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2024-02-18

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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.

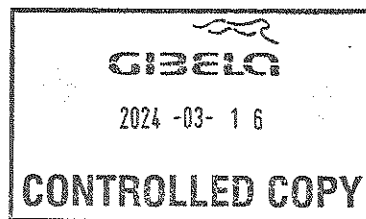
## APPLICATION REFERENCE

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

| REV | DATE       | MODIFICATION CONTENT  | RESPONSIBLE | NAME                 | DATE       |
|-----|------------|---|-------------|----------------------|------------|
| 7   | 2020/02/11 | UPDATE OF AIR TIGHTNESS TEST TIME FROM 4 MIN TO 5 MIN.<br>ADD PANTOGRAPH AIR TIGHTNESS. | APPROVER    | GIVEN SILOWA         | 2020/02/11 |
|     |            |   | CHECKER     | SIMON MOKOENA        | 2020/02/11 |
|     |            |   | COMPILER    | COMFORT MALATJI      | 2020/02/11 |
| 8   | 2021/09/13 | ADDING GAUGE MEASUREMENT CHECK ON THE SI.   | APPROVER    | MAKOFANE LUCY        | 2021/09/13 |
|     |            |   | CHECKER     | RATAU EDISON         | 2021/09/13 |
|     |            |   | COMPILER    | TSAKANI KHOSA        | 2021/09/13 |
| 9   | 2022/05/31 | pressure valve (APV) Isolation  | APPROVER    | MAKHURUPETJI THABANG | 2022/05/31 |
|     |            |   | CHECKER     | HAZEL MGIBA          | 2022/05/31 |
|     |            |   | COMPILER    | RATAU EDISON         | 2021/05/31 |

| TUE    | CAR | OPERATOR NAME | DATE     | SELF INSPECTION NUMBER | PAGES |
|--------|-----|---------------|----------|------------------------|-------|
| TS 214 | MI  | CHIPU         | 16/03/24 | SI.FT1140.52           | 01/08 |

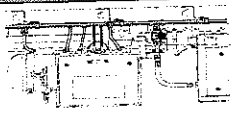



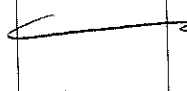

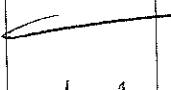

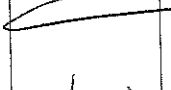

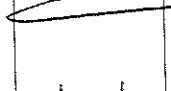

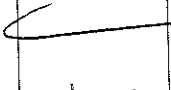

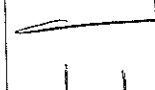
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|---|---------------------------------------|------|--|------------------|--------------|-----|---|--------|---|---|----------------|
|    | SELF INSPECTION<br>INDUSTRIAL QUALITY |      | Rev:09   | Projet:<br>PRASA | SI.FT1140.52 |     |   |        |   |   |                |
|   |                                       |      | Date:<br>2022/05/31                            |                  |              |     |   |        |   |   |                |
| Car:  |                                       | NCR: | Work Station: FT1140                           |                  |              |     |   |        |   |   |                |
|  Safety Related                          |                                       |      |  |                  |              |     |   |        |   |   |                |
| I - Document and Instrument Control   |                                       |      |  |                  |              |     |   |        |   |   |                |
| I.1 - Documents control   |                                       |      |  |                  |              |     |   |        |   |   |                |
| Document  | TC1                                   | M1   | M2   | M3               | M4           | TC2 | Revision  | Remark | D | I | Signature/Date |
| PRA.FT1140.04   |                                       |      |  |                  |              |     |   |        |   |   | ✓ 18/03/24     |
| PRA.FT1140.05   |                                       | ✓    |  |                  |              |     |   |        |   |   |                |
| 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<br>Validation Date |                  | D            | I   | Signature/Date  |        |   |   |                |
| Measuring tape  | CIBTA 0276                            |      | 26/10/23-26/10/24                              |                  | ✓            |     |  16/03/24 |        |   |   |                |
| Vanier calliper   | CIBVR 0056                            |      | 26/01/23-26/06/24                              |                  | ✓            |     |   |        |   |   |                |
| Torque wrench 320Nm   | A9650027                              |      | 21/12/23-21/12/24                              |                  | ✓            |     |   |        |   |   |                |
| Torque wrench 150Nm   | D28622009                             |      | 17/12/23-17/12/24                              |                  | ✓            |     |   |        |   |   |                |
| Torque wrench 35Nm  | D2511023                              |      | 17/12/23-17/12/24                              |                  | ✓            |     |   |        |   |   |                |
|   |                                       |      |  |                  |              |     |   |        |   |   |                |
|   |                                       |      |  |                  |              |     |   |        |   |   |                |

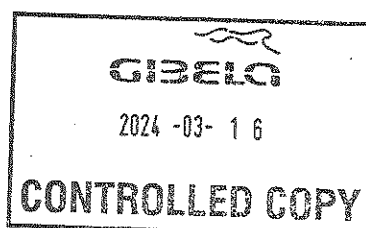



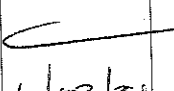
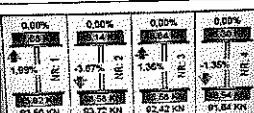
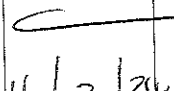
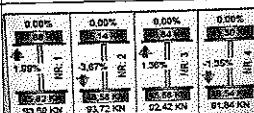
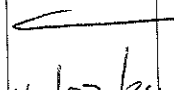
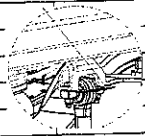


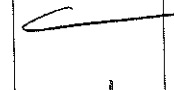
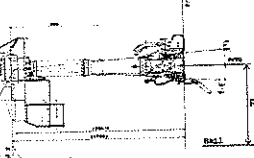
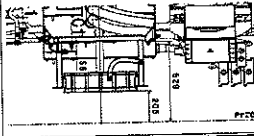
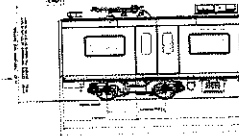

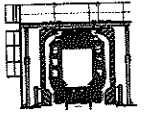

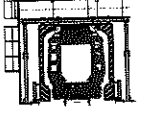
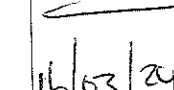
|   |   |            |                   |              |
|---|---|------------|-------------------|--------------|
|  | <h1>SELF INSPECTION<br/>INDUSTRIAL QUALITY</h1> | Rev:09     | Project:<br>PRASA | SI.FT1140.52 |
|   |   | Date:      |                   |              |
|   |   | 2022/05/31 |                   |              |

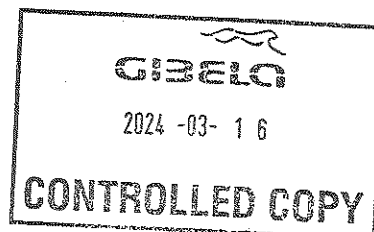
## II - Self Inspection - Items to Check

### II.1 - Items to Check

| Item                  | Picture/Sketch  | Description  | Criteria/Record   | 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                       |   | ✓                     | <br>15/03/24   |         |     |  |  |  |  |  |  |   |   |
| 02                    |   | Check underframe pipe system Air tightness.<br>Test performance according to WI PRA.FT1130.15.   | The test was performed and no leak was observed.<br><br>Initial pressure (IP) <u>2.61</u> bar<br>Final pressure (FP) <u>1.74</u> bar<br>FP - IP = <u>0.87</u> bar<br><br>APPROVAL CRITERIA: After 5 minutes the pressure cannot drops more than 0,2 bar | ✓                     | <br>15/03/24   |         |     |  |  |  |  |  |  |   |   |
| 03                    |    | Movement performed at least 50m to shudder the car. And position on the leveled load cell, with wheels on the center.  |   | ✓                     | <br>16/03/24   |         |     |  |  |  |  |  |  |   |   |
| 04                    |   | Measurement inspection was done with car on condition AWD and the rail levelled.<br><br>(The load cells system must be levelled and calibrated)  | Calibration Validation Date<br><br>- / - / -  | ✓                     | <br>16/03/24  |         |     |  |  |  |  |  |  |   |   |
| 05                    |  | In case of the equipments not installed, equivalent weight of the item should be added in the same place to simulate the equipment.<br><br>(Any simulated weight, add on pending list) | <table><thead><tr><th>EQUIPMENT DESCRIPTION</th><th>WEIGHT (kg)</th></tr></thead><tbody><tr><td>CANUWAY</td><td>350</td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></tbody></table>                    | EQUIPMENT DESCRIPTION | WEIGHT (kg)   | CANUWAY | 350 |  |  |  |  |  |  | ✓ | <br>16/03/24 |
| EQUIPMENT DESCRIPTION | WEIGHT (kg)   |  |   |                       |   |         |     |  |  |  |  |  |  |   |   |
| CANUWAY               | 350   |  |   |                       |   |         |     |  |  |  |  |  |  |   |   |
|                       |   |  |   |                       |   |         |     |  |  |  |  |  |  |   |   |
|                       |   |  |   |                       |   |         |     |  |  |  |  |  |  |   |   |
|                       |   |  |   |                       |   |         |     |  |  |  |  |  |  |   |   |
| 06                    |  | The pressure difference between air spring on each bogie when raise the pressure was maintained < 0.3 bar.   |   | ✓                     | <br>16/03/24 |         |     |  |  |  |  |  |  |   |   |
| 07                    |  | Measurement recorded with empty suspension and loaded are on conformity with tolerances of the project.  |   | ✓                     | <br>16/03/24 |         |     |  |  |  |  |  |  |   |   |
| 08                    |  | All levelling measurements are according to the reference.<br><br>(Values out of reference must be recorded on "Description of defects")   |   | ✓                     | <br>16/03/24 |         |     |  |  |  |  |  |  |   |   |



|  |   | <b>SELF INSPECTION<br/>INDUSTRIAL QUALITY</b>  |  | Rev:09 | Date:<br>2022/05/31 |    | Project:<br>PRASA   | SI.FT1140.52 |  |
|---|---|--|--|--------|---------------------|----|---|--------------|--|
|   |   |  |  |        |                     |    |   |              |  |
| Item  | Picture/Sketch  | Description  | Criteria/Record  | ✓      | ✗                   | NA | Signature/Date  |              |  |
| 09  |   | Check that the leveling rods are torqued and have torque marker.   |  | ✓      |                     |    | <br>16/03/24   |              |  |
| 10  |    | The difference of weight between the left and right wheels of each axis, must be $\leq 4\%$ .<br>(Verify on the T&C equipment if all arrows are in green). |  | ✓      |                     |    | <br>16/03/24   |              |  |
| 11  |    | Remove the car, move back onto the load cells and repeat the step 09.<br>Confirm if both are in the tolerance of $\leq 4\%$ .                              |  | ✓      |                     |    | <br>16/03/24   |              |  |
| 12  |    | 1 - Record shims thickness used on rail.<br>2 - All screws were torqued and have torque marker.  | THICKNESS (mm)<br>I 2<br>II 2<br>III 2<br>IV 2   | ✓      |                     |    | <br>16/03/24   |              |  |
| 13  |   | Pivot fixation   | 1- M20 x 90 screws with application of torque according to PRA.FT1140.04 / 05  | ✓      |                     |    | <br>16/03/24   |              |  |
| 14  |  | FOR TC CARS<br>F = Height of the center of Automatic coupler<br>F = 895mm (+5 / -10mm)<br>(Using levelled rail)  | TC CAB #1 = _____ mm   |        |                     |    | N/A   |              |  |
| 15  |  | FOR TC CARS<br>Height of Eurobalise Antenna = 205mm (+/-10mm)<br>(Using levelled rail)   | TC CAB #1 = _____ mm   |        |                     |    | N/A   |              |  |
| 16  |  | Check pantograph piping air tightness.<br>Test performance according to WI PRA.FT1140.17.  | The test was performed and no leak was observed.<br>-Roof piping connection fittings.<br>-Roof piping connection fittings(Roof arch and door trimming) | ✓      |                     |    | <br>16/03/24 |              |  |
| 17  |  | Pantograph does not come in contact with the higher height gauge when passing through.   | No Contact with Pantograph and Gauge -GO<br>Contact with Pantograph and Gauge - NO GO  | ✓      |                     |    | <br>16/03/24 |              |  |
| 18  |  | Car does not come into contact with the gauge.   | No Contact with Car and Gauge -GO<br>Contact with Car and Gauge - NO GO  | ✓      |                     |    | <br>16/03/24 |              |  |





# SELF INSPECTION INDUSTRIAL QUALITY

Rev:09

Date:

2022/05/31

Projet:  
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 <sup>II</sup>  |   |   |   |   |           |            |   |   |   |   |   | A <sup>I</sup>  |
| AIR SPRING HEIGHT (FULL)           | min 254<br>max 261                             | A <sup>II</sup>  |   |   |   |   | 255 256   | 254 256    |   |   |   |   |   | A <sup>I</sup>  |
| FLOOR COVERING HEIGHT              | min 1096<br>max 1116                           | E <sup>II</sup>  |   |   |   |   |           |            |   |   |   |   |   | E <sup>I</sup>  |
| AIR SPRING PRESSURE                | ≤ 0.3<br>(C <sub>I</sub> - C <sub>I</sub> )    | C <sup>II</sup>  |   |   |   |   | 2,8 2,9   | 2,89 2,8   |   |   |   |   |   | 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                 | min 25<br>max 32                               | K <sup>II</sup>  |   |   |   |   |           |            |   |   |   |   |   | K <sup>I</sup>  |
| PIVOT LATERAL STOP GAPS DIFFERENCE | ≤ 4<br>(J <sub>II</sub> - J <sub>I</sub> )     | 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>II</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)           | min 254<br>max 261                             | A <sup>III</sup> |   |   |   |   | 255 256   | 254 256    |   |   |   |   |   | A <sup>IV</sup> |
| FLOOR COVERING HEIGHT              | min 1096<br>max 1116                           | E <sup>III</sup> |   |   |   |   |           |            |   |   |   |   |   | E <sup>IV</sup> |
| AIR SPRING PRESSURE                | ≤ 0.3<br>(C <sub>IV</sub> - C <sub>III</sub> ) | C <sup>III</sup> |   |   |   |   | 2,76 2,76 | 2,79 2,76  |   |   |   |   |   | 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                 | min 25<br>max 32                               | K <sup>III</sup> |   |   |   |   |           |            |   |   |   |   |   | K <sup>IV</sup> |
| PIVOT LATERAL STOP GAPS DIFFERENCE | ≤ 4<br>(J <sub>IV</sub> - J <sub>III</sub> )   | 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

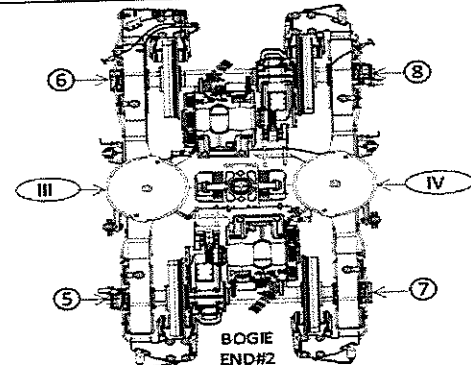
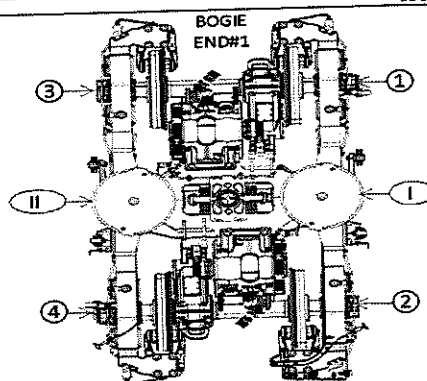
WBGHT

EQUIPMENT

WBGHT

SECONDARY MEASUREMENTS  
(ONLY TC CARS)AUTOMATIC COUPLER  
HEIGHT

ANTENNA HEIGHT



GIBELQ

2024-03-16

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# SELF INSPECTION INDUSTRIAL QUALITY

Rev:09

Date:

2022/05/31

Projet:  
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 <sup>II</sup>  |   |   |   |   |   |            |   |   |   |   |   | A <sup>I</sup>  |
| AIR SPRING HEIGHT (FULL)           | min 254<br>max 261                           | A <sup>II</sup>  |   |   |   |   |   |            |   |   |   |   |   | A <sup>I</sup>  |
| FLOOR COVERING HEIGHT              | min 1096<br>max 1116                         | E <sup>II</sup>  |   |   |   |   |   |            |   |   |   |   |   | E <sup>I</sup>  |
| AIR SPRING PRESSURE                | ≤ 0.3<br>(Q <sub>1</sub> - Q <sub>1</sub> )  | C <sup>II</sup>  |   |   |   |   |   |            |   |   |   |   |   | C <sup>I</sup>  |
| PRIMARY SUSPENSION                 | SEE TABLE (ONLY REF)                         | D <sub>3</sub>   |   |   |   |   |   |            |   |   |   |   |   | D <sub>1</sub>  |
| PRIMARY SUSPENSION                 | SEE TABLE (ONLY REF)                         | D <sub>4</sub>   |   |   |   |   |   |            |   |   |   |   |   | D <sub>2</sub>  |
| PIVOT VERTICAL GAP                 | min 25<br>max 32                             | K <sup>II</sup>  |   |   |   |   |   |            |   |   |   |   |   | K <sup>I</sup>  |
| PIVOT LATERAL STOP GAPS DIFFERENCE | ≤ 4<br>(J <sub>II</sub> - J <sub>I</sub> )   | 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>II</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)           | min 254<br>max 261                           | A <sup>III</sup> |   |   |   |   |   |            |   |   |   |   |   | A <sup>IV</sup> |
| FLOOR COVERING HEIGHT              | min 1096<br>max 1116                         | E <sup>III</sup> |   |   |   |   |   |            |   |   |   |   |   | E <sup>IV</sup> |
| AIR SPRING PRESSURE                | ≤ 0.3<br>(Q <sub>v</sub> - Q <sub>1</sub> )  | C <sup>III</sup> |   |   |   |   |   |            |   |   |   |   |   | C <sup>IV</sup> |
| PRIMARY SUSPENSION                 | SEE TABLE (ONLY REF)                         | D <sub>5</sub>   |   |   |   |   |   |            |   |   |   |   |   | D <sub>7</sub>  |
| PRIMARY SUSPENSION                 | SEE TABLE (ONLY REF)                         | D <sub>6</sub>   |   |   |   |   |   |            |   |   |   |   |   | D <sub>8</sub>  |
| PIVOT VERTICAL GAP                 | min 25<br>max 32                             | K <sup>III</sup> |   |   |   |   |   |            |   |   |   |   |   | K <sup>IV</sup> |
| PIVOT LATERAL STOP GAPS DIFFERENCE | ≤ 4<br>(J <sub>IV</sub> - J <sub>III</sub> ) | 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

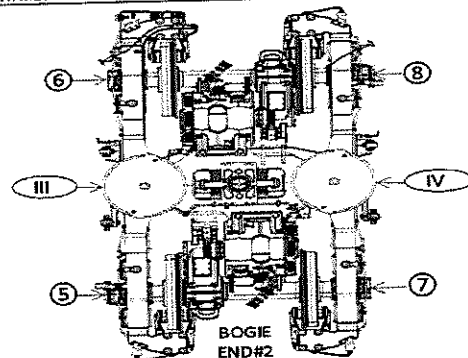
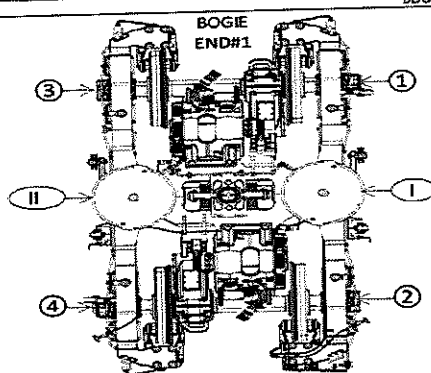
EQUIPMENT

WEIGHT

## SECONDARY MEASUREMENTS (ONLY TC CARS)

AUTOMATIC COUPLER HEIGHT

ANTENNA HEIGHT



GIBELQ

2024-03-16

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

| ITEM   |                  | THEORETICAL VALUES                 |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |                                    |
|--|------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|  |                  | TCL CAR                            |                                    | M4 CAR                             |                                    | M1 CAR                             |                                    | M2 CAR                             |                                    | M3 CAR                             |                                    | TCL CAR                            |                                    |
|  |                  | TBint                              | TBext                              | MR1                                | MR1                                | MR1                                | MR2                                | MR2                                | MR1                                | MR1                                | MR1                                | TBint                              | TBext                              |
| Pivot lateral stop<br>gap difference<br>(mm) | Fig. 4           | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 | ≤4                                 |
| Air Spring height<br>(mm)                    | Fig. 5           | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    | 255 <sup>+6</sup> <sub>-1</sub>    |
| Air spring pressure<br>at AWD<br>(Bar)       | Fig. 5           | 3,76<br>(Ref.)                     | 2,82<br>(Ref.)                     | 2,83<br>(Ref.)                     | 2,83<br>(Ref.)                     | 3,02<br>(Ref.)                     | 2,91<br>(Ref.)                     | 3,07<br>(Ref.)                     | 2,85<br>(Ref.)                     | 2,83<br>(Ref.)                     | 2,87<br>(Ref.)                     | 2,83<br>(Ref.)                     | 3,76<br>(Ref.)                     |
| Primary Suspension<br>gaps<br>(mm)           | Fig. 6           | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    | 35 <sup>+12</sup> <sub>-5</sub>    |
| Carbody Floor<br>height<br>(mm)              | Fig. 7           | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> | 1106 <sup>+10</sup> <sub>-10</sub> |
| Booster height<br>(mm)                       | Fig. 7           | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    | 850 <sup>+3</sup> <sub>-7</sub>    |
| Coupling End height<br>(mm)                  | Fig. 8<br>Fig. 9 | 895<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 760<br>(Ref.)                      | 895<br>(Ref.)                      | 760<br>(Ref.)                      |
| Pivot Vertical gap<br>(mm)                   | Fig. 10          | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    | 30 <sup>+15</sup> <sub>-5</sub>    |



# SELF INSPECTION INDUSTRIAL QUALITY

Rev:09

Date:

2022/05/31

Projet:  
PRASA

SI.FT1140.52

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

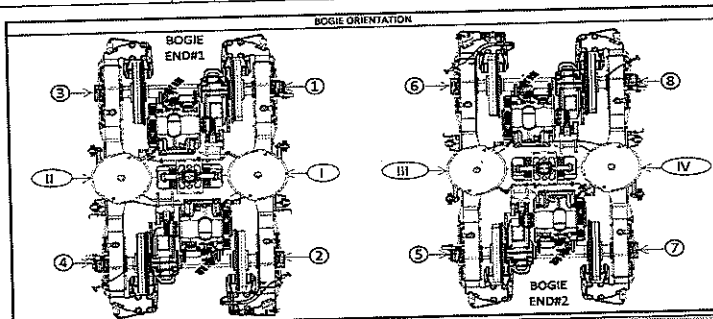
References for secondary suspension empty  
A'n Air spring height emptyReferences for secondary suspension full  
An Air spring height  
Bn Difference between measurement A'n and An  
En Floor covering height  
Cn Air spring pressure  
Dn Primary suspension  
Kn Pivot Vertical gap  
Jn Pivot Lateral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

| Item                | Reference [mm]   | END#1         |           | END#2           |            |
|---------------------|------------------|---------------|-----------|-----------------|------------|
|                     |                  | Right Side    | Left Side | Left Side       | Right Side |
| A'n                 | N/A              | A'i 239       | A'ii 239  | A'iii 240       | A'iv 241   |
| An                  | 254 to 261       | Ai 257        | Aii 255   | Aiii 255        | Aiv 256    |
| Bn = An - A'n       | N/A              | Bi 18         | Bii 16    | Biii 15         | Biv 15     |
| En                  | 1106 ±10 mm      | Ei 1109       | Eii 1114  | Eiii 1106       | Eiv 1108   |
| Item                | Reference [bar]  | END#1         |           | END#2           |            |
|                     |                  | Right Side    | Left Side | Left Side       | Right Side |
| Cn                  | Table 02 (*)     | Ci 2.93       | Cii 2.89  | Ciii 2.81       | Civ 2.74   |
| Cn - Cn+1           | Difference ≤ 0,3 | Ci - Cii 0.04 |           | Ciii - Civ 0.07 |            |
| Gauge serial number | N/A              | 91305875      |           | 91305875        |            |
| Item                | Reference [mm]   | END#1         |           | END#2           |            |
|                     |                  | Right Side    | Left Side | Left Side       | Right Side |
| Dn                  | Table 01 (*)     | D1 44.57      | D2 45.61  | D3 44.99        | D4 45.91   |
|                     |                  | D2 45.59      | D4 45.18  | D5 45.94        | D7 44.64   |
| Kn                  | 25 to 45         | Ki 33.71      |           | Kii 35.58       |            |
| Jn                  | Difference ≤ 4   | Ji 25.94      | Jii 24.71 | Jiii 25.17      | Jiv 24.78  |

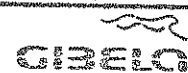
(\*) Reference, only include values, isn't approval criteria.

| Table 01<br>D Theoretical Values | TC1                             |                                 | M4                              |                                 | M1                              |                                 | M2                              |                                 | M3                              |                                 | TC2                             |                                 |
|----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                                  | Tbex                            | Tbin                            | Mb1                             | Mb1                             | Mb1                             | Mb2                             | Mb1                             | Mb1                             | Mb1                             | Mb1                             | Tbin                            | Tbex                            |
| D=                               | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> | 35 <sup>+12</sup> <sub>-5</sub> |

| Table 02<br>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 Levelling and Weighting fine)



2024 -03- 1 6

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

|               |   |
|---------------|---|
| TRAIN SET 214 | REF: GIB0000001672_JO PRASA WEIGHT BALANCE EN |
|               | PC09 WEIGHING REPORT                          |

| M1 | Balance across front and rear bogies | Front Bogie [Tons]     |  | Rear Bogie [Tons]       |  | Longitudinal Imbalance [%] |  | Criteria Longitudinal Imbalance ≤ 3% |  |
|----|--------------------------------------|------------------------|--|-------------------------|--|----------------------------|--|--------------------------------------|--|
|    |                                      | Weight Measured [Tons] |  | Weight Predicted [Tons] |  | Weight Difference [%]      |  | Tolerance [%]                        |  |
|    |                                      | Predicted              |  | Predicted               |  | 0.42%                      |  | 1.37%                                |  |
|    |                                      | 36.71                  |  | 36.87                   |  |                            |  | PASS                                 |  |
|    |                                      |                        |  |                         |  |                            |  | PASS                                 |  |

| Test Participants |             |            |      |
|-------------------|-------------|------------|------|
| Name              | Company     | Department | Date |
| Ruleng Zwane      | GIBELA Rail | EOC        |      |
|                   |             |            |      |
|                   |             |            |      |
|                   |             |            |      |