



**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 1466**

### 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	15 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	1466		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M1823		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M03371		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3433		NGC
Wheel (Right)	AR00000174670	054	10-23	Bonatrans
Wheel (Left)	AR000000174670	052	10-23	Bonatrans
Wheelset (Rear)	AR00000178600	M03372		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3431		NGC
Wheel (Right)	AR00000174670	148	07-23	Bonatrans
Wheel (Left)	AR00000174670	085	03-24	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2403038		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2403064		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1841	06-24	WEBTEC
Brake unit without PB (Right front)	AR00000175185	5542	06-24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5540	06-24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5539	06-24	WEBTEC
Motor (front)	AR00000168516	21624		GIBELA
Motor (Rear)	AR00000168516	21752		GIBELA



PRESSING REPORT

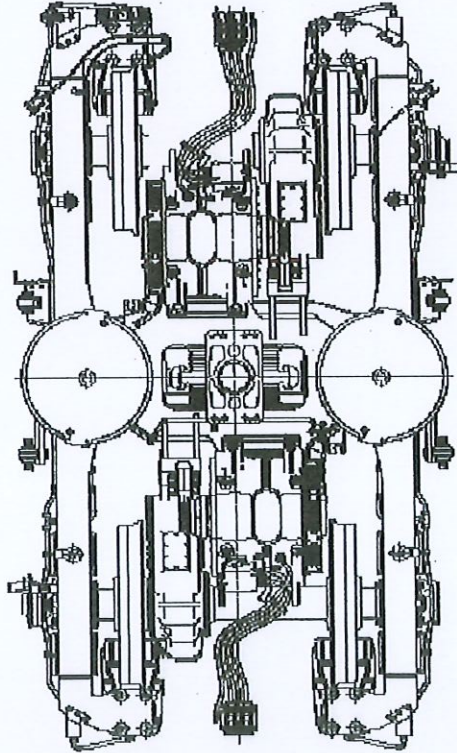
DATE 6/14/2024	PRASA	LOAD TEST : MOTOR BOGIE
RESPONSABLE VALIDATION	INSTRUCTION SHEET:	PROJECT:
	FAMILY:	

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	37.15 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q4		5572

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
585.67	+	0.00	MIN 585.67 MAX 587.50

RIGHT JACK LOAD
7376 Kg

BOGIE SERIAL N°	M81-1466
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22370
COMPLETE BOGIE WEIGHT [Kg]	7292
OPERATOR	EDWARD
DATE	6/14/2024



OPERATOR STAMP
BFI-21

	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.47 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.51 ✓
LOAD DIFFERENCE ON FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.14 ✓
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.02 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.49 ✓

LEFT JACK LOAD
7375 Kg

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.26	+	0.00	MIN 586.26 MAX 587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	✓
-0.59	MIN -1.00 MAX 1.00

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	37.34 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q3		5629

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.83 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q1		5558



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N \* 21624

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77028293

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: 2024/05/27

Function: Final Inspection

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

Signature  \_\_\_\_\_



Gibela Rail  
02 Shosholozza Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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ALSTOM

GIBELD

## 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: 08/06/24

Name: Xouane

Assembly after test

Date: 24/05/24

Name: Godfrey

ROTOR S/N	STATOR S/N		
MCP83-11-65	GIB-1635		
<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  <b>FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</b>  <b>SKF: NU 214 ECM/C4 VA3091</b>          (cross out the references that have not been fitted)</p>			
<p>N°: ROMANIA: 0097 09/23 8N86-1369794</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>Min: 144g - Max: 149g</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Mesured quantity: <i>[Signature]</i></p> <p>Quality validation: <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  <b>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</b>  <b>SKF 6214-M/C4-VL 0241</b>          (cross out the references that have not been fitted)</p>			
<p>Serial N°: GERMANY: 0200 X116-0808 04/23 SNO148</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>Min: 159g - Max: 164g</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Mesured quantity: <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
<p>Référence appareil: AMXG 500</p>			
<p>FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA</p>		<p>TROS 916.216 2 Page 1</p>	

ALSTOM

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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)		1,53 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	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Value: 0mm		AMXG 500	
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
0,03mm		AMXG 500	
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		GIB 1001	
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
		02301003647	



Prep. & Final Assembly							
OPERATOR				Quality Verification			
F1	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		
F2	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		
F3	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		
F4	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		
F5	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		
Finishing							
F1	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		
Grease protection transport							
S3	18g (0/+4.5) CC	Mesured quantity: 18g			<input type="checkbox"/> OK <input type="checkbox"/> NOK		
S4	18g (0/+4.5) CC	Mesured quantity: 18g			<input 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





# CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21752

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77334081

Status: QC PASS

Derogations / Concession / Waiver N °: 7072

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: 2024/06/12

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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21752

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:

Name:

Assembly after test

Date: 03/06/24

Name: XOIANT

2AMA

ROTOR S/N 54900282-009		STATOR S/N CIB-1784	
<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 <del>FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</del> <b>SKF: NU 214 ECM/C4 VA3091</b> (cross out the references that have not been fitted)</p>			
N°: AUSTRIA: 095W			
<p><b>Radial play after assembly (0,042 / 0,114): 0,07mm</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>Filter 1 (Name and signature): Jacques</p> <p>Filter 2 (Name and signature): [Signature]</p> <p>Measured quantity: [Signature]</p> <p>Quality validation: Buhle</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 <b>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</b> <b>SKF 6214-M/C4-VL 0241</b> (cross out the references that have not been fitted)</p>			
Serial N°: ROMANIA: 0097 09/23 8H/69 - 1369794			
<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: 164g</p> <p>Filter 1 (Name and signature): Jacques</p> <p>Filter 2 (Name and signature): [Signature]</p> <p>Measured quantity: [Signature]</p> <p>Quality validation: Buhle</p>	
Référence appareil: AMX 480			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2 Page 1	

ALSTOM

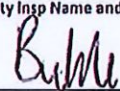
GIBEL

## 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)		2,40 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: AMX 480	<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: AMX 480	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
sensor / toothed wheel play 0,7 (+/- 0,2):	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number:	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number:	<input type="checkbox"/> OK <input type="checkbox"/> NOK	

Missing speed sensor Deviation #: 7072



Prep. & Final Assembly									
OPERATOR				Quality verification					
F1	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		
F2	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		
F3	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		
F4	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		
F5	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		
Finishing									
F1	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		
Grease protection transport									
S3	18g (0/+4.5) CC	Mesured quantity:	18g			<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK		
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:				
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

2024-06-04

Name : 

Signature : 





ALSTOM UBUNYE

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

**CUSTOMER** Gibela

**CONTRACT**

**PROJECT** PRASA

#### MANUFACTURER'S DELIVERY DOCUMENT

**PRODUCT TYPE** MOTOR BOGIE type MB2  
DTR0009706805

**SERIAL NUMBER** MB2 - 618

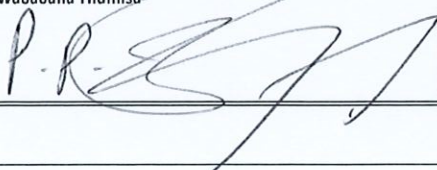
#### CONTENTS

- Compliance certificate.....	Page 1/2	<input checked="" type="checkbox"/>
- List of deviations and missing parts.....	Page 2/2	<input checked="" type="checkbox"/>
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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

<b>DATE</b>	13 June 2024
<b>NAME</b>	Kwababana Hlumisa
<b>VISA</b>	

**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 MB2	DTR0009706805	M 618		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1825		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3365		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3385		NGC
Wheel (Right)	AR00000174670	047	07.23	Bonatrans
Wheel (Left)	AR000000174670	115	07.23	Bonatrans
Wheelset (Rear)	AR00000178600	M 3366		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3389		NGC
Wheel (Right)	AR00000174670	112	07.23	Bonatrans
Wheel (Left)	AR00000174670	091	07.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	231136		Hutchinson
Pneumatic suspension (Left)	AR00000176127	231123		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1820	05.24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5486	05.24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5481	05.24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5483	05.24	Wabtec
Motor (front)	AR00000168516	21756		Alstom Ornans
Motor (Rear)	AR00000168516	21714		Alstom Ornans



DATE  
6/13/2024

DATE VALIDATION

RESPONSABLE VALIDATION

PRASA  
INSTRUCTION SHEET:

FAMILY:

PRESSING REPORT

LOAD TEST : MOTOR BOGIE

PROJECT:

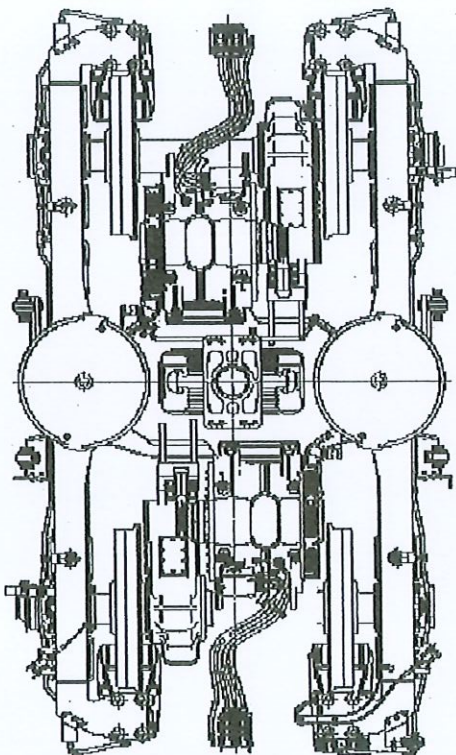
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	35.69 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5598

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
584.05	+	1.00	= 585.05
			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	36.00 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5566

BOGIE SERIAL N°	MB2-618
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22404
COMPLETE BOGIE WEIGHT [Kg]	7308
OPERATOR	DATE
EDWARD	6/13/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-0.08 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	0.75 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.13 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.33 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	0.42 ✓

OPERATOR STAMP
BFI-21

LEFT JACK LOAD	
	7375 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	35.64 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5589

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
584.43	+	1.00	= 585.43
			MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			✓
-0.38			MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	35.43 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5650



21756

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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: 20/05/24

Name: Xoutant

Assembly after test

Date: 01/06/24

Name: Grigore Holari, Thomas &amp; Zarna

ROTOR S/N <b>SU900882-007</b>		STATOR S/N <b>GIB-0930</b>	
<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 <b>FAG:</b> NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4. <b>SKF:</b> NU 214-ECM/C4-VA3091 (cross out the references that have not been filled)</p>			
<p>N°: <b>ROMANIA: 0097</b>    <b>09/23</b>    <b>SN 418-1369794</b></p>			
<p><b>Radial play after assembly (0,042 / 0,114):</b> <b>0,08mm</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: <b>149g</b></p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality validation: <b>Dina</b> </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 <b>FAG:</b> 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 <b>SKF:</b> 6214-M/C4-VL 0241 (cross out the references that have not been filled)</p>			
<p>Serial N°: <b>AUSTRIA: 094W</b></p>			
<p><b>Radial play after assembly (0,021 / 0,067):</b> <b>0,04mm</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: <b>169g</b></p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality validation: <b>Dina</b> </p>	
<p>Référence appareil: <b>AMXG800</b></p>			
<p>FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA</p>		<p>TROS 916.216    2    Page 1</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) <b>127MΩ</b>		<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
<b>OPERATOR</b>		<b>Quality verification</b>	
Out of round at the end of the shaft drive end, 0,05 max Value <b>0,08mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AMXG800</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <b>0,04mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AMXG800</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2):	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK

Missing speed sensor Deviation #: 7072

Prep. & Final Assembly									
OPERATOR				Quality verification					
	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	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"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	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"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	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"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	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"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK	
Finishing									
	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOX	interch reference for the correct force / distance of the motor (in g/h)	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK	
Grease protection transport									
	18g (0/44.5) CC	Mesured quantlty:	18g		<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK	
	18g (0/44.5) CC	Mesured quantlty:	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 Quality Insp Name and Signature:	Comments				
				Dima					
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

2024-06-01

Name : Dima

Signature : [Signature]



01714

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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: 08/05/24  
Name: Groffney

Assembly after test  
Date: 01/06/2024  
Name: Groffney, Nolani Thomas & Zama

ROTOR S/N <b>SU900282-100</b>		STATOR S/N <b>GIB-1736</b>	
<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 <b>FAG: NU-214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU-214-E-M1-P6-F1-H257A-J20AA-C4</b> <b>SKE: NU 214 ECM/C4 VA3091</b> (cross out the references that have not been fitted)</p>			
N°: <b>Austria 237 W</b>			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): <b>0,08mm</b></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>Min: 144g - Max: 49g</p> <p>Measured quantity: <b>49g</b></p> <p>Filter 1 (Name and signature): <b>[Signature]</b></p> <p>Filter 2 (Name and signature): <b>[Signature]</b></p> <p>Quality validation: <b>[Signature]</b></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 <b>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</b> <b>SKE 6214-M/C4-VL 0241</b> (cross out the references that have not been fitted)</p>			
Serial N°: <b>Austria 095 W</b>			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): <b>0,04mm</b></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>Min: 159g - Max: 164g</p> <p>Measured quantity: <b>164g</b></p> <p>Filter 1 (Name and signature): <b>[Signature]</b></p> <p>Filter 2 (Name and signature): <b>[Signature]</b></p> <p>Quality validation: <b>[Signature]</b></p>	
Référence appareil: <b>AJZP14</b>			
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)		<b>5.26 GΩ</b>		<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: <b>0,01 mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AJZP14</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max: <b>0,04 mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AJZP14</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
sensor / toothed wheel play 0,7 (+/- 0,2):	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	

Missing speed sensor Deviation #: 7072

Prep. & Final Assembly									
OPERATOR				Quality verification					
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	NOCES 57	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	NOCES 57	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	NOCES 58	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	NOCES 58	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	NOCES 58	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	NOCES 57	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
Grease protection transport									
S3	18g (0/+4.5) CC	Mesured quantity: 18g				<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK			
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 Quality Insp Name and Signature: <i>Dima</i>	Comments				
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 ° 21714

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77252399

Status: QC PASS

Derogations / Concession / Waiver N °: 7072

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: 2024/06/03

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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## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21756

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77342384

Status: QC PASS

Derogations / Concession / Waiver N °: 7072

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: 2024/06/03

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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