

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 1405**

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- 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	19 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	M 1405		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1739		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 03205		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3251		NGC
Wheel (Right)	AR00000174670	027	10-23	Bonatrans
Wheel (Left)	AR000000174670	047	10-23	Bonatrans
Wheelset (Rear)	AR00000178600	M 03206		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3239		NGC
Wheel (Right)	AR00000174670	175	10-23	Bonatrans
Wheel (Left)	AR00000174670	142	10-23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2401107		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2311094		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1725	04-24	Wabtec
Brake unit without PB (Right front)	AR00000175185	5193	04-24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5192	04-24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5194	04-24	Wabtec
Motor (front)	AR00000168516	21585		Alstom Ornans
Motor (Rear)	AR00000168516	21474		Alstom Ornans

DATE
4/19/2024

RESPONSABLE VALIDATION

PRESSING REPORT

PRASA

ALCANTARA

LOAD TEST : MOTOR BOGIE

INSTRUCTION SHEET:

FAMILY:

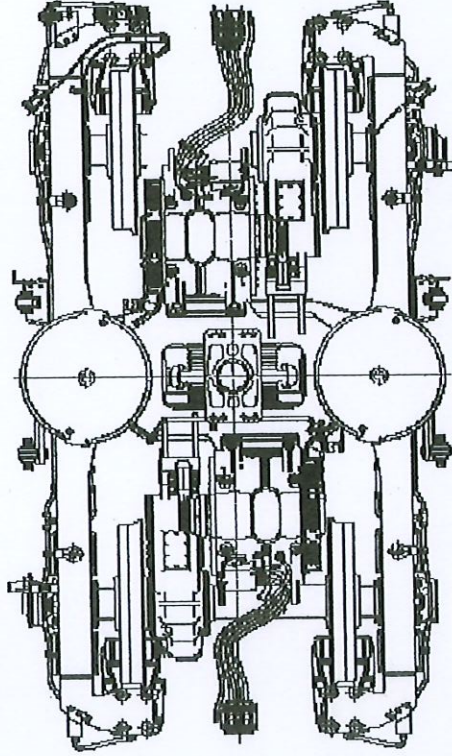
	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		37.96
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q4	5552

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.08	+	1.00	=
			587.08
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD	Kg
7376	

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		38.11
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q2	5584

BOGIE SERIAL N°	MB1-1405
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22362
COMPLETE BOGIE WEIGHT [Kg]	7288
OPERATOR	EDWARD
DATE	4/19/2024



OPERATOR STAMP

BFI-21

LEFT JACK LOAD	Kg
7376	

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.27	+	0.00	=
			587.27
			MIN 585.00 MAX 587.50

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		38.20
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q1	5564

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	
-0.19	
THEORETICAL [mm]	MIN -1.00 MAX 1.00

	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.18
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.97
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.29
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.40
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.58

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		37.57
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q3	5661



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21474

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76659601

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

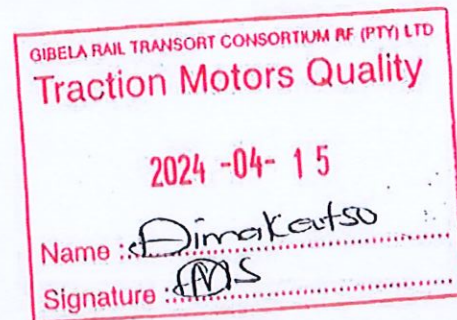
We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards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

Date: 2024/04/15

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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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: 06/02/2024

Name: Jacques

Assembly after test

Date: 09/04/2024

Name: XAVIER THOMAS

ROTOR S/N MCB02-11-174	STATOR S/N CEB-1490		
<p>Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965/289</p>			
<p>INSULATED CERAMIC BEARING DRIVE END - Security operation 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 VA3091 (cross out the references that have not been fitted)</p>			
N°: Romania 0097 09/23 SN288-1367794			
<p>S2 Radial play after assembly (0,042 / 0,114):</p> <p>0,08mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S4 LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 148g</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Measured quantity: <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
<p>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°: Germany 0200 X272-1001 09/23 SN0010			
<p>S1 Radial play after assembly (0,021 / 0,067):</p> <p>0,06mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>- Référence appareil: ASEPI4</p>		<p>S3 LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g - Max: 169g</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Measured quantity: <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 / 2 Page 1	

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)		416M52	<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	ASEPI4	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	ASEPI4	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2):	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	CEBFL00	<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 52241008440	<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	wrench reference (in the event of failure / absence of the motorised 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 motorised 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 motorised 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 motorised 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 motorised 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 motorised 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						
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Final inspection</td> <td style="text-align: center;">Comments</td> </tr> <tr> <td> Quality Insp Name and Signature: Dima </td> <td></td> </tr> </table>			Final inspection	Comments	Quality Insp Name and Signature: Dima	
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 ° 21585

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76940751

Status: QC PASS

Derogations / Concession / Waiver N °: DR-GIB-049

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: 2024/04/11

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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MOT 215 85

(BR-CUB-049)

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: 15/03/20

Name: NOUANT

Assembly after test

Date:

Name:

ROTOR S/N		STATOR S/N	
MCR22-11-099		GTHB-1553	
<p>Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p>INSULATED CERAMIC BEARING DRIVE END - Security operation 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-VA3091 (cross out the references that have not been fitted)</p>			
N°: ROMANIA: 0097 09/23 SN 98-1369794			
<p>Radial play after assembly (0,042 / 0,114): 0,07 mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>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>Measured quantity: <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
<p>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°: GERMANY: 0200 X116-0704 04/23 SN 0043			
<p>Radial play after assembly (0,021 / 0,067): 0,04 mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>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>Measured quantity: <i>[Signature]</i></p> <p>Quality verification: <i>[Signature]</i></p>	
Référence appareil: AJZP14			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216	
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ALSTOM

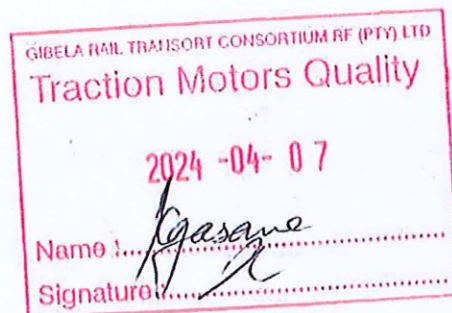
GIBEL

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)		10,6 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: 0,01 mm		AJZP14			
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	
0,04 mm		AJZP14			
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	
0,7 mm		GTHB-1553			
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	
		G0316013516			

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>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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	<small>search reference for the extent of future absence of the motorized screwdriver</small> NCCSSS7	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 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
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>Gasane R</i>	Comments			
OBSERVATIONS									

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page 2
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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 MB2**

DTR0009706805

SERIAL NUMBER **MB2 598**

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"/>
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- Motor certificate.....	8 pages	<input checked="" type="checkbox"/>

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CONSTRUCTOR APPROVAL

DATE	19 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 MB2	DTR0009706805	598		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M1725		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M03203		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3317		NGC
Wheel (Right)	AR00000174670	172	10-23	Bonatrans
Wheel (Left)	AR000000174670	169	10-23	Bonatrans
Wheelset (Rear)	AR00000178600	M03204		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K3379		NGC
Wheel (Right)	AR00000174670	090	10-23	Bonatrans
Wheel (Left)	AR00000174670	174	10-23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2401104		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2401114		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1726	04-24	WEBTEC
Brake unit without PB (Right front)	AR00000175185	5201	04-24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5203	04-24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5199	04-24	WEBTEC
Motor (front)	AR00000168516	21555		GIBELA
Motor (Rear)	AR00000168516	21497		GIBELA

QC: 018
Revision: 1.0

DATE
4/18/2024

DATE VALIDATION

RESPONSABLE VALIDATION

PRASA
INSTRUCTION SHEET:

FAMILY:

PRESSING REPORT

LOAD TEST : MOTOR BOGIE

PROJECT:

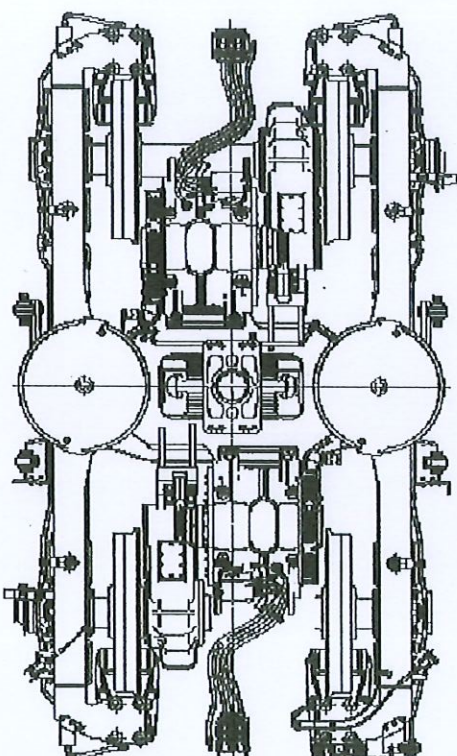
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.78 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5552

SECONDARY SUSPENSION				✓
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM[mm]	THEORETICAL [mm]	
586.70	+	0.00	=	586.70
				MIN 585.00 MAX 587.50

RIGHT JACK LOAD	
7374	Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.60 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5627

BOGIE SERIAL N°	MB2-598
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22378
COMPLETE BOGIE WEIGHT [Kg]	7296
OPERATOR	DATE
BAFANA	4/18/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	0.46 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.29 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.30 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.08 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	-0.37 ✓

OPERATOR STAMP

DO-5-114

LEFT JACK LOAD

7377 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.20 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5603

SECONDARY SUSPENSION				✓
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]	
585.38	+	1.00	=	586.38
				MIN 585.00 MAX 587.50

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

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.19 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5595



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21555

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76862760

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: 2024/04/15

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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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: 08/03/24

Name: Godfrey

Assembly after test

Date: 09/04/2024

Name: Socrates & Xolani & Thomas

ROTOR S/N MCR23-10-016	STATOR S/N GIB-1581		
<p>Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965 289</p>			
<p>INSULATED CERAMIC BEARING DRIVE END - Security operation 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-VA3091- (cross out the references that have not been fitted)</p>			
N°: Romania 0097 10/23 SN310-1988233			
<p>Radial play after assembly (0,042 / 0,114): 0,06mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</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> Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality Insp. Name and signature <i>[Signature]</i></p>	
<p>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°: Germany 0000 X116-07113 04/23 SN0061			
<p>Radial play after assembly (0,021 / 0,067): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</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> Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality Insp. Name and signature <i>[Signature]</i></p>	
Reference appareil: AMXG14			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2 Page 1	

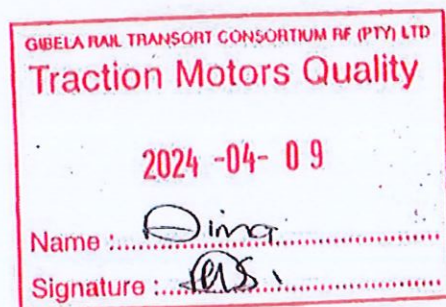
ALSTOM

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)		22.2 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 Value 0,02mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AMXG14	<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	Device serial number AMXG14	<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 GIBFL001	<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 52241008306	<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	<small>no torch reference (in the event of failure / absence of the motorised screwdriver)</small> 0285-188	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 torch reference (in the event of failure / absence of the motorised screwdriver)</small> 0285-188	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 torch reference (in the event of failure / absence of the motorised screwdriver)</small> 02511039	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 torch reference (in the event of failure / absence of the motorised screwdriver)</small> 0005069	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 torch reference (in the event of failure / absence of the motorised screwdriver)</small> 0005069	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	<small>no torch reference (in the event of failure / absence of the motorised screwdriver)</small> 0005069	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 Quality Insp Name and Signature: Dima	Comments			
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 ° 21497

Client /-Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76718966

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

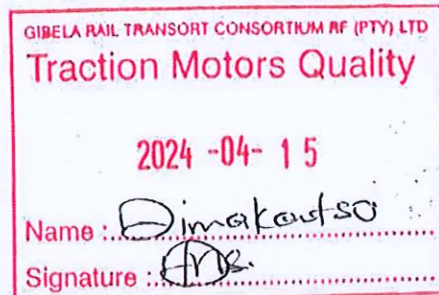
We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards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

Date: 2024/04/15

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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21497

ALSTOM

GIBELQ

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: 16/08/24

Name: XOUANT

Assembly after test

Date: 09/09/24

Name: XOUANT & Thomas

ROTOR S/N MCR22-11-133		STATOR S/N GTF3-1505															
<p align="center">Bearing lubrication - Security operation</p> <p align="center">Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p align="center">SRIL TROS 965.289</p>																	
<p align="center">INSULATED CERAMIC BEARING DRIVE END - Security operation</p> <p align="center">Incorrect assembly can lead to engine failure with a safety risk in service</p> <p align="center">SRIL TROS 965.289</p> <p align="center">FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</p> <p align="center">SKF NU 214 ECM/C4 VA3091</p> <p align="center">(cross out the references that have not been fitted)</p>																	
N°: ROMANIA: - 0097 09/23 8N26 - 1369794																	
<p>S2 Radial play after assembly (0,042 / 0,114): 0,06mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S4 LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <table border="1"> <tr> <td>Min:144g - Max:149g</td> <td>Mesured quantity:</td> <td>Quality validation</td> </tr> <tr> <td>Fitter 1 (Name and signature)</td> <td>Fitter 2 (Name and signature)</td> <td>Quality Insp. Name and signature</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>				Min:144g - Max:149g	Mesured quantity:	Quality validation	Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature						
Min:144g - Max:149g	Mesured quantity:	Quality validation															
Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature															
<p align="center">INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</p> <p align="center">Incorrect assembly can lead to engine failure with a safety risk in service</p> <p align="center">SRIL TROS 965.289</p> <p align="center">FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</p> <p align="center">SKF 6214-M/C4-VL0241</p> <p align="center">(cross out the references that have not been fitted)</p>																	
Serial N°: GERMANY: - 0200 X 272 - 1234 09/23 8N0041																	
<p>S1 Radial play after assembly (0,021 / 0,067): 0,06mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S3 LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <table border="1"> <tr> <td>Min:159g</td> <td>Max:164g</td> <td>Mesured quantity:</td> <td>Quality validation</td> </tr> <tr> <td>Fitter 1 (Name and signature)</td> <td>Fitter 2 (Name and signature)</td> <td>Quality Insp. Name and signature</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Min:159g	Max:164g	Mesured quantity:	Quality validation	Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature					
Min:159g	Max:164g	Mesured quantity:	Quality validation														
Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature															
Référence appareil: AJ2114																	
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)

7,82 GΩ



OK



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>AJEP14</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>AJEP14</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,7mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>C7-141001</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>323170009-11</u>	<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	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	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	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	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	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	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK
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Grease protection transport

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

☒ OK ☐ NOK

Final inspection

Quality Insp Name and Signature:

Ding

Comments

OBSERVATIONS

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

TROS 916.216

2

Page

2

