



ALSTOM UBUNYE

MANUFACTURER **ALSTOM Ubunye**  
Marievale Road, Vosterkroon, Nigel, 1490

CUSTOMER **Gibela**

CONTRACT

PROJECT **PRASA**

### MANUFACTURER'S DELIVERY DOCUMENT

PRODUCT TYPE **MOTOR BOGIE type MB1**

**DTR0009706804**

SERIAL NUMBER **MB1 - 1380**

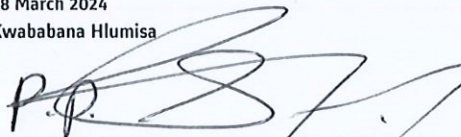
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- Products traceability.....	1 page	<input checked="" type="checkbox"/>
- Load test report.....	1 page	<input checked="" type="checkbox"/>
- Motor certificate.....	8 pages	<input checked="" type="checkbox"/>

### COMPLIANCE CERTIFICATE

We hereby declare, barring exceptions, reservations, or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completions of testing and verification, they completely satisfy all specified requirements and applicable standards and regulations.

### CONSTRUCTOR APPROVAL

DATE	28 March 2024
NAME	Kwababana Hlumisa
VISA	

I - Deviation / Derogation

II - Bogie configuration

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# ALSTOM UBUNYE PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB1	DTR0009706804	M 1380		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1707		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3152		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3091		NGC
Wheel (Right)	AR00000174670	066	10.23	Bonatrans
Wheel (Left)	AR000000174670	083	10.23	Bonatrans
Wheelset (Rear)	AR00000178600	M 3153		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3073		NGC
Wheel (Right)	AR00000174670	079	11.23	Bonatrans
Wheel (Left)	AR00000174670	062	11.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2310180		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2310186		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1674	03.24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5049	03.24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5050	03.24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5047	03.24	Wabtec
Motor (front)	AR00000168516	21422		Alstom Ornans
Motor (Rear)	AR00000168516	21282		Alstom Ornans



DATE  
3/27/2024

DATE VALIDATION

RESPONSABLE VALIDATION

PRASA

ALST. MURINE

INSTRUCTION SHEET:

FAMILY:

## PRESSING REPORT

LOAD TEST : MOTOR BOGIE

PROJECT:

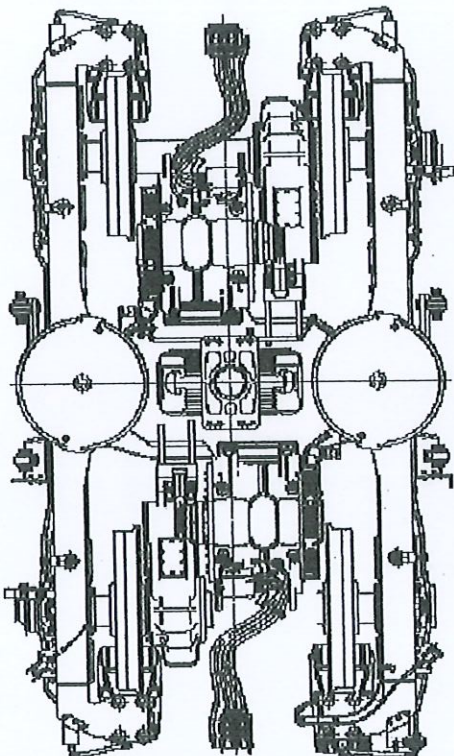
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	38.40 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5566

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.24	+	0.00	= 587.24
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD	
7376	Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	38.32 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5544

BOGIE SERIAL N°	MBL-1380
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22357
COMPLETE BOGIE WEIGHT [Kg]	7272
OPERATOR	DATE
EDWARD	3/27/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	0.14 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	1.08 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.27 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.61 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	0.47 ✓

OPERATOR STAMP

BF1-21

LEFT JACK LOAD

7376 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.99 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5582

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.13	+	0.00	= 587.13
			MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			✓
0.11			MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.17 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5665



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21422

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76555228

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards and regulations.

Date: 2024/02/21

Function: Final Inspection

Performed and signed off by: Name \_\_\_\_\_ Dimakatso Mohoalali

Signature \_\_\_\_\_



Gibela Rail  
02 Shosholozwa Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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ALSTOM

GIBEL

## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date: 19/01/04

Name: XOLANT

Assembly after test

Date: 13/02/04

Name: Godfrey &amp; Thomas

ROTOR S/N.	STATOR S/N.		
MUR03-10-033	GEB-1433		
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 <del>SKF: NU 214-ECM/C4-VA3091</del> (cross out the references that have not been fitted)</p>			
N°: Romania: 0097 09/23 SN279-1369794			
<p><b>Radial play after assembly (0,042 / 0,114): 0,05mm</b></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</b></p> <p>Min: 144g - Max: 149g</p> <p>Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality Insp. Name and signature: <i>[Signature]</i></p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 <del>SKF: 6214-M/C4-VI 0241</del> (cross out the references that have not been fitted)</p>			
Serial N°: GERMANY: 0200 X116-0916 04/23 SN0207			
<p><b>Radial play after assembly (0,021 / 0,067): 0,05mm</b></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</b></p> <p>Min: 159g - Max: 169g</p> <p>Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality Insp. Name and signature: <i>[Signature]</i></p>	
<p>Reference appareil: <i>ATZP14</i></p>			
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## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Record the value of the Insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)		3,430 Ω		<input type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR		Quality verification		
Out of round at the end of the shaft drive end 0,1 max:	<i>0,05mm</i> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<i>ATZP14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max:	<i>0,05mm</i> <input type="checkbox"/> OK <input type="checkbox"/> NOK	<i>ATZP14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
sensor / toothed wheel play 0,7 (+/- 0,2):	<i>0,75mm</i> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<i>GEBF100</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	



Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Deviated serial number <b>300-36007565</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
---	---	---	--

### Prep. & Final Assembly

OPERATOR			Quality verification			
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 37 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	

### Finishing

F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>torque reference (in the event of failure / absence of the motorised screwdriver)</small> <b>NCC05087</b>	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK
----	---------------------------------	---	---	--------------	--

### Grease protection transport

S3	18g (0/+4.5) CC	Mesured quantity: <b>18g</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
S4	18g (0/+4.5) CC	Mesured quantity: <b>18g</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK

Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)

☒ OK
☐ NOK

Final Inspection	Comments
Quality Insp Name and Signature: <b>Dima</b>	

### OBSERVATIONS

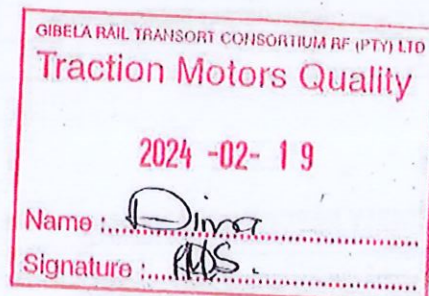
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

TROS 916.216

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Page

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## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21282

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76105447

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

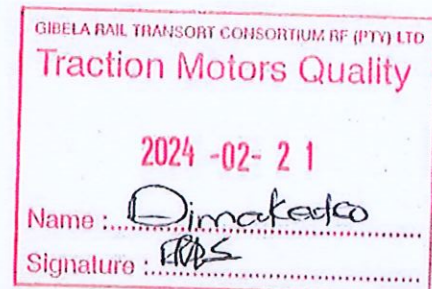
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Date: 2024/02/21

Function: Final Inspection

Performed and signed off by: Name \_\_\_\_\_ Dimakatso Mohoalali

Signature \_\_\_\_\_



Gibela Rail  
02 Shosholoza Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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21382

ALSTOM

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FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date: 09/12/2023

Name: Sargu

Assembly after test

Date: 17/01/24

Name: Godfrey, Volanid, Thomas

ROTOR S/N MCR22-11-129		STATOR S/N GIB-1398	
<b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289			
<b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 SKF: NU 214-ECM/C4-VA9091 (cross out the references that have not been fitted)			
N°: Romania: 0097 09/23 SN281-1369794			
<b>S2</b> Radial play after assembly ( 0,042 / 0,114 ): 0,08mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		<b>S4</b> LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min:144g - Max:149g Mesured quantity: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Fitter 1 (Name and signature) <i>[Signature]</i> Fitter 2 (Name and signature) <i>[Signature]</i> Quality validation: Dima RBS	
<b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 SKF: 6214-M/C4-VL-0242 (cross out the references that have not been fitted)			
Serial N°: Germany: 0200 X116-0101 04/23 SN0036			
<b>S1</b> Radial play after assembly ( 0,021 / 0,067 ): 0,06mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Reference apparell: ASZPM		<b>S3</b> LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min:159g - Max:164g Mesured quantity: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Fitter 1 (Name and signature) <i>[Signature]</i> Fitter 2 (Name and signature) <i>[Signature]</i> Quality validation: Dima RBS	
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ALSTOM

GIBELCO

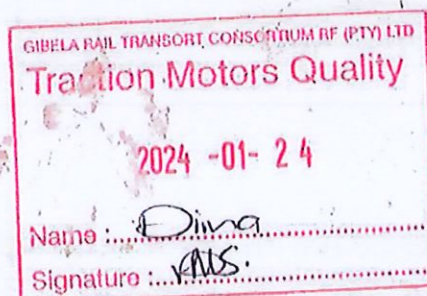
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Record the value of the insulation resistance of the bearings to TROS 915.069 ( > 50 kΩ )		2,31 GΩ <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
OPERATOR		Quality verification	
Out of round at the end of the shaft drive end 0,05 max: 0,01mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	ASZPM	
Out of round on toothed wheel 0,1 max: 0,06mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	ASZPM	
sensor / toothed wheel play 0,7 ( +/- 0,2 ): 0,75mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	GIB-1398	



Sensor reference: DTR0000512252/DSD1830.19Q14HW		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		Device serial number: 3231601027	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>Prep. &amp; Final Assembly</b>						
<b>OPERATOR</b>			<b>Quality verification</b>			
<b>F1</b>	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>F2</b>	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>F3</b>	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 37 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>F4</b>	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>F5</b>	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>Finishing</b>						
<b>F1</b>	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>Grease protection transport</b>						
<b>S3</b>	18g (0/4.5 ) CC	Mesured quantity: 18g			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
<b>S4</b>	18g (0/4.5 ) CC	Mesured quantity: 18g			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)					<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
			<b>Final inspection</b> Quality Insp Name and Signature:		<b>Comments</b>	
			Diina EMS			
<b>OBSERVATIONS</b>						

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page
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MANUFACTURER **ALSTOM** Ubunye  
 Marievale Road, Vosterkroon, Nigel, 1490

CUSTOMER **Gibela**

CONTRACT

PROJECT **PRASA**

### MANUFACTURER'S DELIVERY DOCUMENT

PRODUCT TYPE **MOTOR BOGIE MB1**

**DTR0009706804**

SERIAL NUMBER **MB1 1385**

#### CONTENTS

- Compliance certificate.....	Page 1/2	<input checked="" type="checkbox"/>
- List of deviations and missing parts.....	Page 2/2	<input checked="" type="checkbox"/>
- Products traceability.....	1 page	<input checked="" type="checkbox"/>
- Load test report.....	1 page	<input checked="" type="checkbox"/>
- Motor certificate.....	8 pages	<input checked="" type="checkbox"/>

#### COMPLIANCE CERTIFICATE

We hereby declare, barring exceptions, reservations, or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completions of testing and verification, they completely satisfy all specified requirements and applicable standards and regulations.

CONSTRUCTOR APPROVAL	
DATE	03 April 2024
NAME	Kwababana Hlumisa
VISA	

I - Deviation / Derogation

II - Bogie configuration

B Bogie index





**ALSTOM UBUNYE**

## PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB1	DTR0009706804	1385		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M1502		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M03159		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3171		NGC
Wheel (Right)	AR00000174670	013	11-23	Bonatrans
Wheel (Left)	AR000000174670	088	10-23	Bonatrans
Wheelset (Rear)	AR00000178600	M03160		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3144		NGC
Wheel (Right)	AR00000174670	078	10-23	Bonatrans
Wheel (Left)	AR00000174670	086	10-23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2311010		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2312019		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1685	03-24	WEBTEC
Brake unit without PB (Right front )	AR00000175185	5074	03-24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5076	03-24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5079	03-24	WEBTEC
Motor (front)	AR00000168516	21427		GIBELA
Motor (Rear)	AR00000168516	21523		GIBELA



PRESSING REPORT

DATE  
4/3/2024

RESPONSABLE VALIDATION

PRASA

INSTRUCTION SHEET:

FAMILY:

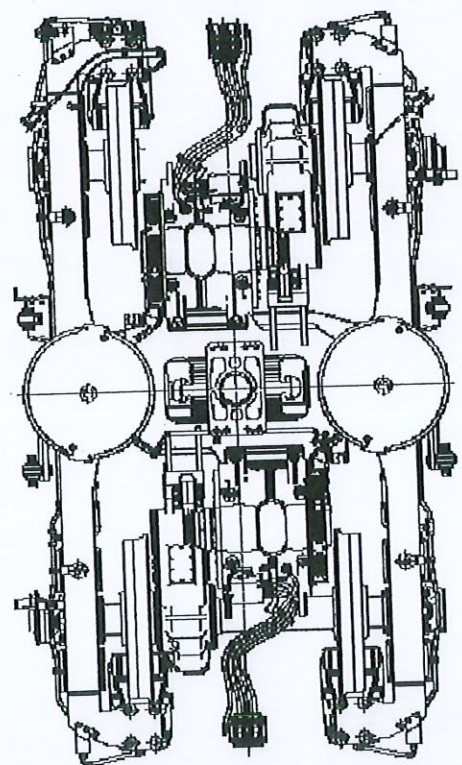
LOAD TEST : MOTOR BOGIE

PROJECT:

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		37.29 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q4		5571

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
584.39	+	3.00 =	MIN 585.00 MAX 587.50

RIGHT JACK LOAD	Kg
7376	



BOGIE SERIAL N°

MB1-1385

BOGIE TYPE

MB

BOGIE WEIGHT UNDER LOAD [Kg]

22398

COMPLETE BOGIE WEIGHT [Kg]

7379

OPERATOR

EDWARD

DATE

4/3/2024

OPERATOR STAMP

BFI-21

LEFT JACK LOAD	Kg
7376	

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.37	+	0.00 =	MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm] ✓			
		0.02	MIN -1.00 MAX 1.00

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		37.45 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q1		5532

	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.90 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.82 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.31 ✓
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	-0.04 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.86 ✓

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		36.68 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q3		5663





## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21427

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76568478

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

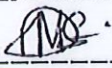
Missing parts: N/A

We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards and regulations.

Date: 2024/03/11

Function: Final Inspection

Perfomed and signed off by: Name \_\_\_\_\_ Dimakatso Mohoalali

Signature  \_\_\_\_\_



Gibela Rail  
02 Shosholora Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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21427

ALSTOM

GIBEL

## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date: 30/01/24

Name: XOLANI

Assembly after test

Date: 02/03/24

Name: Godfrey Xolani &amp; Thomas

ROTOR S/N MCD-11-132	STATOR S/N GIB-1430		
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965,289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965,289 FAG : NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 <del>SKE-NU 214-ECM/C4-VA3091</del> (cross out the references that have not been fitted)</p>			
N°: Romania : 0097 09/23 SN254 -1369794			
<p><b>Radial play after assembly (0,042 / 0,114):</b> 0,07mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>LUBRIFICATION WITH MOBILITH/SHC 100</b> before cover assembly</p> <p>Mln:144g - Max:149g</p> <p>Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature) <i>[Signature]</i></p> <p>Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality validation: <i>Dima ADS</i></p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE-END side - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965,289 FAG : 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 <del>SKE-6214-M/C4-VI 0241</del> (cross out the references that have not been fitted)</p>			
Serial N°: Germany : 0200 X116-0916 04/23 SN0206			
<p><b>Radial play after assembly (0,021 / 0,067):</b> 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>LUBRIFICATION WITH MOBILITH SHC 100</b> before cover assembly</p> <p>Mln:159g Max:164g</p> <p>Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature) <i>[Signature]</i></p> <p>Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality validation: <i>Dima ADS</i></p>	
<p>Reference appareil: <i>A-TEP 14</i></p>			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2 Page 1	









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## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Record the value of the Insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)		5,602 GΩ		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR		Quality verification		
Out of round at the end of the shaft drive end 0,07mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<i>A-TEP 14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max: 0,05mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<i>A-TEP 14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
sensor / toothed wheel play 0,7 (+/- 0,2): 0,85mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<i>GIBEL 1</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	



Sensor reference: DTR0000512252/DSD1830.19Q14HW		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK <u>60331203601</u>		<input type="checkbox"/> OK <input type="checkbox"/> NOK					
<b>Prep. &amp; Final Assembly</b>									
<b>OPERATOR</b>			<b>Quality verification</b>						
	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 37 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
<b>Finishing</b>									
	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>wrench reference (in the event of failure / absence of the motorised screwdriver)</small> <u>NCC0387</u>	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
<b>Grease protection transport</b>									
	18g (0/+4.5) CC	Mesured quantity: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK						
	18g (0/+4.5) CC	Mesured quantity: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK						
Final inspection following the check-list DTR0000452909 and DTR0000452910 (In the case of 100% inspection of the production) <div style="float: right;"> <input checked="" type="checkbox"/> OK    <input type="checkbox"/> NOK         </div>									
			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">Final inspection</th> <th style="text-align: center;">Comments</th> </tr> <tr> <td>           Quality Insp Name and Signature:  <u>Dima</u>    <u>MS</u> </td> <td></td> </tr> </table>			Final inspection	Comments	Quality Insp Name and Signature: <u>Dima</u> <u>MS</u>	
Final inspection	Comments								
Quality Insp Name and Signature: <u>Dima</u> <u>MS</u>									
OBSERVATIONS									

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page 2
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## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21523

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76774725

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards and regulations.

Date: 2024/03/14

Function: Final Inspection

Perfomed and signed off by: Name \_\_\_\_\_ Dimakatso Mohoalali

Signature \_\_\_\_\_



Gibela Rail  
02 Shosholoza Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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21523

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## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date: 28/09/2024

Name: J. G. L. O.

Assembly after test

Date: 08/03/24

Name: YOUNE, GODFREY &amp; THOMAS

ROTOR S/N MQR23-11-008		STATOR S/N GIB-1476	
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p> <p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 <del>SKF-NU 214-ECM/C4-VA3091</del> (cross out the references that have not been fitted)</p>			
N°: ROMANEA 0097 10/23 8N274 - 1988033			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114):</p> <p>0,06mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 149g</p> <p>Measured quantity: <input type="text"/></p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality validation: </p>	
<p><b>S1</b> INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 <del>SKF-6214-M/C4-VL-0241</del> (cross out the references that have not been fitted)</p>			
Serial N°: GERMANY 0800 X 272 - 1237 09/23 8N0047			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067):</p> <p>0,05mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g Max: 164g</p> <p>Measured quantity: <input type="text"/></p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality verification: </p>	
Référence appareil:			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2	
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## FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

Record the value of the Insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)	1,69 952	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR		Quality verification	



Out of round at the end of the shaft drive end, 0,05 max Value <u>0,01mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AS2P17</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <u>0,05mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AS2P17</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,75mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>CIEBFL002</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>S031643466</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK

Prep. & Final Assembly			
OPERATOR		Quality verification	
<b>F1</b> Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 61 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK
<b>F2</b> Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 61 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK
<b>F3</b> Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 37 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK
<b>F4</b> Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 18 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK
<b>F5</b> Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 18 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK

Finishing			
<b>F1</b> Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	wrench reference (in the event of failure follow up the motorized screwdriver) <u>DS1085</u>	QC 1 X 22 Nm <input type="checkbox"/> OK <input type="checkbox"/> NOK

Grease protection transport			
<b>S3</b>	18g (0/+4.5) CC	Mesured quantity: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
<b>S4</b>	18g (0/+4.5) CC	Mesured quantity: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK

Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p style="text-align: center; background-color: #e0e0e0; margin: 0;">Final Inspection</p> <p style="margin: 0;">Quality Insp Name and Signature:</p> <p style="margin: 0;"><u>Dima</u></p> </div> <div style="width: 50%;"> <p style="text-align: center; background-color: #e0e0e0; margin: 0;">Comments</p> </div> </div>		

OBSERVATIONS			

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