



**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 1452**

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- 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	05 June 2024
NAME	Kwababana Hlumisa
VISA	

<b>ALSTOM</b> TRANSPORT	DELIVERY STATUS	PRASA MB1 1452
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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	M 1452		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1799		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 03335		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 2990		NGC
Wheel (Right)	AR00000174670	062	10-23	Bonatrans
Wheel (Left)	AR000000174670	096	10-23	Bonatrans
Wheelset (Rear)	AR00000178600	M 03336		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3166		NGC
Wheel (Right)	AR00000174670	019	07-23	Bonatrans
Wheel (Left)	AR00000174670	010	07-23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2312068		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2311109		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1816	05-24	Wabtec
Brake unit without PB (Right front)	AR00000175185	5468	05-24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5474	05-24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5469	05-24	Wabtec
Motor (front)	AR00000168516	21727		Alstom Ornans
Motor (Rear)	AR00000168516	21658		Alstom Ornans



PRESSING REPORT

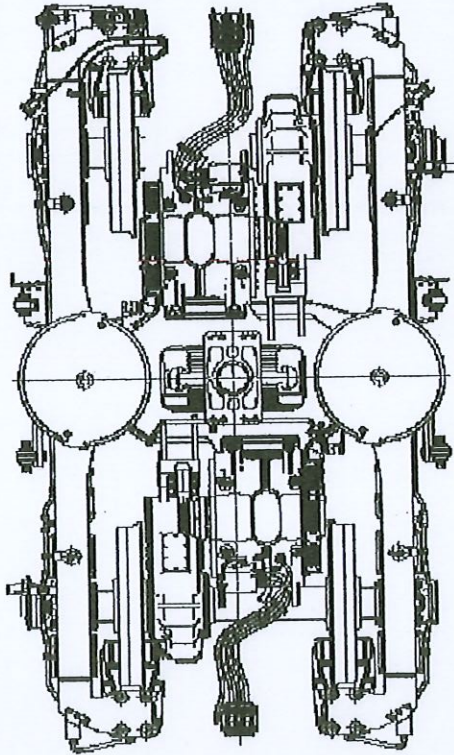
DATE 6/5/2024	RESPONSABLE VALIDATION	PRASA	LOAD TEST : MOTOR BOGIE
DATE VALIDATION		INSTRUCTION SHEET:	PROJECT:
		FAMILY:	

THEORETICAL		MEASURED
WHEEL DIAMETER [mm]	MIN	
	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN	33.00
	MAX	39.00
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5617

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
583.95	+	2.00	=
			585.95
			MIN
			585.00
			MAX
			587.50

RIGHT JACK LOAD	Kg
7376	

BOGIE SERIAL N°	MBL-1452
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22373
COMPLETE BOGIE WEIGHT [Kg]	7294
OPERATOR	BAFANA
DATE	6/5/2024



OPERATOR STAMP
DC-3FI-6

LEFT JACK LOAD	Kg
7376	

THEORETICAL		MEASURED
WHEEL DIAMETER [mm]	MIN	
	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN	33.00
	MAX	39.00
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5546

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
585.43	+	0.00	=
			585.43
			MIN
			585.00
			MAX
			587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]		
0.52		
		THEORETICAL [mm]
		MIN
		-1.00
		MAX
		1.00

THEORETICAL		MEASURED
WHEEL DIAMETER [mm]	MIN	
	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN	33.00
	MAX	39.00
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5508

THEORETICAL		MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN	0.00
	MAX	0.00
LOAD DIFFERENCE ON REAR AXLE [%]	MIN	0.00
	MAX	0.00
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN	0.00
	MAX	0.00
LOAD DIFFERENCE ON RAILS [%]	MIN	0.00
	MAX	0.00
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN	0.00
	MAX	0.00

THEORETICAL		MEASURED
WHEEL DIAMETER [mm]	MIN	
	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN	33.00
	MAX	39.00
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5702



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21658

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77147319

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: 2024/05/15

Function: Final Inspection

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

Signature\_\_\_\_\_ *Dimakatso*



Gibela Rail  
02 Shosholoza Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

Property of GIBELA RAIL, cannot be distributed or reproduced without authorization



21658

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: 19/04/24

Name: Xolanti

Assembly after test

Date: 14/05/24

Name: Goodfrey Xolanti Thomas

ROTOR S/N		STATOR S/N	
SU900082-010		GIB-1445	
<p><b>Bearing lubrication - Security operation</b></p> <p>Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU-214-E-M1-P6-F1-H257A-J20AA-C4</p> <p><b>SKE:</b> NU-214-ECM/C4-VA3091</p> <p>(cross out the references that have not been fitted)</p>			
N°: ROMANIA: 0097 09/23 SN 368 -1369794			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRICATION WITH MOBILITH SHC 100 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) <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 2 (Name and signature) <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Quality Insp. Name and signature <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</p> <p><b>SKE:</b> 6214-M/E4-VL-0241</p> <p>(cross out the references that have not been fitted)</p>			
Serial N°: GERMANY: 0200 X116 -0944 04/23 SN 0232			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): 0,06mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b> LUBRICATION WITH MOBILITH SHC 100 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) <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 2 (Name and signature) <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Quality Insp. Name and signature <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>	
Référence appareil: AMXG700			
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)		22,3 MΩ		<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	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Value: 0,02mm		AMXG700		
Out of round on toothed wheel 0,1 max:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
0,02mm		AMXG700		
sensor / toothed wheel play 0,7 (+/- 0,2):	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
0,7mm		AT-851001		
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
		80231002546		



Prep. & Final Assembly									
OPERATOR				Quality verification					
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 61 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 61 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 37 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 18 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 18 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
Finishing									
F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>	wrench reference (in the event of failure / absence of the specified parameter)	QC 1 X 22 Nm	<input type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
Grease protection transport									
S3	18g (0/+4.5) CC	Mesured quantity:	18g				<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
S4	18g (0/+4.5) CC	Mesured quantity:	18g				<input checked="" type="checkbox"/>	OK <input type="checkbox"/>	NOK <input type="checkbox"/>
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 <input type="checkbox"/>
						Final Inspection	Comments		
						Quality Insp Name and Signature:			
						Dima			
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 ° 21727

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77293068

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: 2024/05/16

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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## 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: 15/05/2024

Name: Jacques

Assembly after test

Date: 15/05/2024

Name: Volant

ROTOR S/N MCB93-11-100	STATOR S/N CIB-1740		
<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 SKF: NU 214-EGM/C4-VA3091 (cross out the references that have not been fitted)</p>			
N°: Romania 0097 09/03 SN44-1369794			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 0,08mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Min: 144g - Max: 149g Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 2 (Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK Quality Insp. Name and signature <input type="checkbox"/> OK <input type="checkbox"/> NOK</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 SKF 6214-M/C4-VL 0241 (cross out the references that have not been fitted)</p>			
Serial N°: Austria 095W			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): 0,06mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Référence appareil AMX420</p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Min: 159g - Max: 164g Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 2 (Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK Quality Insp. Name and signature <input type="checkbox"/> OK <input type="checkbox"/> NOK</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)		3,33 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 Value 0,01mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AMX420	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: 0,04mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AMX420	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): 0,7mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number CIB-1740	<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 3032/000912	<input type="checkbox"/> OK <input type="checkbox"/> NOK



Prep. & Final Assembly									
OPERATOR				Quality verification					
<input checked="" type="checkbox"/> F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 37 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Finishing									
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	interch reference (in the event of false substance of the motorised screwdriver)	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Grease protection transport									
<input checked="" type="checkbox"/> S3	18g (0/+4.5) CC	Mesured quantity: 18g				<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> S4	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
					Final Inspection	Comments			
					Quality Insp Name and Signature:				
					Dima				
OBSERVATIONS									

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







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 - 1453**

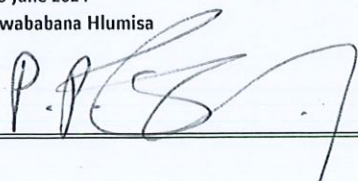
#### CONTENTS

- 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	06 June 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	M 1453		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1806		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 8331		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 2968		NGC
Wheel (Right)	AR00000174670	097	07.23	Bonatrans
Wheel (Left)	AR000000174670	140	07.23	Bonatrans
Wheelset (Rear)	AR00000178600	M 3332		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 2964		NGC
Wheel (Right)	AR00000174670	133	07.23	Bonatrans
Wheel (Left)	AR00000174670	132	07.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2312032		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2312070		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	188	05.24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5482	05.24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5478	05.24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5472	05.24	Wabtec
Motor (front)	AR00000168516	21726		Alstom Ornans
Motor (Rear)	AR00000168516	21614		Alstom Ornans



PRESSING REPORT

DATE  
6/5/2024

RESPONSABLE VALIDATION

PRASA  
ALFA ROMEO

LOAD TEST : MOTOR BOGIE

DATE VALIDATION

INSTRUCTION SHEET:

PROJECT:

FAMILY:

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.12 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5660

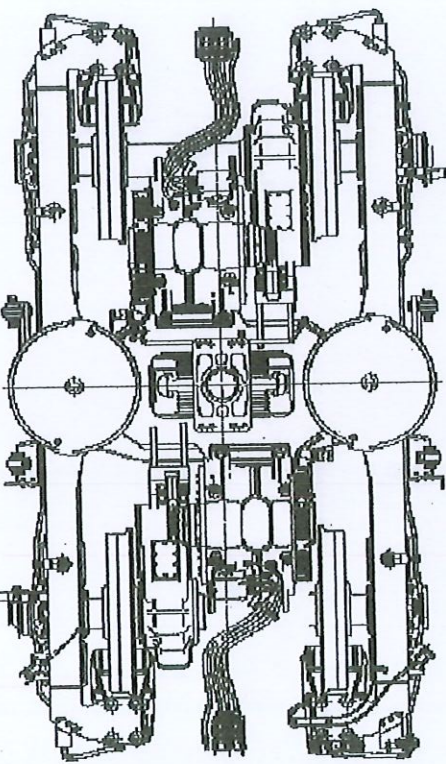
SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM[mm]	THEORETICAL [mm]
585.59	+	1.00 =	MIN 585.00 MAX 587.50

RIGHT JACK LOAD

7376 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.35 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5512

BOGIE SERIAL N°	MB1-1453
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22378
COMPLETE BOGIE WEIGHT [Kg]	7277
OPERATOR	DATE
EDWARD	6/5/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-1.35 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	1.66 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.18 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.16 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	1.51 ✓

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	37.22 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5509

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.34	+	0.00 =	MIN 585.00 MAX 587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	✓	THEORETICAL [mm]
-0.75		MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.42 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5698





## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21726

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77252411

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: 2024/05/24

Function: Final Inspection

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

Signature  \_\_\_\_\_



Gibela Rail  
02 Shosholozu Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

Property of GIBELA RAIL, cannot be distributed or reproduced without authorization



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21614

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76977409

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: 2024/05/16

Function: Final Inspection

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

Signature 



Gibela Rail  
02 Shosholara Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

Property of GIBELA RAIL, cannot be distributed or reproduced without authorization



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21614

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: 07/03/24

Name: XOLANI

Assembly after test

Date: 10/04/24

Name: XOLANI

ROTOR S/N		STATOR S/N	
MCR23-11-102		CET3-1621	
<p><b>Bearing lubrication - Security operation</b></p> <p>Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END -- Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p>FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4-</p> <p>SKF: NU 214 ECM/C4-VA3091</p> <p>(cross out the references that have not been fitted)</p>			
<p>N°: ROMANIA: 0097 09/23 SN99-1369794</p>			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 0,06mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Mln:144g - Max:149g</p> <p>Filter 1 (Name and signature)</p> <p>Filter 2 (Name and signature)</p> <p>Mesured quantity:</p> <p>Quality validation</p> <p>Quality Insp. Name and signature</p> <p>Dina</p>	
<p><b>S1</b> INSULATED CERAMIC BEARING OPPOSITE DRIVE END side -- Security operation</p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4-</p> <p>SKF 6214-M/C4-VL0241</p> <p>(cross out the references that have not been fitted)</p>			
<p>Serial N°: GERMANY: 0200 X116-0712 04/24 SN0059</p>			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Mln:159g - Max:164g</p> <p>Filter 1 (Name and signature)</p> <p>Filter 2 (Name and signature)</p> <p>Mesured quantity:</p> <p>Quality verification</p> <p>Quality Insp. Name and signature</p> <p>Dina</p>	
<p>Référence appareil</p> <p>AMXG20</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)		10,3 MΩ		<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	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Value: 0,03mm		AMXG20		
Out of round on toothed wheel 0,1 max:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
0,05mm		AMXG20		
sensor / toothed wheel play 0,7 (+/- 0,2):	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
0,8mm		CET3-1621		
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
		80371000994		



Prep. & Final Assembly									
OPERATOR					Quality verification				
<input checked="" type="checkbox"/> F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 37 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<b>Finishing</b>									
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>no screw reference (in the event of failure / absence of the motorized screwdriver)</small> <b>NCCS 587</b>		QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<b>Grease protection transport</b>									
<input checked="" type="checkbox"/> S3	18g (0/+4,5) CC	Mesured quantity: 18g				<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> S4	18g (0/+4,5) CC	Mesured quantity: 18g				<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<b>Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)</b> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK									
					<b>Final Inspection</b> Quality Insp Name and Signature:		<b>Comments</b>		
					Dima <i>[Signature]</i>				
<b>OBSERVATIONS</b>									

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

GIBELA RAIL TRANSPORT CONSORTIUM RF (PTY) LTD

**Traction Motors Quality**

**2024 -05- 16**

Name : Dima

Signature : *[Signature]*



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21726

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:

Name:

13/05/04  
Goodman

Assembly after test

Date:

Name:

23/05/04  
Xoant

ROTOR S/N MCR23-11-121		STATOR S/N GIB-1734	
<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 SKF: NU 214-EE-M/C4-VA3091 (cross out the references that have not been fitted)</p>			
N°: Romania 0097 09/03 SN385-1369794			
<p><b>Radial play after assembly (0,042 / 0,114):</b> 0,05mm</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 SKF 6214-M/C4-VL 0241 (cross out the references that have not been fitted)</p>			
Serial N°: Austria 096W			
<p><b>Radial play after assembly (0,021 / 0,067):</b> 0,04mm</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: 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 Insp. Name and signature: <i>[Signature]</i></p>	
Référence appareil: A522P14			
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)		2.63 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 Value: 0,01mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number A522P14	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max: 0,07mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number A522P14	<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	Device serial number CIR-6001	<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 803100/3365	<input type="checkbox"/> OK <input type="checkbox"/> NOK	



Prep. & Final Assembly							
OPERATOR				Quality verification			
<input checked="" type="checkbox"/> F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 37 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
Finishing							
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	interference (in the event of failure / absence of the motorized screwdriver)	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
Grease protection transport							
<input checked="" type="checkbox"/> S3	18g (0/+4.5) CC	Mesured quantity: 18g		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK			
<input checked="" type="checkbox"/> S4	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			
				Final Inspection		Comments	
				Quality Insp Name and Signature:			
				Dima FMS			
OBSERVATIONS							

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

GIBELA RAIL TRANSPORT CONSORTIUM RF (PTY) LTD

Traction Motors Quality

2024 -05- 23

Name : Dima

Signature : [Signature]