



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 - 1425**

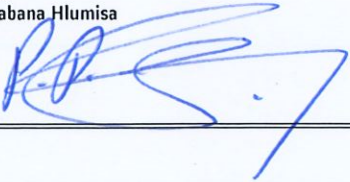
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- Motor certificate.....	8 pages	<input checked="" type="checkbox"/>

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	13 May 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 1425		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1757		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3260		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3279		NGC
Wheel (Right)	AR000000174670	035	10.23	Bonatrans
Wheel (Left)	AR0000000174670	042	10.23	Bonatrans
Wheelset (Rear)	AR000000178600	M 3261		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3194		NGC
Wheel (Right)	AR000000174670	019	10.23	Bonatrans
Wheel (Left)	AR000000174670	046	10.23	Bonatrans
Pneumatic suspension (Right)	AR000000176127	2401037		Hutchinson
Pneumatic suspension (Left)	AR000000176127	2401134		Hutchinson
Brake unit with PB (Right rear)	AR000000174544	1765	05.24	Wabtec
Brake unit without PB (Right front)	AR000000175185	5324	05.24	Wabtec
Brake unit without PB (Left Front)	AR000000175185	5325	05.24	Wabtec
Brake unit without PB (left rear)	AR000000175185	5323	05.24	Wabtec
Motor (front)	AR000000168516	21515		Alstom Ornans
Motor (Rear)	AR000000168516	21483		Alstom Ornans

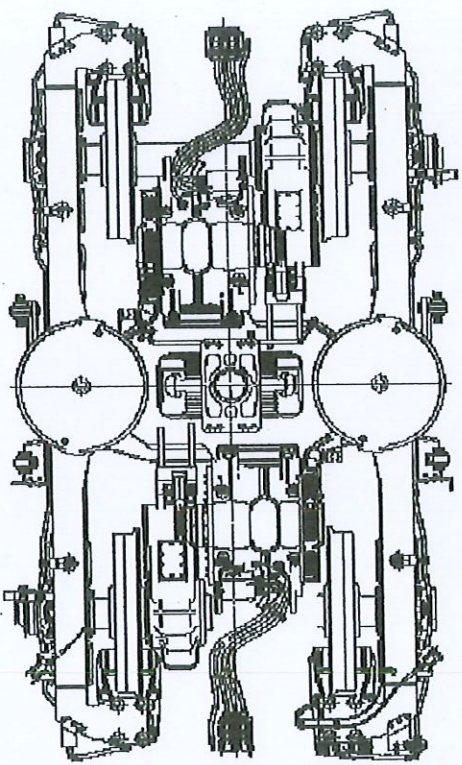
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN MAX	37.57
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5597

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.51	+	0.00	= 586.51
			MIN MAX

RIGHT JACK LOAD
7376 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN MAX	37.60
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5573

BOGIE SERIAL N°	MB1-1425
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22370
COMPLETE BOGIE WEIGHT [Kg]	7282
OPERATOR	DATE
EDWARD	5/13/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN MAX	-0.30
LOAD DIFFERENCE ON REAR AXLE [%]	MIN MAX	0.57
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN MAX	-0.22
LOAD DIFFERENCE ON RAILS [%]	MIN MAX	0.13
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN MAX	0.44

OPERATOR STAMP
BF1-21

LEFT JACK LOAD
7377 Kg

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.04	+	0.00	= 587.04
			MIN MAX

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	THEORETICAL [mm]
-0.53	MIN MAX

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN MAX	37.67
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5563

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN MAX	36.19
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5637

ALSTOM

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: 09/02/2004

Name: Jacques

Assembly after test

Date: 09/05/2004

Name: YOUNG & GODFREY

ROTOR S/N	STATOR S/N
MCR23-11-014	CIB-1489
<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>	
<p>N°: ROMANIA: 00917 09/23 SN199-1369794</p>	
<p>Radial play after assembly (0,042 / 0,114): 0,08mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>	<p>LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min: 144g - Max: 149g Measured quantity: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature): <i>[Signature]</i> Filter 2 (Name and signature): <i>[Signature]</i> 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>	
<p>Serial N°: GERMANY: 0200 X272-1245 09/23 SN0065</p>	
<p>Radial play after assembly (0,021 / 0,067): 0,06mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Reference and serial: <i>ASCP14</i></p>	<p>LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min: 159g - Max: 168g Measured quantity: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature): <i>[Signature]</i> Filter 2 (Name and signature): <i>[Signature]</i> Quality validation: <i>[Signature]</i></p>
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ALSTOM

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)	1,04952	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
<p>OPERATOR</p>		
Out of round at the end of the shaft drive end, 0,05 max Value: 0,04mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Quality verification: <input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: 0,04mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Quality verification: <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	Quality verification: <input type="checkbox"/> OK <input type="checkbox"/> NOK
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Quality verification: <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	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 37 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Finishing									
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	intech reference (in the event of failure absence of the motorized screwdriver)	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Grease protection transport									
<input checked="" type="checkbox"/> S3	18g (0/+4.5) CC	Mesured quantity:	18g			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> S4	18g (0/+4.5) CC	Mesured quantity:	18g			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)						<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
						Final Inspection		Comments	
						Quality Insp Name and Signature:			
						Dima			
OBSERVATIONS									
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA						TROS 916.216	2	Page	
								2	



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>AS-EP14</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <u>0,04mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AS-EP14</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,75mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>918FL500</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>523/4006647</u>	<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
<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"/> F7 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: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
<input checked="" type="checkbox"/> 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:

Dima

Comments

OBSERVATIONS

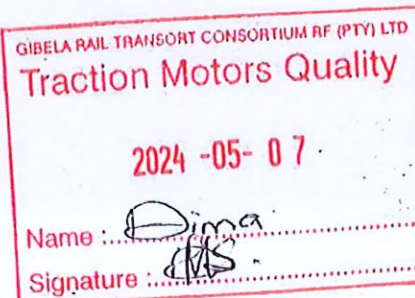
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TROS 916.216

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Page

2



21515

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

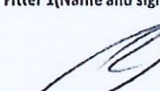

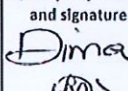
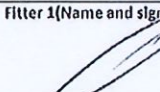

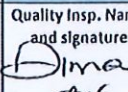
Date: 28/08/2004

Name: Jacques

Assembly after test

Date: 06/08/2004

Name: Godfrey & Xolani

ROTOR S/N MCE23-10-014		STATOR S/N GIB-1532	
<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 SKE-NU 214-ECM/C4-VA3091 (cross out the references that have not been fitted)</p>			
N°: ROMANIA: 0097 09/23 8N14-1369794			
<p>S2 Radial play after assembly (0,042 / 0,114):</p> <p>0,06mm <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: 149g</p> <p>Measured 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 validation: </p>	
<p>S1 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 fitted)</p>			
Serial N°: GERMANY: 0200 X 116-0955 04/23 8N0254			
<p>S1 Radial play after assembly (0,021 / 0,067):</p> <p>0,05mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>AS Reference applied</p>		<p>S3 LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g - Max: 169g</p> <p>Measured 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 validation: </p>	
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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)

195 MΩ

☒ OK☐ NOK

OPERATOR

Quality verification



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21483

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76679925

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: 2024/05/06

Function: Final Inspection

Performed and signed off by: Name _____ Dimakatso Mohoalali

Signature _____



Gibela Rail
02 Shosholozu Avenue
M07 Traction Motor
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N° 21515

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76765636

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: 2024/05/07

Function: Final Inspection

Performed and signed off by: Name _____ Dimakatso Mohoalali
Signature _____



Gibela Rail
02 Shosholota 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



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 - 1428

CONTENTS

- Compliance certificate.....	Page 1/2	<input checked="" type="checkbox"/>
- List of deviations and missing parts.....	Page 2/2	<input checked="" type="checkbox"/>
- Products traceability.....	1 page	<input checked="" type="checkbox"/>
- Load test report.....	1 page	<input checked="" type="checkbox"/>
- Motor certificate.....	8 pages	<input checked="" type="checkbox"/>

COMPLIANCE CERTIFICATE

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

CONSTRUCTOR APPROVAL

DATE	15 May 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	1428		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	1771		Alstom - Ubunye
Wheelset (Front)	AR000000177020	3269		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	2884		NGC
Wheel (Right)	AR00000174670	045	03.23	Bonatrans
Wheel (Left)	AR000000174670	039	03.23	Bonatrans
Wheelset (Rear)	AR00000178600	3270		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	2911		NGC
Wheel (Right)	AR00000174670	040	03.23	Bonatrans
Wheel (Left)	AR00000174670	068	03.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2401063		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2401142		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1769	05.24	WEBTEC
Brake unit without PB (Right front)	AR00000175185	5354	05.24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5355	05.24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5353	05.24	WEBTEC
Motor (front)	AR00000168516	21508		GIBELA
Motor (Rear)	AR00000168516	21494		GIBELA

PRESSING REPORT

DATE
5/15/2024

DATE VALIDATION
RESPONSABLE VALIDATION

PRASA
INSTRUMENTAL

INSTRUCTION SHEET:

FAMILY:

LOAD TEST : MOTOR BOGIE

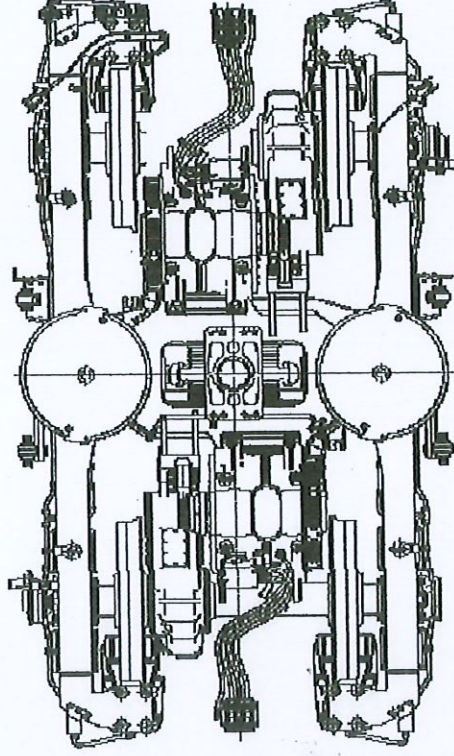
PROJECT:

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	36.98 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5564

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.69	+	0.00	MIN 585.00 MAX 587.50

RIGHT JACK LOAD	
7374	Kg

BOGIE SERIAL N°	MB1-1428
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22375
COMPLETE BOGIE WEIGHT [Kg]	7294
OPERATOR	TYRON
DATE	5/15/2024



OPERATOR STAMP	
DC-BF1-2	

	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	0.29 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.49 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.25 ✓
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.39 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.10 ✓

LEFT JACK LOAD	
7376	Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN	
	MAX	
GAP PRIMARY SUSPENSION [mm]	MIN	33.00
	MAX	39.00
SHIM THICK [mm]		36.84 ✓
WEIGHT ON WHEEL [Kg]	Q1	5596

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.02	+	0.00	MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			
0.67			
THEORETICAL [mm]			
MIN -1.00 MAX 1.00			

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN MAX	36.57
SHIM THICK [mm]		
WEIGHT ON WHEEL [kg]	Q3	5635



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21508

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76754149

Status: QC PASS

Derogations / Concession / Waiver N °: N/A

Customer modification: N/A

Missing parts: N/A

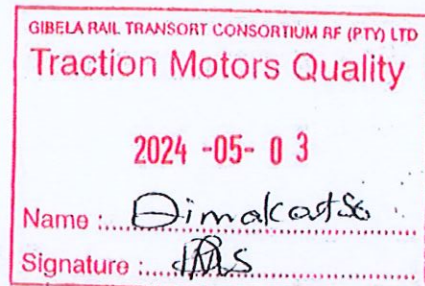
We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards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

Date: 2024/05/03

Function: Final Inspection

Performed and signed off by: Name _____ Dimakatso Mohoalali

Signature _____



Gibela Rail
02 Shosholora Avenue
M07 Traction Motor
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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21508

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: 20/02/24

Name: Godfrey / Xolani

Assembly after test

Date: 03/05/24

Name: XOLANI, JACQUES / THOMAS

ROTOR S/N MUR22-11-0911		STATOR S/N GIB-1518	
<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>			
<p>N°: Romania 0091 09/23 SN67-1369794</p>			
<p>S2 Radial play after assembly (0,042 / 0,114): 0,07 mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S3 LUBRICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 149g Mesured quantity: <input type="text"/></p> <p>Filter 1 (Name and signature) <i>[Signature]</i> Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality validation: <i>Dima</i></p>	
<p>S1 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>			
<p>Serial N°: Germany 0200 X272-0958 09/23 SN0002</p>			
<p>S1 Radial play after assembly (0,021 / 0,067): 0,05 mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S3 LUBRICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g Max: 164g Mesured quantity: <input type="text"/></p> <p>Filter 1 (Name and signature) <i>[Signature]</i> Filter 2 (Name and signature) <i>[Signature]</i></p> <p>Quality validation: <i>Dima</i></p>	
<p>Référence appareil: AMXG114</p>			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2	
		Page 1	

ALSTOM

GIBEL

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

Record the value of the insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)

2.81 MΩ



OK



NOK

OPERATOR

Quality verification

Out of round at the end of the shaft drive end, 0,05 max Value <u>0,02 mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMXG14</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <u>0,02 mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMXG14</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,7 mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMXG14</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>64871001</u> <u>S2317000387</u>	<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	wrench reference for the exact offset/absence of the <u>D2862188</u>	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	wrench reference for the exact offset/absence of the <u>D2862188</u>	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	wrench reference for the exact offset/absence of the motorised screwdriver <u>D2S11039</u>	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	wrench reference for the exact offset/absence of the <u>N0052169</u>	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	wrench reference for the exact offset/absence of the <u>N0052169</u>	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	wrench reference for the exact offset/absence of the <u>N0052169</u>	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: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
<input checked="" type="checkbox"/> 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:

Dima AMS

Comments

OBSERVATIONS

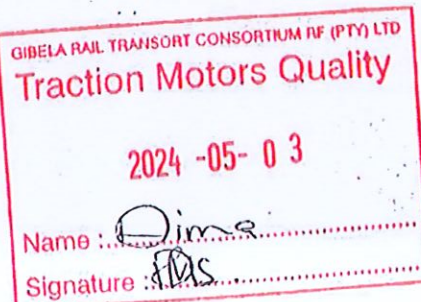
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA

TROS 916.216

2

Page

2



21494

ALSTOM

GIBEL

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

Référence: TROS 916.216

Révision: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test

Date:

Name:

16/02/24
Goodfrey

Assembly after test

Date:

Name:

03/05/24
THOMAS, XOLANI & JACQUES

ROTOR S/N MCR23-10-076		STATOR S/N GIB-1517										
<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 8N43 - 1369794												
<p>S2 Radial play after assembly (0,042 / 0,114): 0,05mm</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>Dima </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			Dima
Min:144g - Max:149g	Mesured quantity:	Quality validation										
Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature										
		Dima 										
<p>S1 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 X293 - 0605 10/23 8N114												
<p>S1 Radial play after assembly (0,021 / 0,067): 0,00mm</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 Max:164g</td> <td>Mesured quantity:</td> <td>Quality verification</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>Dima </td> </tr> </table>		Min:159g Max:164g	Mesured quantity:	Quality verification	Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature			Dima
Min:159g Max:164g	Mesured quantity:	Quality verification										
Fitter 1 (Name and signature)	Fitter 2 (Name and signature)	Quality Insp. Name and signature										
		Dima 										
Référence appareil AMXG14												
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)

8.42 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>AMX614</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: <u>0,07mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>AMX614</u>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): <u>0,6mm</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <u>0121209</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>52247008281</u>	<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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D586288</u>	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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D586288</u>	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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D5811039</u>	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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D583967</u>	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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D583967</u>	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	wrench reference (in the event of failure/absence of the motorised screwdriver) <u>D583967</u>	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 Measured quantity: <u>18g</u>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
<input checked="" type="checkbox"/> S4 18g (0/+4.5) CC Measured 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:

Dima RS

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° 21494

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 76700063

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: 2024/05/03

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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