34.6	M3	35.4	35.9	M2	36	37.1	M1	36.6	37	M4	35.3	36.6	TC1	33.9	34.4	<p><b>Anteriority:</b></p> <p><b>Impact on:</b></p> <ul style="list-style-type: none"> <li>Environment..... <input type="checkbox"/></li> <li>Safety (people)..... <input type="checkbox"/></li> <li>Contract clauses..... <input type="checkbox"/></li> <li>Economic..... <input type="checkbox"/></li> <li>Development.. <input type="checkbox"/></li> <li>Product Safety..... <input type="checkbox"/></li> <li>Reliability..... <input type="checkbox"/></li> <li>Performances..... <input checked="" type="checkbox"/></li> <li>Delivery..... <input type="checkbox"/></li> <li>Cost..... <input type="checkbox"/></li> <li>Documentation..... <input type="checkbox"/></li> <li>Resources..... <input type="checkbox"/></li> <li>Others..... <input type="checkbox"/></li> </ul>																						
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<b>Cause of the non-conformity / reasons for request:</b> Weight balance document was revised from J to K by engineering and the following was removed from the weight calculations: -Main Reservoir Tank Removal -Brake Reservoir Resizing -CPU bloc is combined with the screen - Closure of Air Extractor Opening						
<b>Attached documents:</b> REF: GIB0000001672_K0 PRASA WEIGHT BALANCE EN report <div style="text-align: center; margin: 5px 0;">  </div> RE TS Weight is failing .msg						
<b>Containment action:</b> Each train is evaluated by engineering and based on risk it will be approved or declined. A new version of GIB000001672 will be created to align the sub system actual weight with the theoretical weight which will reduce the error percentage.				Use or assignment limitations of the non-conforming product:		
<b>Corrective &amp; Preventive action:</b> Engineering to revise car weights per baseline.						
Function	Entity	Name	Date	Visa	Observations / Conditions	Decision
Process Manufacturing Engineering	GIB	Junior MAGADA	14/05/2024	<i>JFK</i>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Train System Engineering	GIB	Mpho LELALA-MNGUNI		<i>Belab-mnguni</i>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Industrial Quality	GIB	Lucy MAKOFANE	14/05/2024	<i>[Signature]</i>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Engineering Manager	GIB	Tshepo NKODI	15/05/2024	<i>[Signature]</i>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Quality Safety Manager	GIB	Soiani MALIBONGWE	16/05/2024	<i>R.M.C. [Signature]</i> pp. Reitumeiso Mohuthi		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Manager	GIB	Devendran GOVENDER	17/05/2024	<i>[Signature]</i>	Engineering to update the test procedure with new targets	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK