




SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION




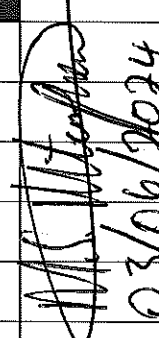
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APPLICATION REFERENCE



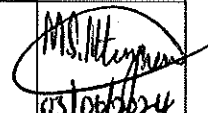
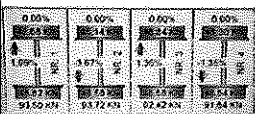
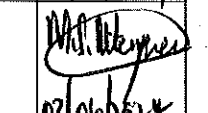
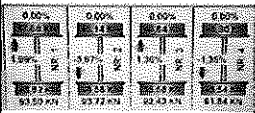


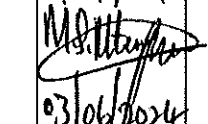

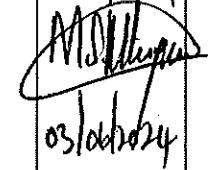

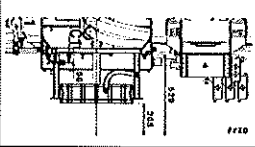
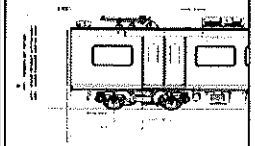
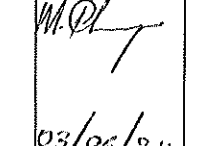
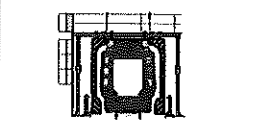
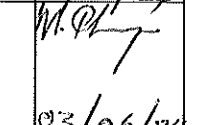
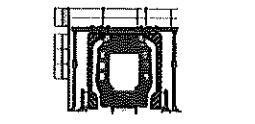
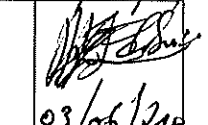
MOUNTING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
			TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING M CAR	FT1140	1	1	1	1		PRA.FT1140.04	YES
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1				1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1	1	1	1	1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	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 227	M2	Mpumelo	03/06/24	SI.FT1140.52	01/08

 GIBELQ	<h1 style="text-align: center;">SELF INSPECTION INDUSTRIAL QUALITY</h1>		Rev:09	Projet: PRASA	SI.FT1140.52						
			Date: 5/31/2022								
Car:	MCR:		Work Station FT1140								
 Safety Related											
I - Document and Instrument Control											
I.1 - Documents control											
Document	T01	M1	M2	M3	M4	T02	Revision	Remark	OK	NO	Signature/Date
PRA.FT1140.04											
PRA.FT1140.05			✓								 02/06/24
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	NO	Signature/Date				
Measuring tape	GIBTH 0276		24/10/23 - 24/10/24		✓		 03/06/2024				
Vernier Calliper	GIBVK 0086		06/06/23 - 06/06/24		✓						
Torque wrench 35N.m	A2511023		19/11/23 - 19/11/24		✓						
Torque wrench 150N.m	A28622009		19/12/23 - 19/12/24		✓						
Torque wrench 320N.m	A9650027		21/12/23 - 21/12/24		✓						

	<h1 style="text-align: center;">SELF INSPECTION INDUSTRIAL QUALITY</h1>		Rev:09	Projet: PRASA	SI.FT1140.52									
			Date:											
			5/31/2022											
II - Self Inspection - Items to Check														
II.1 - Items to Check														
Item	Picture/Sketch	Description	Criteria/Record	OK	NOX	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		✓		MS. [Signature] 03/06/24								
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) 10.67 bar Final pressure (FP) 10.64 bar FP - IP - 0.03 bar APPROVAL CRITERIA: After 5 minutes the pressure cannot drops more than 0.2 bar	✓		MS. [Signature] 03/06/24								
03		Movement performed at least 50m to shudder the car. And position on the leveled load cell, with wheels on the center.		✓		MS. [Signature] 03/06/24								
04		Measurement inspection was done with car on condition AWO and the rail leveled. (The load cells system must be leveled and calibrated)	Calibration Validation Date 14/05/24	✓		MS. [Signature] 03/06/2024								
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)	<table border="1" style="width: 100%;"> <thead> <tr> <th>EQUIPMENT DESCRIPTION</th> <th>WEIGHT (kg)</th> </tr> </thead> <tbody> <tr> <td>Gangway</td> <td>360</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	EQUIPMENT DESCRIPTION	WEIGHT (kg)	Gangway	360					✓		MS. [Signature] 03/06/2024
EQUIPMENT DESCRIPTION	WEIGHT (kg)													
Gangway	360													
06		The pressure difference between air spring on each bogie when raise the pressure was maintained < 0.3 bar.		✓		MS. [Signature] 03/06/2024								
07		Measurement recorded with empty suspension and loaded are on conformity with tolerances of the project		✓		MS. [Signature] 03/06/2024								
08		All leveling measurements are according to the reference. (Values out of reference must be recorded on "Description of defects")		✓		MS. [Signature] 03/06/2024								

		SELF INSPECTION INDUSTRIAL QUALITY		Rev:09	Project: PRASA	SI.FT1140.52
				Date: 5/31/2022		
Item	Picture/Sketch	Description	Criteria/Record	OK	Not OK	Signature/Date
09		Check that the leveling rods are torqued and have torque marker.		✓		 03/06/2024
10		The difference of weight between the left and right wheels of each axis, must be ≤ 4%. (Verify on the T&C equipment if all arrows are in green).		✓		 03/06/2024
11		Remove the car, move back onto the load cells and repeat the step 09. Confirm if both are in the tolerance of ≤ 4%.		✓		 03/06/2024
12		1 - Record shims thickness used on rod. 2 - All screws were torqued and have torque marker.	THICKNESS (mm) I _____ II _____ III _____ IV _____	✓		 03/06/2024
13		Pivot fixation	1- M20 x 90 screws with application of torque according to PRA.FT1140.04 / 05	✓		 03/06/2024
14		FOR TC CARS F= Height of the center of Automatic coupler F = 895mm (+5/-10mm) (Using levelled rail)	TC CAB #1= _____ mm			n/a
15		FOR TC CARS Height of Eurobalise Antenna = 205mm(+/-10mm) (Using levelled 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 -Roof piping connection fittings(Roof arch and door trimming)	✓		 03/06/2024
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	✓		 03/06/2024
18		Car does not come into contact with the gauge.	No Contact with Car and Gauge -GO Contact with Car and Gauge - NO GO	✓		 03/06/2024



SELF INSPECTION INDUSTRIAL QUALITY

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Date:

5/31/2022

Proj:
PRASA

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'ii											A'i
AIR SPRING HEIGHT (FULL)	min 254 max 261	Aii				259	256	257	258				Ai
FLOOR COVERING HEIGHT	min 1096 max 1116	Eii				1110			1108				Ei
AIR SPRING PRESSURE	≤ 0.3 (Qi - Q)	Cii				3.01	3.06	2.91	2.93				CI
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D3											D1
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D4											D2
PIVOT VERTICAL GAP	min 25 max 32	Kii											Ki
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (Ai - A)	Jii											Ji
QTY OF TURNS OF LEVELLING ROD	N/A	Xii											Xi
SHIMS OF ANTI-ROLL BAR	N/A	Yii											Yi
DESCRIPTION	TOLERANCE	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	Aiii				257	256	258	260				Aiv
FLOOR COVERING HEIGHT	min 1096 max 1116	Eiii				1110			1109				Eiv
AIR SPRING PRESSURE	≤ 0.3 (Qv - Q)	Ciii				2.80	2.80	2.81	2.77				Civ
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D5											D7
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D6											D8
PIVOT VERTICAL GAP	min 25 max 32	Kiii											Kiv
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (Av - A)	Jiii											Jiv
QTY OF TURNS OF LEVELLING ROD	N/A	Xiii											Xiv
SHIMS OF ANTI-ROLL BAR	N/A	Yiii											Yiv

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

GOOD LOWER HIGHER

✓ ↓ ↑

WEIGHT COMPENSATION

EQUIPMENT

WEIGHT

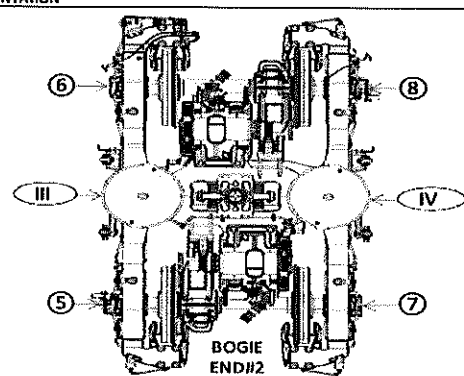
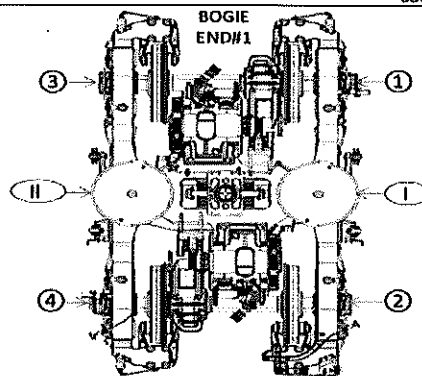
EQUIPMENT

WEIGHT

SECONDARY MEASUREMENTS (ONLY TO CARS)

AUTOMATIC COUPLER HEIGHT

ANTENNA HEIGHT





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Projat:
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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 ^{II}											A ^I
AIR SPRING HEIGHT (FULL)	mn 254 max 261	A ^{II}											A ^I
FLOOR COVERING HEIGHT	mn 1096 max 1116	E ^{II}											E ^I
AIR SPRING PRESSURE	± 0.3 (Ci - Qi)	C ^{II}											C ^I
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D ₃											D ₁
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D ₄											D ₂
PIVOT VERTICAL GAP	mn 25 max 32	K ^{II}											K ^I
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (Ji - Ji')	J ^{II}											J ^I
QTY OF TURNS OF LEVELLING ROD	N/A	X ^{II}											X ^I
SHIMS OF ANTI-ROLL BAR	N/A	Y ^{II}											Y ^I
AIR SPRING HEIGHT (EMPTY)	N/A	A ^{III}											A ^{IV}
AIR SPRING HEIGHT (FULL)	mn 254 max 261	A ^{III}											A ^{IV}
FLOOR COVERING HEIGHT	mn 1096 max 1116	E ^{III}											E ^{IV}
AIR SPRING PRESSURE	± 0.3 (Civ - Qiv)	C ^{III}											C ^{IV}
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D ₅											D ₇
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D ₆											D ₈
PIVOT VERTICAL GAP	mn 25 max 32	K ^{III}											K ^{IV}
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (Jiv - Ji')	J ^{III}											J ^{IV}
QTY OF TURNS OF LEVELLING ROD	N/A	X ^{III}											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 CARS)		
AUTOMATIC COUPLER HEIGHT		
ANTENNA HEIGHT		

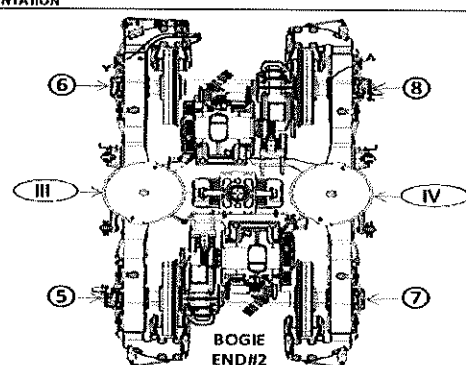
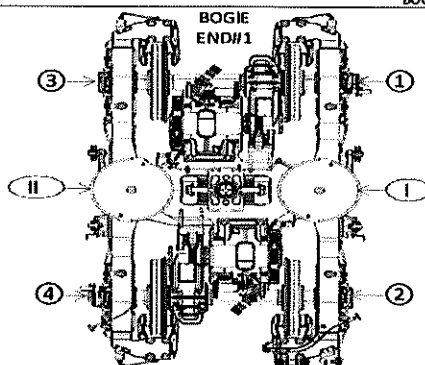


Table 1 - Reference Values and Measurement Tolerances for the Car Levelling.

ITEM		THEORETICAL VALUES											
		T12 CAR		M1 CAR		M2 CAR		M3 CAR		T12 CAR		T12 CAR	
		T12ext	T12int	M11	M12	M21	M22	M31	M32	T12ext	T12int	T12ext	T12int
Pivot lateral stop gap difference (mm)	Fig. 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Air Spring height (mm)	Fig. 5	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}	255^{+4}_{-4}
Air spring pressure at AWD (Bar)	Fig. 5	3,76 (Ref.)	2,82 (Ref.)	2,83 (Ref.)	3,02 (Ref.)	2,91 (Ref.)	3,07 (Ref.)	2,85 (Ref.)	2,87 (Ref.)	2,83 (Ref.)	2,83 (Ref.)	2,83 (Ref.)	2,83 (Ref.)
Primary Suspension gaps (mm)	$C_1 - C_4$	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.
	$C_3 - C_2$	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_1, D_2	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅
	D_3, D_4	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅	35 ⁺²⁵ ₋₅
Carbody floor height (mm)	Fig. 7	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀	1106 ⁺²⁰ ₋₁₀
Bolster height (mm)	Fig. 7	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅	850 ⁺²⁵ ₋₁₅
Coupling End height (mm)	Fig. 8	895 (Ref.)	760 (Ref.)	760 (Ref.)	760 (Ref.)	760 (Ref.)	760 (Ref.)	760 (Ref.)	760 (Ref.)	895 (Ref.)	760 (Ref.)	895 (Ref.)	760 (Ref.)
Pivot Vertical gap (mm)	Fig. 10	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅	30 ⁺²⁵ ₋₅

	<h1 style="margin: 0;">SELF INSPECTION INDUSTRIAL QUALITY</h1>	Rev:09	Projet: PRASA	SI.FT1140.52
		Date:		
		5/31/2022		

Leveling report from Production (Final measurements after Levelling 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'i 237	A'ii 240	A'ia 244	A'iv 240
An	254 to 261	Ai 258	Aii 259	Aia 257	Aiv 260
Bn = An - A'n	N/A	Bi 21	Bii 19	Bia 13	Biv 20
En	1108 ±10 mm	Ei 1108	Eii 1110	Eia 1110	Eiv 1109

Item	Reference [bar]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
Cn	Table 02 (*)	Ci 2.93	Cii 3.01	Cia 2.80	Civ 2.77
Cn - Cn+1	Difference ≤ 0,3	Ci - Cii 0,08		Cia - Civ 0,03	
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 42.71	D2 42.63	D3 44.33	D4 43.29
		D5 42.67	D6 42.06	D7 43.96	D8 44.08
Kn	25 to 45	Ki 32.56		Kii 34.61	
Jn	Difference ≤ 4	Ji 24.50	Jii 25.56	Jia 23.17	Jiv 25.26

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

Table 01
D Theoretical Values

TC1	M4		M1		M2		M3		TC2
Tbox	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Tbin
35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}	35^{+12}_{-5}

Table 02
C Theoretical Values

TC1	M4		M1		M2		M3		TC2
Tbox	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Tbin
3.76	2.82	2.87	2.83	3.02	2.91	3.07	2.85	2.83	2.83

BOGIE ORIENTATION

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

[illegible]



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

TRAIN SET 227	REF: GIB000001572_10 PRASA WEIGHT BALANCE EN
	PC09 WEIGHING REPORT

M2	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%
		18.64	17.94	1.91%	PASS
	Weight Measured vs Predicted	Weight Measured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]
		36.58	37.06	1.30%	1.37%
					Criteria MinDiffMax
					PASS

GIBELA				For Signature	
Name	Company	Department	Signature	Date	
Chato Musi	GIBELA	EOC		03/06/2014	