



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 - 1484**

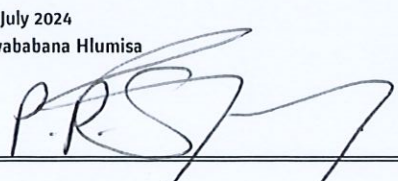
#### CONTENTS

- 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	01 July 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	1484		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	1847		Alstom - Ubunye
Wheelset (Front)	AR000000177020	3417		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3471		NGC
Wheel (Right)	AR00000174670	017	03.24	Bonatrans
Wheel (Left)	AR000000174670	016	03.24	Bonatrans
Wheelset (Rear)	AR00000178600	3418		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	3439		NGC
Wheel (Right)	AR00000174670	077	03.24	Bonatrans
Wheel (Left)	AR00000174670	078	03.24	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2402024		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2402010		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1851	06.24	WEBTEC
Brake unit without PB (Right front )	AR00000175185	5581	06.24	WEBTEC
Brake unit without PB (Left Front)	AR00000175185	5577	06.24	WEBTEC
Brake unit without PB (left rear)	AR00000175185	5576	06.24	WEBTEC
Motor (front)	AR00000168516	21855		GIBELA
Motor (Rear)	AR00000168516	21804		GIBELA



PRESSING REPORT

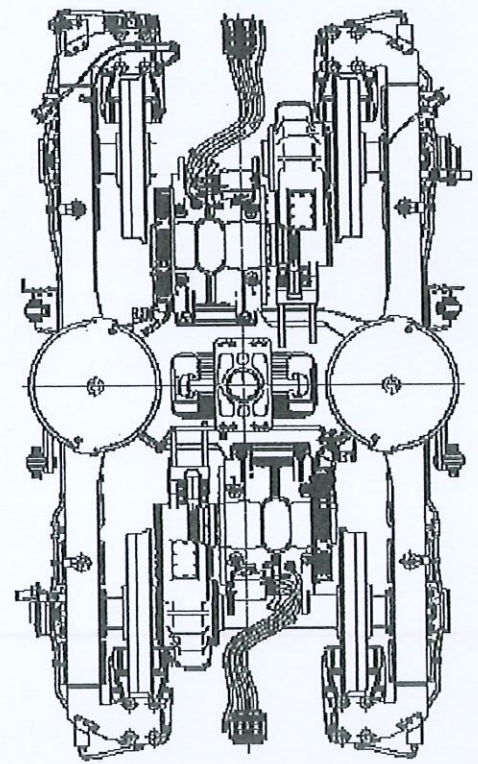
PRASA		LOAD TEST : MOTOR BOGIE	
INSTRUCTION SHEET:		PROJECT:	
FAMILY:			
RESPONSABLE VALIDATION			
DATE VALIDATION		6/28/2024	

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.70 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q4	5559

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
587.26	+	0.00	MIN 585.00 MAX 587.50

RIGHT JACK LOAD	7376	Kg
-----------------	------	----

BOGIE SERIAL N°	MB1-1484
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22376
COMPLETE BOGIE WEIGHT [Kg]	7316
OPERATOR	BAFANA
DATE	6/28/2024



	THEORETICAL		MEASURED
	MIN	MAX	
LOAD DIFFERENCE ON FRONT AXLE [%]	0.00	0.00	-0.46 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	0.00	0.00	0.85 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	0.00	0.00	-0.22 ✓
LOAD DIFFERENCE ON RAILS [%]	0.00	0.00	0.20 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	0.00	0.00	0.65 ✓

OPERATOR STAMP	DC-BFI-6
----------------	----------

LEFT JACK LOAD	7375	Kg
----------------	------	----

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.30 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q3	5654

SECONDARY SUSPENSION			
MEASURED [mm]	SHIM THICK [mm]	DIM. WITH SHIM [mm]	THEORETICAL [mm]
586.78	+	0.00	MIN 585.00 MAX 587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	0.48	THEORETICAL [mm]	MIN -1.00 MAX 1.00
--	------	------------------	-----------------------

	THEORETICAL		MEASURED
	MIN	MAX	
WHEEL DIAMETER [mm]			
GAP PRIMARY SUSPENSION [mm]	MIN 33.00	MAX 39.00	36.50 ✓
SHIM THICK [mm]			
WEIGHT ON WHEEL [Kg]		Q1	5556



21855

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: 22/06/2024

Name: Jacques

Assembly after test

Date: 24/06/24

Name: Nolant &amp; Surprise

ROTOR S/N <b>S469683-013</b>		STATOR S/N <b>CIB-1878</b>	
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 <b>FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</b> <b>SKE: NU 214 ECM/C4 VA3091</b> (cross out the references that have not been fitted)</p>			
N°: <b>AUSTRIA 349 W</b>			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): <b>0,07mm</b></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 149g</p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Measured quantity: </p> <p>Quality validation: </p>	
<p><b>S1</b> INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 <b>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</b> <b>SKE: 6214-M/C4-VL-0241</b> (cross out the references that have not been fitted)</p>			
Serial N°: <b>GERMANY 0200 4272 - 1001 09/23 SN 0012</b>			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): <b>0,06mm</b></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Reference app: <b>APX 920</b></p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g Max: 168g</p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Measured quantity: </p> <p>Quality validation: </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)		<b>3,71 952</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>APX 920</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max: <b>0,08mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number: <b>APX 920</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	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F2	Torque tightening to 8 x 76 Nm:		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 61 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F3	Torque tightening to 4 x 44 Nm: Fold locking plate		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 37 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F4	Torque tightening to 4 x 22 Nm:		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> F5	Torque tightening to 6 x 22 Nm:		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Finishing									
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	<small>check reference (in the event of false / absence of the motorized screwdriver)</small> <i>[Signature]</i>	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Grease protection transport									
<input checked="" type="checkbox"/> S3	18g (0/+4.5 ) CC	Mesured quantity:	18g			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<input checked="" type="checkbox"/> S4	18g (0/+4.5 ) CC	Mesured quantity:	18g			<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)						<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
					<b>Final Inspection</b> Quality Insp Name and Signature: <i>[Signature]</i>	<b>Comments</b>  			
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 -06- 27

Name : *Dima*

Signature : *[Signature]*



21804

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: 3/10/24  
Name: XOLANT

Assembly after test  
Date: 26/06/24  
Name: XOLANT & SURPRISE

ROTOR S/N <b>BU69683-056</b>		STATOR S/N <b>GIB-1823</b>	
<p>Bearing lubrication - Security operation Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 <b>FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4</b> <b>SKF-NU 214-ECM/C4-VA3091</b> (cross out the references that have not been fitted)</p>			
<p>N°: <b>Romania 0097 09/23 SN32-1369794</b></p>			
<p><b>S2</b> Radial play after assembly ( 0,042 / 0,114 ): <b>0,07mm</b></p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 149g</p> <p>Measured quantity: <b>164g</b></p> <p>Filter 1 (Name and signature): <b>[Signature]</b></p> <p>Filter 2 (Name and signature): <b>[Signature]</b></p> <p>Quality validation: <b>Dima RRS</b></p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 <b>FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4</b> <b>SKF 6214-M/C4-VL 0241</b> (cross out the references that have not been fitted)</p>			
<p>Serial N°: <b>Austria 094W</b></p>			
<p><b>S1</b> Radial play after assembly ( 0,021 / 0,067 ): <b>0,05mm</b></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>Measured quantity: <b>164g</b></p> <p>Filter 1 (Name and signature): <b>[Signature]</b></p> <p>Filter 2 (Name and signature): <b>[Signature]</b></p> <p>Quality validation: <b>Dima RRS</b></p>	
<p>Reference appareil: <b>AMX600</b></p>		<p>TROS 916.216 2</p>	
<p>FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA</p>		<p>Page 1</p>	

ALSTOM


GIBEL

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

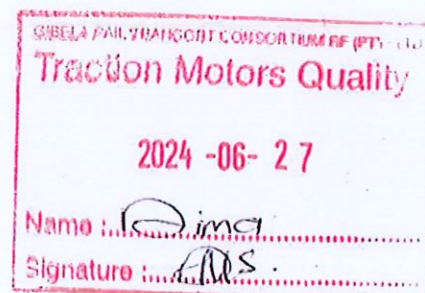
Record the value of the Insulation resistance of the bearings to TROS 915.069 ( > 50 kΩ )		<b>156 MΩ</b>		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR			Quality verification	
Out of round at the end of the shaft drive end, 0,05 max Value: <b>0,01mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AMX600</b>	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel 0,1 max: <b>0,04mm</b>	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number <b>AMX600</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	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</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	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</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	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</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	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</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	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</b>	QC 1 X 18 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<b>Finishing</b>									
<input checked="" type="checkbox"/> F1	Torque tightening to 4 x 22 Nm:	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<small>interch reference (in the event of failure / absence of the motor)</small> <b>NCCSS 87</b>	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
<b>Grease protection transport</b>									
<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
<b>Final inspection following the check-list DTR0000452909 and DTR0000452910 (in the case of 100% inspection of the production)</b> <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK									
				<b>Final inspection</b> Quality Insp Name and Signature: 		<b>Comments</b>			
<b>OBSERVATIONS</b>									

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 ° 21804

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77446437

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: 2024/06/27

Function: Final Inspection

Performed and signed off by: Name \_\_\_\_\_ Dimakatso Mohoalali

Signature *[Signature]*



Gibela Rail  
02 Shosholoza 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 \* 21855

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77596287

Status: QC PASS

Derogations / Concession / Waiver N \* : 7072

Customer modification: N/A


Missing parts: N/A

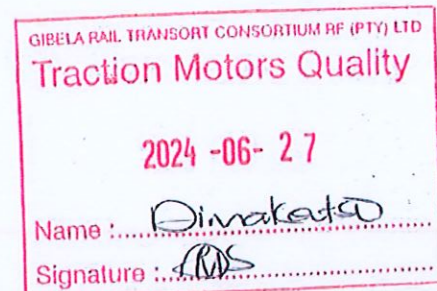
We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they completely satisfy all specified requirements, and applicable standards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

Date: 2024/06/27

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

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



**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 - 623

### 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	28 June 2024
NAME	Kwababana Hlumisa
VISA	

**I - Deviation / Derogation**

**II - Bogie configuration**

B Bogie index



Products Designation	Product Reference	Serial Number	Batch or Date Manufactured	Supplier
Motor Bogie MB2	DTR0009706805	M 623		Alstom - Ubunye
Motor Bogie Frame	AR00000176080	M 1846		Alstom - Ubunye
Wheelset (Front)	AR000000177020	M 3409		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3465		NGC
Wheel (Right)	AR00000174670	079	03.24	Bonatrans
Wheel (Left)	AR000000174670	080	03.24	Bonatrans
Wheelset (Rear)	AR00000178600	M 3410		Alstom - Ubunye
Axle with fitted gearbox	AR00000177072	K 3462		NGC
Wheel (Right)	AR00000174670	129	03.24	Bonatrans
Wheel (Left)	AR00000174670	128	03.24	Bonatrans
Pneumatic suspension (Right)	AR00000176127	2402025		Hutchinson
Pneumatic suspension (Left)	AR00000176127	2402026		Hutchinson
Brake unit with PB (Right rear)	AR00000174544	1877	06.24	Wabtec
Brake unit without PB (Right front )	AR00000175185	5650	06.24	Wabtec
Brake unit without PB (Left Front)	AR00000175185	5655	06.24	Wabtec
Brake unit without PB (left rear)	AR00000175185	5656	06.24	Wabtec
Motor (front)	AR00000168516	21704		Alstom Ornans
Motor (Rear)	AR00000168516	21850		Alstom Ornans



DATE  
6/26/2024

DATE VALIDATION

RESPONSABLE VALIDATION

PRASA  
INSTRUCTION SHEET:

FAMILY:

LOAD TEST : MOTOR BOGIE

PROJECT:

## PRESSING REPORT

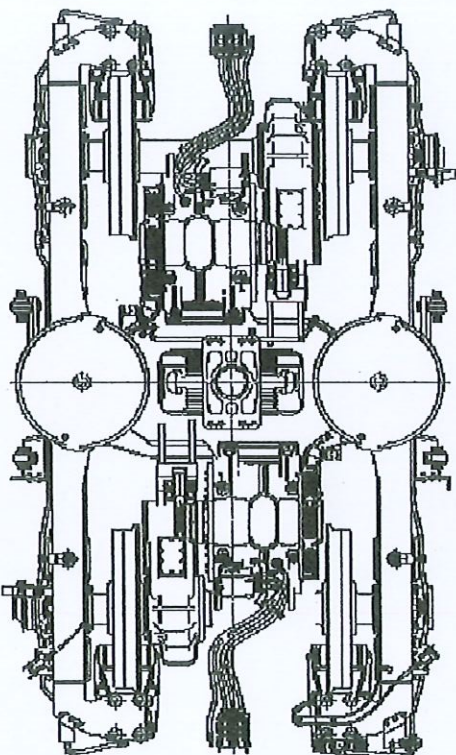
	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	36.00 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q2	5642

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DM. WITH SHIM [mm]	THEORETICAL [mm]
586.39	+	0.00 =	586.39
			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	36.40 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q4	5527

BOGIE SERIAL N°	MB2-623
BOGIE TYPE	MB
BOGIE WEIGHT UNDER LOAD [Kg]	22406
COMPLETE BOGIE WEIGHT [Kg]	7316
OPERATOR	DATE
BAFANA	6/26/2024



	THEORETICAL	MEASURED
LOAD DIFFERENCE ON FRONT AXLE [%]	MIN 0.00 MAX 0.00	-0.98 ✓
LOAD DIFFERENCE ON REAR AXLE [%]	MIN 0.00 MAX 0.00	1.58 ✓
LOAD DIFFERENCE FRONT AXLE AND REAR AXLE [%]	MIN 0.00 MAX 0.00	-0.25 ✓
LOAD DIFFERENCE ON RAILS [%]	MIN 0.00 MAX 0.00	0.30 ✓
LOAD DIFFERENCE ON DIAGONAL WHEELS [%]	MIN 0.00 MAX 0.00	1.28 ✓

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	36.20 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q1	5532

SECONDARY SUSPENSION ✓			
MEASURED [mm]	SHIM THICK [mm]	DM. WITH SHIM [mm]	THEORETICAL [mm]
586.87	+	0.00 =	586.87
			MIN 585.00 MAX 587.50

DIFFERENCE IN RIGHT AND LEFT SUSPENSION HEIGHTS [mm]	✓	THEORETICAL [mm]
-0.48		MIN -1.00 MAX 1.00

	THEORETICAL	MEASURED
WHEEL DIAMETER [mm]	MIN MAX	
GAP PRIMARY SUSPENSION [mm]	MIN 33.00 MAX 39.00	35.60 ✓
SHIM THICK [mm]		
WEIGHT ON WHEEL [Kg]	Q3	5704



ALSTOM

GISEL

## 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: 30/04/2014

Name: XOLANT

Assembly after test

Date: 22/06/2014

Name: XOLANT, HENRI &amp; ZAMIN

ROTOR S/N S469683-031		STATOR S/N P-115-1716	
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 SKF: NU 214-ECM/C4-VA3091 (cross out the references that have not been filled)</p>			
N°: ROMANIA- 0097 09/23 8N459-1369794			
<p><b>S2</b> Radial play after assembly (0,042 / 0,114): 0,07mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S4</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 144g - Max: 149g</p> <p>Filter 1 (Name and signature): <i>[Signature]</i></p> <p>Filter 2 (Name and signature): <i>[Signature]</i></p> <p>Mesured quantity: <i>[Signature]</i></p> <p>Quality validation: <i>[Signature]</i></p>	
<p><b>INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 SKF: 6214-M/C4-VL0241 (cross out the references that have not been filled)</p>			
Serial N°: GERMANY- 0200 X116-0644 04/23 8N0002			
<p><b>S1</b> Radial play after assembly (0,021 / 0,067): 0,05mm</p> <p><input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK</p>		<p><b>S3</b> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g - Max: 164g</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>Reference assembly: <i>ANC 6700</i></p>			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216 2 Page 1	

ALSTOM

GISEL

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

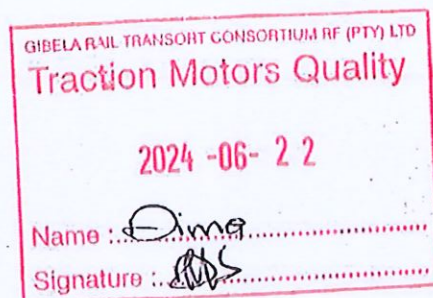
Record the value of the insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)		103 M.Ω		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
OPERATOR		Quality verification		
Out of round at the end of the shaft drive end, 0,05 max	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	Device serial number	<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Value: 0,01mm		AM X 920		
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	
0,03mm		AM X 920		
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 # 17072



Prep. & Final Assembly											
OPERATOR				Quality verification							
F1	Torque tightening to 8 x 76 Nm:	<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK	match reference for the event of failure / absence of the motorized attachment	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	match reference for the event of failure / absence of the motorized attachment	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	match reference for the event of failure / absence of the motorized attachment	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	match reference for the event of failure / absence of the motorized attachment	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	match reference for the event of failure / absence of the motorized attachment	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	match reference for the event of failure / absence of the motorized attachment	QC 1 X 22 Nm	<input type="checkbox"/>	OK	<input type="checkbox"/>	NOK
Grease protection transport											
S3	18g (0/+4.5) CC	Mesured quantity:	Kg					<input checked="" type="checkbox"/>	OK	<input type="checkbox"/>	NOK
S4	18g (0/+4.5) CC	Mesured quantity:	Kg					<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
--	--------------	---	-----------





MOT 21850

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

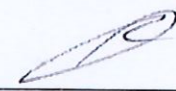
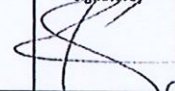
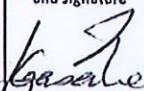

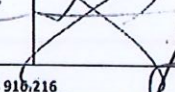
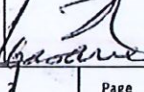
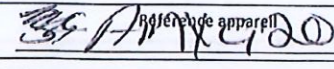
Date: 20/06/2024

Name: Jacques

Assembly after test

Date: 23/06/24

Name: Tom, ERICK & AUBREY

ROTOR S/N		STATOR S/N	
S469683-D11		CIB-1859	
<p><b>Bearing lubrication - Security operation</b> Incorrect lubrication can lead to engine failure with a safety risk in service SRIL TROS 965.289</p>			
<p><b>INSULATED CERAMIC BEARING DRIVE END - Security operation</b> Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: NU 214-E-XL-M1-P6-F1-H257A-J20AB-C4 or NU 214-E-M1-P6-F1-H257A-J20AA-C4 SKF: NU 214 ECM/C4 VA3091 (cross out the references that have not been fitted)</p>			
N°: AUSTRIA: 292 W			
<p><b>S2</b> 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> 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><b>S1</b> INSULATED CERAMIC BEARING OPPOSITE DRIVE END side - Security operation Incorrect assembly can lead to engine failure with a safety risk in service SRIL TROS 965.289 FAG: 6214-M-P6-J20AB-H257A-C4 or 6214-M-P6-J20AA-H257-C4 SKF 6214-M/C4-VL-0241 (cross out the references that have not been fitted)</p>			
Serial N°: GERMANY: 0700 X353 -1300 12/23 SN0301			
<p><b>S3</b> 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> LUBRIFICATION WITH MOBILITH SHC 100 before cover assembly</p> <p>Min: 159g Max: 164g</p> <p>Measured quantity: <input type="checkbox"/> OK <input type="checkbox"/> NOK</p> <p>Filter 1 (Name and signature): </p> <p>Filter 2 (Name and signature): </p> <p>Quality validation: </p>	
<p>Reference appareil: </p>			
FINAL ASSEMBLY REPORT FOR THE MOTOR 6 ECA 3022 B - PRASA		TROS 916.216	
		Page 1	

ALSTOM

GIBEL

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

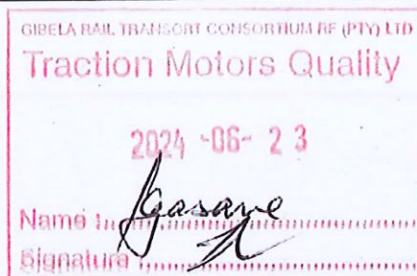
Record the value of the Insulation resistance of the bearings to TROS 915.069 (> 50 kΩ)				505 MΩ <input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
OPERATOR				Quality verification	
Out of round at the end of the shaft drive end, 0,05 max		Value: 0,01 mm		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
Out of round on toothed wheel, 0,1 max:		0,06 mm		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK	
sensor / toothed wheel play 0,7 (+/- 0,2):				<input type="checkbox"/> OK <input type="checkbox"/> NOK	
Sensor reference: DTR0000512252/DSD1830.19Q14HW				<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	no interference (in the event of false absence of the motor (screws))	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	no interference (in the event of false absence of the motor (screws))	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	no interference (in the event of false absence of the motor (screws))	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	no interference (in the event of false absence of the motor (screws))	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	no interference (in the event of false absence of the motor (screws))	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	no interference (in the event of false absence of the motor (screws))	QC 1 X 22 Nm	<input checked="" 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
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>Final Inspection</b>            Quality Insp Name and Signature: <i>Gasare</i> </div> <div style="margin-left: 20px;"> <b>Comments</b>  <i>Speed sensor to be fitted at M02</i> </div>									
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 ° 21850

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77554807

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: 2024/06/25

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



## CERTIFICATION OF CONFORMITY

Inspection certificate according EN 10204-3.1

Product: Traction Motors 6 ECA 3022 B

Serial Number: N ° 21704

Client / Customer: ALSTOM UBUNYE (PTY) LTD

Project: PRASA

P O Number: 77236520

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: 2024/06/25

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