Rapport de service

Nom	BGENE
Interlocuteur	Sebastien Renoud
Adresse du client	maud.vidick@bgene-genetics.com 7 rue des arts et metiers F-38400 Grenoble Cedex 9

But

Le but de cette page de confirmation est de remplacer dans les documents ci-dessous chaque signature. Les signataires confirment et acceptent par leur signature sur cette page d´avoir pris connaissance de tous les documents mentionnés. De plus les signataires confirment que les résultats des tests dans les documents ci-dessous répondent aux critères qualificatifs et commerciaux ainsi que toute exception notée dans ce rapport. La signification détaillée des signatures du client et de l´employé de TECAN est décrite dans les cases ci-dessous.

Remarque: dans quelques-uns des documents ci-dessous les cases “Tecan Technicien SAV signature/date” ne sont pas remplies. Selon la configuration de l’instrument, des parties des documents peuvent être omises et peuvent ne pas être montrées. TECAN déclare en relation avec cette page de confirmation ces cases comme “non utilisables”.

Déclaration de renonciation

Liste des documents

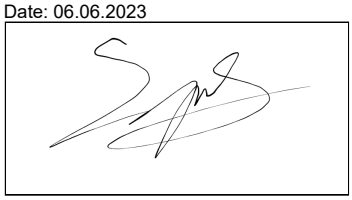
Date	Nom du document	Description
06.06.2023	ServiceReport_4510940_BGENE.pdf	Service Report
06.06.2023	PSC_398846_SC-Fluent.pdf	Service Checklist Fluent
06.06.2023	rapport bgene.pdf	rapport bgene.pdf
06.06.2023	Balance.pdf	Balance.pdf
06.06.2023	M30 Certificate Sacha Pinto Da Silva.pdf	M30 Certificate Sacha Pinto Da Silva.pdf

Technicien SAV:

Signification de la signature:
Je confirme, par la présente, avoir établi les documents mentionnés ci-dessus.Basé sur ma responsabilité et ma compétence professionnelle j´ai vérifié que les résultats et les comptes-rendus des tests soient conformes aux exigences de TECAN pour le bon fonctionnement de la machine.

Sacha Pinto Da Silva

Date: 06.06.2023



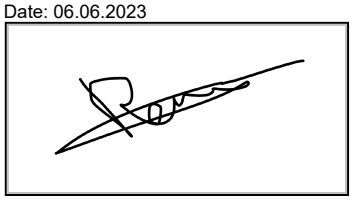
Les ingénieurs Service fourniront au client tous les documents nécessaires à la réalisation de la prestation. La signature du client est nécessaire pour chaque opération ou dérogation de test.

Client:

Signification de la signature:
Je confirme, par la signature de ce document, avoir contrôlé, accepté et approuvé les documents mentionnésci-desssus. Basé sur ma compétence et ma responsabilité j´accepte les résultats et les comptes-rendus destests. Les contenus des documents répondent aux critères qualificatifs et commerciaux.

Sebastien Renoud

Date: 06.06.2023



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Rapport de service

N° de commande de service	4510940	Tél.	
Adresse du client	BGENE maud.vidick@bgene-genetics.com 7 rue des arts et metiers F-38400 Grenoble Cedex 9	Interlocuteur	Sebastien Renoud
		Date d'entrée de la commande	26.04.2023
		Date d'intervention	06.06.2023
		N° de commande du client	

N° d'équipement	11617536	N° de série	1807000013
UDI			
Description	INSTRUMENT FLUENT 480 BASE UNIT		
Symptôme - Groupe de Codes	050	Symptôme - Codage	100

Description de l'erreur/Réparation/Mesure

2023-05-26 4:31 PM CEST SA092201 Sacha Pinto Da Silva:
Changement du cylindre-tip adapter de la voie après avoir subit un crash.

Vérification de l'alignement des 8 voies.
L'ensemble des tests sous Fluent setup est conforme.

Qualification par gravimétrie à 1 et 10µL en DiTi 10µL conforme à nos exigences.
Instrument conforme pour une utilisation en routine après intervention.

CF (Code de Facturation): Z1 = Gratuit, Z2 = Garantie, Z3 = Facturation, Z4 = Garantie de réparation, Z5 = Contrat, Z6 = Installation

Numéro article	Description	Quantité	N° série ajouté	N° série enlevé	CF
30185397	CYLINDER TIP ADAPTER SLIDER ASSY	1			Z3

Statut de Réparation

- ✓ Réparé - L'utilisation normale peut être poursuivie
- Erreur non reproductible - L'utilisation normale peut être poursuivie
- Erreur toujours présente
- Entretien fait / Maintenanace effectuée
- Installation terminée

Date de Réparation	Temps de travail (hh:mm)	CF	Temps de déplacement (hh:mm)	CF	Kilomètres	CF
26.05.2023	4:00	Z3	3:00	Z3		
06.06.2023	1:00	Z3				

PSC_398846_SC-Fluent

Purpose:
This form serves the TECAN authorized Service Technician as a checklist on the main repair process. However, this form does not contain the procedure in detail (refer to reference documents and to the SOP Field Intervention Doc. 10402TMs01). Actions flagged N/A must be explained in the notes section of this document if the reason differs from the description text. Skipped or failed actions must always be explained. Printed versions of this checklist must always be bundled with the corresponding associated documents.

Disclaimer:
Depending on the configuration of instrument, sections of checklist can be omitted and may not be displayed.

1. General Information

Document Title	Service Checklist Fluent
Document Number	398846
Document Version	1.9

Customer information

Service Order #	000004510940
Contact Person	Cédric TUMBARELLO
Performed By	Sacha Pinto Da Silva (Sacha.PintoDaSilva@tecan.com)

Instrument information

Instrument	INSTRUMENT FLUENT 480 BASE UNIT; BGENE GRENOBLE
Code	11617536; 410766-410766
Serial Number	1807000013;

2. Configuration

Safety label	In Chapter 2 please only select the items that are impacted by your repair. This will limit the following Chapter to only those relevant for repaired/replaced items.

2.1. Equipment Type

Instrument Size	480
Fluent Model	FLUENT 2018

2.2. Arm

Air FCA 1	YES
RGA Std 1	YES

3. Reference documents

Document [No. 399934]	Fluent Service Manual
Document [No. 399937]	Reference Manual
Document [No. 396330]	Instrument Software Manual
Document [No. 397069]	QC Kit Application Manual
Document [No. 40205TMt01]	Certificate Of Decontamination
Document [No. 10301TMt01]	Out of Box Quality Report

4. Actions

Instructions	In the following sections all tasks have to be performed according to the instrument configuration / replaced part. Therefore, please select the instrument configuration, the affected device and then replaced part. Modules not selected will be hidden and are therefore not applicable. In case a module is installed twice, perform the tests on each module and attach both print outs.

4.3. Air FCA

Replaced Parts

Air FCA PMP Tip Adapter & Cylinder	■ YES	☐ NO

4.3.13. Air FCA PMP Tip Adapter & Cylinder

Instructions	Actions listed below must be successfully executed. Some tests may not be available due to the instrument's configuration. These tests can then be skipped. If tasks are checked N/A or Failed they must be explained in the Notes section of this document.

Part Replaced

Part	Reason	Status
Air FCA PMP Tip Adapter & Cylinder	broken	Done

Action List - Setups & Tests

Action List	Further Description	Status
Air FCA	Check condition of cLLD and PMP cable at the cable outlet of the Z-Rod	Passed
Air FCA	Tip Adapter Test	Passed
Air FCA	Mount Pipetting Tips	Passed
Air FCA	Disposable Tips Test	Passed
Air FCA	cLLD Offset (n/a for Air FCA MultiSense, no comment required)	Passed
Air FCA	cLLD Test	Passed
Air FCA	Pressure Sensor Connection Test	Passed
Air FCA	Inline Filter Test	Passed
Air FCA	Leakage Test	Passed
Air FCA	Pipetting Test	Passed
Instrument	Running-In Test (P-Axis)	Passed

4.10. FluentSetup Software Module

FluentSetup Software Module

Task	Further Description	Status
Create backup files	Using the Backup & Restore Function	Done
Make a print out of the QC report	Using the report generated in the Action List	Done

4.12. Remote Access

Disclaimer	Internet access for the EVO PC is strongly recommended to allow remote diagnosis and support through remote access. If task checked N/A, please state the reason in the Comment section.
Remote Access Status	Remote access not possible or denied
Reason why remote access is not possible or denied	Customer does not allow instrument PC to be connected to the Internet
Please indicate customer name and contact details to follow up on your pre-discussion	Cédric TUMBARELLO

4.13. IoT Client

IoT Client Status	IoT Client will NOT be installed
Reason why the IoT client was not installed	Customer does not want to connect
Please indicate customer name and contact details to follow up on your pre-discussion (If it is the same person as stated within the chapter Remote Access, please note: see remote access)	Cédric TUMBARELLO

6. Signatures

Confirmation	The service technician confirms with signature that the intervention was performed in accordance to this checklist and the published Tecan procedures that apply to the instrument listed on this form.
Maintenance Date	26.05.2023
Checklist specific signature is NOT required	■ YES ☐ NO
Service Bundle	■ YES ☐ NO

Doc. No.	Title	Version	Effective Date	Author
398846	Service Checklist Fluent	1.9	2023-03-08	Andrea Hertli

rapport bgene.pdf

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QC Report

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1 Field Service Engineer - Workflow Report

1.1 Summary

Instrument Type	Fluent
Instrument Serial Number	1807000013
Test Configuration	User Defined
Ready for Operation	Yes
Number of Pending/Failed/Not Done Actions	0
Number of Not Required Actions	0
Number of Skipped Actions	3
Execution Date	2023-05-26
Execution Time	13:17:43
Time Zone [h]	UTC+2
FluentSetup Version	2.3.13.48369
Computer Name	BGPC022-FLUENT

Operator: _____ Date: _____ Signature: _____

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2 Instrument 1807000013

2.1 Firmware Download

2.1.1 Summary

Action	Firmware Download
Device	Instrument 1807000013
State	Done
Operator	Mr Jonathan Mazaudon
Execution Date	2019-07-31
Execution Time	12:04:05
Time Zone [h]	UTC+2

2.1.2 Pass / Fail Criteria

Configuration mismatches are resolved by downloading the corresponding firmware application and bootloader.

2.1.3 Detailed Results

Type	Device	Firmware Type	Old Version	New Version	Status
TeMotion					
-	FCA:1/X	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/Y,Ys	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/Z1,Z2	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/Z3,Z4	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/Z5,Z6	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/Z7,Z8	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,1	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,2	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,3	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,4	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,5	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,6	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,7	Application	1.4.0.10892	1.7.0.11279	Success
-	FCA:1/ZAAP,8	Application	1.4.0.10892	1.7.0.11279	Success
-	RGA:1/G	Application	1.4.0.10892	1.7.0.11279	Success
-	RGA:1/R	Application	1.4.0.10892	1.7.0.11279	Success
-	RGA:1/X	Application	1.4.0.10892	1.7.0.11279	Success

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Type	Device	Firmware Type	Old Version	New Version	Status
-	RGA:1/Y	Application	1.4.0.10892	1.7.0.11279	Success
-	RGA:1/Z	Application	1.4.0.10892	1.7.0.11279	Success

2.2 Instrument Configuration

2.2.1 Summary

Action	Instrument Configuration
Device	Instrument 1807000013
Operator	Mr Jonathan Mazaudon
Execution Date	2020-03-02
Execution Time	15:10:11
Time Zone [h]	UTC+1

2.2.2 Instrument Configuration

Instrument Type:	Fluent Novo
Instrument Size:	480
Chassis Serial Number:	18210042
User defined chassis name:	myWT
Successful service action execution:	False

Arm order from left to right

Air FCA RGA

Instrument Options

Has front door locks (left and right):	True
Has front door sensors (left and right):	True
Has external fast stop button:	False
Has level sensors on liquid and waste container 1:	False
Has level sensors on liquid and waste container 2:	False
Has a HEPA hood:	False
Has a UV light:	False
Has Interior Light:	True
COM 1:	True
COM 2:	True

Cabinet

Cabinet is available:	False	-	-	-
Door Number:	1	2	3	4
Has Door Lock:	False	False	False	False
Has Door Sensor:	False	False	False	False

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Extension 1

Extension is available:	False
Has front door locks (left and right):	False
Has front door sensors (left and right):	False

Extension 2

Extension is available:	False
Has front door locks (left and right):	False
Has front door sensors (left and right):	False

2.2.3 Firmware / Hardware Versions

Board	Firmware	Hardware
TeControl	1.2.0.11057	5
TeGio 1	1.1.0.10808	0

2.3 Installation

2.3.1 Summary

Action	Installation
Device	Instrument 1807000013
Operator	Mr Jonathan Mazaudon
Execution Date	2020-03-02
Execution Time	15:10:13
Time Zone [h]	UTC+1

2.3.2 Installation Qualification

After Shipment:	2019-07-31

2.4 Preventive Maintenance

2.4.1 Summary

Action	Preventive Maintenance
Device	Instrument 1807000013
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:10:19
Time Zone [h]	UTC+2

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2.4.2 Preventive Maintenance

12 Month Preventive Maintenance:	2021-04-21
2 Years Preventive Maintenance (Air FCA only):	2021-04-21
3 Years Preventive Maintenance:	2021-04-21

2.5 Part Replacement

2.5.1 Summary

Action	Part Replacement
Device	Instrument 1807000013
Operator	Undefined user
Execution Date	2018-07-13
Execution Time	15:36:35
Time Zone [h]	UTC+2

2.5.2 Part Replacement

Rapid Wash:	0001-01-01
Te-GIO 1:	2018-07-13
Te-GIO 2:	0001-01-01
Te-GIO 3:	0001-01-01
Te-GIO 4:	0001-01-01
Sensors for frontdoor:	0001-01-01
Sensors for Cabinet:	0001-01-01
Doorlocks front door:	2018-07-13
Locks cabinet doors:	0001-01-01
Locks front door extension 1:	0001-01-01
Locks front door extension 2:	0001-01-01
Dilback:	0001-01-01
Te-Control:	0001-01-01
Te-Control Extension board PCB (Distributor):	0001-01-01
Sensors for Extension 1:	0001-01-01
Sensors for Extension 2:	0001-01-01
HEPA Hood:	0001-01-01
Light System:	0001-01-01
Front Safety Panel:	0001-01-01

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3 Instrument 1807000013

3.1 Status LED Test

3.1.1 Summary

Action	Status LED Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:11:49
Time Zone [h]	UTC+2

3.1.2 Test Configuration

Cycles: 1

3.1.3 Pass / Fail Criteria

User confirms the correct light color is on.

3.1.4 Detailed Results

Failed test step: None

3.2 Door Sensor Test

3.2.1 Summary

Action	Door Sensor Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:12:05
Time Zone [h]	UTC+2

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3.2.2 Test Configuration

Instrument:	True
Cabinet:	False
Extension 1:	False
Extension 2:	False

3.2.3 Pass / Fail Criteria

- Sensor changes its state correctly
- If Door Look is available: No door lock failed error occured

3.2.4 Detailed Results

Test Result:	All configured door sensors work properly.

3.3 Door Lock Test

3.3.1 Summary

Action	Door Lock Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:12:38
Time Zone [h]	UTC+2

3.3.2 Test Configuration

Instrument:	True
Cabinet:	False
Extension 1:	False
Extension 2:	False

3.3.3 Pass / Fail Criteria

- Doors can be locked and unlocked.
- User confirms the correct locking of the door.

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3.3.4 Detailed Results

Test Result: All configured door locks work properly.

3.4 Fast Stop Sensor Test

3.4.1 Summary

Action	Fast Stop Sensor Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:12:53
Time Zone [h]	UTC+2

3.4.2 Test Configuration

Front Door Instrument:	True
Front Door Extension 1:	False
Front Door Extension 2:	False
External Fast Stop:	False

3.4.3 Pass / Fail Criteria

User confirms that the fast stop was executed on fast stop event. No Action Failed Exceptions are thrown.

3.4.4 Detailed Results

Failed test step: None

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4 Instrument 1807000013

4.1 Encoder Calibration

4.1.1 Summary

Action	Encoder Calibration
Device	Instrument 1807000013
State	Done
Operator	Undefined user
Execution Date	2018-07-13
Execution Time	15:38:28
Time Zone [h]	UTC+2

4.1.2 Setup Configuration

Selected Axes

Arm	TeMotion	Selected
Air FCA:1	X	True
RGA:1	R	True
	X	True
	Y	True
	Z	True

4.1.3 Pass / Fail Criteria

Calibration table can be evaluated without error

4.2 Initialize System

4.2.1 Summary

Action	Initialize System
Device	Instrument 1807000013
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:33:17
Time Zone [h]	UTC+2

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4.2.2 Setup Configuration

Not applicable

4.3 Odometer Check

4.3.1 Summary

Action	Odometer Check
Device	Instrument 1807000013
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:05:20
Time Zone [h]	UTC+2

4.3.2 Detailed Results

Odometer values

Arm	Serial-No	Axis	Moves	Total distance	Unit	Moves [%]
RGA:1	1807000015	-	-	-	-	-
-	-	G	15320 (max 5000000)	194	m	0
-	-	R	10376 (max 2500000)	4320	Rot. (360°)	0
-	-	X	19960 (max 3000000)	4242	m	1
-	-	Y	11399 (max 3000000)	1052	m	0
-	-	Z	26974 (max 5000000)	3414	m	1
Air FCA:1	1807000014	-	-	-	-	-
-	-	Y (E,0)	64989 (max 3000000)	3050	m	2
-	-	S (E,1)	65019 (max 3000000)	3048	m	2
-	-	P,1	46409 (max 4800000)	143	m	1
-	-	P,2	34514 (max 4800000)	88	m	1
-	-	P,3	34086 (max 4800000)	87	m	1
-	-	P,4	32661 (max 4800000)	86	m	1
-	-	P,5	31477 (max 4800000)	84	m	1
-	-	P,6	30619 (max 4800000)	84	m	1
-	-	P,7	30989 (max 4800000)	84	m	1
-	-	P,8	30569 (max 4800000)	85	m	1
-	-	X	82715 (max 3000000)	3915	m	3
-	-	Z,1	98629 (max 5000000)	1903	m	2
-	-	Z,2	86009 (max 5000000)	1962	m	2
-	-	Z,3	85088 (max 5000000)	1966	m	2
-	-	Z,4	82259 (max 5000000)	1935	m	2
-	-	Z,5	80435 (max 5000000)	1932	m	2

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Arm	Serial-No	Axis	Moves	Total distance	Unit	Moves [%]
-	-	Z,6	79972 (max 5000000)	1944	m	2
-	-	Z,7	79200 (max 5000000)	1947	m	2
-	-	Z,8	81474 (max 5000000)	1976	m	2

Usage Counters

Arm	Serial-No	Axis	Counter	Moves	Max Moves	Moves [%]
RGA:1	1807000015	-	-	-	-	-
Air FCA:1	1807000014	-	-	-	-	-
-	-	Z,1	Diti Drops	4506	300000	2
-	-	-	Pierces	-	NA	NA
-	-	Z,2	Diti Drops	4498	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,3	Diti Drops	4493	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,4	Diti Drops	4492	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,5	Diti Drops	4484	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,6	Diti Drops	4484	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,7	Diti Drops	4483	300000	1
-	-	-	Pierces	-	NA	NA
-	-	Z,8	Diti Drops	4611	300000	2
-	-	-	Pierces	-	NA	NA

4.4 Running-In Test

4.4.1 Summary

Action	Running-In Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	13:17:28
Time Zone [h]	UTC+2

4.4.2 Test Configuration

Minimum axes cycles to pass

Arm	Axis	Set Cycles
Air FCA:1	S	0
	X	0

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Arm	Axis	Set Cycles
	Y	0
	Z	0
	P	100
RGA:1	R	0
	G	0
	X	0
	Y	0
	Z	0

4.4.3 Pass / Fail Criteria

- No error detected.

4.4.4 Detailed Results

Axes-Current (Frictional-Resistance)

Arm	Axis	Cycles	Start [A] Move1/Move2	End [A] Move1/Move2	Mean [A] Move1/Move2
Air FCA:1	S	0	-	-	-
	X	0	-	-	-
	Y	0	-	-	-
	Z1	0	-	-	-
	Z2	0	-	-	-
	Z3	0	-	-	-
	Z4	0	-	-	-
	Z5	0	-	-	-
	Z6	0	-	-	-
	Z7	0	-	-	-
	Z8	0	-	-	-
	P1	100	0.127 / 0.193	0.120 / 0.182	0.122 / 0.185
	P2	0	-	-	-
	P3	0	-	-	-
	P4	0	-	-	-
	P5	0	-	-	-
	P6	0	-	-	-
	P7	0	-	-	-
	P8	0	-	-	-
RGA:1	R	0	-	-	-
	G	0	-	-	-
	X	0	-	-	-
	Y	0	-	-	-
	Z	0	-	-	-

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4.5 Random Move Test

4.5.1 Summary

Action	Random Move Test
Device	Instrument 1807000013
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:41:22
Time Zone [h]	UTC+2

4.5.2 Test Configuration

Cycles (Arm Positions):	50
Number of Random Arm Positions:	50

Selected Axes

Arm	Axis	Selected
Air FCA:1	Z	False
	Y	False
	S	False
	X	False
RGA:1	Z	True
	R	True
	X	True
	G	True
	Y	True

4.5.3 Pass / Fail Criteria

- No error detected
- User confirms that no striking sound was audible

4.5.4 Detailed Results

Cycles done: 50

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5 RGA 1 SN:1807000015

5.1 Instrument Configuration

5.1.1 Summary

Action	Instrument Configuration
Device	RGA 1
Operator	Mr Jonathan Mazaudon
Execution Date	2020-03-02
Execution Time	15:10:14
Time Zone [h]	UTC+1

5.1.2 RGA Configuration

Gripper Type: Fixed Eccentric Gripper

Available FES Gripper Types

Eccentric Gripper Long:	False
Eccentric Gripper:	False
Centric Gripper:	False
Tube Gripper:	False
Barcode Reader:	No Reader
Arm Serial Number:	1807000015
Gripper Head Serial Number:	100380
Has Long Z-Axis:	False

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5.1.3 Firmware / Hardware Versions

Board	Firmware	Hardware
TeMotion X	1.7.0.11279	1
TeMotion Y	1.7.0.11279	0
TeMotion Z	1.7.0.11279	0
TeMotion R	1.7.0.11279	0
TeMotion G	1.7.0.11279	0

5.2 Part Replacement

5.2.1 Summary

Action	Part Replacement
Device	RGA 1
Operator	Undefined user
Execution Date	2018-07-13
Execution Time	15:36:36
Time Zone [h]	UTC+2

5.2.2 Part Replacement

Part Replacement History

Arm	Serial-No	Axis	Part	Number of moves	Total travelled distance	Unit	Replaced on
RGA:1	1807000015	-	-	-	-	-	-
-	-	-	Arm	-	-	-	2018-07-13
-	-	-	Y/Z-drive assembly (complete including motor)	-	-	-	-

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Arm	Serial-No	Axis	Part	Number of moves	Total travelled distance	Unit	Replaced on
-	-	-	Y/Z-backplane	-	-	-	-
-	-	-	Te-Motion board	-	-	-	-
-	-	-	X-backplane and Y/Z-backplane cable	-	-	-	-
-	-	-	Slip ring cable assembly	-	-	-	-
-	-	-	Z-drive belt	-	-	-	-
-	-	-	Gripper module head	-	-	-	-
-	-	-	Centric fingers without sensors	-	-	-	-
-	-	-	Tube fingers without sensors	-	-	-	-
-	-	-	Barcode reader	-	-	-	-
-	-	-	Cable Guide	-	-	-	-
-	-	X	X-drive assembly (complete including motor)	-	-	-	-
-	-	-	X-backplane	-	-	-	-
-	-	-	X-Linear encoder board	-	-	-	-
-	-	-	Front guide roller	-	-	-	-
-	-	-	X-Carriage	-	-	-	-
-	-	-	X-Drive	-	-	-	-
-	-	C	R-drive assembly (complete including motor)	-	-	-	-
-	-	-	R-drive init sensor	-	-	-	-
-	-	Y	Y-Linear encoder board	-	-	-	-
-	-	-	Y-drive belt	-	-	-	-
-	-	Z	Z-Linear encoder board	-	-	-	-
-	-	-	Z-brake assembly complete	-	-	-	-
-	-	G	Excentric fingers without sensors	-	-	-	2018-07-13
-	-	-	Long excentric fingers without sensors	-	-	-	-

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5.3 Diagnostics

5.3.1 Summary

Action	Diagnostics
Device	RGA 1 SN:1807000015
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:05:21
Time Zone [h]	UTC+2

5.3.2 Detailed Results

Diagnostic Data

Axis	Number of moves	Total travelled distance	Unit
G	15320	194690	mm
R	10376	1555348	deg
X	19960	4242436	mm
Y	11399	1052559	mm
Z	26974	3414084	mm

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5.4 Rotator Photosensor Test

5.4.1 Summary

Action	Rotator Photosensor Test
Device	RGA 1 SN:1807000015
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2019-07-31
Execution Time	12:33:38
Time Zone [h]	UTC+2

5.4.2 Test Configuration

Not applicable

5.4.3 Pass / Fail Criteria

- The pattern reported by the two sensors is different for all of the four states.
- Sensor pattern sequence (cw): Sensor 1 results {0,1,1,0}, Sensor 2 results {0,0,1,1}

5.4.4 Detailed Results

Sensor states

	Sensor 1	Sensor 2
Cycle 1:	0	0
Cycle 2:	1	0

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	Sensor 1	Sensor 2
Cycle 3:	1	1
Cycle 4:	0	1

5.5 Arm Alignment Test

5.5.1 Summary

Action	Arm Alignment Test
Device	RGA 1 SN:1807000015
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:11:40
Time Zone [h]	UTC+2

5.5.2 Test Configuration

Reference position used for rear X:	SXR
Reference position used for front X:	SXF
Y/X Alignment:	True
Y/Z Alignment:	True

5.5.3 Pass / Fail Criteria

- Difference between the rear and front Z-position is <= 0.2mm.
- Difference between the rear and front X-position is <= 0.2mm.

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5.5.4 Detailed Results

Difference between the rear and front X-position [mm]:	-0.10
Difference between the rear and front Z-position [mm]:	0.06

5.6 Displacement

5.6.1 Summary

Action	Displacement
Device	RGA 1 SN:1807000015
State	Done
Operator	Mr Jonathan Mazaudon
Execution Date	2019-07-31
Execution Time	13:43:09
Time Zone [h]	UTC+2

5.6.2 Setup Configuration

X-Axis:	True
Y-Axis:	True
Z-Axis:	True
Reference position used for X-displacement:	SXM
Reference position used for Y-displacement:	SYM
Reference position used for Z-displacement:	RM

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5.6.3 Pass / Fail Criteria

No error occurred.

5.6.4 Detailed Results

Deviation in X:	0.05
Deviation in Y:	0.05
Deviation in Z:	-0.24

5.7 Positioning Test

5.7.1 Summary

Action	Positioning Test
Device	RGA 1 SN:1807000015
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:13:13
Time Zone [h]	UTC+2

5.7.2 Test Configuration

Cycles:	3
Reference position used for Z-position:	RM
Reference position used for rear hole:	TR_M

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Reference position used for middle hole:	TM_M
Reference position used for front hole:	TF_M

5.7.3 Pass / Fail Criteria

No crash occurred, all holes were found

5.7.4 Detailed Results

XY Test Failure Position

Cycle:	-
Position:	
Angle [degree]:	-

5.8 Range Test

5.8.1 Summary

Action	Range Test
Device	RGA 1 SN:1807000015
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:17:27
Time Zone [h]	UTC+2

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5.8.2 Test Configuration

Cycles:	1
X-Axis:	True
Y-Axis:	True
Z-Axis:	True
R-Axis:	True
G-Axis:	True

5.8.3 Pass / Fail Criteria

Linear Axes:	found range >= nominal range
All Axes:	Check if the whole range can be reached using minimal speed and minimal force.

5.8.4 Detailed Results

Axis Results

Axis:	Z	X	Y	R	G
Passed:	True	True	True	True	True
Nominal range:	335.00	672.00	477.00	360.00	61.00
Minimal found range:	335.62	672.98	478.20	365.00	61.56
Displacement at Range Min.:	0.80	-0.04	-0.09	0.00	-0.44
Displacement at Range Max.:	-0.23	1.02	1.14	0.00	0.00
Processing Status:	Ok	Ok	Ok	Ok	Ok
Cycles:	1	1	1	1	1

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5.9 Mount Gripper Fingers

5.9.1 Summary

Action	Mount Gripper Fingers
Device	RGA 1 SN:1807000015
State	Done
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:19:13
Time Zone [h]	UTC+2

5.10 Gripper Alignment

5.10.1 Summary

Action	Gripper Alignment
Device	RGA 1 SN:1807000015
State	Done
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:21:13
Time Zone [h]	UTC+2

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5.10.2 Test Configuration

Reference position used for gripper alignment: PG

5.10.3 Detailed Results

Offset at 90 [°]: -0.01

5.10.4 Pass / Fail Criteria

Long holes can/cannot be gripped.

5.11 Finger Adjustment Test

5.11.1 Summary

Action	Finger Adjustment Test
Device	RGA 1 SN:1807000015
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:20:18
Time Zone [h]	UTC+2

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5.11.2 Test Configuration

5.11.3 Pass / Fail Criteria

RGA gripper fingers are adjusted successfully.

5.11.4 Detailed Results

Fingers adjusted correctly : Yes

5.12 Z-Brake Test

5.12.1 Summary

Action	Z-Brake Test
Device	RGA 1 SN:1807000015
State	Skipped
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:34:50
Time Zone [h]	UTC+2

5.12.2 Skip Information

Reason for skipping: Test non effectué car absence de l'ancienne plaque de référence

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5.12.3 Pass / Fail Criteria

Measured distance <= Drop distance limit (8 mm)

5.13 Gripper Brake Test

5.13.1 Summary

Action	Gripper Brake Test
Device	RGA 1 SN:1807000015
State	Skipped
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:35:37
Time Zone [h]	UTC+2

5.13.2 Skip Information

Reason for skipping: Test non effectué car absence de l'ancienne plaque de référence

5.13.3 Pass / Fail Criteria

Service tool can be held by the RGA for 120 seconds. It does not fall out of the gripper.

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5.14 Plate Move Test

5.14.1 Summary

Action	Plate Move Test
Device	RGA 1 SN:1807000015
State	Skipped
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	12:36:13
Time Zone [h]	UTC+2

5.14.2 Skip Information

Reason for skipping:	Test non effectué car absence de l'ancienne plaque de référence

5.14.3 Pass / Fail Criteria

- Plate was moved without crash or other errors.
- User confirms that no striking sound was audible.

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6 Air FCA 1 SN:1807000014

6.1 Instrument Configuration

6.1.1 Summary

Action	Instrument Configuration
Device	Air FCA 1
Operator	Mr Jonathan Mazaudon
Execution Date	2020-03-02
Execution Time	15:10:17
Time Zone [h]	UTC+1

6.1.2 FCA Configuration

Arm Serial Number:	1807000014
Altitude [m.a.s.l.]:	415

Channel Configuration

	Channel 1	Channel 2	Channel 3	Channel 4
Serial Number	30099891 03 1807002550	30099891 03 1807002551	30099891 03 1807002552	30099891 03 1807002553
QC DiTi type	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS
Max pipetting speed [ul/sec]	1009	1009	1009	1009
Tip broken	False	False	False	False

	Channel 5	Channel 6	Channel 7	Channel 8
Serial Number	30099891 03 1807002554	30099891 03 1807003070	30099891 03 1807002556	30099891 03 1807002557
QC DiTi type	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS	FCA DiTi 200 & 10µl SBS

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Max pipetting speed [ul/sec]	1009	1009	1009	1009
Tip broken	False	False	False	False

6.1.3 Firmware / Hardware Versions

Board	Firmware	Hardware
PMP Board	1.0.0.10470	0
CLLD Board	1.0.0.10483	8
TeMotion X	1.7.0.11279	0
TeMotion Y	1.7.0.11279	0
TeMotion Z	1.7.0.11279	Z1,Z2: 0, Z3,Z4: 0, Z5,Z6: 0, Z7,Z8: 0
TeMotion CXP	not applicable	-
TeMotion Plunger	1.7.0.11279	1: 0, 2: 0, 3: 0, 4: 0, 5: 0, 6: 0, 7: 0, 8: 0

6.2 Part Replacement

6.2.1 Summary

Action	Part Replacement
Device	Air FCA 1
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	10:12:08
Time Zone [h]	UTC+2

6.2.2 Part Replacement

Part Replacement History

Arm	Serial-No	Axis	Part	Number of moves	Total travelled distance	Unit	Replaced on
Air FCA:1	1807000014	-	-	-	-	-	-
-	-	-	Arm	-	-	-	2018-07-13
-	-	-	Air FCA backplane	-	-	-	-
-	-	-	PMP board	-	-	-	-
-	-	-	Te-Motion Pipetting Channel	-	-	-	-
-	-	-	Z-brake assy	-	-	-	-
-	-	-	Y-motors	-	-	-	-
-	-	-	Set of Y-belts (2 pcs)	-	-	-	-
-	-	-	Backplane	-	-	-	-
-	-	-	Te-Motion board	-	-	-	-
-	-	-	cLLD_CU board	-	-	-	-
-	-	-	cLLD-backplane cable	-	-	-	-
-	-	-	TES option	-	-	-	2018-07-13
-	-	-	Coupling Z-axis	-	-	-	-
-	-	-	Pinion Z-Gear	-	-	-	-
-	-	X	X-drive assembly	-	-	-	-
-	-	-	X-drive	-	-	-	-
-	-	-	X-carriage	-	-	-	-
-	-	-	Front Guide Roller	-	-	-	-
-	-	Z1	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2023-05-26
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-

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Arm	Serial-No	Axis	Part	Number of moves	Total travelled distance	Unit	Replaced on
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z2	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z3	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z4	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z5	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z6	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21

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Arm	Serial-No	Axis	Part	Number of moves	Total travelled distance	Unit	Replaced on
-	-	Z7	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21
-	-	Z8	Z-Channel assembly	-	-	-	-
-	-	-	PMP tip Adapter & Cylinder	-	-	-	2021-04-21
-	-	-	Star-shaped shaft Z-axis	-	-	-	-
-	-	-	Z-Motor	-	-	-	-
-	-	-	DiTi option	-	-	-	2021-04-21

6.3 Diagnostics

6.3.1 Summary

Action	Diagnostics
Device	Air FCA 1 SN:1807000014
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:05:22
Time Zone [h]	UTC+2

6.3.2 Detailed Results

Diagnostic Data

Axis	Number of moves	Total travelled distance	Unit	Number of Pierces	Number of DiTi drops
Y (E,0)	64989	3050983	mm	-	-
S (E,1)	65019	3048900	mm	-	-
P,1	46409	143204	mm	-	-
P,2	34514	88563	mm	-	-
P,3	34086	87383	mm	-	-
P,4	32661	86791	mm	-	-
P,5	31477	84848	mm	-	-
P,6	30619	84840	mm	-	-
P,7	30989	84068	mm	-	-
P,8	30569	85759	mm	-	-
X	82715	3915524	mm	-	-
Z,1	98629	1903492	mm	-	4506
Z,2	86009	1962800	mm	-	4498
Z,3	85088	1966477	mm	-	4493
Z,4	82259	1935276	mm	-	4492
Z,5	80435	1932610	mm	-	4484
Z,6	79972	1944016	mm	-	4484
Z,7	79200	1947423	mm	-	4483
Z,8	81474	1976531	mm	-	4611

6.4 Arm Alignment Test

6.4.1 Summary

Action	Arm Alignment Test
Device	Air FCA 1 SN:1807000014
State	Passed

Test Configuration	User Defined
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:21:30
Time Zone [h]	UTC+2

6.4.2 Test Configuration

Reference position used for rear X:	SXR
Reference position used for front X:	SXF
Channel number of reference tip (XY alignment):	1
Number of available Reference Tips:	8
XY alignment:	True
YZ alignment:	True

6.4.3 Pass / Fail Criteria

Difference between the rear and front Z-positions <= 0.35 [mm]
Difference between the rear and front X-positions <= 0.3 [mm]

6.4.4 Detailed Results

Difference between rear and front X position [mm]: -0.09

Difference between rear and front Z position [mm]

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
0.20	0.00	0.10	-0.02	0.20	-0.12	0.22	0.05

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6.5 Displacement

6.5.1 Summary

Action	Displacement
Device	Air FCA 1 SN:1807000014
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	10:36:49
Time Zone [h]	UTC+2

6.5.2 Setup Configuration

Reference position used for X:	SXM
Reference position used for Y:	SYM
X/Y-Axes:	True
Spreading:	True
Z-Axes:	True
Number of available Reference Tips:	8

6.5.3 Detailed Results

X/Y-Displacement

X	Y
0.06	0.52

S-Displacement

S
0.92

Z-Displacement

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
-0.80	-0.53	-0.51	-0.53	-0.80	-0.51	-0.77	-0.53

6.6 Positioning Test

6.6.1 Summary

Action	Positioning Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	User Defined
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	10:50:38
Time Zone [h]	UTC+2

6.6.2 Test Configuration

Available Reference Tips:	8
Cycles:	2
Use big holes:	True

X/Y-Axes under test

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

Z-Axes under test

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

6.6.3 Pass / Fail Criteria

XY-Axes selected:	Finds all holes
Z-Axes selected:	Z-Deviation per tip [mm] <= 0.2

6.6.4 Detailed Results

Status per cycle and hole

	Front 9	Front 18	Front 36	Rear 9	Rear 18	Rear 36
Cycle 1:	Passed	Passed	Passed	Passed	Passed	Passed
Cycle 2:	Passed	Passed	Passed	Passed	Passed	Passed

Tips that did not match the hole: -

Z-Deviation

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
0.03	0.03	0.08	0.01	0.03	0.02	0.03	0.01

6.7 Z-Brake Test

6.7.1 Summary

Action	Z-Brake Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	User Defined

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Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:30:12
Time Zone [h]	UTC+2

6.7.2 Test Configuration

Cycles:	3
Number of available Reference Tips:	8

6.7.3 Pass / Fail Criteria

Sink distance per channel <= 5 mm.

6.7.4 Detailed Results

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Status:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Max. sink Distance [mm]:	0.73	1.25	0.22	0.73	0.68	0.22	0.22	0.32

6.8 Range Test

6.8.1 Summary

Action	Range Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default

Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:36:12
Time Zone [h]	UTC+2

6.8.2 Test Configuration

Cycles:	1
X-Axis:	True
Y-Axis:	True
S-Axis:	True
Z-Axis:	True
P-Axis:	True

6.8.3 Pass / Fail Criteria

- All axes: found range >= nominal range.
- The whole range can be reached using init speed.

6.8.4 Detailed Results

Axis range results

Cycle	Axis name	Passed/Failed	Found Range	Nominal Range
1	X	Passed	672.94 [mm]	672 [mm]
1	Y	Passed	503.72 [mm]	500 [mm]
1	S	Passed	38.1 [mm]	38 [mm]
1	Z1	Passed	219.01 [mm]	217 [mm]
1	Z2	Passed	218.96 [mm]	217 [mm]
1	Z3	Passed	219.6 [mm]	217 [mm]

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Cycle	Axis name	Passed/Failed	Found Range	Nominal Range
1	Z4	Passed	219.01 [mm]	217 [mm]
1	Z5	Passed	218.99 [mm]	217 [mm]
1	Z6	Passed	218.99 [mm]	217 [mm]
1	Z7	Passed	219.21 [mm]	217 [mm]
1	Z8	Passed	218.99 [mm]	217 [mm]
1	P1	Passed	1250 [ul]	1250 [ul]
1	P2	Passed	1250 [ul]	1250 [ul]
1	P3	Passed	1250 [ul]	1250 [ul]
1	P4	Passed	1250 [ul]	1250 [ul]
1	P5	Passed	1250 [ul]	1250 [ul]
1	P6	Passed	1250 [ul]	1250 [ul]
1	P7	Passed	1250 [ul]	1250 [ul]
1	P8	Passed	1250 [ul]	1250 [ul]

6.9 Tip Adapter Test

6.9.1 Summary

Action	Tip Adapter Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:05:38
Time Zone [h]	UTC+2

6.9.2 Test Configuration

Tip adapters under test

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

Tip switch timeout [sec]: 15

6.9.3 Pass / Fail Criteria

- Switch states of all selected channels are changed correctly.
- Ambient Pressure: Max deviation from 0 mBar = (+/-) 7.5 [mBar].

6.9.4 Detailed Results

Tip adapter has switched state

Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
True	True	True	True	True	True	True	True

Tip adapter pressure sensor state

Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
True	True	True	True	True	True	True	True

Measured tip adapter pressure sensor values [mBar]

Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
0	-0.5	-0.8	-1	-1.2	-2.4	-1.4	-2.5

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6.10 Tip Ejection System Test

6.10.1 Summary

Action	Tip Ejection System Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Mr Jonathan Mazaudon
Execution Date	2021-04-21
Execution Time	10:37:39
Time Zone [h]	UTC+2

6.10.2 Configuration

Channels that use DiTi Options

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

6.10.3 Pass / Fail Criteria

Difference between lower eject position and the found eject position is between 4.5mm and 10mm.

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6.10.4 Detailed Results

Ejection Z position difference per channel [mm]

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
5.43	5.21	5.61	5.41	5.80	5.53	5.56	5.78

Result per channel

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

6.11 Mount Pipetting Tips

6.11.1 Summary

Action	Mount Pipetting Tips
Device	Air FCA 1 SN:1807000014
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	10:54:47
Time Zone [h]	UTC+2

6.11.2 Tip Configuration

Tip Select

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

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6.12 Disposable Tips Test

6.12.1 Summary

Action	Disposable Tips Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:07:15
Time Zone [h]	UTC+2

6.12.2 Pass / Fail Criteria

All disposable tips picked up:	All disposable tips are picked up and discarded correctly.
Disposable tips properly picked up and no sound audible:	User confirms that all disposable tips were picked up properly and no striking sound was audible.

6.12.3 Detailed Results

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Status:	OK	OK	OK	OK	OK	OK	OK	OK

User confirmed that: All disposable tips have been picked up correctly and no striking sound was audible.

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6.13 cLLD Offset

6.13.1 Summary

Action	cLLD Offset
Device	Air FCA 1 SN:1807000014
State	Done
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:08:04
Time Zone [h]	UTC+2

6.13.2 Tip Configuration

Tip Select

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

6.13.3 Detailed Results

Fast Signal Offset [3.2mV per Step]

0 0 1 0 0 1 0 1

Slow Signal Offset [3.2mV per Step]

-1 -1 -1 -1 -1 0 -1 -1

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6.14 cLLD Test

6.14.1 Summary

Action	cLLD Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:09:43
Time Zone [h]	UTC+2

6.14.2 Pass / Fail Criteria

All values specified hereafter are effective for all channels.
cLLD Test is only passed if all three sub tests (cLLD self-test; Board-Tip Connection test; Noise test) are passed.

- cLLD self-test
Pass criteria: Self test of cLLD module is passed.

- Board-Tip Connection Test
Fail criteria: If one channel is not within limits, the Board-Tip Connection Test is failed.
Pass criteria: After receiving trigger events RFC and RSC command report values as following:
- Moving Channel down:

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SlowMin <= -5
Stopped channels (1st neighbour on both sides): SlowMin <= -75 AND FastMin <= -7
- Moving Channel up:
SlowMax >= 5
Stopped channels (1st neighbour on both sides): SlowMax >= 75 AND FastMax >= 7

- Noise Test
Pass criteria: No detection trigger received for the set SLP command limits:
Fast Dip In Trigger Level [steps] -25
Fast Dip In Pulse Time [steps] 0
Fast Dip Out Trigger Level [steps] 25
Fast Dip Out Pulse Time [steps] 0

6.14.3 Self Tests, Results Summary

Self test: Passed

Group 1: General tests

Tip presence:	Passed
Extern RAM data bus connections:	Passed
Power supplies:	Passed

Group 2: Fast Signal Tests

Amplitude: test signal, positive impulse:	Passed
Amplitude: test signal, negative impulse:	Passed
Pulse width: test signal, positive impulse:	Passed
Pulse width: test signal, negative impulse:	Passed
Response time: test signal, positive impulse:	Passed
Response time: test signal, negative impulse:	Passed
Cross talk: test signal, absolute value:	Passed

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Noise: absolute value:	Passed
Offset (from A/D zero point):	Passed
Relative Offset (from offset corrected zero point):	Passed

Group 3: Slow Signal Tests

Amplitude: test signal, positive impulse:	Passed
Amplitude: test signal, negative impulse:	Passed
Pulse width: test signal, positive impulse:	Passed
Pulse width: test signal, negative impulse:	Passed
Response time: test signal, positive impulse:	Passed
Response time test signal, negative impulse:	Passed
Cross talk: test signal, absolute value:	Passed
Noise: signal, absolute value:	Passed
Offset (from A/D zero point):	Passed
Relative Offset (from offset corrected zero point):	Passed

6.14.4 Board Tip Connection Test, Results Summary

Number of cycles executed: 1

Moving Tip

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
State:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

Stopped Tip

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
State:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

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6.14.5 Noise Test, Results Summary

Number of cycles executed: 1

Fast signal

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
State:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

6.14.6 Test Configuration

Self Test:	True
Board-Tip Connection Test:	True
Noise Test:	True
Cycles:	1

6.15 Pressure Sensor Connection Test

6.15.1 Summary

Action	Pressure Sensor Connection Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:14:50
Time Zone [h]	UTC+2

6.15.2 Test Configuration

Tip Select

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

Cycles:	6
Tip Type:	DiTi200
Aspiration Volume [ml]:	1
Plunger Backlash Compensation [µl]:	0.5
Overpressure Volume ΔV [µl]:	144.5
Plunger Speed [µl/s]:	50
Air Volume V0 [µl]:	1885

6.15.3 Pass / Fail Criteria

-Target Ambient Pressure: Max deviation from 0mbar = (+/-) 7.5mbar.
-Connection: Sensor of each tip is connected to correct PMP board input channel.
-Overpressure: Max deviation from Target Overpressure = (+/-) 7.5%.
Target Overpressure [mbar]: 80.06 @ 415m
Calculation of Target Overpressure at different altitude done with Barometric Formula:
1013.25 * (1 - 0.00651 * Altitude / 288)^ 5.255 / (V0 / ΔV - 1)

6.15.4 Detailed Results

Ambient Pressure

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Target Ambient Pressure [mbar]:	0	0	0	0	0	0	0	0
Ambient Pressure [mbar]:	0	-0.5	-0.8	-1	-1.2	-2.4	-1.4	-2.5

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	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Max Deviation (+/-) [mbar]:	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Status:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

Overpressure

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Measure 1:	80.8	80.1	80.5	79.3	80.7	78.2	79.2	80.3
Measure 2:	81.2	80.6	80.8	79.7	81.1	78.5	79.6	80.7
Measure 3:	81.2	80.5	80.8	79.7	81	78.5	79.5	80.7
Measure 4:	81.2	80.5	80.8	79.7	81.1	78.5	79.5	80.7
Measure 5:	81.2	80.5	80.8	79.7	81.1	78.5	79.5	80.8
Measure 6:	81.2	80.5	80.8	79.7	81	78.5	79.5	80.8

Overpressure Limits

	Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
Target Overpressure [mbar]:	80.06	80.06	80.06	80.06	80.06	80.06	80.06	80.06
Max Deviation (+/-) [%]:	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Upper Limit [mbar]:	86.06	86.06	86.06	86.06	86.06	86.06	86.06	86.06
Lower Limit [mbar]:	74.06	74.06	74.06	74.06	74.06	74.06	74.06	74.06
Status:	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

Connection

Status	Passed

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6.16 Inline Filter Test

6.16.1 Summary

Action	Inline Filter Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:14:58
Time Zone [h]	UTC+2

6.16.2 Test Configuration

Tip Select

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

6.16.3 Pass / Fail Criteria

Each selected channel meets the following criteria:
0.52 mbar < Relative Filter Resistance < 1.72 mbar
-0.17 mbar < Deviation Noise Level < 0.17 mbar

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6.16.4 Detailed Results

Results per Tip

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
Relative Filter Resistance [mbar]	1.11	1.24	0.95	1.24	1.22	1.155	1.275	0.925
Deviation Noise Level [mbar]	0	0	0	-0.005	0	0	0	0
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

6.17 Leakage Test

6.17.1 Summary

Action	Leakage Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva
Execution Date	2023-05-26
Execution Time	11:20:02
Time Zone [h]	UTC+2

6.17.2 Test Configuration

Tip Select

Tip1	Tip2	Tip3	Tip4	Tip5	Tip6	Tip7	Tip8
True	True	True	True	True	True	True	True

Altitude [m.a.s.l.]: 415

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6.17.3 Pass / Fail Criteria

Each selected channel meets the following criteria:
Underpressure Deviation ≤ 2.60 mbar
Overpressure Deviation ≤ 6.94 mbar
21.86 mbar ≤ Underpressure ≤ 44.06 mbar
128.01 mbar ≤ Overpressure ≤ 199.99 mbar

6.17.4 Detailed Results

Results per Tip

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
TEST STEP 1								
Ambient [mbar]	0	-0.5	-0.8	-1	-1.2	-2.4	-1.4	-2.5
Underpressure Deviation[mbar]	0	0.9	0	0	0	1	0	0.1
Overpressure Deviation[mbar]	0	4.3	0.1	0	0	4.6	0	0
Underpressure [mbar]	34.6	32.1	34.6	34.2	34.8	31.7	34.3	35.4
Overpressure [mbar]	165.3	152	165.4	161.1	166.9	150.3	164.1	169.7
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
TEST STEP 2								
Ambient [mbar]	0	-0.5	-0.8	-1	-1.1	-2.4	-1.4	-2.5
Underpressure Deviation[mbar]	0.1	0.7	0.1	0	0	0.8	0.1	0.1
Overpressure Deviation[mbar]	0.1	3.6	0.1	0.1	0	3.8	0	0
Underpressure [mbar]	35.3	33.1	35.3	35.3	35.9	32.9	35.2	36.4
Overpressure [mbar]	164.5	154	164.9	160.9	166.4	152.5	163.7	169.2
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
TEST STEP 3								
Ambient [mbar]	0	-0.5	-0.8	-1	-1.1	-2.4	-1.4	-2.5

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Underpressure Deviation[mbar]	0	0.7	0.1	0.1	0.1	0.7	0.1	0.1
Overpressure Deviation[mbar]	0	3.1	0.1	0.1	0.1	3.3	0.1	0
Underpressure [mbar]	35.9	34.3	36	35.9	36.5	33.9	35.7	37
Overpressure [mbar]	165.6	157	166.5	162.4	167.8	155.4	165.1	170.2
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
TEST STEP 4								
Ambient [mbar]	0	-0.5	-0.8	-1	-1.1	-2.4	-1.4	-2.5
Underpressure Deviation[mbar]	0	0.6	0.1	0	0	0.6	0	0
Overpressure Deviation[mbar]	0.1	2.7	0.1	0.1	0	2.8	0	0.1
Underpressure [mbar]	35.8	34.5	35.9	35.8	36.3	34.1	35.6	36.8
Overpressure [mbar]	166	158.6	166.6	162.7	167.9	156.9	165.4	170.4
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
TEST STEP 5								
Ambient [mbar]	0	-0.5	-0.8	-1	-1.1	-2.4	-1.4	-2.5
Underpressure Deviation[mbar]	0.1	0.5	0.1	0	0.1	0.5	0	0
Overpressure Deviation[mbar]	0.1	2.4	0.1	0.1	0.1	2.5	0	0
Underpressure [mbar]	35.6	34.5	35.7	35.7	36.2	34.1	35.5	36.5
Overpressure [mbar]	166.5	160.2	167.4	163.6	168.8	158.6	166.2	171
Tip Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

6.18 Pipetting Test

6.18.1 Summary

Action	Pipetting Test
Device	Air FCA 1 SN:1807000014
State	Passed
Test Configuration	Default
Operator	Sacha Pinto Da Silva

Execution Date	2023-05-26
Execution Time	12:49:10
Time Zone [h]	UTC+2

6.18.2 Test Configuration

Balance protocol:	COM:METTLER,BALANCE,C211709608
Balance calibration date [YYYY-MM-DD]:	2022-07-06
Cycles:	12

Tip Select

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
1µl	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10µl	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
100µl	No	No	No	No	No	No	No	No
Syring Size [µl]	1250	1250	1250	1250	1250	1250	1250	1250
Tubing Type	Air	Air	Air	Air	Air	Air	Air	Air
Used Tip	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10

6.18.3 Pass / Fail Criteria

- CV per channel and across all channels sharing the same configuration must be less or equal max CV.
- No under dispenses (target volume) allowed: Every dispensed volume should deviate by max 50% of the expected dispense volume.
- The max CVs are defined as follows:

AirFCA Syringe Size 1250µl:

- for 10µl tests: max CV <= 2% and for 1µl tests: max CV <= 8%

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6.18.4 Detailed Results

-

Results per groups

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8	All
Tip Type	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	-
Volume [µl]	1	1	1	1	1	1	1	1	-
Meas 1	0.87	0.91	0.89	0.86	0.89	0.82	0.89	0.80	-
Meas 2	0.90	0.87	0.92	0.84	0.80	0.79	0.96	0.75	-
Meas 3	0.88	0.87	0.88	0.88	0.81	0.86	1.04	0.81	-
Meas 4	0.89	0.86	0.90	0.92	0.90	0.84	0.98	0.83	-
Meas 5	0.89	0.85	0.91	0.92	0.85	0.83	1.05	0.79	-
Meas 6	0.90	0.86	0.91	0.84	0.84	0.82	0.92	0.79	-
Meas 7	0.93	0.91	0.98	0.85	0.85	0.85	0.99	0.81	-
Meas 8	0.90	0.91	0.94	0.87	0.86	0.85	1.02	0.85	-
Meas 9	0.94	0.89	0.94	0.86	0.84	0.85	0.98	0.85	-
Meas 10	0.91	0.90	0.96	0.86	0.83	0.83	0.99	0.83	-
Meas 11	0.94	0.84	0.90	0.82	0.82	0.85	1.00	0.80	-
Meas 12	0.85	0.83	0.89	0.82	0.84	0.79	0.92	0.80	-
Mean [mg]	0.90	0.88	0.92	0.86	0.85	0.83	0.98	0.81	0.88
Min [mg]	0.85	0.83	0.88	0.82	0.80	0.79	0.89	0.75	0.75
Max [mg]	0.94	0.91	0.98	0.92	0.90	0.86	1.05	0.85	1.05
Acc [%]	-10.05	-12.42	-8.27	-13.78	-15.40	-16.83	-2.42	-19.17	-12.29
CV [%]	3.11	3.30	3.40	3.61	3.52	2.67	4.98	3.47	6.69
Max CV Limit [%]	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.00
Date	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	-
Time	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	-

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Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Tip Type	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	DiTi10	-
Volume [µl]	10	10	10	10	10	10	10	10	-
Meas 1	10.02	9.94	10.04	9.98	9.99	9.91	9.94	9.98	-
Meas 2	10.00	9.94	10.02	9.98	10.00	9.91	9.95	9.98	-
Meas 3	9.99	9.93	10.02	9.99	9.99	9.87	9.95	9.94	-
Meas 4	9.99	9.95	10.01	9.98	9.95	9.89	9.94	9.97	-
Meas 5	9.95	9.90	9.97	9.94	9.95	9.85	9.89	9.93	-
Meas 6	9.93	9.89	9.99	9.93	9.96	9.86	9.89	9.92	-
Meas 7	9.95	9.87	10.01	9.95	9.98	9.87	9.91	9.94	-
Meas 8	9.94	9.90	9.99	9.95	9.94	9.86	9.92	9.96	-
Meas 9	9.99	9.87	10.02	9.96	9.95	9.87	9.87	9.94	-
Meas 10	9.99	9.90	9.99	9.95	9.93	9.91	9.94	9.94	-
Meas 11	9.97	9.90	9.96	9.90	9.92	9.89	9.91	9.94	-
Meas 12	9.98	9.91	9.98	9.94	9.98	9.83	9.87	9.93	-
Mean [mg]	9.97	9.91	10.00	9.95	9.96	9.88	9.91	9.95	9.94
Min [mg]	9.93	9.87	9.96	9.90	9.92	9.83	9.87	9.92	9.83
Max [mg]	10.02	9.95	10.04	9.99	10.00	9.91	9.95	9.98	10.04
Acc [%]	-0.26	-0.91	0.02	-0.46	-0.39	-1.23	-0.86	-0.52	-0.58
CV [%]	0.27	0.27	0.23	0.26	0.27	0.27	0.31	0.21	0.46
Max CV Limit [%]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.00
Date	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	2023-05-26	-
Time	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	11:37:59	-
Status	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed

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Balance.pdf

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FR0846-068-060722-ACC

METTLER TOLEDO

Mettler-Toledo SAS

18-20 Avenue de la Pépinière
78220 Viroflay
N/A

Certificat d'étalonnage ACC

Accuracy Calibration Certificate

Client

Société:	TECAN FRANCE		
Adresse:	1 BD VIVIER MERLE; TOUR SWISS LIFE		
Ville:	LYON	Contact:	N/A
Code Postal:	69003	N° de commande:	N/A

Appareil de pesage

Constructeur:	Mettler Toledo	Type d'instrument:	Instrument de pesage
Modèle:	WXSS205	N° inventaire:	N/A
N° de série:	C219024138	Modèle Terminal:	SWT
Bâtiment:	Balance Nomade Tech	N° de série Terminal:	C211709608
Étage:	N/A	N° inventaire Terminal:	N/A
Pièce:	N/A	Autre n° d'inventaire:	N/A

Étendue	Portée Max.	Résolution (d)
1	220 g	0,00001 g

Procédure

Instruction d'étalonnage :	EURAMET cg-18 v. 4.0 (11/2015)
Instruction de travail :	DAQ5

Ce certificat d'étalonnage contient les mesures de l'étalonnage Après réglage.

Conformément au guide cg18 de l'EURAMET, les charges d'essai sont sélectionnées pour montrer une utilisation spécifique de l'instrument ou pour s'accommoder aux conditions spécifiques d'étalonnage.

Date étal. Avant réglage :	N/A	Technicien :	
Date étal. Après réglage :	07-06-2022		Arnaud Martin
Date d'édition :	07-06-2022		
Date proch. étalonnage :	30-06-2023		

ID Certificat d'étalonnage
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METTLER TOLEDO Service

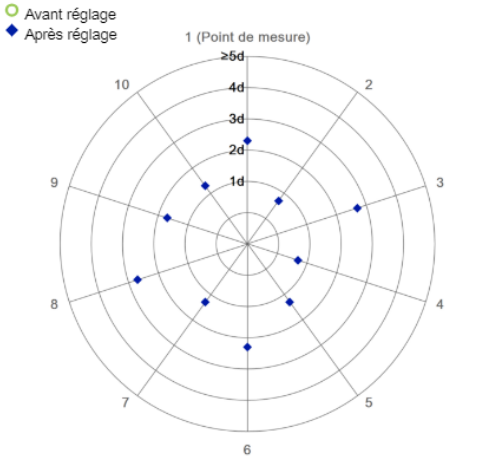
Résultats de mesure

Répétabilité

Charge d'essai: 100 g

	Avant réglage	Après réglage
1	N/A	100,00013 g
2	N/A	100,00010 g
3	N/A	100,00008 g
4	N/A	100,00010 g
5	N/A	100,00012 g
6	N/A	100,00013 g
7	N/A	100,00012 g
8	N/A	100,00008 g
9	N/A	100,00009 g
10	N/A	100,00012 g

Écart-type	N/A	0,000019 g



Le "d" dans le graphique représente la résolution de l'étendue/échelon dans lequel l'essai a été effectué.

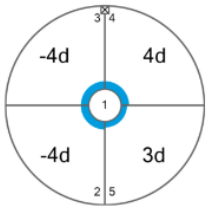
Les résultats de ce graphique sont basés sur les valeurs absolues des différences par rapport à la valeur moyenne.

Excentration

Charge d'essai: 70 g

Position	Avant réglage	Après réglage
1	N/A	69,99999 g
2	N/A	69,99995 g
3	N/A	69,99995 g
4	N/A	70,00003 g
5	N/A	70,00002 g

Écart maximal	N/A	0,00004 g



Après réglage

Le "d" dans le graphique représente la résolution de l'étendue/échelon dans lequel l'essai a été effectué.

Erreur d'indication

Après réglage

	Valeur Référence	Indication	Erreur d'indication	Incertitude élargie	k
1	0,00000 g	0,00000 g	0,00000 g	0,039 mg	2
2	0,01001 g	0,01001 g	0,00000 g	0,040 mg	2
3	20,00003 g	20,00001 g	-0,00002 g	0,11 mg	2
4	50,00001 g	50,00000 g	-0,00001 g	0,21 mg	2
5	100,00011 g	100,00013 g	0,00002 g	0,40 mg	2
6	150,00011 g	150,00016 g	0,00005 g	0,61 mg	2
7	220,00020 g	220,00014 g	-0,00006 g	0,89 mg	2

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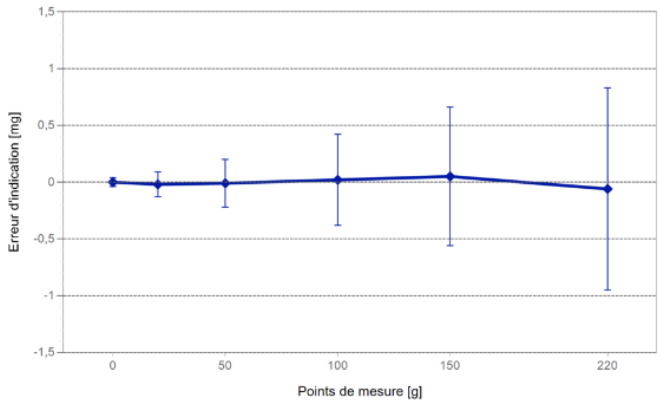

Pour améliorer la lisibilité des graphiques, les points de mesure décroissants et les points de mesure proches de zéro ne sont pas

L'incertitude indiquée est l'incertitude élargie de l'étalonnage obtenue en multipliant l'incertitude type composée par le facteur d'élargissement k - qui peut être supérieur à 2 conformément au guide cg-18 de l'EURAMET. La valeur du mesurande se trouve dans l'étendue des valeurs avec un niveau de confiance de 95%. L'utilisateur veille à maintenir les mêmes conditions environnementales et les paramètres de l'instrument de pesage qu'au moment de l'étalonnage.

Incertitude de mesure de l'instrument de pesage en utilisation

Établie à partir de l'incertitude élargie en utilisation avec k = 2. La formule sera utilisée pour estimer l'incertitude en prenant en compte les erreurs d'indication. La valeur R représente l'indication de la charge nette selon l'unité de mesure de l'appareil.

Coefficient de température pour l'évaluation de l'incertitude en utilisation : $1{,}5 \cdot 10^{-6}$ / K

Étendue de température sur site pour l'évaluation de l'incertitude en utilisation : 4 K

Linéarisation de l'équation d'incertitude

Étendue			Avant réglage	Après réglage
	d	Max		
1	0,00001 g	220 g	N/A	U_I = 0,040 mg + 0,00533 mg/g · R

Pour optimiser la stabilité de la linéarisation, en plus du zéro, les points de mesure croissants avec une charge supérieure à 5% de la plage de mesure ou plus sont retenus pour calculer l'équation linéaire.

Incertitude de mesure absolue et relative en utilisation pour diverses indications nettes (exemples)

Indication Nette	Avant réglage		Après réglage	
0,00220 g	N/A	N/A	0,040 mg	1,8%
0,02200 g	N/A	N/A	0,040 mg	0,18%
0,22000 g	N/A	N/A	0,041 mg	0,019%
2,20000 g	N/A	N/A	0,052 mg	0,0024%
220,00000 g	N/A	N/A	1,2 mg	0,00055%

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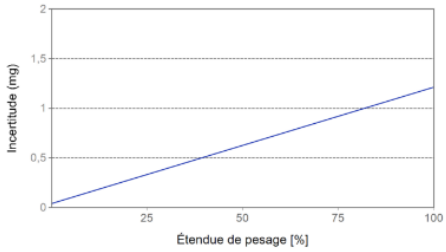

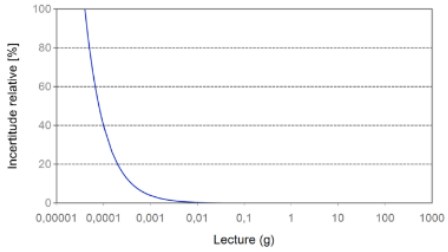

Avant réglage Après réglage

Équipement d'essai

Tous les poids utilisés pour le contrôle métrologique sont raccordés aux étalons nationaux et internationaux. Les poids sont étalonnés par un laboratoire accrédité.

Série de Poids 1: OIML E2

N° série de poids :	8575	Date d'édition :	20-04-2022
N° Certificat :	E22/110/038	Date proch. étalonnage :	18-04-2023

Remarques

Étalonnage après installation

INSTALLATION

Ce document est délivré afin de consigner l'achèvement des travaux effectués par METTLER TOLEDO sur l'appareil concerné conformément aux normes reconnues. Il ne garantit en aucun cas les performances continues du présent appareil. Toutes les mesures enregistrées sont basées sur les performances de l'appareil en question à un instant donné, telles que testées par METTLER TOLEDO et, sauf indication contraire explicite, n'expriment aucune opinion en ce qui concerne la suffisance des procédures conçues par le client pour tester l'appareil. Ce document ne constitue pas une garantie de quelque nature que ce soit, explicite ou implicite. METTLER TOLEDO décline expressément toute responsabilité résultant de l'utilisation des informations contenues dans ce document à d'autres fins que celles énoncées ici.

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Annexe au certificat d'étalonnage :
FR0846-068-060722-ACC
Pesée minimale

METTLER TOLEDO Service

Pesée minimale

Avant réglage - Tableau de pesée minimale

La pesée minimale n'a pas été calculée car l'essai de répétabilité Avant réglage n'a pas été effectué.

Après réglage - Tableau de pesée minimale

Étendue 1

Pesée minimale pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de sécurité				
Tolérance	1	2	3	5	10
0,1%	0,039990 g	0,080412 g	0,121272 g	0,204336 g	0,420188 g
0,2%	0,019942 g	0,039990 g	0,060147 g	0,100787 g	0,204336 g
0,5%	0,007964 g	0,015945 g	0,023943 g	0,039990 g	0,080412 g
1%	0,003980 g	0,007964 g	0,011952 g	0,019942 g	0,039990 g
2%	0,001989 g	0,003980 g	0,005971 g	0,009958 g	0,019942 g
5%	0,000796 g	0,001591 g	0,002387 g	0,003980 g	0,007964 g

À ces valeurs de pesée nette minimale, l'incertitude de mesure de l'appareil est inférieure ou égale à 1/1 (pas de facteur de sécurité), 1/2, 1/3, 1/5 ou 1/10 de la tolérance requise. Ces valeurs sont calculées avec k = 2 et basées sur la formule linéaire de l'incertitude de mesure de l'instrument de pesage en utilisation.

Le facteur de sécurité Avant réglage est toujours de 1. Cela signifie qu'il n'y a pas de facteur de sécurité. Les essais Avant réglage montrent le comportement de l'instrument depuis que le dernier essai a été effectué. Pour l'historique, il est indispensable de savoir que la tolérance était atteinte mais pas le facteur de sécurité. Le facteur de sécurité est un élément de mesure proactif à appliquer aux prochaines mesures.

Remarques sur les valeurs de pesée minimale du tableau ci-dessus :
1. "N/A" est indiqué ci-dessus, si aucune valeur appropriée n'a pu être calculée.
2. METTLER TOLEDO n'est pas responsable de la définition des conditions de processus.
3. L'utilisateur veille à conserver les mêmes conditions ambiantes et le paramétrage de l'appareil qu'au moment où il a été étalonné.

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Annexe au certificat d'étalonnage :

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Évaluation selon les tolérances CVS

METTLER TOLEDO Service

Évaluation selon les tolérances CVS (En Service)

Évaluation effectuée sans tenir compte de l'incertitude de mesure

Les mesures du certificat d'étalonnage joint ont été évaluées selon les tolérances CVS définies par METTLER TOLEDO.

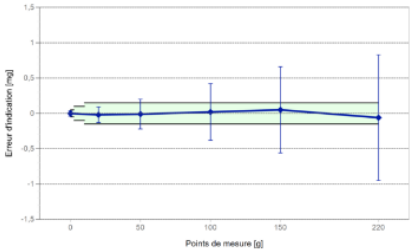
	Avant réglage	Après réglage
Global	N/A	✓

✓ = Réussi

✗ = Échec

Appareil de pesage

Étendue	Portée Max.	Résolution (d)
1	220 g	0,00001 g



Tolérances CVS

Charge d'essai		Tolérance
De	jusqu'à	
0,00000 g	0,00000 g	0,0000125 g
0,00001 g	2,50000 g	0,00005 g
2,50001 g	10,00000 g	0,0001 g
10,00001 g	220,00000 g	0,00015 g

○ Avant réglage

◆ Après réglage

— EMT

Excentration et Répétabilité

Essai	Charge d'essai	Tolérance	Avant réglage		Après réglage	
			Écart max. / Étendue	Résultat	Écart max. / Étendue	Résultat
Excentration	70 g	0,00015 g	N/A	N/A	0,00004 g	✓
Répétabilité	100 g	0,00015 g	N/A	N/A	0,00005 g	✓

Écart max. (Excentration) : Valeur absolue du plus grand écart avec le centre.

Étendue (Répétabilité) : Différence entre la plus grande et la plus petite valeur de mesure.

Erreur d'indication

	Valeur référence	Tolérance	Avant réglage		Après réglage	
			Erreur d'indication	Résultat	Erreur d'indication	Résultat
1	0,00000 g	0,00005 g	N/A	N/A	0,00000 g	✓
2	0,01001 g	0,00005 g	N/A	N/A	0,00000 g	✓
3	20,00003 g	0,00015 g	N/A	N/A	-0,00002 g	✓
4	50,00001 g	0,00015 g	N/A	N/A	-0,00001 g	✓
5	100,00011 g	0,00015 g	N/A	N/A	0,00002 g	✓
6	150,00011 g	0,00015 g	N/A	N/A	0,00005 g	✓
7	220,00020 g	0,00015 g	N/A	N/A	-0,00006 g	✓

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M30 Certificate Sacha Pinto Da Silva.pdf

CONGRATULATIONS FOR PASSING THE EXAM!

Sacha Pinto Da Silva
Tecan France S.A.

has successfully completed the training
Fluent® Service

Your certificate has been awarded on 11/18/2022 and is valid for 2 years.

We look forward to training you again,
Your Tecan Academy Team

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Sacha.PintoDaSilva@tecan.comTPlanTFLHW_FLService_04202211181156

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TMS Template 10.400.TM003 , V2.0, Effective: 2022-11-03