



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 - 1408

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- 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	23 April 2024
NAME	Kwababana Hlumisa
VISA	

I - Deviation / Derogation

II - Bogie configuration

B Bogie index



PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB1	DTR0009706804	M 1408		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1711		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3215		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3292		NGC
Wheel (Right)	AR000000174670	003	12.23	Bonatrans
Wheel (Left)	AR000000174670	005	12.23	Bonatrans
Wheelset (Rear)	AR000000178600	M 3216		Alstom - Ubunye
Axle with fitted gearbox	AR000000177072	K 3190		NGC
Wheel (Right)	AR000000174670	073	10.23	Bonatrans
Wheel (Left)	AR000000174670	072	10.23	Bonatrans
Pneumatic suspension (Right)	AR000000176127	2311060		Hutchinson
Pneumatic suspension (Left)	AR000000176127	2311133		Hutchinson
Brake unit with PB (Right rear)	AR000000174544	1734	04.24	Wabtec
Brake unit without PB (Right front)	AR000000175185	5226	04.24	Wabtec
Brake unit without PB (Left Front)	AR000000175185	5225	04.24	Wabtec
Brake unit without PB (left rear)	AR000000175185	5222	04.24	Wabtec
Motor (front)	AR000000168516	21570		Alstom Ornans
Motor (Rear)	AR000000168516	21560		Alstom Ornans

DATE
4/22/2024

RESPONSIBLE VALIDATION

PRASA
INSTRUCTION SHEET:
FAMILY:

PRESSING REPORT

LOAD TEST : MOTOR BOGIE
PROJECT:

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	38.99 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q2	5595

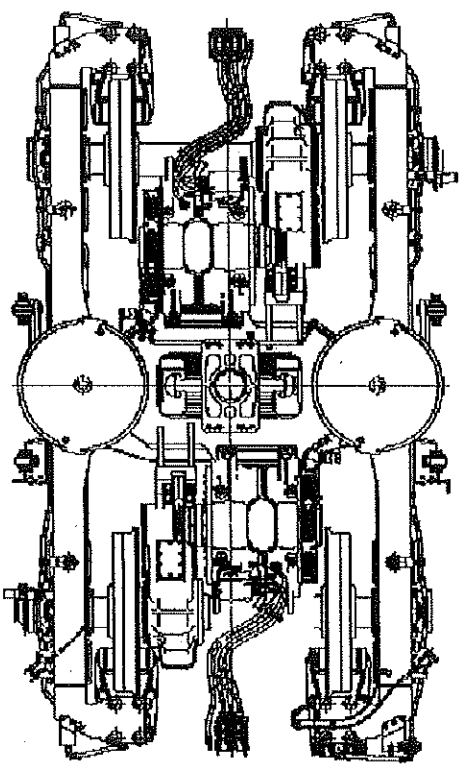
SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
585.78	+	1.00	= 586.78
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD
7376 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	39.00 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q4	5546

BOGIE SERIAL N°	M81-1408
BOGIE TYPE	MS
BOGIE WEIGHT UNDER LOAD [KG]	22365
COMPLETE BOGIE WEIGHT [KG]	7278
OPERATOR	DATE
EDWARD	4/22/2024

OPERATOR STAMP
BFI-21



LEFT JACK LOAD
7377 Kg

	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-0.25 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	0.97 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.17 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.36 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	0.61 ✓

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	38.70 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q1	5567

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.68	+	0.00	= 586.68
			MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			THEORETICAL [mm]
0.10			MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	38.94 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q3	5655



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B
Serial Number: N ° 21560
Client / Customer: ALSTOM UBUNYE (PTY) LTD
Project: PRASA
P O Number: 76871890
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: 2024/04/11
Function: Final Inspection
Perfomed and signed off by: Name_____ Dimakatso Mohoalali
Signature _____ *KMS*



Gibela Rail
02 Shosholozza Avenue
M07 Traction Motor
1590

GIBELA RAIL	Compiled by M Kola	Date: 22/2/2022
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Property of GIBELA RAIL, cannot be distributed or reproduced without authorization

MOT 21560

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: 11/03/24
Name:

Assembly after test
Date: 06/04/24
Name: XOLUENE

ROTOR S/N	STATOR S/N
MOROS-11-020	CHIS-1578
<p>Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965289</p>	
<p>INSULATED CERAMIC BEARING DRIVE END - Security operation Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965289 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: - 0097 10/23 SN 309-1988233</p>	
<p>S2 Radial play after assembly (0,042 / 0,114): 0,07mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>	<p>S9 LUBRICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 192g</p> <p>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 validation: <input type="checkbox"/> OK <input type="checkbox"/> NOK</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 965289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 SKF: 6214-M/C4-VL0241 (cross out the references that have not been fitted)</p>	
<p>Serial N°: GERMANY: - 0200 X116-0907 04/23 SN 0187</p>	
<p>S1 Radial play after assembly (0,021 / 0,067): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>	<p>S9 LUBRICATION 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) <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 validation: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p>
<p>Reference appareil: AJEP14</p>	
<p>FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA</p>	
<p>TROS 916.216</p>	
<p>Page 1</p>	

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

Record the value of the insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)	35,1 MΩ	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR		Quality verification
Out of round at the end of the shaft drive end, 0,05 max Value: 0,02mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<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	<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	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Sensor reference: DTR0000512252/DSD1830.19Q14HW	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<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"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 61 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 61 Nm	<input type="checkbox"/>	<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"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 37 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 18 Nm	<input type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 18 Nm	<input type="checkbox"/>	<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"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	wrench reference in the event of failure / absence of the motorised screwdriver NCC05057	QC 1 X 22 Nm	<input type="checkbox"/>	<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"/>	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
<input checked="" type="checkbox"/> S4	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
						Final Inspection	Comments		
						Quality Insp Name and Signature:			
						<i>Gasano</i>			
OBSERVATIONS									
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA						TROS 916.216	2	Page	
								2	

GIBELA RAIL TRANSPORT CONSORTIUM RE (PTY) LTD
Traction Motors Quality
 2024 -04- 07
 Name: *Gasano*
 Signature: *Gasano*

MOT 21570

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: 13/03/24
Name: XOLANI

Assembly after test

Date: 06/04/24
Name: THOMAS & XOLANI

ROTOR S/N MCR03-11-034		STATOR S/N CETS-1591	
<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 11/23 SN 907-1888219			
<p>S2 Radial play after assembly (0,042 / 0,114): 0,05mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S3 LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min: 144g - Max: 149g Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature): [Signature] Filter 2 (Name and signature): [Signature] Quality Insp. Name and signature: [Signature]</p>	
<p>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 SKF-6214-M/C4-VL-0241 (cross out the references that have not been fitted)</p>			
Serial N°: GERMANY: - 0200 X116-0914 04/23 SN 0202			
<p>S1 Radial play after assembly (0,021 / 0,067): 0,05mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S3 LUBRICATION WITH MOBILITH SHC 100 before cover assembly Min: 159g - Max: 164g Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK Filter 1 (Name and signature): [Signature] Filter 2 (Name and signature): [Signature] Quality Insp. Name and signature: [Signature]</p>	
Référence appareil: ATZP			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216	
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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)		22,4 MΩ		<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR			Quality verification		
Out of round at the end of the shaft drive end, 0,05 max Value: 0,05mm	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	Device serial number ATZP14	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
Out of round on toothed wheel, 0,1 max: 0,05mm	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	Device serial number ATZP14	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2): 0,7mm	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	Device serial number C03R1007	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
Sensor reference: DTR0000512252/DSD1B30.19Q14HW	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	Device serial number S03000000619	<input type="checkbox"/> OK	<input type="checkbox"/> NOK

Prep. & Final Assembly

OPERATOR				Quality verification					
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
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Grease protection transport

S3	18g (0/+4.5) CC	Mesured quantity:	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	Comments
Quality Insp Name and Signature: <i>[Signature]</i>	

OBSERVATIONS

FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA	TROS 916.216	2	Page 2
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GIBELA RAIL TRANSPORT CONSORTIUM BE (PTY) LTD
Traction Motors Quality
 2024-04-07
 Name: *[Signature]*
 Signature: *[Signature]*

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 - 600

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	24 April 2024
NAME	Kwababana Hlumisa
VISA	

I - Deviation / Derogation

II - Bogie configuration

B Bogie index



ALSTOM UBUNYE

PRODUCTS TRACEABILITY

Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB2	DTR0009706805	600		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	1748		Alstom - Ubunye
Wheelset (Front)	AR000000177020	3219		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3220		NGC
Wheel (Right)	AR00000174670	020	12.23	Bonatrans
Wheel (Left)	AR000000174670	017	12.23	Bonatrans
Wheelset (Rear)	AR00000178600	3220 3282		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3282		NGC
Wheel (Right)	AR00000174670	101	10.23	Bonatrans
Wheel (Left)	AR00000174670	118	10.23	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2308134		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2312052		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1736	04.24	WEBTEC
Brake unit without PB (Right front)	AR00000175185	5231	04.24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5230	04.24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5232	04.24	WEBTEC
Motor (front)	AR00000168516	21549		GIBELA
Motor (Rear)	AR00000168516	21592		GIBELA

PRESSING REPORT

DATE
4/23/2024

DATE VALIDATION

RESPONSABLE VALIDATION

PRASA
INSTRUCTION SHEET:

FAMILY:

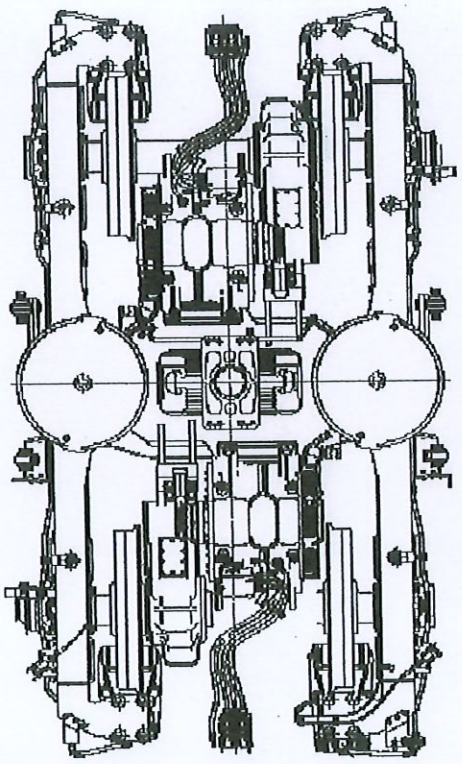
LOAD TEST : MOTOR BOGIE

PROJECT:

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.69 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q2	5620

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.01	+	1.00 =	587.01
			MIN 585.00 MAX 587.50

RIGHT JACK LOAD
7376 Kg



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-0.61 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	1.27 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.20 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.33 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	0.94 ✓

OPERATOR STAMP
BFI-21

BOGIE SERIAL N°	MB2-600
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [KG]	22388
COMPLETE BOGIE WEIGHT [KG]	7288
OPERATOR	DATE
EDWARD	4/23/2024

LEFT JACK LOAD
7376 Kg

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	37.36 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q1	5552

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.14	+	0.00 =	587.14
			MIN 585.00 MAX 587.50
DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]			✓
-0.13			MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	36.71 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [KG]	Q3	5679



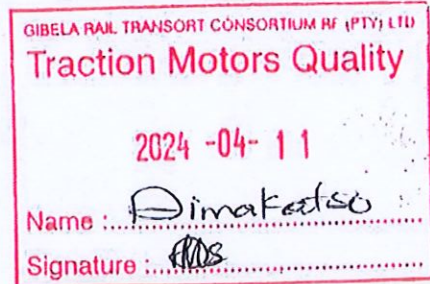
CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B
Serial Number: N ° 21549
Client / Customer: ALSTOM UBUNYE (PTY) LTD
Project: PRASA
P O Number: 76851223
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: 2024/04/11
Function: Final Inspection
Performed and signed off by: Name _____ Dimakatso Mohoalali
Signature _____



Gibela Rail
02 Shosholozana Avenue
M07 Traction Motor
1590

GIBELA RAIL Compiled by M Kola Date: 22/2/2022

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21549

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: 06/03/24
Name: Godfrey

Assembly after test
Date: 19/03/24
Name: Godfrey & Kolaris

ROTOR S/N MCR23-10-067		STATOR S/N GIB-1543	
<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 10/23 SH237-1988233			
<p>S2 Radial play after assembly (0,042/0,114): 0,07mm</p> <p><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>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Mesured quantity: <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
<p>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 X272-1300 09/23 SH0088			
<p>S1 Radial play after assembly (0,021/0,067): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p>S5 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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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)		5.68 G 52		<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR			Quality verification		
Out of round at the end of the shaft drive $\leq 0,05$ max:	<i>0,05mm</i>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<i>AMXG14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max:	<i>0,06mm</i>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<i>AMXG14</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK
sensor / toothed wheel play 0,7 (+/- 0,2):	<i>0,8mm</i>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<i>ALBFL001</i>	<input type="checkbox"/> OK <input type="checkbox"/> NOK

Sensor reference: DTR0000512252/DSD1830.19Q14HW OK NOK 62316013/18 OK 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>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 (in the event of failure / absence of the motorised screwdriver) <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 (in the event of failure / absence of the motorised screwdriver) <u>D2511039</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>N005269</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>N005269</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>N005269</u>	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
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Grease protection transport

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

Final Inspection	Comments
Quality Insp Name and Signature: <u>Dima ADS</u>	

OBSERVATIONS

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GIBELA RAIL TRANSORT CONSORTIUM RF (PTY) LTD
Traction Motors Quality
 2024 -03- 2 0
 Name : Dima
 Signature : ADS



CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B
Serial Number: N ° 21592
Client / Customer: ALSTOM UBUNYE (PTY) LTD
Project: PRASA
P O Number: 76950611
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 _____ *DM*



Gibela Rail
02 Shosholozu Avenue
M07 Traction Motor
1590

GIBELA RAIL

Compiled by M Kola

Date: 22/2/2022

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21592

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

Référence: TROS 916.216 Révisión: 2

Documents de référence: AT00000325953 - AT00000325990

Assembly before test
Date: 16/03/24
Name: JOHANN

Assembly after test
Date: 10/04/2024
Name: Jacques & Kolani & Thomas

ROTOR S/N		STATOR S/N	
MCP23-11-091		C115-1569	
Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289			
(S2) 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)			
N°: ROMANIA: - 0097 09/23 SNb2 - 1369794			
(S2) Radial play after assembly (0,042 / 0,114): 0,06 mm <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		(S4) LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Min: 144g - Max: 199g Filter 1 (Name and signature): [Signature] Filter 2 (Name and signature): [Signature] Measured quantity: [Signature] Quality validation: [Signature]	
(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)			
Serial N°: GERMANY: 0200 x116 - 1015 24/23 SN0299			
(S1) Radial play after assembly (0,021 / 0,067): 0,03 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK		(S3) LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly Min: 159g - Max: 169g Filter 1 (Name and signature): [Signature] Filter 2 (Name and signature): [Signature] Measured quantity: [Signature] Quality verification: [Signature]	
Référence appareil: AJZP14			
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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)		38,9 MΩ	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK
OPERATOR		Quality verification		
Out of round at the end of the shaft drive end, 0,05 max Value: 0,01 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AJZP14	<input type="checkbox"/> OK	<input type="checkbox"/> NOK
Out of round on toothed wheel 0,1 max: 0,04 mm	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number AJZP14	<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 C1151001	<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 80316013742	<input type="checkbox"/> OK	<input type="checkbox"/> NOK

Prep. & Final Assembly							
OPERATOR				Quality verification			
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	(in the event of failure/absence of the parts/operation)	NCCS87	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	(in the event of failure/absence of the parts/operation)	NCCS87	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	(in the event of failure/absence of the material & standards)	NCCS87	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	(in the event of failure/absence of the parts/operation)	NCCS87	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	(in the event of failure/absence of the parts/operation)	NCCS87	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	(in the event of failure/absence of the parts/operation)	NCCS87	QC 1 X 22 Nm	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Grease protection transport							
S3	18g (0/+4.5) CC	Mesured quantity: 18g				<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
S4	18g (0/+4.5) CC	Mesured quantity: 18g				<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)						<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
				Final Inspection	Comments		
				Quality Insp Name and Signature:			
				Dima ADS			
OBSERVATIONS							
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GIRELA RAIL TRANSPORT CONSORTIUM RF (PTY) LTD

Traction Motors Quality

2024 -04- 10

Name : Dima

Signature : ADS