



ALSTOM UBUNYE

**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 1473

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

### COMPLIANCE CERTIFICATE

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

### CONSTRUCTOR APPROVAL

DATE	28 June 2024
NAME	Kwababana Hlumisa
VISA	

**ALSTOM**  
TRANSPORT

DELIVERY STATUS

PRASA  
MB1 1473

**I - Deviation / Derogation****II - Bogie configuration**

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**ALSTOM UBUNYE**

## PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB1	DTR0009706804	1473		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	1831		Alstom - Ubunye
Wheelset (Front)	AR000000177020	3387		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3512		NGC
Wheel (Right)	AR00000174670	079	03.24	Bonatrans
Wheel (Left)	AR000000174670	049	03.24	Bonatrans
Wheelset (Rear)	AR00000178600	3388		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3579		NGC
Wheel (Right)	AR00000174670	054	03.24	Bonatrans
Wheel (Left)	AR00000174670	048	03.24	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2312175		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2402035		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1819	05.24	WEBTEC
Brake unit without PB (Right front)	AR00000175185	5511	06.24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5519	06.24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5510	06.24	WEBTEC
Motor (front)	AR00000168516	21685		GIBELA
Motor (Rear)	AR00000168516	21680		GIBELA



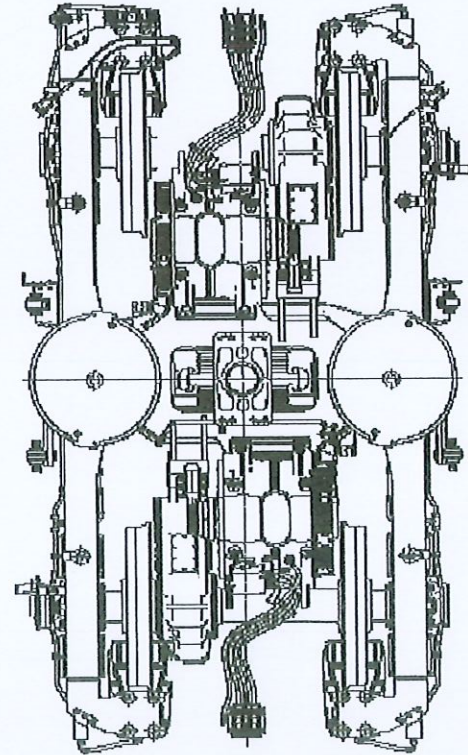
PRESSING REPORT

DATE VALIDATION		RESPONSABLE VALIDATION		PRASA		LOAD TEST : MOTOR BOGIE	
6/20/2024				INSTRUCTION SHEET:			
				FAMILY:		PROJECT:	

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM[mm]	THEORETICAL [mm]
584.04	+	1.00	MIN 585.00
			MAX 587.50

RIGHT JACK LOAD	
7376	Kg

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.96
	MIN 33.00	MAX 39.00	
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q4		5539



BOGIE SERIAL N°	MB1-1473
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22369
COMPLETE BOGIE WEIGHT [Kg]	7286
OPERATOR	DATE
EDWARD	6/20/2024

OPERATOR STAMP
BFI-21

LEFT JACK LOAD	
7376	Kg

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
584.62	+	1.00	MIN 585.62
			MAX 587.50

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

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.03
	MIN 33.00	MAX 39.00	
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q3		5665

WHEEL DIAMETER [mm]	THEORETICAL		MEASURED
	MIN	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.14
	MIN 33.00	MAX 39.00	
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]	Q1		5564



## CERTIFICATION OF CONFORMITY

Inspection certificate according to EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N° 21680

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77174163

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: 2024/06/20

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

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



21680

ALSTOM

GIBELG

## 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:

28/04/2014  
GRODFREY

Assembly after test

Date:

Name:

15/06/2014  
XOLANI, HOMAC ZAMA

ROTOR S/N		STATOR S/N			
SU 900282-047		GIB-1665			
<p><b>Bearing lubrication - Security operation</b></p> <p>Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p>					
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</p> <p><b>SKF:</b> NU 214 ECM/C4 VA3091</p> <p>(cross out the references that have not been fitted)</p>					
N°: KOMAMIA: 0097 09/23 SN 398-1369794					
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 906mm</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: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>			
<p><b>S1</b> INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</p> <p><b>SKF:</b> 6214-M/C4-VLC0241</p> <p>(cross out the references that have not been fitted)</p>					
Serial N°: GERMANY: 0200 X116-0744 04/23 SN 0114					
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): 9,04mm</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: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>			
Référence appareil: A52P14					
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216		Page 1	

ALSTOM

GIBELG

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

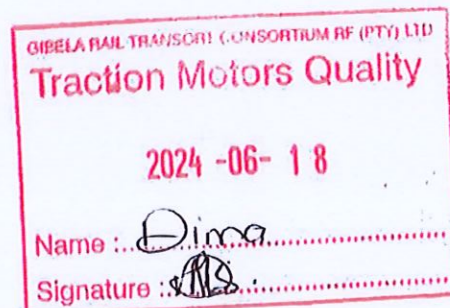
Record the value of the insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)				896 GΩ <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
OPERATOR			Quality verification		
Out of round at the end of the shaft drive end, 0,05 max	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
Value: 0,01mm		A52P14			
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		
0,06mm		A52P14			
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/DS01830.19Q14HW	<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					
<input checked="" type="checkbox"/> F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	search reference (in the event of failure / absence of the motor / screwdriver) <b>N005287</b>	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	search reference (in the event of failure / absence of the motor / screwdriver) <b>N005287</b>	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	search reference (in the event of failure / absence of the motorized screwdriver) <b>N005281</b>	QC 1 X 37 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	search reference (in the event of failure / absence of the motor / screwdriver) <b>N005288</b>	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	search reference (in the event of failure / absence of the motor / screwdriver) <b>N005288</b>	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	search reference (in the event of failure / absence of the motor / screwdriver) <b>N005287</b>	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:	<b>18g</b>			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> S4	18g (0/+4.5) CC	Mesured quantity:	<b>18g</b>			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)						<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
					<b>Final Inspection</b> Quality Insp Name and Signature:		Comments		
					<b>Dima</b>				
OBSERVATIONS									

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## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N \* 21685

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77223670

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: 2024/06/20

Function: Final Inspection

Perfomed 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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21685

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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: 26/04/24  
Name: Godfrey

Assembly after test

Date: 15/06/24  
Name: XOLANI THOMAS

ROTOR S/N <b>SUB9683-045</b>		STATOR S/N <b>GIB-1700</b>	
<b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289			
<b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 <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)			
N°: <b>ROMANIA: 0094</b> <b>09/23 8185-1369794</b>			
<b>S2</b> Radial play after assembly (0,042 / 0,114): <b>0,07mm</b> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		<b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Measured quantity: <b>149g</b> Filter 1 (Name and signature): <b>[Signature]</b> Filter 2 (Name and signature): <b>[Signature]</b> Quality validation: <b>[Signature]</b>	
<b>S1</b> <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-VL0241</b> (cross out the references that have not been fitted)			
Serial N°: <b>GERMANY: 0200</b> <b>X116-0735</b> <b>0735 04/23 810094</b>			
<b>S1</b> Radial play after assembly (0,021 / 0,067): <b>0,04mm</b> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		<b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Measured quantity: <b>164g</b> Filter 1 (Name and signature): <b>[Signature]</b> Filter 2 (Name and signature): <b>[Signature]</b> Quality validation: <b>[Signature]</b>	
Référence appareil: <b>A52P14</b>			
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

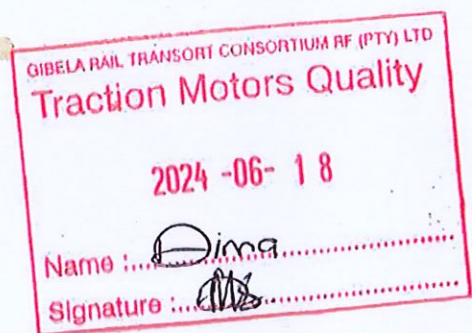
Record the value of the insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)				<b>10.3 G.5L</b>		<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR				Quality verification			
Out of round at the end of the shaft drive end, 0,05 max Value: <b>0,01mm</b>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>A52P14</b>		<input type="checkbox"/> OK <input type="checkbox"/> NOK		
Out of round on toothed wheel 0,1 max: <b>0,05</b>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>A52P14</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 #: 7070



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	
<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	
				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
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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**  
**DTR0009706804**  
**SERIAL NUMBER** **MB2 620**

### 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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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 June 2024
NAME	Kwababana Hlumisa
VISA	

**I - Deviation / Derogation****II - Bogie configuration**

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**ALSTOM UBUNYE**

# PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB2	DTR0009706805	M 620		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1828		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3374		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3445		NGC
Wheel (Right)	AR00000174670	069	03-24	Bonatrans
Wheel (Left)	AR000000174670	070	03-24	Bonatrans
Wheelset (Rear)	AR00000178600	M 03382		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3484		NGC
Wheel (Right)	AR00000174670	160	10-23	Bonatrans
Wheel (Left)	AR00000174670	157	10-23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2403008		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2404017		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1858	06-24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5597	06-24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5689	06-24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5604	06-24	Wabtec
Motor (front)	AR00000168516	21650		Alstom Ornans
Motor (Rear)	AR00000168516	21715		Alstom Ornans



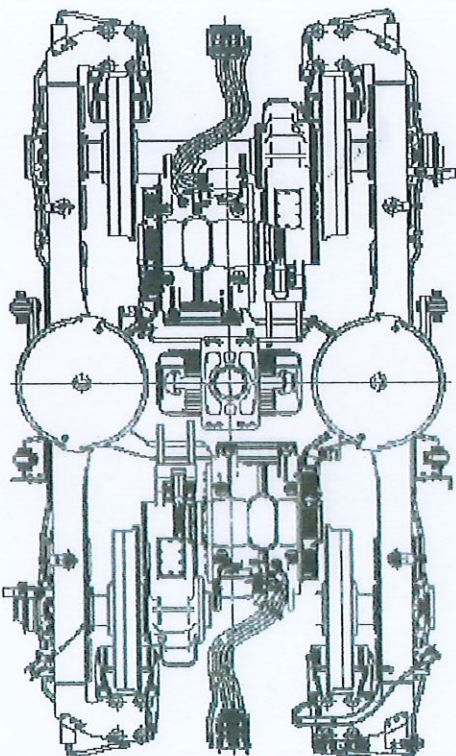
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	36.00 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [kg]	Q2	5648

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.02	+	0.00	586.02
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD	
7376	kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.00 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [kg]	Q4	5493

BOGIE SERIAL N°	MB2-620
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [kg]	22387
COMPLETE BOGIE WEIGHT [kg]	7294
OPERATOR	DATE
BAFANA	6/19/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-1.16 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	1.82 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.11 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.33 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	1.49 ✓

OPERATOR STAMP

DC-371-6

LEFT 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]	Q1	5518

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
584.79	+	1.00	585.79
			MIN 585.00 MAX 587.50

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

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	36.20 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [kg]	Q3	5697



21650

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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:

18/04/24  
Gibbel

Assembly after test

Date:

Name:

18/05/24  
Romain B Thomas

ROTOR S/N		STATOR S/N			
MCR23-11-002		GIB-1655			
<p><b>Bearing lubrication - Security operation</b></p> <p>Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p>					
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</p> <p><b>SKE:</b> NU 214-ECM/C4-VA3091</p> <p>(cross out the references that have not been fitted)</p>					
N°: Romania 0097 04/23 SN63-1369-794					
<p><b>S2</b></p> <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><b>S4</b></p> <p>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min:144g - Max:149g</p> <p>Filter 1 (Name and signature)</p> <p><i>[Signature]</i></p>		<p>Mesured quantity:</p> <p>Filter 2 (Name and signature)</p> <p><i>[Signature]</i></p>	
				<p><b>Quality validation</b></p> <p>Quality Insp. Name and signature</p> <p><i>Dima</i></p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p><b>FAG:</b> 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</p> <p><b>SKE:</b> 6214-M/C4-VL 0241</p> <p>(cross out the references that have not been fitted)</p>					
Serial N°: Germany 0200 11/6 - 0807 04/23 SN0146					
<p><b>S1</b></p> <p>Radial play after assembly (0,021 / 0,067): 0,06 mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b></p> <p>LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min:159g Max:164g</p> <p>Filter 1 (Name and signature)</p> <p><i>[Signature]</i></p>		<p>Mesured quantity:</p> <p>Filter 2 (Name and signature)</p> <p><i>[Signature]</i></p>	
				<p><b>Quality verification</b></p> <p>Quality Insp. Name and signature</p> <p><i>Dima</i></p>	
Référence appareil					
AZJP14					
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)		6.85 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	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK		
Value 0,02 mm		AZJP14			
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		
0,05 mm		AZJP14			
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		GIB1002			
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		
		52321003293			



Prep. & Final Assembly									
OPERATOR				Quality verification					
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the</small> <i>D2860188</i>	QC 1 X 61 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the</small> <i>D2860188</i>	QC 1 X 61 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the motorised servodrive)</small> <i>D2511039</i>	QC 1 X 37 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the</small> <i>N005269</i>	QC 1 X 18 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the</small> <i>N005269</i>	QC 1 X 18 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
Finishing									
F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK	<small>merch reference in the event of failure / absence of the</small> <i>N005269</i>	QC 1 X 22 Nm	<input type="checkbox"/>	OK <input type="checkbox"/> NOK		
Grease protection transport									
S3	18g (0/+4.5) CC	Mesured quantity:	<i>18g</i>			<input checked="" type="checkbox"/>	OK <input type="checkbox"/> NOK		
S4	18g (0/+4.5) CC	Mesured quantity:	<i>18g</i>			<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:				
					<i>Dima</i>				
OBSERVATIONS									

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page
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21715

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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:

Assembly after test

Date:

Name:

ROTOR S/N		STATOR S/N	
SUGCO080-062		GIB-1731	
<p><b>Bearing lubrication - Security operation</b></p> <p>Incorrect lubrication can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p>FAG: NU-214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU-214-E-M1-P6-F1-H257A-J20AA-C4</p> <p>SKF: NU 214 ECM/C4 VA3091</p> <p>(cross out the references that have not been filled)</p>			
N°: <u>Austria 237 W</u>			
<p><b>S2</b></p> <p>Radial play after assembly (0,042 / 0,114): <u>0,08mm</u></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b></p> <p><b>LUBRICATION WITH MOBILITH SHC 100</b></p> <p>before cover assembly</p> <p>Min: 144g - Max: 149g</p> <p>Measured quantity:</p> <p>Filter 1 (Name and signature): <u>[Signature]</u></p> <p>Filter 2 (Name and signature): <u>[Signature]</u></p> <p>Quality validation</p> <p>Quality Insp. Name and signature: <u>Dima</u></p>	
<p><b>S1</b></p> <p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b></p> <p>Incorrect assembly can lead to engine failure with a safety risk in service</p> <p>SRIL TROS 965.289</p> <p>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</p> <p>SKF 6214-M/C4-VL 0241</p> <p>(cross out the references that have not been filled)</p>			
Serial N°: <u>Austria 095 W</u>			
<p><b>S1</b></p> <p>Radial play after assembly (0,021 / 0,067): <u>0,06mm</u></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b></p> <p><b>LUBRICATION WITH MOBILITH SHC 100</b></p> <p>before cover assembly</p> <p>Min: 159g - Max: 164g</p> <p>Measured quantity:</p> <p>Filter 1 (Name and signature): <u>[Signature]</u></p> <p>Filter 2 (Name and signature): <u>[Signature]</u></p> <p>Quality verification</p> <p>Quality Insp. Name and signature: <u>Dima</u></p>	
Référence appareil: <u>AMXG700</u>			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216	
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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) <u>113 MΩ</u>		<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR		Quality verification	
Out of round at the end of the shaft drive end, 0,05 max Value <u>0mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMXG700</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <u>0,09mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMXG700</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,85mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>GIBELCO</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>0231000101</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK



Prep. & Final Assembly									
OPERATOR				Quality verification					
	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 61 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 61 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 37 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 18 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 18 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
Finishing									
	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	QC 1 X 22 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
Grease protection transport									
	18g (0/+4.5) CC	Mesured quantity: 18g		<input checked="" type="checkbox"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK				
	18g (0/+4.5) CC	Mesured quantity: 18g		<input checked="" type="checkbox"/>	<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"/>	<input type="checkbox"/> OK <input type="checkbox"/> NOK			
				<b>Final Inspection</b> 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







## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21715

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77252401

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: 2024/05/17

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 to EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21650

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77126040

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: 2024/05/18

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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