



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 - 1402

#### 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	
DATE	17 April 2024
NAME	Kwababana Hlumisa
VISA	

I - Deviation / Derogation

II - Bogie configuration

B Bogie index



DATE  
4/17/2024

DATE VALIDATION RESPONSIBLE VALIDATION

PRASA

INSTRUCTION SHEET:

FAMILY:

LOAD TEST: MOTOR BOGIE

PROJECT:

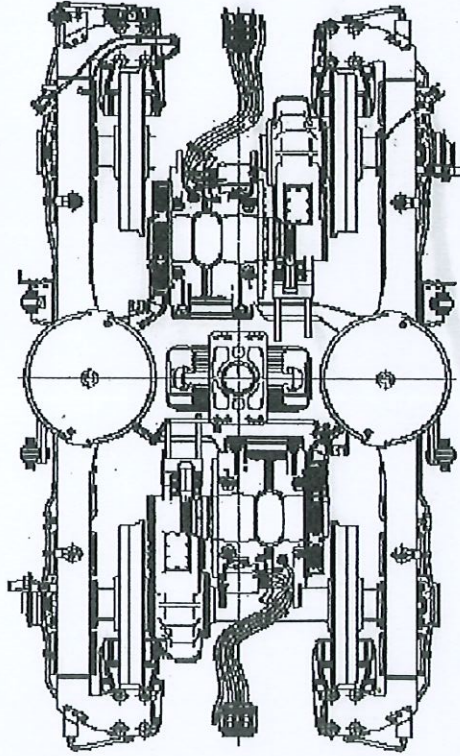
# PRESSING REPORT

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		36.44 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q2	5599

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.20	+	0.00	586.20
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD	7377	Kg
-----------------	------	----

BOGIE SERIAL N°	MB1-1402
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22385
COMPLETE BOGIE WEIGHT [Kg]	7305
OPERATOR	EDWARD
DATE	4/17/2024



OPERATOR STAMP	BFI-21
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	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.20 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.49 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.15 ✓
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.15 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.34 ✓

LEFT JACK LOAD	7376	Kg
----------------	------	----

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		36.57 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q1	5577

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.22	+	0.00	586.22
			MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			
	-0.02		THEORETICAL [mm]
			MIN -1.00 MAX 1.00

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00		36.07 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q3	5632





# ALSTOM UBUNYE PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB1	DTR0009706804	M 1402		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1738		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3195		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3336		NGC
Wheel (Right)	AR000000174670	135	10.23	Bonatrans
Wheel (Left)	AR000000174670	043	10.23	Bonatrans
Wheelset (Rear)	AR000000178600	M 3196		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3365		NGC
Wheel (Right)	AR000000174670	049	10.23	Bonatrans
Wheel (Left)	AR000000174670	040	10.23	Bonatrans
Pneumatic suspension (Right)	AR000000176127	2401057		Hutchinson
Pneumatic suspension (Left)	AR000000176127	2312170		Hutchinson
Brake unit with PB (Right rear)	AR000000174544	1718	04.24	Wabtec
Brake unit without PB (Right front )	AR000000175185	5174	04.24	Wabtec
Brake unit without PB (Left Front)	AR000000175185	5175	04-24	Wabtec
Brake unit without PB (left rear)	AR000000175185	5176	04.24	Wabtec
Motor (front)	AR000000168516	21439		Alstom Ornans
Motor (Rear)	AR000000168516	21582		Alstom Ornans



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21439

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76576929

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

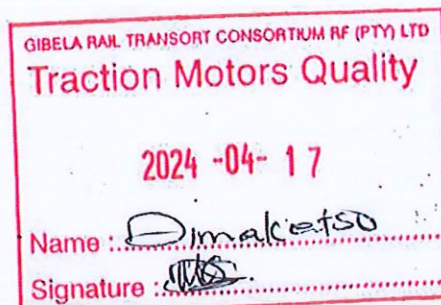
We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards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

Date: 2024/04/17

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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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: 25/01/24

Name: YOUSSEF

Assembly after test

Date: 19/04/2024

Name: Jacques &amp; Youssef &amp; Thomas

ROTOR S/N MCP22-11-032-CTB-1441		STATOR S/N	
<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>			
N°: ROMANIA: - 0097 09/23 S-290 - 1369794			
<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>Mesured quantity:</p> <p>Filter 1 (Name and signature)</p> <p>Filter 2 (Name and signature)</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 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-VL0241</b> (cross out the references that have not been fitted)</p>			
Serial N°: GERMANY: - 0200 X272-1245 09/23 S-20063			
<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> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g Max: 164g</p> <p>Mesured quantity:</p> <p>Filter 1 (Name and signature)</p> <p>Filter 2 (Name and signature)</p> <p>Quality verification</p> <p>Quality Insp. Name and signature</p> <p>Dina</p>	
Référence appareil: AT2P14			
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)		S, K, G, L		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR		Quality verification		
Out of round at the end of the shaft drive 0,05 max:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<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	Device serial number	<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	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	



Sensor reference: DTR0000512252/DSD1830.19Q14HW

☒ OK ☐ NOK 6231012310☐ OK ☐ NOK

## Prep. &amp; 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) NCC5587	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) NCC5587	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) NCC5587	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) NCC5587	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) NCC5587	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) NCC5587	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)

☒ OK ☐ NOK

## Final Inspection

Quality Insp Name and Signature:

Dima

Comments

## OBSERVATIONS

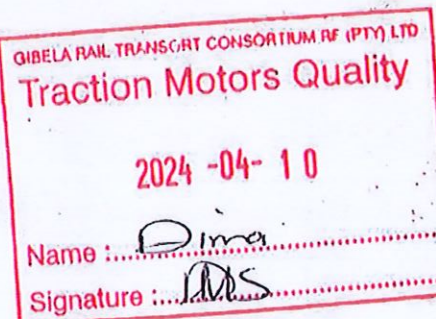
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

TROS 916.216

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## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21582

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76932752

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: 2024/04/17

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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21582

ALSTOM

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

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date:

Name:

15/02/24  
Guelfrey E Xolani

Assembly after test

Date:

Name:

11/04/2024  
Jacques Xolani d Tommas

ROTOR S/N MIR22-11-190		STATOR S/N GIB-1603	
<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 SKE: NU 214 EGM/C4-VA3091 (cross out the references that have not been filled)</p>			
N°: ROMANIA: - 0097 09/23 SN13 - 1369794			
<p><b>S2</b> Radial play after assembly ( 0,042 / 0,114 ): 0,07mm</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:144g - Max:149g Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1(Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 2(Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>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 SKE 6214-M/C4-VL 0241 (cross out the references that have not been filled)</p>			
Serial N°: GERMANY: - 0200 X116 - 0714 04/23 SMO064			
<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 Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1(Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 2(Name and signature) <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Quality Insp. Name and signature <input type="checkbox"/> OK <input type="checkbox"/> NOK</p>	
Référence appareil: AMXG114			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2 Page 1	

ALSTOM

GIBELQ

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 )				8.15 G.5L <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 AMXG114	<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 AMXG114	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
sensor / toothed wheel play 0,7 ( +/- 0,2 ): 0,75mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<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 62317000278	<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	QC 1 X 61 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	<small>watch reference in the event of failure / absence of the motorised screwdriver</small> D0862186 D0862186 D0862186 D0511039 D0511039 D0511039				
<input checked="" type="checkbox"/> 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					
<input checked="" type="checkbox"/> 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					
<input checked="" type="checkbox"/> 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					
<input checked="" type="checkbox"/> 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									
<input checked="" type="checkbox"/> 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					
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					
			<b>Final Inspection</b> Quality Insp Name and Signature: Dima ADS		Comments				
OBSERVATIONS									

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page 2
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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 - 596

#### 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  
NAME

16 April 2024  
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	596		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1729		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3187		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3296		NGC
Wheel (Right)	AR00000174670	116	11.23	Bonatrans
Wheel (Left)	AR000000174670	069	11.23	Bonatrans
Wheelset (Rear)	AR00000178600	M 3188		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3201		NGC
Wheel (Right)	AR00000174670	007	10.23	Bonatrans
Wheel (Left)	AR00000174670	009	10.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2310222		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2310143		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1712	04.24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5162	04.24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5159	04.24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5158	04.24	Wabtec
Motor (front)	AR00000168516	21565		Alstom - Gibela
Motor (Rear)	AR00000168516	21550		Alstom - Gibela

PRESSING REPORT

DATE 4/15/2024	RESPONSABLE VALIDATION	PRASA	LOAD TEST : MOTOR BOGIE
DATE VALIDATION		INSTRUCTION SHEET:	
		FAMILY:	PROJECT:

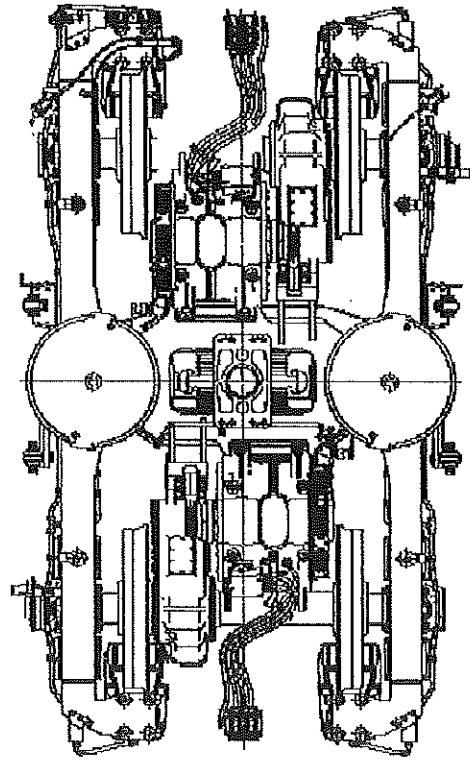
	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	37.70
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q4	5533

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.90	+	0.00	=
		586.90	MIN 585.00
			MAX 587.50

RIGHT JACK LOAD	Kg
7377	

BOGIE SERIAL N°	MB2-S96
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22353
COMPLETE BOGIE WEIGHT [Kg]	7273
OPERATOR	DATE
BAFANA	4/16/2024

OPERATOR STAMP
DC-BFI-6



	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.30
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	1.21
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.22
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.45
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.76

LEFT JACK LOAD	Kg
7376	

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	37.40
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q1	5559

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.48	+	0.00	=
		587.48	MIN 585.00
			MAX 587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]		
-0.58	MIN -1.00	MAX 1.00

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.91
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q3	5668





## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21565

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76892094

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 Shosholara Avenue  
M07 Traction Motor  
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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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:

14/03/24  
Godfrey & Xolami

Assembly after test

Date:

Name:

09/04/24  
Xolami, Jacques / Thomas

ROTOR S/N	STATOR S/N
MCR23-11-036	GIB-1546
<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 ECM/C4-VA3091 (cross out the references that have not been fitted)</p>	
N°: ROMANIA: 0097 10/23 SN258-1988233	
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 0,07mm</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 verification: <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-VE0241 (cross out the references that have not been fitted)</p>	
Serial N°: GERMANY: 0200 X116-0740 04/23 SN 0105	
<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> 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 verification: <i>[Signature]</i></p>
Référence appareil: AMXG14	
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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)		4-12 G52	<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: 0,02 mm	<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: 0,06 mm	<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): 0,7 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number: GIBEL	<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: 52252005593	<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	microreference (in the event of failure / absence of the motorized screwdriver) D28162188	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	microreference (in the event of failure / absence of the motorized screwdriver) D28162188	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	microreference (in the event of failure / absence of the motorized screwdriver) D2511039	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	microreference (in the event of failure / absence of the motorized screwdriver) N088267	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	microreference (in the event of failure / absence of the motorized screwdriver) N088267	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	microreference (in the event of failure / absence of the motorized screwdriver) N088267	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 (S)				
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 ° 21550

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76862638

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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## 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:

04/03/24  
Goffrey

Assembly after test

Date:

Name:

09/04/24  
JOLANTY JACQUES & THOMAS

ROTOR S/N MCD3-10-004		STATOR S/N GIB-1540	
<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-ECM/C4-VA3091 (cross out the references that have not been fitted)</p>			
N°: ROMANIA: 0097 10/23 SN 207-1988233			
<p><b>Radial play after assembly (0,042 / 0,114):</b> 0,08mm</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>Mesured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality Insp. Name and signature: </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°: GERMANY: 0200 X 116-1014 04/23 SN 0296			
<p><b>Radial play after assembly (0,021 / 0,067):</b> 0,07mm</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>Mesured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality Insp. Name and signature: </p>	
Référence appareil: AMXG114			
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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)		1.26 G.52 <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: 0,01 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AMXG114	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: 0,07 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AMXG114	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): 0,7 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number GIRPL-001	<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 52316013801	<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 screw driver)	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 screw driver)	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 screw driver)	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 screw driver)	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 screw driver)	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 screw driver)	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 RDS.				
OBSERVATIONS									
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									2

