

GIBELA

PRASA PROJECT


APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

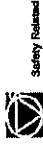
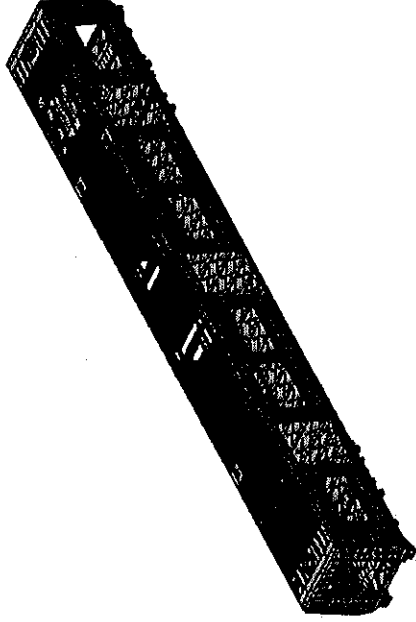
SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

APPLICATION REFERENCE												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE					WORK INSTRUCTION	SAFETY		
				TC	MC	MS	MS	TC				
<input type="checkbox"/>	07R3174497/3	CARBODYSHELL, MC ASSEMBLY	CB1230						X		PRA, CB12310, DTR313744, 97/3, V25	YES
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT		RESPONSIBLE	NAME	DATE						
0	10/01/2018	GIBELA NEW CREATION		APPROVER	Ismeleng Modiba	10/01/2018						
				CHECKER	Nosiso Pindela	10/01/2018						
				COMPLER	Tshanyani Mathegu	10/01/2018						
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PVE Manager to Quality manager		APPROVER	Ismeleng Modiba	2018/05/18						
				CHECKER	Nosiso Pindela	2018/05/18						
				REVISD BY	Raimokone Mogama	2018/05/18						
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230		APPROVER	Ismeleng Modiba	2018/07/04						
				CHECKER	Nosiso Pindela	2018/07/04						
				REVISD BY	Raimokone Mogama	2018/07/04						
3	2018/12/12	Added dimensional check points to CB1210		APPROVER	Ismeleng Modiba	12/12/2018						
				CHECKER	Nosiso Pindela	12/12/2018						
				REVISD BY	Raimokone Mogama	12/12/2018						
5	22/01/2019	As per Baseline 10.2		APPROVER	Ismeleng Modiba	22/01/2019						
				CHECKER	Nosiso Pindela	22/01/2019						
				REVISD BY	Vanessa Ndiil	22/01/2019						
6	13/03/2019	Added 01 and 02 on Self - Inspection		APPROVER	Ismeleng Modiba	13/03/2019						
				CHECKER	Nosiso Pindela	13/03/2019						
				REVISD BY	Nosiso Pindela	13/03/2019						
10	21/08/2019	New Baseline 10.2.5		APPROVER	Ismeleng Modiba	21/08/2019						
				CHECKER	Nosiso Pindela	22/08/2019						
				REVISD BY	Nosiso Pindela	21/08/2019						
15	06/08/2020	New Baseline 10.2.5		APPROVER	Timothy Mainela	06/08/2020						
				CHECKER	Bongane Masina							
				REVISD BY	Bongane Masina							
20	19/04/2021	New Baseline change 10.3		APPROVER	Timothy Mainela	19/04/2021						
				CHECKER	Bongane Masina							
				REVISD BY	Bongane Masina							
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING		APPROVER	Mkhombi collins	17/08/2021						
				CHECKER	Mpho Mubautzi							
				REVISD BY	Mpho Mubautzi							
25	21/02/2022	New Baseline change 10.3.1		APPROVER	Mkhombi collins	21/02/2022						
				CHECKER	Andani Muthelo							
				REVISD BY	Andani Muthelo							
26	14/04/2023	Addition of welding consumable traceability		APPROVER	Nbilit Vanessa	14/04/2023						
				CHECKER	Mohlamepe Amogelang							
				REVISD BY	Mohlamepe Amogelang							
27	27/07/2023	Added verification of loaded parts		APPROVER	Nyobeni Tyson	27/07/2023						
				CHECKER	Zwane Ntokoza							
				REVISD BY	Mohlamepe Amogelang							
28	07/11/2023	Addition of welder traceability		APPROVER	Nyobeni Tyson	07/11/2023						
				CHECKER	Andani Muthelo							
				REVISD BY	Ntokoza Zwane							
TRAINSET	QIR	OPERATOR NAME/USING	DATE	SELF INSPECTION NUMBER				PAGES				
218	M72	W/NGA 471497	29/02/24	SLCB1210.247.V28				17				

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3		Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.247.V28
Car: MC			Work station: CB1210	



Safety Related

I - Documentation and Instruments Control

I.1 - Documentation Control

Document	ISO 9001	ISO 14001	ISO 45001	ISO 9001	ISO 14001	ISO 45001	Revision	Classification	Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR31374497/3									N/A	29/02/24

I.2 - Instruments Control


Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial Number	Calibration/Verification/Validation Date	Signature/Date (Manufacturing)	Signature/Date (Quality)
TURBINE	222713	02/01/20	29/02/24	29/02/24
20M TAPE	6187P0084	15/08/32	29/02/24	29/02/24
45ER TAPE	125425924	12/10/30	29/02/24	29/02/24

I.3 - Consumables







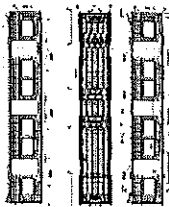


Welding Consumable Control - Used for Special Process


Welding Material	Welding Process	Welding Parameter	Signature/Date (Manufacturing)	Signature/Date (Quality)
MUT 1100 308 LSI	MIG	6116	29/02/24	29/02/24
ETL 309 LSI	MIG	6116	29/02/24	29/02/24

	CARBOOVSHELL M2 ASSEMBLY DTR313744973		Rev. 28	Project: PRASA SI.CB1210.247.V28
			Date 07/11/2023	

II - Self Inspection - Items to Check

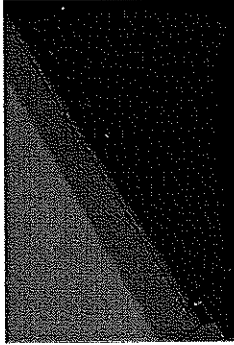
II.1 - Items to check

Item	Required Drawing	Describe Defect	Applicable Critical Record	Yes	No	Signature/Date (Inspector)	Signature/Date (Quality)
01	N/A	Verification of coned parts loaded (Sidewalls, Endframes, Roof and Underframe)	AA00001375051	✓		M/10 29/02/24	 29/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		M/10 29/02/24	 29/02/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 DTD0000210675	✓		M/10 29/02/24	 29/02/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		M/10 29/02/24	 29/02/24
05		Cleaning of all Stainless Steel Surface	According to GIB-WEL - PROC-0002	✓		M/10 29/02/24	 29/02/24
06		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		M/10 29/02/24	 29/02/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓		M/10 29/02/24	 29/02/24

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Welder traceability

Roof ring welds



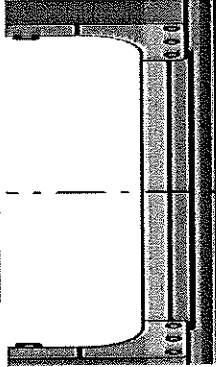
LHS Boiler maker (Name & Sign): <u>Gerald</u>	RHS Boiler maker (Name & Sign): <u>LAURENCE Joly</u>
Welder (Name & Sign): <u>Robert Dubé</u>	Welder (Name & Sign): <u>Keru K. Nod</u>

END 1

LHS Boiler maker (Name & Sign): <u>Gerald</u>	RHS Boiler maker (Name & Sign): <u>LAURENCE Joly</u>
Welder (Name & Sign): <u>Robert Dubé</u>	Welder (Name & Sign): <u>Keru K. Nod</u>

END 2

Door ring welds



LHS Boiler maker (Name & Sign): <u>LUNGHA Djo</u>	RHS Boiler maker (Name & Sign): <u>LAURENCE Joly</u>
Welder (Name & Sign): <u>Keru K. Nod</u>	Welder (Name & Sign): <u>Robert Dubé</u>

LHS Boiler maker (Name & Sign): <u>LUNGHA Djo</u>	RHS Boiler maker (Name & Sign): <u>LAURENCE Joly</u>
Welder (Name & Sign): <u>Keru K. Nod</u>	Welder (Name & Sign): <u>Robert Dubé</u>

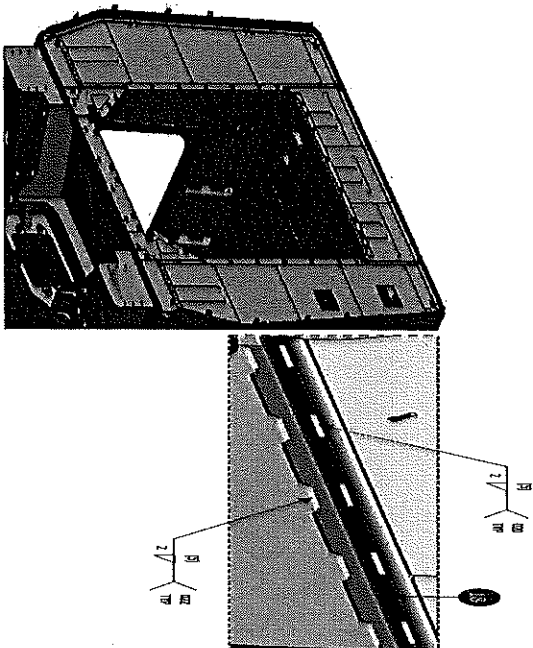


CARBODYSHELL M2 ASSEMBLY DTR31574497/3

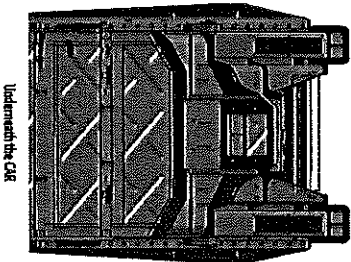
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07/11/2023

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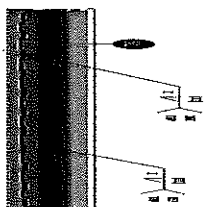
EUF Reinforcement Plates



END 2



Underneath the CAR

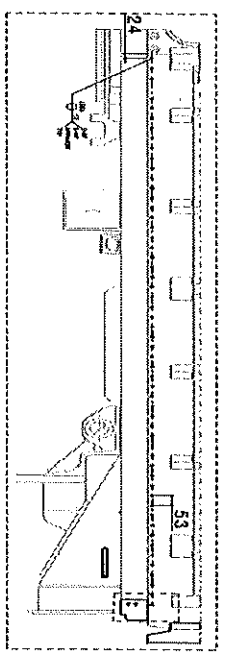


END 1
Boiler maker (Name & Sign): Tim Red

Welder (Name & Sign): Barry Red

END 2
Boiler maker (Name & Sign): Leago

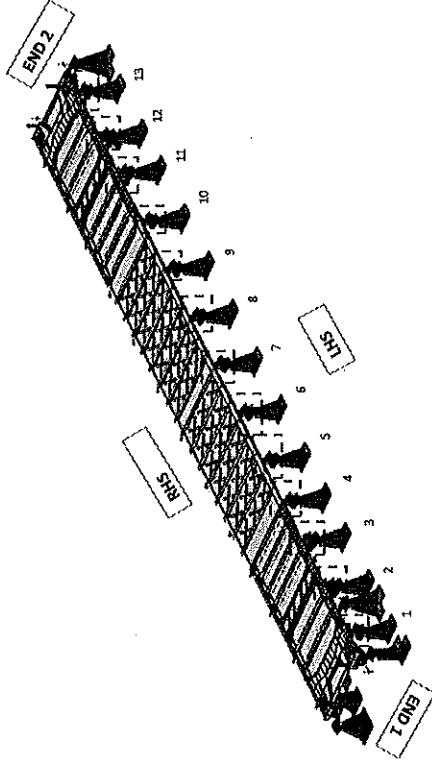
Welder (Name & Sign): Kevin K. Neal



FEDOU
OPERATOR: Leago

	CARBODYSHELL M2 ASSEMBLY DTR313744973	Rev.	28	Project: PRASA
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Specifications of Details for CBS measurement



Measure gap between jig pillar / chair and underframe = 0mm. No

After loading and clamping

Fill in the gap foundon each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side													
Right Hand Side													

Signature Operators:  Date: 28/11/23

After Welding.

Fill in the gap found each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side													
Right Hand Side													

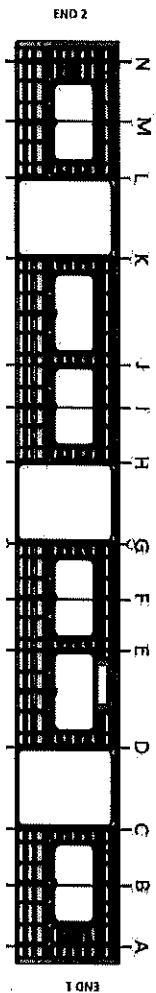
Signature Industrial Quality:  Date: 28/02/24



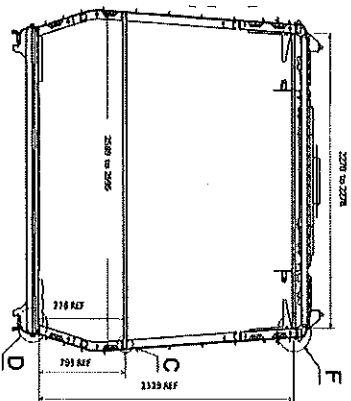
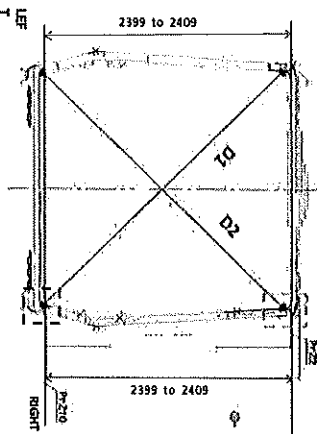
CARBODYSHELL M2 ASSEMBLY DTR313744973

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28	SI.CB1210.247.V28
Date	
07/11/2023	

Specifications of Details for C85 measurement



9



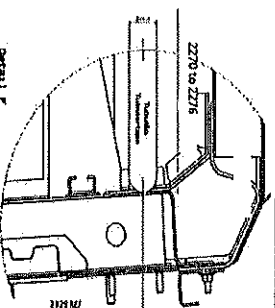
Measurement of the carbody shell assembly at the measurement points A through N.



Measurement of the carbody shell assembly at the measurement points D1, D2, and T.



Measurement of the carbody shell assembly at the measurement points C, D, E, and F.

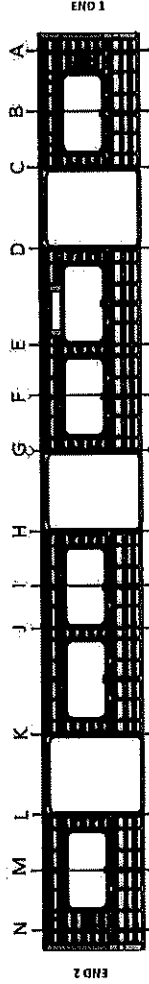


Detail F
Part assembly
Measurement

	CARBODYSHELL M2 ASSEMBLY DTR313744973	Rev. 28	Project: PRASA SI.CB1210.247.V28
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Specifications of Details for CBS measurement

BEFORE WELDING



Note: The difference in Height values measured on the LHS and RHS should be ≤ 2MM on each point.

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3270	3269	1	2404	2406	2
B	3269	3267	3	2403	2403	0
C	3268	3270	2	2401	2406	1
D	3269	3269	0	2402	2402	0
E	3269	3266	0	2404	2406	2
F	3266	3266	2	2406	2402	1
G	3268	3269	1	2404	2404	0
H	3269	3270	1	2402	2407	2
I	3266	3265	1	2406	2402	2
J	3266	3266	0	2402	2402	0
K	3270	3268	2	2404	2404	0
L	3269	3269	0	2406	2402	1
M	3266	3268	2	2405	2407	2
N	3268	3270	2	2402	2406	2


 29/02/24

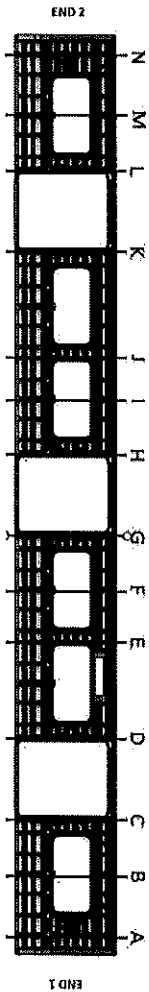


CARBOV-SHELL M2 ASSEMBLY DTR31374497/3

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Specifications of Details for C85 measurement

AFTER WELDING

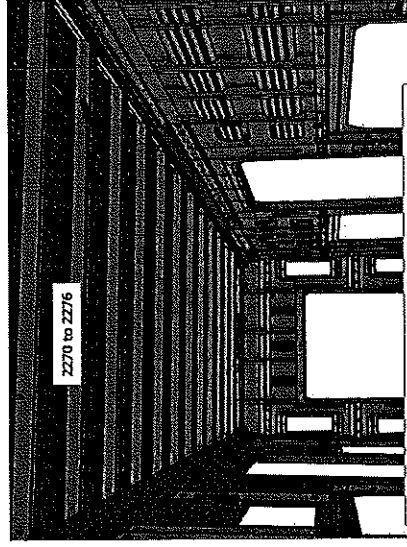
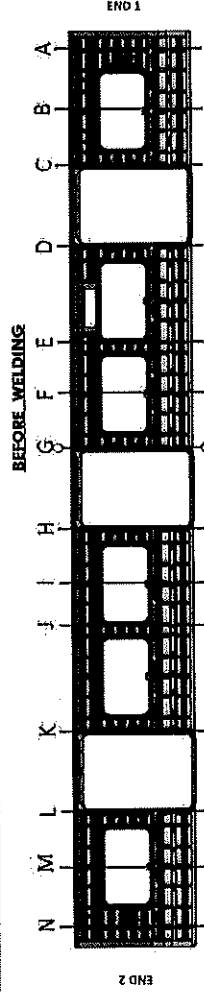
Note: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3297	0	2405	2407	1
B	3268	2	2406	2406	0
C	3296	1	2404	2405	1
D	3295	2	2406	2404	2
E	3265	0	2405	2405	0
F	3266	1	2404	2405	1
G	3296	0	2407	2405	2
H	3296	1	2404	2403	1
I	3265	1	2406	2404	2
J	3266	0	2405	2405	0
K	3295	1	2406	2405	1
L	3296	0	2405	2407	2
M	3266	3	2406	2406	0
N	3294	1	2406	2407	1

29/02/24

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3		Rev. 28	Project: PRASA
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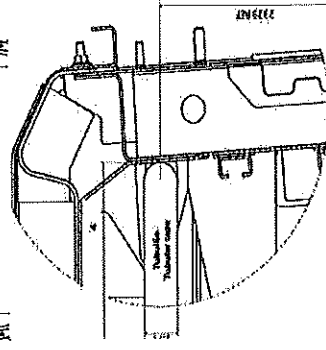
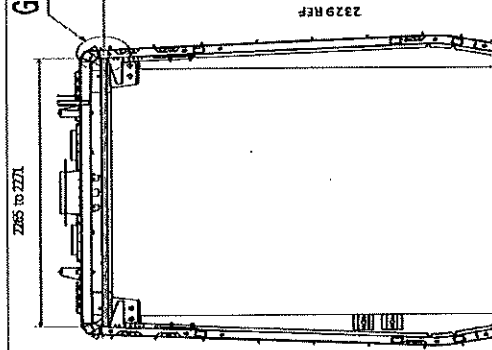
CBS measurement



Do not consider reinforcement (Take measurements top area of zee profile)

2270 to 2276

A	2291
B	2294
C	2295
D	2276
E	2276
F	2279
G	2272
H	2274
I	2276
J	2278
K	2273
L	2271
M	2272
N	2272



Detail G
Consideration of reinforcement zone

2285 to 2271

Handwritten signature and date: 29/02/24



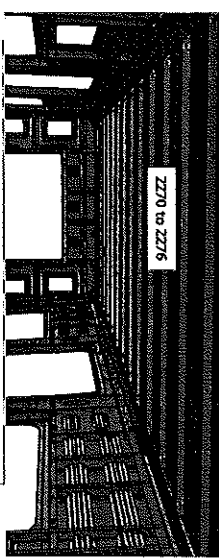
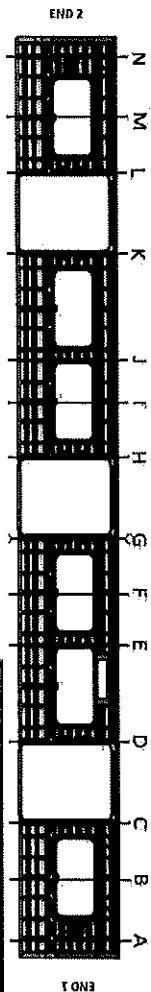
CARBOVYSHELL M2 ASSEMBLY DTR31374487/3

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07/11/2023

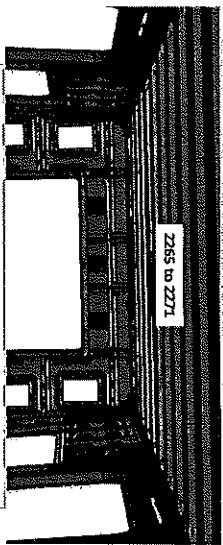
Project: PRASA
SI.CB1210.247.V28

CBS measurement

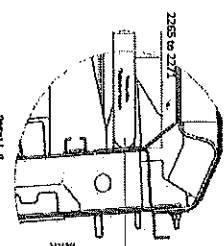
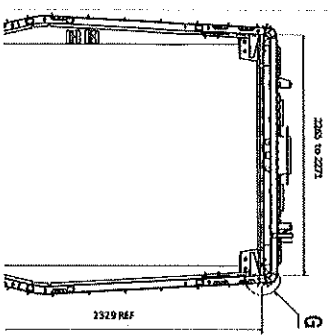
AFTER WELDING



Do not consider reinforcement (Take measurements top area of zee profile)




Take measurement close to radius (considering reinforcement)



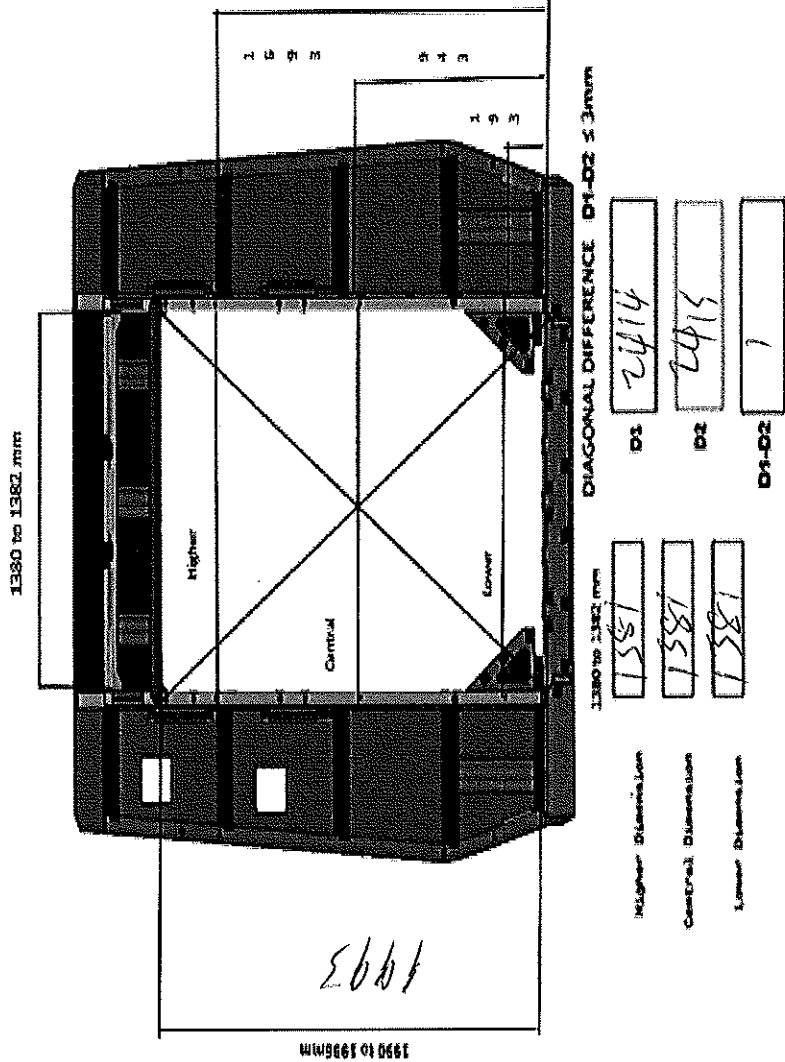
	2265 to 2271	2270 to 2276
A	2265	NA
B	NA	2274
C	2268	NA
D	2266	NA
E	NA	2276
F	NA	2274
G	2270	NA
H	2268	NA
I	NA	2275
J	NA	2275
K	2266	NA
L	2271	NA
M	NA	2273
N	2268	NA

29/02/24

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CBS measurement

End frame 1



29/02/24


DIAGONAL DIFFERENCE D1-D2 = 3mm

2413

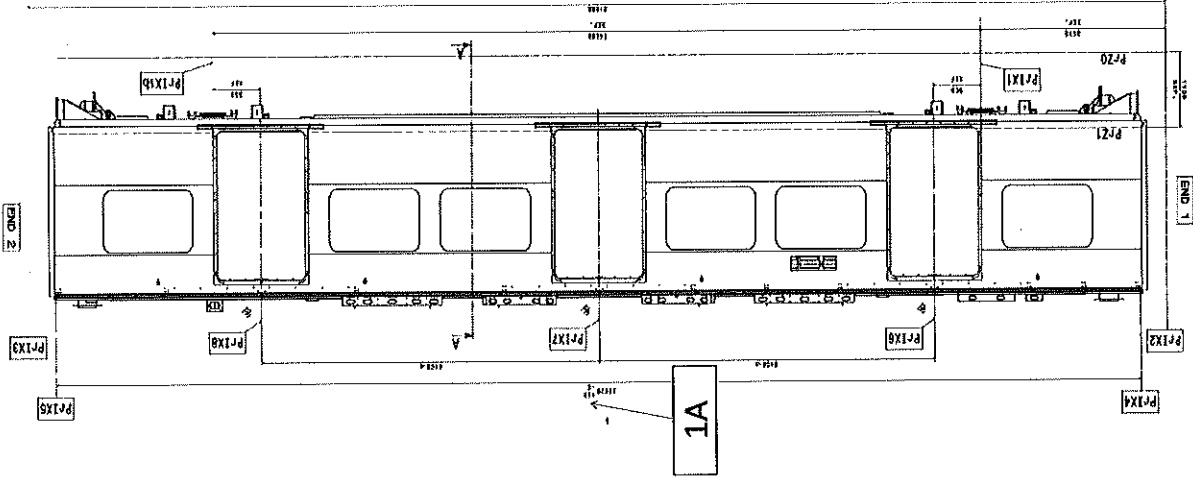
九十九



2024/09

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

Specifications of Details for CBS measurement

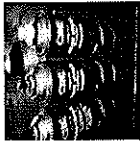


LEFT SIDE		
1A	SPECIFICATION SIZE	ACTUAL SIZE
	20632 - 20614	20616


RIGHT SIDE		
1A	SPECIFICATION SIZE	ACTUAL SIZE
	20632 - 20614	20615

Dye penetrant test

Dye-penetration test to be performed by quality personnel



[illegible]

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

Self Inspection - Final Result

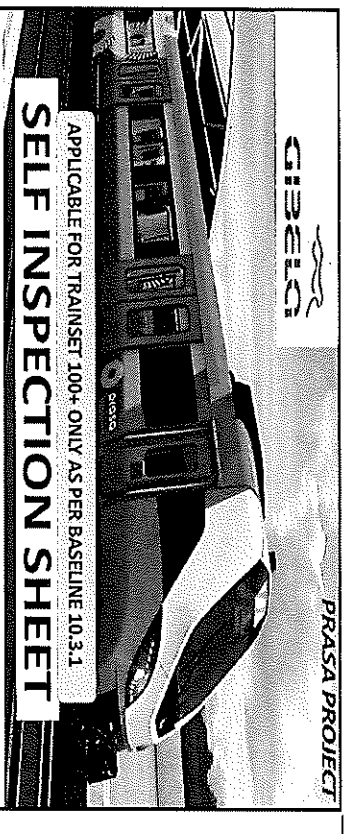
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			
		DATE	SIGNATURE
HOLD POINT	GO	29/02/24	W. L. G. G.
		29/02/24	Edmond

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":			
Item	Description	Responsible	Status

Operations

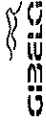
Quality



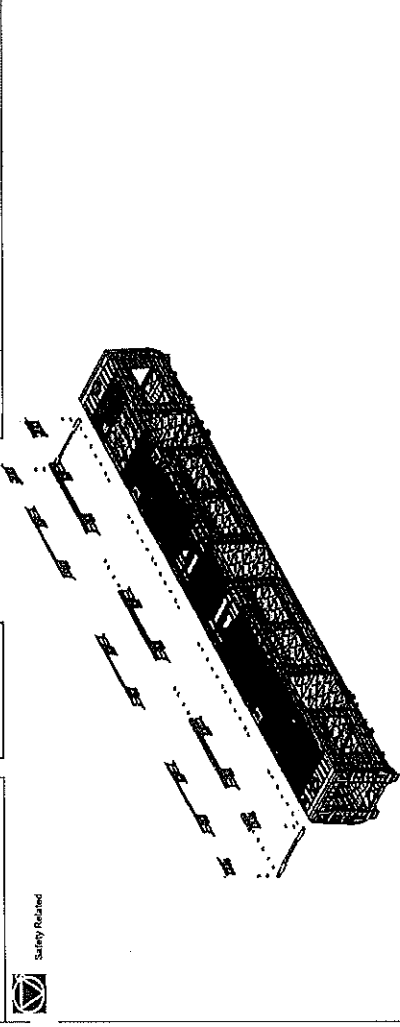
APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

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APPLICATION REFERENCE												
AMOUNTING	DRAWING	DESCRIPTION	STATION	CAT TYPE						WORK INSTRUCTION	SAFETY TAG	
				TOL	M4	M5	M6	M7	M8			
<input type="checkbox"/>	DRS131446272	CARDOSHELL M5 ASSEMBLY	CH2320			X				POLCB1220-DT5321-1497 / VZ9	YES	
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
REV /	DATE	MODIFICATION CONTENT			RESPONSIBLE					NAME	DATE	
0	01/02/2018	GIBEA NEW CREATION			APPROVER					Ireneing Modiba	01/02/2018	
					CHECKER					Noson Phinda	01/02/2018	
					COMPILER					Thayison Mubhegu	01/02/2018	
1	18/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager			APPROVER					Ireneing Modiba	18/05/2018	
					CHECKER					Noson Phinda	18/05/2018	
					REVISOR BY					Ramobana Motzama	18/05/2018	
2	2018/07/05	Certain dimensional check added and others moved to CB1210			APPROVER					Ireneing Modiba	20/8/07/05	
					CHECKER					Noson Phinda	20/8/07/05	
					REVISOR BY					Ramobana Motzama	20/8/06/12	
3	2018/06/12	Width tolerance as per DT0000336600			APPROVER					Ireneing Modiba	24/01/2019	
					CHECKER					Noson Phinda	24/01/2019	
					REVISOR BY					Noson Phinda	24/01/2019	
5	24/01/2019	As per Baseline 10.2			APPROVER					Ireneing Modiba	24/01/2019	
					CHECKER					Vanzona Ntuli	24/01/2019	
					REVISOR BY					Vanzona Ntuli	24/01/2019	
6	13/03/2019	Added D1 and D2 on Saff - Inspection length measurements			APPROVER					Ireneing Modiba	13/03/2019	
					CHECKER					Noson Phinda	13/03/2019	
					REVISOR BY					Noson Phinda	13/03/2019	
7	27/05/2019	Removed measurement positions on the display windows			APPROVER					Ireneing Modiba	27/05/2019	
					CHECKER					Noson Phinda	27/05/2019	
					REVISOR BY					Noson Phinda	27/05/2019	
10	22/08/2019	New Baseline 10.2.5			APPROVER					Ireneing Modiba	22/08/2019	
					CHECKER					Noson Phinda	22/08/2019	
					REVISOR BY					Noson Phinda	22/08/2019	
15	06/08/2020	New Baseline 10.2.6			APPROVER					Timothy Mamela	06/08/2020	
					CHECKER					Bongane Masina	06/08/2020	
					REVISOR BY					Bongane Masina	06/08/2020	
20	19/04/2021	New Baseline change 10.3			APPROVER					Bongane Masina	19/04/2021	
					CHECKER					Bongane Masina	19/04/2021	
					REVISOR BY					Bongane Masina	19/04/2021	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING			APPROVER					Mkhombeni Collins	17/08/2021	
					CHECKER					Mphahlele Mphahlele	17/08/2021	
					REVISOR BY					Mphahlele Mphahlele	17/08/2021	
25	20/02/2022	New Baseline change 10.3.1			APPROVER					Mkhombeni Collins	20/02/2022	
					CHECKER					Akadani Muthelo	20/02/2022	
					REVISOR BY					Akadani Muthelo	20/02/2022	
26	14/06/2022	Update Minimum temperature requirement for sealant application			APPROVER					Mkhombeni Collins	14/06/2022	
					CHECKER					Akadani Muthelo	14/06/2022	
					REVISOR BY					Akadani Muthelo	14/06/2022	
27	19/10/2022	Addition of traceability for sealant application and welding.			APPROVER					Mkhombeni Collins	19/10/2022	
					CHECKER					Neliswa Zizane	19/10/2022	
					REVISOR BY					Anogelang Mokheleme	19/10/2022	
28	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER					Vanzona Ntuli	14/04/2023	
					CHECKER					Neliswa Zizane	14/04/2023	
					REVISOR BY					Anogelang Mokheleme	14/04/2023	
29	28/10/2023	Addition of barrel quantity			APPROVER					Tyson Ngweni	28/10/2023	
					CHECKER					Kekwane Matshapo	28/10/2023	
					REVISOR BY					Anogelang Mokheleme	28/10/2023	
TRAINSET	CAR	OPERATOR NAME ALPS NO.		DATE	SELF INSPECTION NUMBER					PAGES		
215	M2	Levi 483028 oilshot		SI/CB1220-276-V29						15		

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2		Rev. 28	Project: PRASA
			Date 28/10/2023	Sl: CB1220.276.V29

QAT: M2	Work station:	CB1220
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I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car							Revision	Observation	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
	T01	T02	T03	T04	T05	T06	T07						
DTR31374497/2								29				01/03/24	01/03/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process						
Instruments	Serial number	Calibration or Verification Validation Date		OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Measuring Tape	5151863	30/03/2023	30/03/24	X	01/03/24	01/03/24
Caliper	227B-1	29/11/2023	29/11/24	X	01/03/24	01/03/24


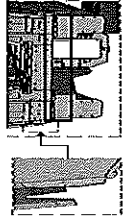




I.3 Consumables


Welding Consumable Control - Used for Special Process					
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding 308LSi B22180	Mig	X	X	01/03/24	01/03/24

II - Self Inspection - Items to Check

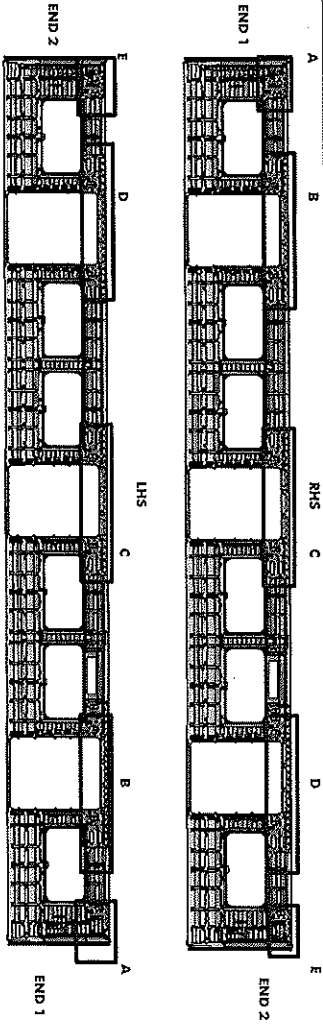
II.1 - Items to check

Item	Photo/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA-CB220-DTR313744972 Verification of filament for all reinforcement brackets.	PRA-CB220-DTR313744972	-	01/05/24 [Signature]	01/05/24 [Signature]
02	N/A	Carbide free of significant flaws which compromise the appearance or functionality	DT00000210075	-	01/05/24 [Signature]	01/05/24 [Signature]
03	REFER TO ANNEXURE A	Arg Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TTPDEF - ARC - 0000	-	01/03/24 [Signature]	01/03/24 [Signature]
04		Cleaning of all Stainless Steel Surfaces	According to GIB-WEL - PROC-0002	-	01/05/24 [Signature]	01/05/24 [Signature]
05		Function's dimensions approved according drawing or complementary document approved by Astem engineering and registered in DIs document.	Approved according specified on paper below.	-	01/05/24 [Signature]	01/05/24 [Signature]
06		Perform visual inspection of welds in 100% of the project. Run by process section in electric arc welding (shield ring) as IND-SAL-WMS-026 Run by process section in electric arc welding (shield ring) and fillet sampling as defined in DT00000210026.	As the welding procedure IND-SAL-WMS-026 and DT00000210026.	-	01/05/24 [Signature]	01/05/24 [Signature]
07	N/A	Before application of solvent, record the copy date and make sure that the room temperature and humidity are within specified values as per Work's instructions Spot-Check: Temperature max - Min (°) : 19°C - 15°C Relative Humidity Max - Min (%): 23% - 50%	Section Batch No: 182 P33 Exp Date: ___ / ___ / 24 Actuals: Temperature: 30°C Humidity: 65% [Signature]	-	01/05/24 [Signature]	01/05/24 [Signature]
08	N/A	Verification of solvent application in certain regions in the drawing.	AAD0000433725	-	01/05/24 [Signature]	01/05/24 [Signature]



	CARBODYSHELL M2 ASSEMBLY DTR313744972	Rev. 23	Project: PRASA
		Date 28/10/2023	SI.CB1220.276.V29
SEALANT APPLICATION			
		<div>AREA 1 & 2 END 1</div> <div>Operator (Name & sign): </div> <div>Operator (Name & sign): </div> <div>Operator (Name & sign): </div>	
			

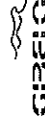
	CARBODYSHELL M2 ASSEMBLY DTRJ1374497/2		Rev	Project: PRASA
			29	
		Date	28/10/2023	
		SI/CB1220.276.V29		

II - Self Inspection - Items to Check

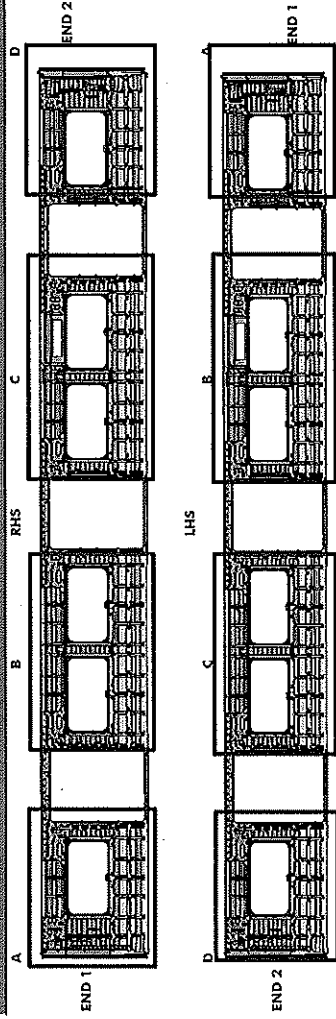


REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u>Linde</u> 	<u>Linde</u> 
B	Operator (Name&sign): <u>Nekolungu</u>	<u>Nekolungu</u>
C	Operator (Name&sign): <u>Sifiso</u>	<u>Sifiso</u>
D	Operator (Name&sign): <u>Mosha</u>	<u>Mosha</u>
E	Operator (Name&sign): <u>Sifiso</u>	<u>Sifiso</u>

	CARBODYSHELL M2 ASSEMBLY DTR313744972		Rev.	Project: PRASA
			28	
			Date	SI.CB1220.276.V29
		28/10/2023		

II - Self Inspection - Items to Check



BRACKETING


C-RAILS:	INSTALLATION	<u>ASANDRA</u>
	Operator:	
	Operator:	
	Operator:	
	Operator:	
	Operator:	
DOOR MECHANISMS:		<u>LINDO</u>
TAPPING PADS		<u>LINDO END1</u>
		<u>LINDO END2</u>
SEAT & LUGGAGE BRACKETS:	INSTALLATION & VERIFICATION	
	Operator:	<u>LINDO</u> <u>WTHO</u> <u>LOLO</u> <u>JOHNNY</u> <u>SIBIYA</u>
	Operator:	
SEAT BRACKETS VERIFICATION:		<u>WTHO</u>
	Operator:	
	Operator:	

WELDING

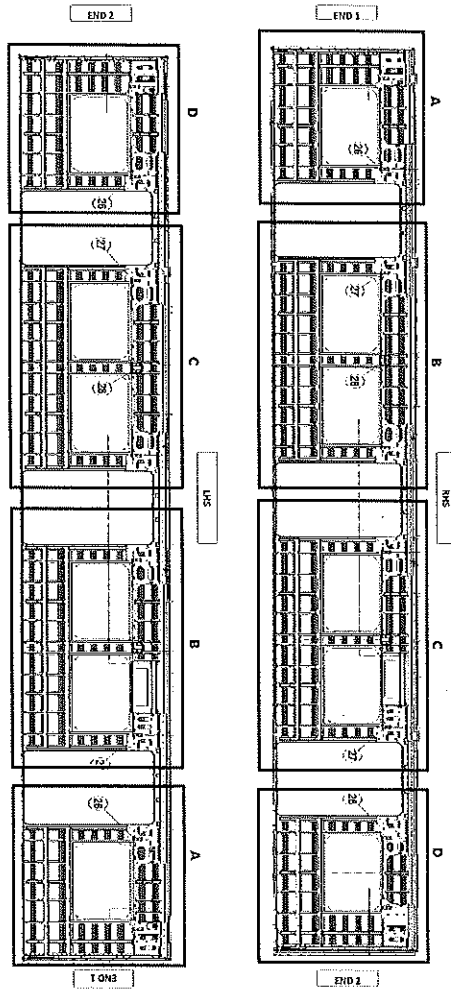
AREA	LHS	RHS
A (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
B (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
C (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
D (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>	: Operator (Name&sign): <u>[Signature]</u>

ENDS

END 1 TAPPING PADS WELDING:	Operator (Name&sign): <u>LINDO</u>
END 2 TAPPING PADS WELDING:	Operator (Name&sign): <u>LINDO</u>

	Project: PRASA	
	Rev. 29 Date 28/10/2023	SI.CB1220.276.V29
CARBODYSHELL M2 ASSEMBLY DTR313744972		

M2 BRACKET INSTALLATION



QUANTITIES (M2)

RHS				
SECTION	QUANTITY	OK	NOK	
C-RAILS	A	8	✓	
	B	8	✓	
	C	8	✓	
	D	2	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	13	✓	
	D	2	✓	
EARTH BUSH	A	4	✓	
	B	4	✓	
	C	5	✓	
D	3	✓		


ROOF ENDS:
 CRAILS 2 OFF EACH END
 EARTH BUSH 8 OFF EACH END

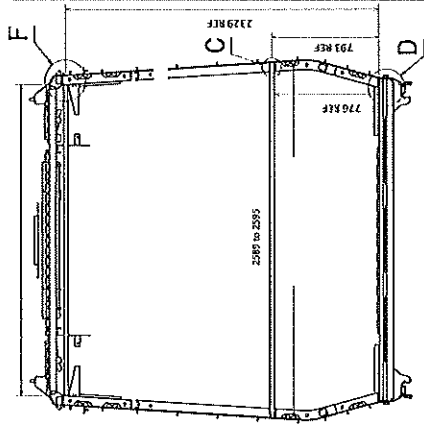
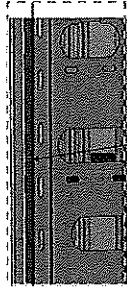
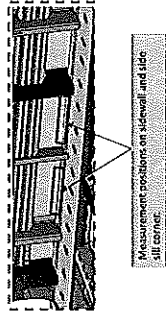
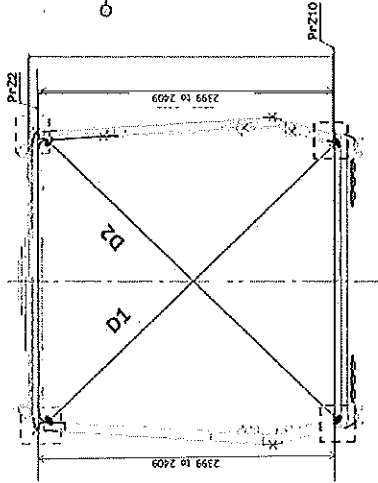
VERIFICATION BY: 

LHS				
SECTION	QUANTITY	OK	NOK	
C-RAILS	A	11	✓	
	B	11	✓	
	C	12	✓	
	D	12	✓	
SEAT BRACKETS	A	12	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	7	✓	
	B	7	✓	
	C	6	✓	
D	2	✓		

ROOF ENDS:
 CRAILS 2 OFF EACH END
 EARTH BUSH 5 OFF EACH END

VERIFICATION BY: 

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev. 29	Project: PRASA
		Date 28/10/2023	SI.CB1220.276.V29

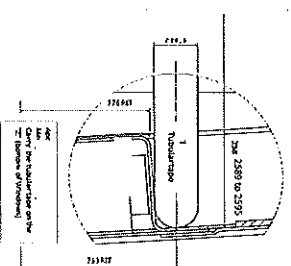
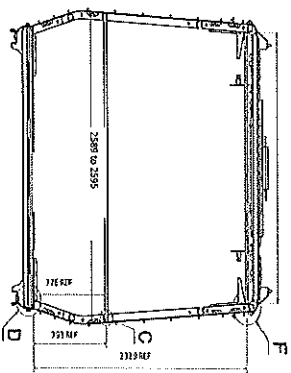




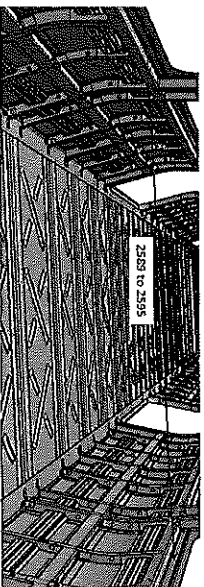
CARBODYSHELL M2 ASSEMBLY DTR31374497/2

Rev.
29
Date
28/10/2023

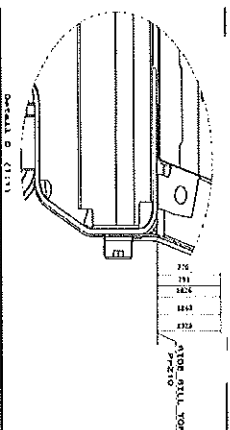
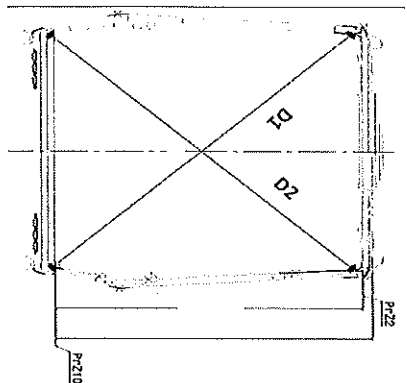
Project: PRASA
SI.CB1220.276.V29




Detail C

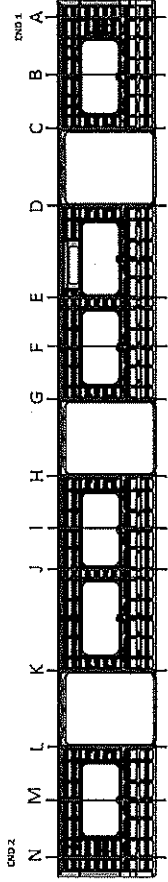


Take measurement close to radius



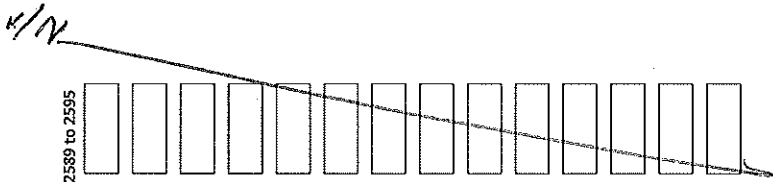
	CARBODYSHELL M2 ASSEMBLY DTR313744972		Project: PRASA
	Rev.	28	SI.CB1220.276.V29
	Date	28/10/2023	

CBS measurement

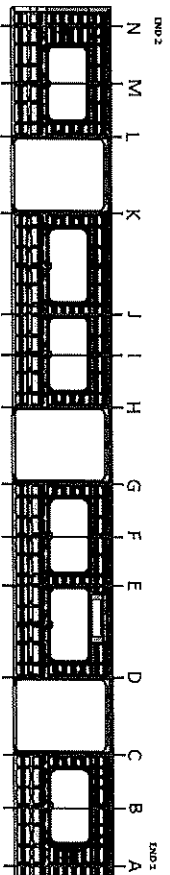


BEFORE WELDING

Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A 3295	3295	0	
B 3265	3263	2	
C 3298	3295	3	
D 3294	3298	4	
E 3263	3265	2	
F 3262	3265	3	
G 3297	3297	1	
H 3296	3295	1	
I 3262	3264	2	
J 3264	3265	1	
K 3302	3297	3	
L 3266	3294	2	
M 3265	3265	0	
N 3298	3266	2	

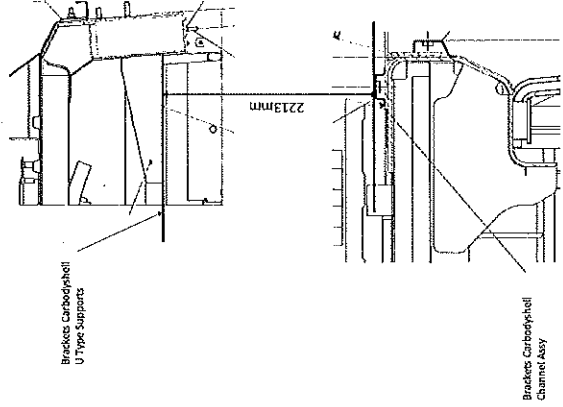
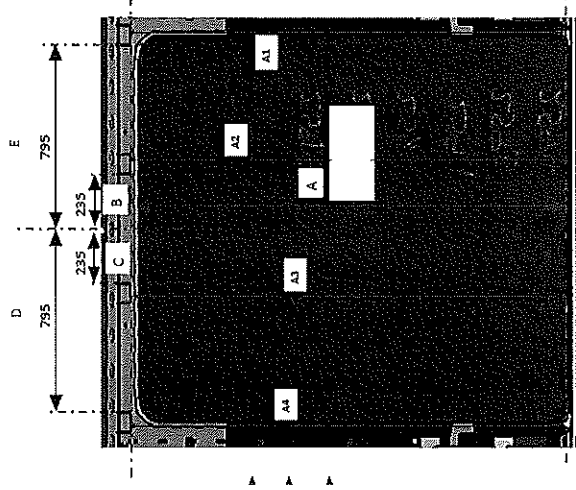


CBS measurement



AFTER WELDING

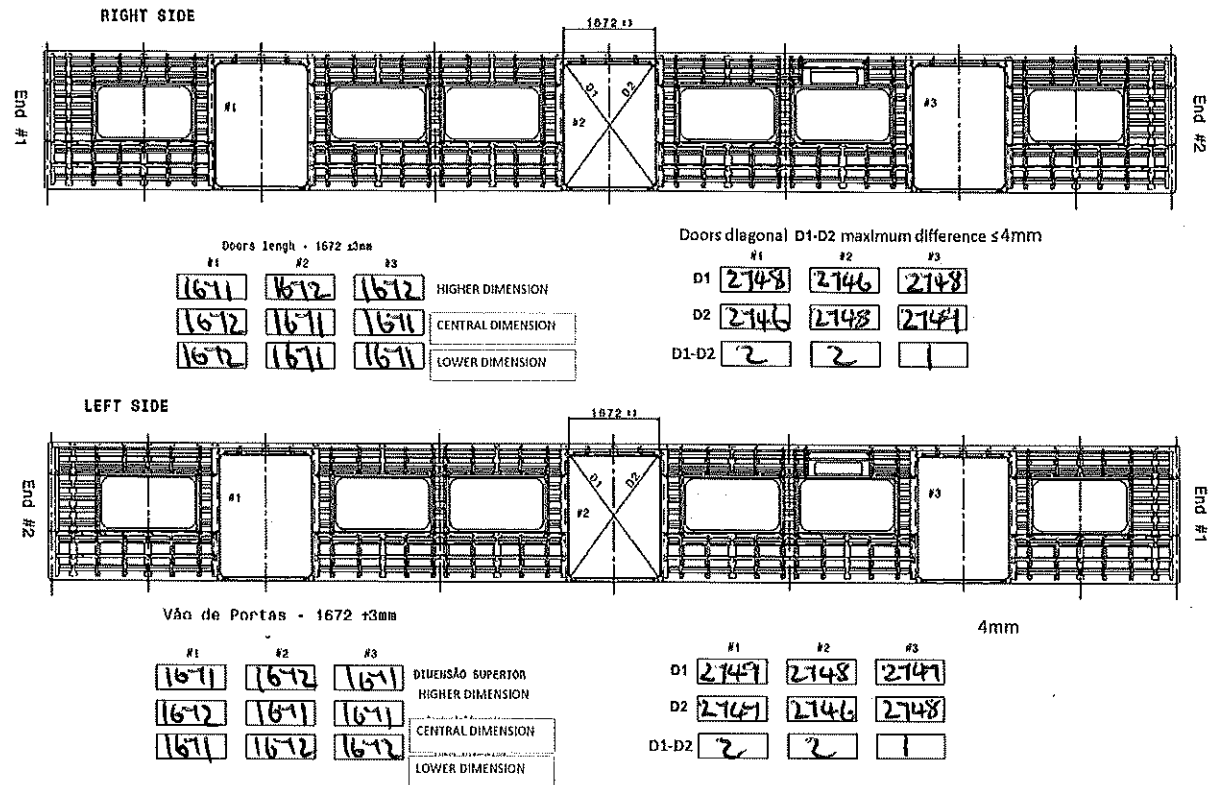
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3380	3298	2	2595
B	3267	3267	1	2592
C	3298	3295	3	2589
D	3291	3294	3	2591
E	3265	3267	2	2595
F	3264	3265	1	2594
G	3291	3300	3	2595
H	3291	3300	3	2591
I	3265	3265	0	2593
J	3264	3266	2	2594
K	3300	3300	0	2592
L	3296	3295	1	2589
M	3268	3269	1	2591
N	3299	3295	4	2593



DOOR 1 - LHS		DOOR 2 - LHS		DOOR 3 - LHS	
VALUE	ACTUAL	VALUE	ACTUAL	VALUE	ACTUAL
A1	2231	A1	2232	A1	2230 to 2232
A2	2232	A2	2231	A2	2230 to 2232
A3	2230	A3	2230	A3	2230 to 2232
A4	2231	A4	2231	A4	2230 to 2232
B	235	B	235	B	234 to 236
C	235	C	235	C	234 to 236
D	795	D	795	D	794 to 796
E	795	E	795	E	794 to 796

DOOR 1 - RHS		DOOR 2 - RHS		DOOR 3 - RHS	
VALUE	ACTUAL	VALUE	ACTUAL	VALUE	ACTUAL
A1	2230	A1	2231	A1	2230 to 2232
A2	2230	A2	2230	A2	2230 to 2232
A3	2231	A3	2231	A3	2230 to 2232
A4	2231	A4	2230	A4	2230 to 2232
B	235	B	235	B	234 to 236
C	235	C	235	C	234 to 236
D	794 to 796	D	794 to 796	D	794 to 796
E	794 to 796	E	794 to 796	E	794 to 796

Specifications of Details for CBS measurement CB1220





CARBODYSHELL M2 ASSEMBLY DTR3137/4497/2

Rev.
29
Date

28/10/2023

Project: PRASA

SI.CB1220.276.V29

Self Inspection - Final Result


Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE
HOLD POINT	GO	01/03/2024	Leni <small>Operations</small>	
		01/03/2024	Amogelany <small>Industrial Quality</small>	
			<small>Operations</small>	
			<small>Industrial Quality</small>	

In case of "NO GO", describe blocking problems

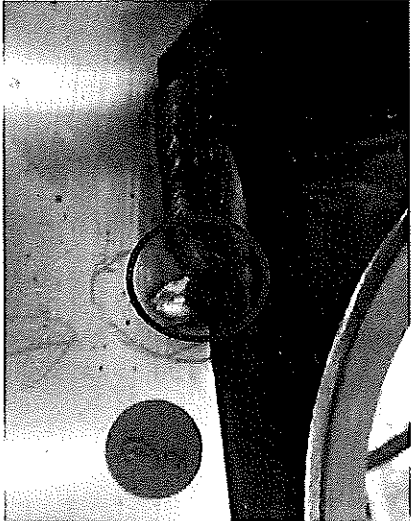
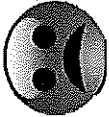
In case of "NO GO", the operations manager must define below action plan to ensure "GO".				
Item	Description	Responsible	Due date	Status

Operations

Quality

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2		Rev.	Project: PRASA	
			28	SI. CB1220.276.V29	
			Date	28/10/2023	

ANNEXURE A: Arc Welding Quality Acceptance Standard

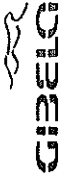


APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1
SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

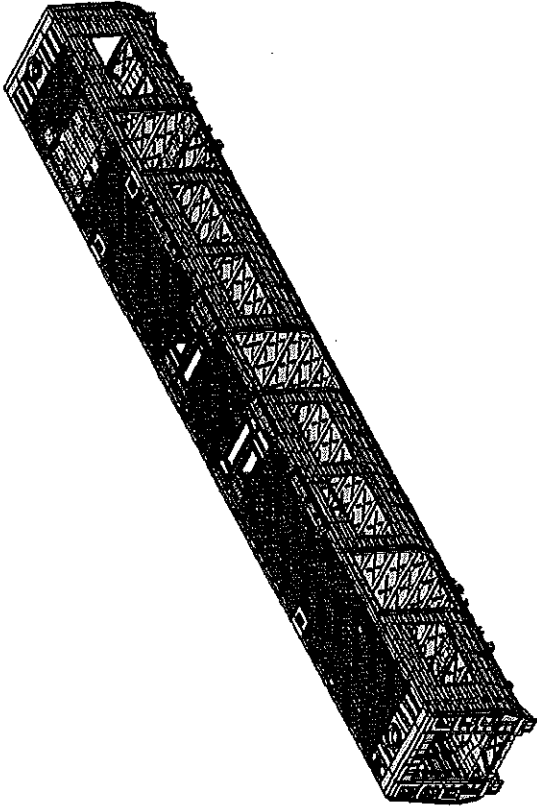
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

MOUNTING		DRAWING	DESCRIPTION	STATION	CAR TYPE				WORK INSTRUCTION	SAFETY ?	
					TC	ML	MC	MS			TC
<input type="checkbox"/>	AA0000374497	AA000043329	CARBODYSHELL W2 ASSEMBLY	CB1230				X		PRC CB1230-AA000013 74497-V20	YES
<input type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											
REV	DATE	MODIFICATION CONTENT							RESPONSIBLE	NAME	DATE
0	2018/08/02	GIBELA NEW CREATION							APPROVER	Philippe Marques	2018/08/02
									CHECKER	Nosizo Pindela	2018/08/02
									COMPLIER	Nosizo Pindela	2018/08/02
									APPROVER	Itumeleng Modiba	30/5/2018
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PVE Manager to Quality manager							CHECKER	Nosizo Pindela	30/5/2018
									REVISED BY	Nosizo Pindela	30/5/2018
									APPROVER	Itumeleng Modiba	2018/05/07
2	2018/05/07	Certain dimensional checks moved to CB1220							CHECKER	Nosizo Pindela	2018/05/07
									REVISED BY	Ramokone Motema	2018/05/07
									APPROVER	Itumeleng Modiba	24/01/2019
5	24/01/2019	As per Baseline 10.2							CHECKER	Nosizo Pindela	24/01/2019
									REVISED BY	Vanessa Ntuli	24/01/2019
									APPROVER	Itumeleng Modiba	19/03/2019
6	13/03/2019	Added Twist and Door Bracket Measurements Remove Door Measurements							CHECKER	Nosizo Pindela	19/03/2019
									REVISED BY	Vanessa Ntuli	19/03/2019
									APPROVER	Itumeleng Modiba	29/08/2019
10	23/03/2019	New Baseline 10.2.5							CHECKER	Nosizo Pindela	29/08/2019
									REVISED BY	Nosizo Pindela	29/08/2019
									APPROVER	Timothy Maimela	06/08/2020
	06/08/2020	New Baseline 10.2.6							CHECKER	Bongane Masina	
									REVISED BY	Bongane Masina	
									APPROVER	Timothy Maimela	
20	19/04/2021	New Baseline change 10.3							CHECKER	Bongane Masina	19/04/2021
									REVISED BY	Bongane Masina	
									APPROVER	Collins Mkhombhi	
25	20/02/2022	New Baseline change 10.3.1							CHECKER	Andani Muthelo	20/02/2022
									REVISED BY	Andani Muthelo	
									APPROVER	Collins Mkhombhi	
26	14/06/2022	Update minimum temperature requirement for sealant application							CHECKER	Andani Muthelo	14/06/2022
									REVISED BY	Andani Muthelo	
									APPROVER	Collins Mkhombhi	
27	26/07/2022	Threshold measurement addition							CHECKER	Andani Muthelo	27/07/2022
									REVISED BY	Andani Muthelo	
									APPROVER	Collins Mkhombhi	
28	17/10/2022	Addition of traceability for sealant application							CHECKER	Nitokozo Zwane	17/10/2022
									REVISED BY	Amogelang Mhlangpe	
									APPROVER	Vanessa Ntuli	
29	14/04/2023	Added sealant batch number & welding consumables traceability							CHECKER	Nitokozo Zwane	14/04/2023
									REVISED BY	Amogelang Mhlangpe	
TRAINSET	CAR	OPERATOR NUMBER ALPS NO		DATE		SELF INSPECTION NUMBER			PAGES		
2X5	M02	Leney		01/05/2024		SI.CB1230.277.V29			11		

	CARBODYSHELL M2 ASSEMBLY AA00001374497	Rev. 29	Project: PRASA
		Date 14/04/2023	SI.CB1230.277.V29
Car:	NCR:	Work station: CB1230	



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	Signature/Date (Operations)	Signature/Date (Quality)
	T3	M1	M2	M3	T3					
PRA.CB1230.AA00001374497			X			29		✓	N/A	01/03/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Operations)	Signature/Date (Quality)
Tubular	22113	29/11/2023	✓	01/03/24	01/03/24
Combination Square	GIBUS073	2024/01/11	✓	01/03/24	01/03/24
Measuring Tape	GIBTA0348	2023/04/05	✓	01/03/24	01/03/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Autored 308 LSi	E231067	MIG	✓	01/03/24	01/03/24




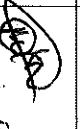

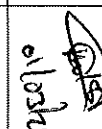
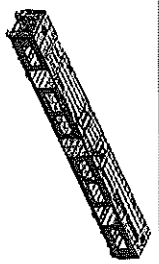


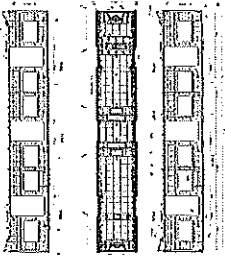


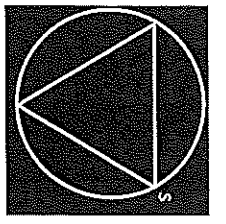




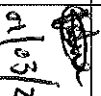



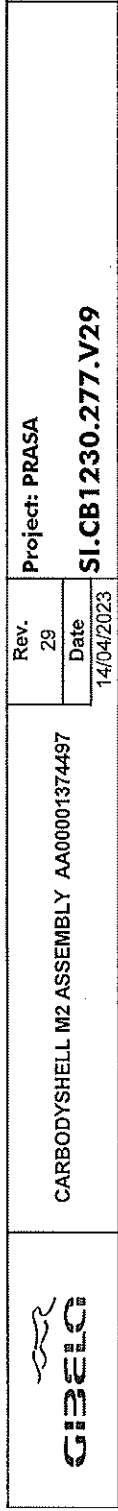
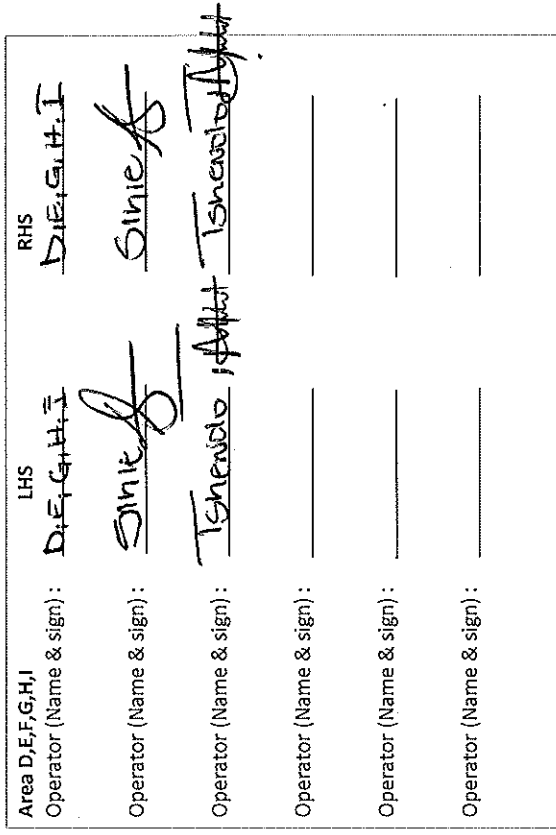
CARBODYSHELL M2 ASSEMBLY AA00001374497

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II - Self Inspection - Items to Check

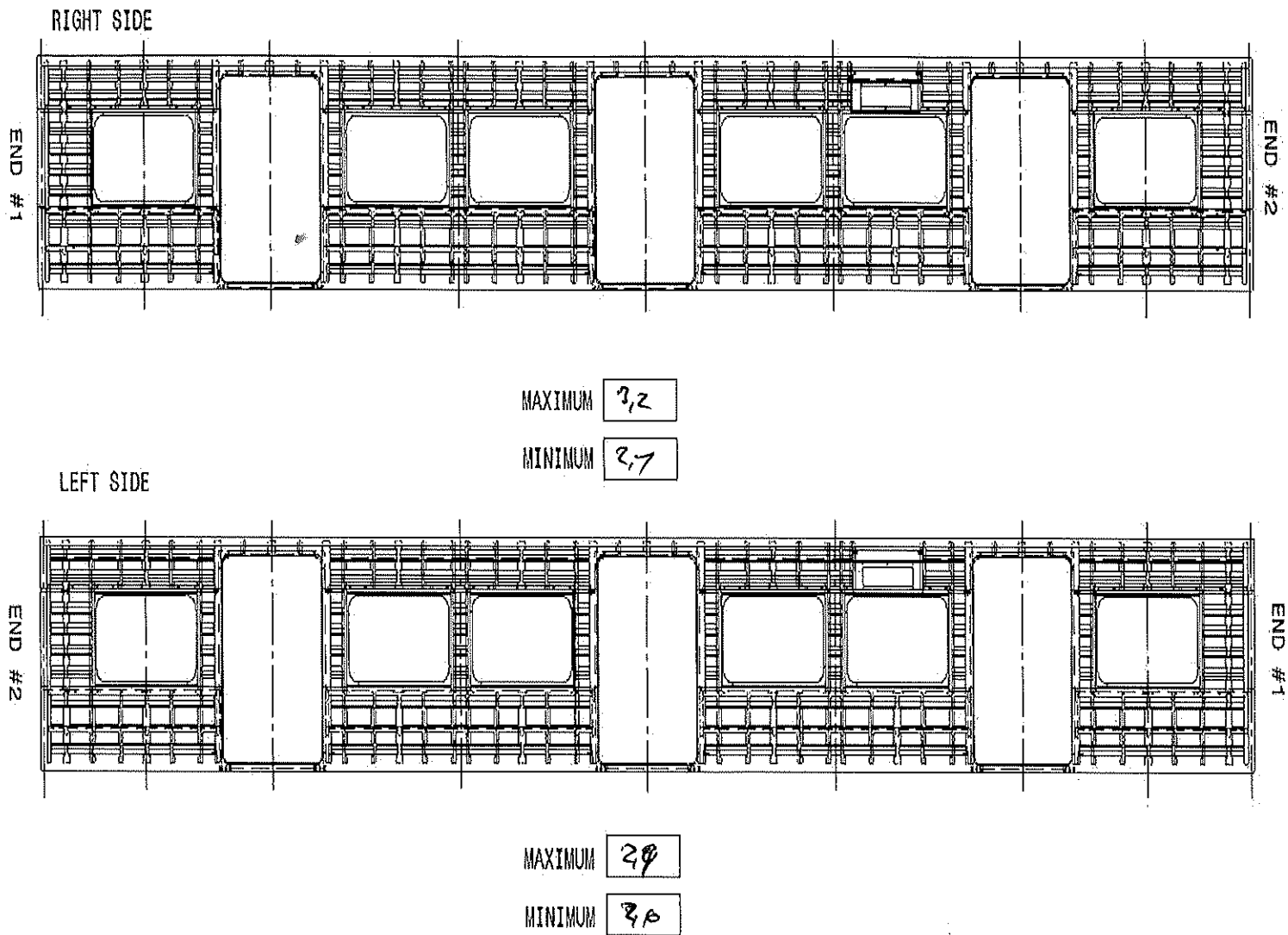
II.1 - Items to check


Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.AA00001374497 Verification of fitment for all brackets.	PRA.CB1230.AA00001374497	✓	 01/03/24	 01/03/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD00000210675	✓	 01/03/24	 01/03/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 01/03/24	 01/03/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 01/03/24	 01/03/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 01/03/24	 01/03/24
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and filler sampling as described in DTD00000210658.	As the welding procedure IND-SAL-WMS-018 and DTD00000210658.	✓	 01/03/24	 01/03/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (°) Min-Max Relative Humidity Min - Max (%) 10°C - 35°C 25% - 80%	Sealant Batch No: <u>SR-70-03</u> Exp Date: <u>05/24</u> Actuals Temperature: <u>16°C</u> Humidity: <u>47%</u>	✓	 01/03/24	 01/03/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓	 01/03/24	 01/03/24

[illegible]

Specifications of Details for CBS measurement CB1230

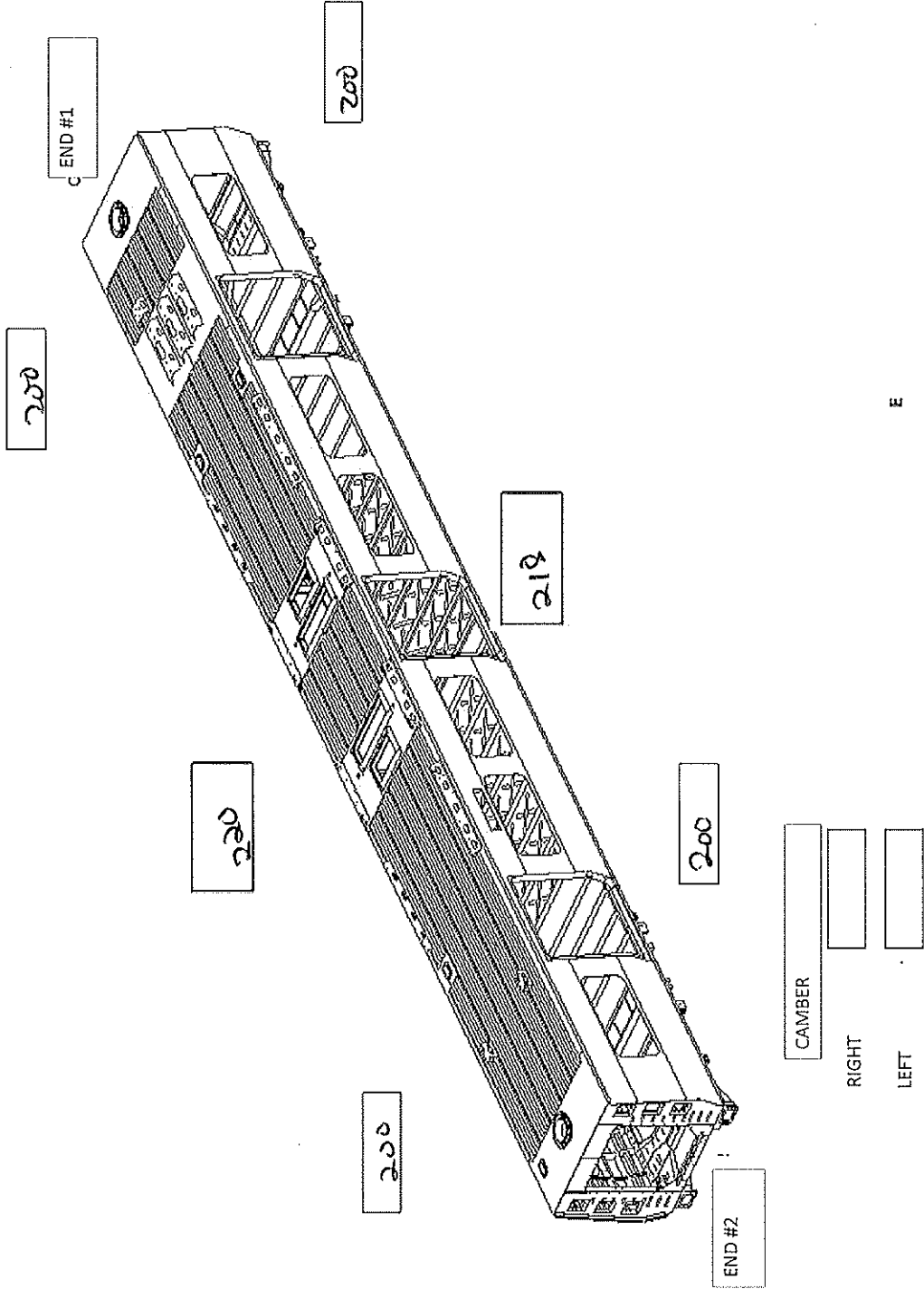
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value found and indicate the corresponding region.



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Specifications of Details for CBS measurement CB1230

Specified Camber for car out of jig is 18mm(-0mm + 2mm)





CARBODYSHELL M2 ASSEMBLY AA0000137/4497

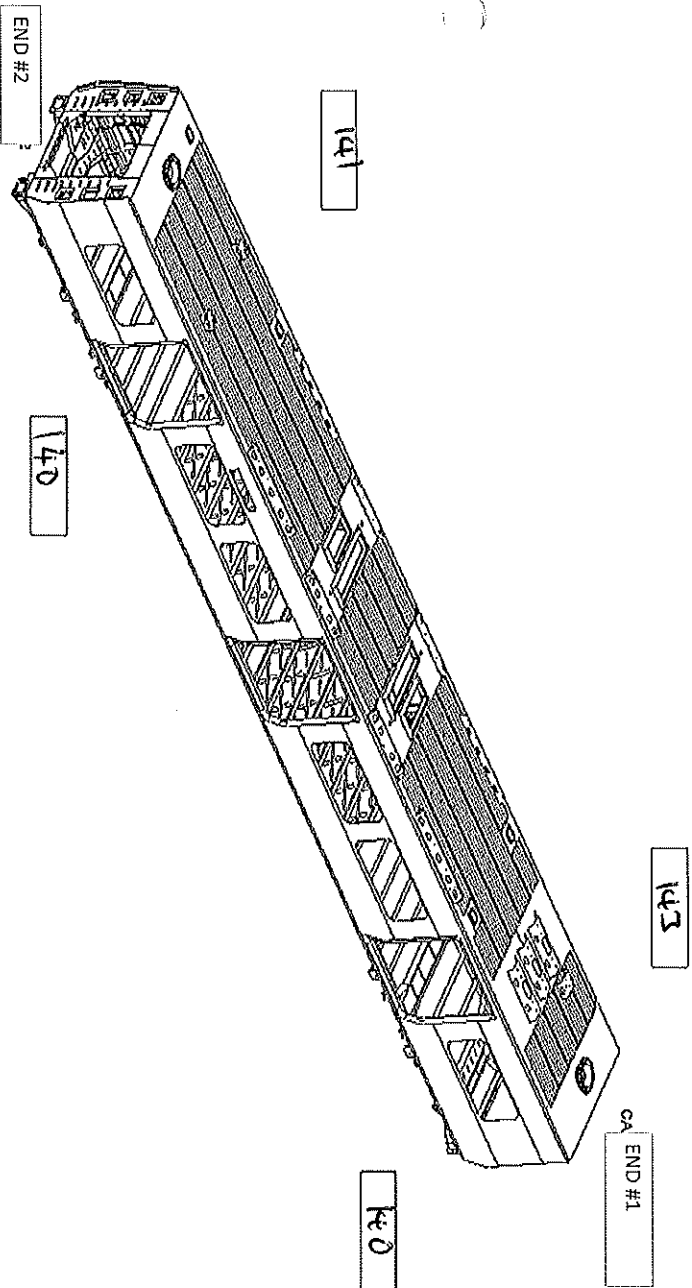
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Specifications of Details for GBS measurement CB1230

Twist measured in transversal and longitudinal = Maximum 3mm. Measure twist on air spring plates (LHS and RHS), both End 1 and End 2 following twist measurement document.



TWIST FOUND ON END 1

TRANVERSE

3

LONGITUDINAL

0

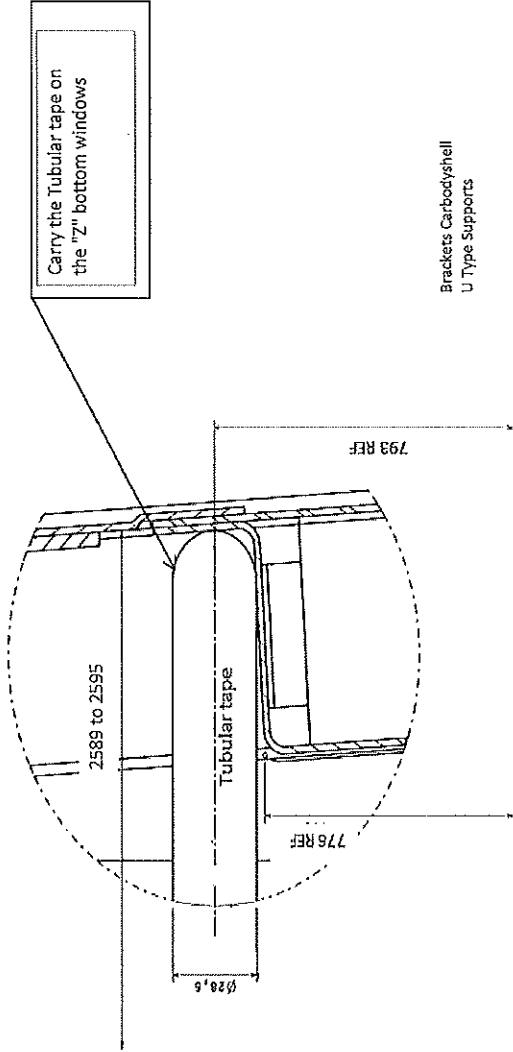
TWIST FOUND ON END 2

TRANVERSE

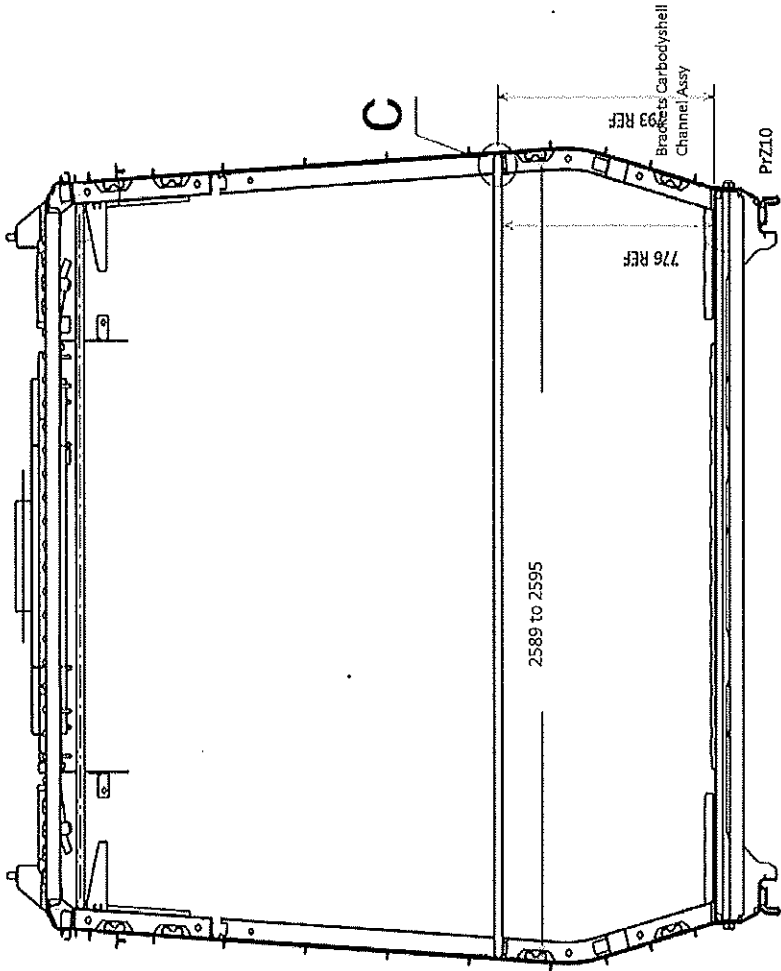
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LONGITUDINAL

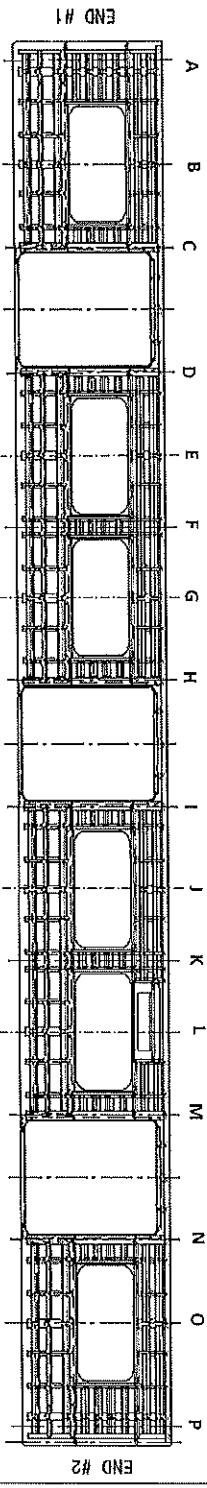
2



Detail C

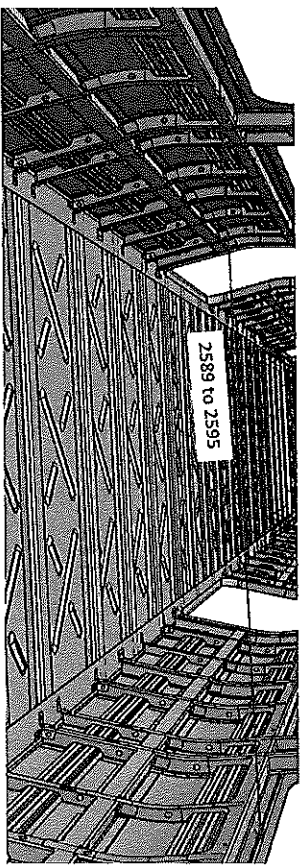


Specifications of Details for GBS measurement CB1230



2589 to 2595mm

A	25 95
B	25 92
C	25 92
D	25 94
E	25 95
F	25 94
G	25 89
H	25 92
I	25 90
J	25 90
K	25 92
L	25 89
M	25 94
N	25 91
O	25 90
P	25 95





Thresholds
Boiler: 15henclo
Welder: Micausi

Threshold verification

Nominal value :38

Door 1	Door 2	Door 3
L	R	L
38	38	38
Door 4	Door 5	Door 6
L	R	L
38	38	38

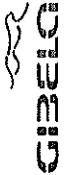
	CARBODYSHELL M2 ASSEMBLY AA00001374497	Rev. 29	Project: PRASA	
		Date	SI.CB1230.277.V29	
		14/04/2023		


	CARBODYSHELL M2 ASSEMBLY AA00001374497		Rev.		Project: PRASA
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			Date		
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Dye penetrant test



Dye-penetration test to be performed by quality personnel



	CARBODYSHELL M2 ASSEMBLY AA00001374497	Rev. 29	Project: PRASA			
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Specifications of Details for CBS measurement						
Item	Description of the issue	OK	Signature/Date (Operations)	Signature/Date (Quality)		
II.2 - Check List REX						
Check List Items						
Item	Picture/Drawing	Description	Criteria /Record	OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX			

	CARBODYSHELL M2 ASSEMBLY AA0000137/4497	Rev. 29	Project: PRASA SI.CB1230.277.V29
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Self Inspection - Final Result

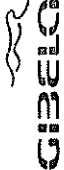
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE
HOLD POINT	GO	01/03/2024	Leroy	
		01/03/24	Richard	
	NO GO			
			Operations	
			Industrial Quality	

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":				
Item	Description	Responsible	Due date	Status

Operations

Quality

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			Date		
				14/04/2023	

ANNEXURE A: Arc Welding Quality Acceptance Standard

