TECAN.

Service Report

Service order number	4247081	Phone	
Customer's adress	Københavns Universitet Retsmedicinsk Institut 2100 København Ö Frederik V's Vej 11 35326288	Contact person	
		Date call received	17.02.2014
		Date of service	25.03.2014
		PO number	

Equipment number	10309015	Serial number	708000319
Equipment description	INSTRUMENT FREEDOM EVO 150 BASE UNIT		
Symptoms - Group code	090	Symptoms - Coding	030

Solution/Corrective action

Årlig vedligeholdelse iflg Tecan dokumenter "Preventive maintenance" og "Operation Qualification"
Instrument testet og funde i orden.

BC (Bill Code): Z1 = Good will Z2 = Warranty Z3 = To be invoiced Z4 = Warranty on Repair Z5 = Contract Z6 = Installation

Component	Description	Quantity	Serial # Added	Serial # Removed	BC
10619863	CABLE ILID SET 4 PCE. GENESIS FREEDOM	2,00			Z5
10619532	SYRINGE 1.0ML NEW	8,00			Z5
10612501	TIP STD. STA.STEEL PTFE COATED EVO SP	8,00			Z5
10649016	VALVE 3-WAY 120° M6 DILUTER XP SMART	8,00			Z5
10619403	TUBING PIP. FEP 2.5*1.5MM 2800MM SP	8,00			Z5
10619402	TUBE FEP IC M6 3*2MM 650MM SP	8,00			Z5

Instrument status at time of service report

- ✓ Repaired - Normal utilization can continue
- Fault/Defect not reproducible - Normal utilization can continue
- Fault/Defect still present

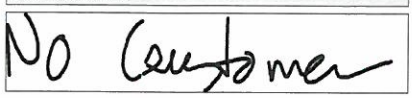
Date	Work Hours	BC	Travel Hours	BC	Distance	BC
21.03.2014	8,00	Z5	2,00	Z5		

Date: 25.03.2014

Tecan: Niels Andersen

Signature: 

Customer: No customer

Signature: 

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Operation Qualification

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Customer information		Instrument information
Contact account		Freedom EVO Clinical 100 ☐ 150 ☐ 200 ☐
Contact person	Brian Schou Rasmussen	Freedom EVO 100 ☐ 150 ☐ 200 ☒
Lab site	Retskemisk Afdeling	Freedom EVO 75 ☐ 8 plus 1 Access ☐
Address	Retsmedicinsk Institut	
	Københavns Universitet	PosID ☒
		Arm left LiHa ☒ AirLiHa ☐ RoMa ☐ PnP ☐ MCA ☐
	Frederik V's vej 11, 3. Sal	Arm middle LiHa ☐ AirLiHa ☐ RoMa ☐ PnP ☐ MCA ☐
		Arm right LiHa ☐ AirLiHa ☐ RoMa ☒ PnP ☐ MCA ☐
ZIP code + City	2100 København Ø	
Country	DK	LiHa configuration left ☒ middle ☐ right ☐ Te-Fill ☐ PMP ☐
Service Engineer	Niels Andersen	No of tips 8 Type of tips std tip
		No of tips Type of tips
		LiHa configuration left ☐ middle ☐ right ☐ Te-Fill ☐ PMP ☐
		No of tips Type of tips
		No of tips Type of tips
		MCA configuration No of tips Type of tips
		Serial number of the instrument 708000319
		Instrument new installation ☐ used before ☒

Reference documents	Document Number	Document Version	N/A
Freedom EVO Service Manual	392887	V...	☒
Freedom EVO-2 Service Manual	393828	V.7.4..	☐
Freedom EVO 75 Service Manual	394880	V...	☒
Freedom EVO Clinical Operating Manual	393062	V...	☒
Freedom EVO Operating Manual	392886	V.7.3..	☐
Freedom EVO 75 Operating Manual	393248	V...	☒
Instrument Software Manual	392888	V.5.0..	☐
Proteam Advanced Digest Application Freedom EVO	392513	V...	☒
Te-PoolSafe IQ/OQ	395255	V...	☒

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In the following sections place a checkmark in the check box that applies. Many steps within Setup and Service software have the option to print out data/result sheets once the step is complete. When a print option is available: print out, sign, and date the data/result sheets. File the sheets in the print out chapter in this Logbook.
If the operation qualification is being performed immediately after the IQ and the tests listed in these sections passed as part of the IQ – do not repeat them. If the OQ is not being performed immediately after the IQ or for any test(s) that failed in the IQ, repeat the necessary test(s).

Instrument modules	Acceptance values	N/A	Done	Passed
• **System Devices / Move Test**		☒		
- Random Move Test	Duration 600 cycles, Re-init 200 cycles			☐
• **System Devices / Move Test 2**	(Use this test in case of an obstructed worktable only, run either the Move Test or the Move Test2)	☒		
- Random Move Test	Duration 600 cycles, Re-init 200 cycles			☐
• **System Devices / LiHA**		☐		
- Verify Reference Positions	Reference positions accurately		☒	
- Te-PS (Positioning System)	Tip alignment and individual Z verification passed	☒		☐
- Tip Adapter Test	Test passed with all available DiTi channels	☒		☐
- Flush tips once sequentially	Order of pipetting tubing is correct		☒	
• **System Devices / AirLiHA**		☒		
- Verify Reference Positions	Reference positions accurately		☐	
- Te-PS (Positioning System)	Tip alignment and individual Z verification passed	☒		☐
- Tip Adapter Test	Test passed with all available DiTi channels	☒		☐
• **Liquid System / DiTi Test**		☒		
- (Lower) DiTi Eject Test	Test passed with all available DiTi channels			☐
• **Liquid System / Te-Fill**		☒		
- Channel Sequence	Test passed with all available channels			☐
- Dispense	Test passed with all available channels			☐
- Aspiration	Test passed with all available channels			☐
• **Liquid System / PMP**		☒		
- USB Test	Test passed			☐
- PMP Channel Test	Test passed with all available channels			☐
- Clogging Test	Test passed with all available channels			☐
- Leakage Test	Test passed with all available channels			☐
- P-Sensor Test	Test passed with all available channels			☐
- Filter Test	Test passed with all available channels	☐		☐
- Pressure LLD Test	Test passed with all available channels			☐
• **Liquid System / Liquid System**	(A minimum of 2 tests need to be performed)			
- Liquid Level Detection Test	Test passed with trough rack	☐		☒
	Test passed with micro plate	☐		☒
	Test passed with strip rack	☐		☒
- FaWa Test	Test passed with all available channels	☐		☒

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TECAN. Operation Qualification

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Instrument modules	Acceptance values			N/A	Done	Passed
- **Liquid LiHa Gravimetric Precision Test**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration with either the Gravimetric Precision Test or QC Kit.					
- LiHa Gravimetric Precision Test - Low Vol tip / Syringe 500µl - Using Low Vol option	Test passed at	1µl	CV≤ 10.0%	☒		☐
- LiHa Gravimetric Precision Test - Low Vol tip / Syringe 500µl	Test passed at	10µl	CV≤ 3.5%	☒		☐
- LiHa Gravimetric Precision Test - Te-PS tip / Syringe 250µl	Test passed at Test passed at	1µl 10µl	CV≤ 10.0% CV≤ 3.5%	☒		☐ ☐
- LiHa Gravimetric Precision Test - Standard tip / Syringe 1000µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 0.75%	☐		☒ 2A ☒ 2B
- LiHa Gravimetric Precision Test - Diti Type 10µl / Syringe 500µl - Using Low Vol option	Test passed at	1µl	CV≤ 10.0%	☒		☐
- LiHa Gravimetric Precision Test - Diti Type 10µl / Syringe 500µl	Test passed at	10µl	CV≤ 3.5%	☒		☐
- LiHa Gravimetric Precision Test - DiTi 200µl / Syringe 1000µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 0.75%*	☒		☐ ☐
- Gravimetric Precision Test for none-standard configuration	1st measurement = Reference 2nd measurement = Comparison to Reference			☒		☐ ☐
- **Liquid LiHa Colorimetric Precision Test with QC Kit**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration with either the Gravimetric Precision Test or QC Kit.					
- LiHa QC Kit - Fixed tip Low Vol / Syringe 500µl	Test passed at Test passed at	1µl 10µl	CV≤ 10.0% CV≤ 3.5%	☒		☐ ☐
- LiHa QC Kit - Fixed tip Low Vol / Syringe 1000µl	Test passed at	10µl	CV≤ 3.5%	☒		☐
- LiHa QC Kit - Fixed tip Standard / Syringe 1000µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 1.0%	☒		☐ ☐
- LiHa QC Kit - Diti Type 10µl / Syringe 500µl	Test passed at Test passed at	1µl 10µl	CV≤ 10.0% CV≤ 3.5%	☒		☐ ☐
- LiHa QC Kit - Diti Type 200µl/ Syringe 1000µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 1.0%*	☒		☐ ☐

* The different methods mentioned above are intended to verify that the system is operating within its specifications. Please be aware that different measurement methods have different inherent systematic measurement errors and therefore the acceptance values can be different. Details can be found in the operating manual.

TECAN

Operation Qualification

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Instrument modules	Acceptance values			N/A	Done	Passed
- **Air LiHa Gravimetric Precision Test**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration with either the Gravimetric Precision Test or QC Kit.					
- Air LiHa Gravimetric Precision Test Diti Type 200µl / non filtered	Test passed at Test passed at	100µl 10µl	CV≤ 0.5% CV≤ 2.0%	☒		☐ ☐
- Air LiHa Gravimetric Precision Test Diti Type 10µl / non filtered	Test passed at	1µl	CV≤ 8.0%	☒		☐
- **Air LiHa Colorimetric Precision Test with QC Kit**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration with either the Gravimetric Precision Test or QC Kit.					
- Air LiHa Colorimetric Precision Test Diti Type 200µl / non filtered	Test passed at	10µl	CV≤ 2.0%	☒		☐
- Air LiHa Colorimetric Precision Test Diti Type 10µl / non filtered	Test passed at	1µl	CV≤ 8.0%	☒		☐
- **8 plus 1 Colorimetric Precision Test with S&S software**						
- 8 plus 1 Colorimetric Test with Orange G / Sunrise reader only Diti Type 200µl / Syringe 1000 µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 1.75%*	☒		☐ ☐
- **8 plus 1 Colorimetric Precision Test with QC kit**						
- 8 plus 1 Colorimetric Precision Test with QC Kit for all channels Infinite series reader only Diti Type 200µl / non filtered Syringe 1000 µl	Test passed at Test passed at	10µl 100µl	CV≤ 3.5% CV≤ 1.0%*	☒		☐ ☐
• **System Devices / RoMa**				☒		
- Reference plate test	Passed with 10 cycles					☐
• **System Devices / PnP**				☒		
- Verify Reference positions	Reference positions accurately				☐	
- Tube Move Test	Passed at left and right grid position					☐

* The different methods mentioned above are intended to verify that the system is operating within its specifications. Please be aware that different measurement methods have different inherent systematic measurement errors and therefore the acceptance values can be different. Details can be found in the operating manual.

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• **System Devices MCA96**					☒	
- DiTi Test	Passed				☒	☐
- Tip Block Test	Passed				☒	☐
- Plate Move Test	Passed				☒	☐
- **MCA96 Colorimetric Precision Test with QC Kit**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration. (3 plates needed to create the pass / fail report)					
- MCA96 QC kit / 50 µl DiTi	Test passed at	1µl	CV≤ 6.0%		☒	☐
- MCA96 QC kit / 100 µl DiTi	Test passed at	1.5µl	CV≤ 6.0%		☒	☐
- MCA96 QC kit / 200 µl DiTi	Test passed at	2µl	CV≤ 6.0%		☒	☐
- MCA96 QC kit / Standard Tipblock	Test passed at Test passed at	5µl 50µl	CV≤ 4.0% CV≤ 3.0%		☒	☐ ☐
- MCA96 QC kit / HP Tipblock	Test passed at Test passed at Test passed at	1µl 5µl 10µl	CV≤ 10.0% CV≤ 4.0% CV≤ 3.0%		☒	☐ ☐ ☐
- Tightness Test, performed in EVOware. scripts available in: \EVOware\database\maintenance	Head is able to aspirate liquid and hold liquid for a minimum time of 5 minutes (Diti's) / 1 minute (FTB), no droplets on the worktable during this time.					☐

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Instrument modules	Acceptance values			N/A	Done	Passed
• **System Devices MCA384**				☒		
- Set defaults in EEPROM				☒	☐	
- Set head production data				☒	☐	
- Determine range				☒	☐	
- Determine reference positions	(scaling and offset)			☒	☐	
- Range test	Passed			☒		☐
- Park sensor test	Passed			☒		☐
- Plunger init sensor test	Passed			☒		☐
- Head adapter test	Passed			☒		☐
- **MCA384 Colorimetric Precision Test with QC Kit**	It's required to perform the tests at all indicated volumes of the appropriate tip configuration. (3 plates needed to create the pass / fail report)					
- MCA384 QC kit / 15µl DiTi	Test passed at	0.5µl	CV≤ 4.0% ACC± 10.0%	☒		☐
- MCA384 QC kit / 50µl DiTi	Test passed at	1.0µl	CV≤ 4.0% ACC± 5.0%	☒		☐
- MCA384 QC kit / 125µl DiTi	Test passed at	2.0µl	CV≤ 3.0% ACC± 5.0%	☒		☐
- MCA384 QC kit / small capacity Tipblock	Test passed at	1.0µl	CV≤ 8.0% ACC± 5.0%	☒		☐
- MCA384 QC kit / large capacity Tipblock	Test passed at	5.0µl	CV≤ 4.0% ACC± 5.0%	☒		☐
- Tightness Test, performed in EVOware. scripts available in: \EVOware\database\maintenance	Head is able to aspirate liquid and hold liquid for a minimum time of 5 minutes, no droplets are falling into the Microplate during this time.					☐

Instrument modules, accessories	Acceptance values	N/A	Done	Passed
• **CGM**		☒		
Set defaults in EEPROM		☒	☐	
Calibrate rotator		☒	☐	
Align rotator		☒	☐	
Determine range of y and g axis		☒	☐	
Gripper finger alignment and z-range		☒	☐	
Determine reference positions (scaling an offset)		☒	☐	
Adjust displacement of r and g axis		☒	☐	
Rotator Encoder Test		☒		☐
Park sensor test		☒		☐
Range Test		☒		☐
Plate move test		☒		☐

TECAN. Operation Qualification

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Instrument modules	Acceptance values	N/A	Done	Passed
• **System Devices / PosID2 / PosID-3**		☒		
- Reading Position Test (PosID-3)	Passed	☒		☐
- No Tube Sensor Test	Passed			☐
- Barcode Reading Test	Passed with 5 cycles			☐
• **Options / Access Status Options**				
- I/O Module tests	Passed	☒		☐
- Loading interface tests	Passed	☒		☐
- RSS tests	Passed	☒		☐
- SPO/MPO sensors tests	Passed	☒		☐
- Safety tests	Passed	☐		☒ (3)
• **Options / Incubator**		☒		
- Incubator tests	Passed			☐
• **Options / Te-Link**		☒		
- Te-Link tests	Passed			☐
• **Options / Te-MagS**		☒		
- Te-MagS tests	Passed			☐
• **Options / Te-Shake**		☐		
- Te-Shake tests	Passed			☒ (4)

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• **Options / Te-Stack**		☒		
- Te-Stack tests	Passed			☐
• **Options / Te-MO**		☒		
- Te-MO tests	Passed			☐
• **Options / Te-VacS**		☐		
- Te-VacS tests	Passed			☒ (5)
• **Centrifuge Rotanta**		☒		
- Imbalance test	No imbalance with 30 g / Imbalance with 45 g			☐
- Temperature sensor test	T1, T2, T3 = room temperature +/- 1° C			☐
- Speed test	RPM 3500 ±3%			☐
• **Te-PoolSafe**		☒		
- Te-PoolSafe	Passed according to Doc 395255			☐
Instrument / basic setup	Create EEPROM backup files		☒	
Instrument / Information	Make a printout		☒	(6)
Mobile Tool	Maintain equipment characteristics data in SAP/MAM (e.g. SW version)		☒	

Additional Test	describe test and acceptance values	Done	Passed

The Service Technician confirms that the instrument has been verified in accordance with this operation qualification. Approval by the Lab Manager or responsible person is required.

12mar2014	Niels Andersen, T-NO	Brian Schou Rasmussen
Verification date	Name of Service Technician	Name of Lab Manager
mar 2015		
Next due date maintenance/ verification	Signature	Signature

TECAN. Preventive Maintenance

Purpose This form serves as a checklist to enable the Tecan authorized Service Technician a reference guide on the maintenance process, however, this form does not contain details.

Customer information		**Instrument information**
Contact account		Freedom EVO Clinical 100 ☐ 150 ☐ 200 ☐
Contact person	Brian Schou Rasmussen	Freedom EVO 75 ☐ 100 ☐ 150 ☐ 200 ☒
Lab site	Retskemisk Afdeling	Arm left LiHa ☒AirLiHa ☐Te-Fill ☐RoMa ☐PnP ☐ MCA ☐
Address	Retsmedicinsk Institut	Arm middle LiHa ☐AirLiHa ☐Te-Fill ☐RoMa ☐PnP ☐ MCA ☐
	Københavns Universitet	Arm right LiHa ☐AirLiHa ☐Te-Fill ☐RoMa ☒PnP ☐ MCA ☐
	Frederik V's vej 11, 3. Sal	LiHa configuration No of tips 8 Type of tips std tip
ZIP code + City	2100 København Ø	
Country	DK	Serial number of the instrument 708000319
Service Engineer	Niels Andersen	Instrument new installation ☐ used before ☒

Reference documents	**Document Number**	**Document Version**
Freedom EVO Service Manual	392887	V na
Freedom EVO-2 Service Manual	393828	V 7.4
Freedom EVO-75 Service Manual	394880	V na

System	Interval	Variable — depending on stress condition	Action	N/A	Done
Complete Freedom EVO	Every PM*		Decontaminate system		☒
MCA96 / MCA384	Every PM*		Check tip adapter function	☒	☐
MCA96 / MCA384	Every PM*		Empty / clean wash / waste containers	☒	☐
MCA96 / MCA384	Every PM*		Clean wash block	☒	☐
MCA96 / MCA384	Every PM*		Replace wash liquid filter	☒	☐
Air filter in dust cover	Every PM*		Replace as needed	☒	☐
LiHa MultiSense; pipetting tubing	6 months		Cut low volume tubing to remove tubing section worn out by x-ring	☒	☐
LiHa MultiSense; tip adapter	6 months		Replace Diti Kit MultiSense	☒	☐
Complete Freedom EVO	12 months		Clean system		☒
Frontal arm guide	12 months		Clean		☒
Worktable	12 months		Visually inspection, check grids and replace if necessary		☒
LiHa	12 months		Visually inspection	☐	☒
LiHa; support tubing	12 months		Check condition	☐	☒
LiHa DiTi cone and tubing extension	12 months		Replace	☒	☐
Air LiHa; DiTi cone tip adapter	12months		Replace option DiTi cone Air LiHa	☒	☐
MCA96 / MCA384	12 months		Visually inspection	☒	☐
MCA384; s-motor spindle	12 months		Clean and grease s-motor spindle	☒	☐
MCA96 / MCA384; p-drive	12 months		Check the toothed belt of the p-drive	☒	☐
MCA96 / MCA384; wash system	12 months		Replace the external tubing	☒	☐
MCA96 / MCA384; wash system	12 months		Check the internal of the wash station for corrosion and leakage and replace the internal tubing	☒	☐
MCA96; gripper	12 months		Clean and lubricate gripper spindle	☒	☐
CGM (MCA384 Gripper)	12 months		Visually inspection	☒	☐
RoMa	12 months		Visually inspection	☐	☒
RoMa; Z-rod	12 months		Clean	☐	☒
PnP	12 months		Visually inspection	☒	☐

*Every time when maintenance work is performed

TECAN. Preventive Maintenance

System	Interval	Variable — depending on stress condition	Action	N/A	Done
Liquid system, dilutors	12 months		Replace syringe	☐	☒
Liquid system, diluters	12 months		Replace 3-way valve	☐	☒
LiHa	12 months		Replace fixed tips	☐	☒
LiHa MultiSense Option	12 months		Replace Multisense tip adapter	☒	☐
Liquid system	12 months		Replace aspirating tubing	☐	☒
Liquid system	12 months		Replace interconnecting tubing	☐	☒
Liquid system	12 months		Replace pipetting tubing	☐	☒
Liquid system	12 months		Check and replace waste tubing, if necessary.	☒	☐
LiHa Te-fill option	12 months		Replace complete Te-fill tubing	☒	☐
LiHa; AirLiHa Z-rod	12 months		Clean and apply a very thin layer of grease	☒	☐
X-rail	12 months		Clean and apply thin layer of grease		☒
MCA96; pipetting head	12 months		Replace all 96 tip cone seals	☒	☐
MCA96; pipetting head	12 months		Lubricate the plungers and spindles	☒	☐
MCA384; pipetting head	12 months		Check the gaskets and blunt tubes and replace if necessary	☒	☐
Centrifuge	12 months		Perform the imbalance test	☒	☐
Centrifuge	12 months		Carry out the speed calibration	☒	☐
Centrifuge	12 months		Carry out the temperature calibration	☒	☐
Centrifuge Rotanta 46	12 months		Check hangers for micro cracks; check the expiry date of the hangers.	☒	☐
AirLiHa Cylinder Assembly	12 months	After 500'000 plunger moves	Check number of plunger moves according to service manual, Replace Air LiHa cylinder assembly if necessary.	☒	☐
Verifications performed according to Operating Qualification Doc. 392817	12 months		Perform in S&S		☐
Air LiHa; tip adapter	24 months		Replace tip adapter AirLiHa	☒	☐
Liquid LiHa; tip adapter	24 months		Replace tip adapter on Liquid LiHa used with disposable tips	☒	☐
LiHa; liquid detection	24 months		Replace ILID cables	☐	☒
LiHa MultiSense option	24 months		Replace pressure sensor cables	☒	☐
8 plus 1 ejector blocks	24 months		Replace	☒	☐
MCA96; pipetting head	36 months		Replace the pipeting head	☒	☐
Te-Fill option	36 months		Replace bidirectional pump	☒	☐
Centrifuge Rotanta 46: Rubber- metal bearings	36 months		Check for cracks; if necessary replace	☒	☐
MCA384; pipetting head		After 1'000'000 moves	Replace the pipetting head	☒	☐

The Service Technician confirms that maintenance on the instrument has been performed in accordance with this Preventive Maintenance Checklist.

12mar2014	mar 2015	Niels Andersen, T-NO
Date	next due date maintenance / verification	Service Technician

TECAN. **QC Report**

Rman 2014. 10 ul pip test

(1) (2) IA

Liquid Handling System

LiquidSystem.dll Version:	1.10.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal
Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 13:07:47

Test Result: **Passed**
Tests done: **All**
Test Configuration: **User Defined**

Operator: Service tecan **Date:** Rman 2014 **Signature:** R

Devices

LiHa Arm

Serial Number:	510000060
Address:	C5
Firmware Version:	V1.40-11/2006
Bootware Version:	V1.00-10/2000

Liquid Channel Configuration

	Tip Type	Pipetting Tubing	Syringe Volume [ul]
Tip 1	Fixed Tip Standard	Standard	1000
Tip 2	Fixed Tip Standard	Standard	1000
Tip 3	Fixed Tip Standard	Standard	1000
Tip 4	Fixed Tip Standard	Standard	1000
Tip 5	Fixed Tip Standard	Standard	1000
Tip 6	Fixed Tip Standard	Standard	1000
Tip 7	Fixed Tip Standard	Standard	1000
Tip 8	Fixed Tip Standard	Standard	1000

Aspiration Tubing Configuration

Tubing type: Standard

FaWa

Serial Number:	1001
Address:	C6T30
Firmware Version:	V2.00-11/99
Bootware Version:	V1.00-11/99

Worktable: Retskemisk fixed tip med balance 2014

Balance

Balance type:	AG285
Serial number:	1120503480
Calibration date:	03okt2013
Samples [count]:	5
Tolerance [mg]:	0.10
Weigh Delay [sec]:	0.5

FaWa Test: Passed

Test Configuration Details

Pump duration before opening the valves[ms]:	1000
Duration with open valves[ms]:	3000
Pump duration after closing the valves[ms]:	200
Tube inner diameter [mm]:	13.0

Pass / Fail Criteria

Minimum expected throughput: see detailed results

Detailed Results

Tips

	Throughput	Min throughput	Within limit
Tip 1, Standard	2030 ul/s	1600 ul/s	Yes
Tip 2, Standard	2039 ul/s	1600 ul/s	Yes
Tip 3, Standard	2083 ul/s	1600 ul/s	Yes
Tip 4, Standard	2101 ul/s	1600 ul/s	Yes
Tip 5, Standard	2052 ul/s	1600 ul/s	Yes
Tip 6, Standard	2021 ul/s	1600 ul/s	Yes
Tip 7, Standard	2044 ul/s	1600 ul/s	Yes
Tip 8, Standard	2061 ul/s	1600 ul/s	Yes

Liquid Level Detection Test: Passed

Test Configuration Details

LLD

Common

Cycles:	15
Clot Error Limit [mm]:	4.0
Error Limit [mm]:	1.5
Air Gap [ul]:	30
LLD Speed [mm/sec]:	60.0
Clot LLD Speed [mm/sec]:	40.0
Source Liquid Conductivity:	Bad
Prefill LLD Mode:	Trough mode
Prefill Aspiration Speed [ul/sec]:	100
Prefill Dispense Speed [ul/sec]:	300
Prefill Submerge [mm]:	2.0
Retract Speed [mm/sec]:	20.0
User prompt on error:	enabled

LLD Source Racks

	Name	FirstWell	WellCount
Trough (Prefill > 5ml)	QCTROUGH.RF	1	1
Microplate	QCTROUGH.RF	1	1
Strip Rack	QCTROUGH.RF	1	1

LLD Dest Racks

	Name	FirstWell	WellCount	Interleaved Wells
Trough (Prefill > 5ml)	QCTROUGH.RM	1	1	0
Microplate	MP96_RoMa.RF	1	8	0
Strip Rack	QCTUBE1.R1	1	8	0

LLD Prefill Volume

	Tip1 [ul]	Tip2 [ul]	Tip3 [ul]	Tip4 [ul]	Tip5 [ul]	Tip6 [ul]	Tip7 [ul]	Tip8 [ul]
Trough (Prefill > 5ml)	0	0	0	0	0	0	0	0
Microplate	200	200	200	200	200	200	200	200
Strip Rack	600	600	600	600	600	600	600	600

LLD Liquid

	Submerge [mm]	Liquid Conductivity	LLD Mode
Trough (Prefill > 5ml)	2.0	Good	Trough mode
Microplate	2.0	Bad	Odd / even tips twice
Strip Rack	2.0	Good	Odd / even tips twice

Pass / Fail Criteria

'z-in-dev' smaller or equal 'Error Limit [mm]': 1.5
'Liquid det err' equals 0
'Clot error' equals 0
How these results are achived:

For tips that are expected to find liquid (prefill volume > 0 or destination is a trough):
1) 'Liquid det err' is incremented if no liquid is detected.
2) 'z-in-dev': max difference of the found levels measured over 'Cycles'.
3) 'Clot error' is incremented if no exit signal occures within 'Clot Error Limit'.

For tips that are not expected to find liquid (no prefill and destination is not a trough):
1) 'Liquid det err' is incremented if liquid is detected.
2) 'Clot error' is incremented if an exit signal occures within 'Clot Error Limit'.

Detailed Results

Summary

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-dev	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Trough (Prefill > 5ml)

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	42.9	43.1	42.8	42.9	43.1	42.9	43.0	43.5
z-in-max	42.9	43.2	43.0	43.0	43.2	43.0	43.0	43.6
z-in-dev	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Microplate

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	72.4	72.1	71.7	71.8	72.0	71.6	71.7	72.0
z-in-max	72.7	72.2	71.8	71.9	72.0	71.8	71.8	72.2
z-in-dev	0.3	0.1	0.1	0.1	0.0	0.2	0.1	0.2
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Strip Rack

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	16.8	17.2	17.0	16.5	17.0	17.0	16.6	17.2
z-in-max	16.8	17.2	17.0	16.7	17.0	17.2	16.8	17.2
z-in-dev	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Gravimetric Pipetting Precision Test: Passed

Test Configuration Details

Common

Use next tip for each dispense:	enabled
Liquid type:	Tap water
Density [mg/ul]:	1.000
Liquid Conductivity:	Bad
LLD Mode:	Trough mode

Fixed Tip

Standard

Pipetting Tubing: Standard

10 ul

Test

Cycles: 12

Max CV [%]: 3.500

Aspiration

Aliquotes:	1
Aspiration Delay [msec]:	200
Aspiration Retract Speed [mm/sec]:	20.0
Aspiration Speed [ul/sec]:	30
Aspiration Submerge [mm]:	1.0
Aspiration Volume [ul]:	10.000
Calibration Volume [ul]:	1.000
Detect Speed [mm/sec]:	60
Low-Volume by Aspiration:	disabled

Dispense

Break Off Speed [ul/sec]:	150
Delay Before Pinch [msec]:	500
Dispense Delay [sec]:	0.0
Dispense Speed [ul/sec]:	600
Dispense Volume [ul]:	10.000
Dispense by Dilutor:	enabled
Dispense on LL:	disabled
Dispense on LL Offset [mm]:	0.0
Low-Volume Active:	disabled

Liquid Structure

Air Gap Aspiration Speed [ul/sec]:	70
Conditioning Volume [ul]:	0.000
Conditioning Volumes count:	0
Delay After Conditioning [msec]:	0
Excess Volume [ul]:	0.000
Leading Air Gap [ul]:	10.000
Partition Leading Air Gap [ul]:	0.000
Partition Trailing Air Gap [ul]:	0.000
Partition Volume [ul]:	0.000
System Trailing Air Gap [ul]:	20.000
Trailing Air Gap [ul]:	5.000

Wash

Low-Volume by Wash:	disabled
Wash Speed [ul/sec]:	1000
Wash Volume [ul]:	1000

Pass / Fail Criteria

CV of each channel and over all CV: less or equal 'Max CV [%]'.
No '0' dispenses are allowed. Limit for '0' dispenses: 10% of nominal volume.

History

	Channels	Start time	Operator comment
1. Validation	1, 2, 3, 4, 5, 6, 7, 8	12/Mar/2014 12:18:22	First run

Detailed Results

Fixed Tip / Standard / Pipetting Tubing: Standard / 10 ul

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8	All
Meas 1	9.780	10.020	10.080	10.140	9.920	10.100	9.820	10.260	-
Meas 2	10.080	10.200	10.000	10.400	9.900	9.980	9.780	9.800	-
Meas 3	10.100	9.860	9.960	10.100	10.100	10.180	9.800	9.560	-
Meas 4	9.960	10.060	10.000	10.040	10.100	10.040	9.900	10.000	-
Meas 5	10.080	10.080	10.080	10.260	9.960	10.240	9.900	9.940	-
Meas 6	10.120	9.940	9.820	10.040	10.080	10.020	9.900	9.680	-
Meas 7	10.000	9.800	10.100	10.280	10.080	9.880	9.960	9.900	-
Meas 8	10.100	10.000	10.080	10.400	10.000	9.940	10.040	9.640	-
Meas 9	10.280	10.060	10.000	9.680	9.800	10.000	9.800	9.640	-
Meas 10	9.860	10.120	9.900	9.760	9.780	9.880	10.160	9.380	-
Meas 11	10.180	10.080	10.040	9.900	9.780	9.920	10.060	9.820	-
Meas 12	10.140	10.140	10.080	9.600	9.680	10.000	9.980	9.940	-
Mean [mg]	10.057	10.030	10.012	10.050	9.932	10.015	9.925	9.797	9.977
Mean [ul]	10.057	10.030	10.012	10.050	9.932	10.015	9.925	9.797	9.977
Acc [%]	0.567	0.300	0.117	0.500	-0.683	0.150	-0.750	-2.033	-0.229
CV [%]	1.370	1.152	0.850	2.681	1.468	1.120	1.200	2.385	1.786

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8	All
Max CV [%]	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
Status	passed	passed	passed	passed	passed	passed	passed	passed	passed

Colorimetric Pipetting Precision Test: Not Applicable

Test Configuration Details
Pass / Fail Criteria
Detailed Results

TECAN. **QC Report**

12mc 2014, n
100 ul pip-test

(2) B

Liquid Handling System

LiquidSystem.dll Version:	1.10.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal

Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 14:05:02

Test Result: **Passed**
Tests done: **All**
Test Configuration: **User Defined**

Operator: Service tecan **Date:** 12mar2014 **Signature:** NL

Devices

LiHa Arm

Serial Number:	510000060
Address:	C5
Firmware Version:	V1.40-11/2006
Bootware Version:	V1.00-10/2000

Liquid Channel Configuration

	Tip Type	Pipetting Tubing	Syringe Volume [ul]
Tip 1	Fixed Tip Standard	Standard	1000
Tip 2	Fixed Tip Standard	Standard	1000
Tip 3	Fixed Tip Standard	Standard	1000
Tip 4	Fixed Tip Standard	Standard	1000
Tip 5	Fixed Tip Standard	Standard	1000
Tip 6	Fixed Tip Standard	Standard	1000
Tip 7	Fixed Tip Standard	Standard	1000
Tip 8	Fixed Tip Standard	Standard	1000

Aspiration Tubing Configuration

Tubing type: Standard

FaWa

Serial Number:	1001
Address:	C6T30
Firmware Version:	V2.00-11/99
Bootware Version:	V1.00-11/99

Worktable: Retskemisk fixed tip med balance 2014

Balance

Balance type:	AG285
Serial number:	1120503480
Calibration date:	03okt2013
Samples [count]:	5
Tolerance [mg]:	0.10
Weigh Delay [sec]:	0.5

FaWa Test: Passed

Test Configuration Details

Pump duration before opening the valves[ms]:	1000
Duration with open valves[ms]:	3000
Pump duration after closing the valves[ms]:	200
Tube inner diameter [mm]:	13.0

Pass / Fail Criteria

Minimum expected throughput: see detailed results

Detailed Results

Tips

	Throughput	Min throughput	Within limit
Tip 1, Standard	2030 ul/s	1600 ul/s	Yes
Tip 2, Standard	2039 ul/s	1600 ul/s	Yes
Tip 3, Standard	2083 ul/s	1600 ul/s	Yes
Tip 4, Standard	2101 ul/s	1600 ul/s	Yes
Tip 5, Standard	2052 ul/s	1600 ul/s	Yes
Tip 6, Standard	2021 ul/s	1600 ul/s	Yes
Tip 7, Standard	2044 ul/s	1600 ul/s	Yes
Tip 8, Standard	2061 ul/s	1600 ul/s	Yes

Liquid Level Detection Test: Passed

Test Configuration Details

LLD

Common

Cycles:	15
Clot Error Limit [mm]:	4.0
Error Limit [mm]:	1.5
Air Gap [ul]:	30
LLD Speed [mm/sec]:	60.0
Clot LLD Speed [mm/sec]:	40.0
Source Liquid Conductivity:	Bad
Prefill LLD Mode:	Trough mode
Prefill Aspiration Speed [ul/sec]:	100
Prefill Dispense Speed [ul/sec]:	300
Prefill Submerge [mm]:	2.0
Retract Speed [mm/sec]:	20.0
User prompt on error:	enabled

LLD Source Racks

	Name	FirstWell	WellCount
Trough (Prefill > 5ml)	QCTROUGH.RF	1	1
Microplate	QCTROUGH.RF	1	1
Strip Rack	QCTROUGH.RF	1	1

LLD Dest Racks

	Name	FirstWell	WellCount	Interleaved Wells
Trough (Prefill > 5ml)	QCTROUGH.RM	1	1	0
Microplate	MP96_RoMa.RF	1	8	0
Strip Rack	QCTUBE1.R1	1	8	0

LLD Prefill Volume

	Tip1 [ul]	Tip2 [ul]	Tip3 [ul]	Tip4 [ul]	Tip5 [ul]	Tip6 [ul]	Tip7 [ul]	Tip8 [ul]
Trough (Prefill > 5ml)	0	0	0	0	0	0	0	0
Microplate	200	200	200	200	200	200	200	200
Strip Rack	600	600	600	600	600	600	600	600

LLD Liquid

	Submerge [mm]	Liquid Conductivity	LLD Mode
Trough (Prefill > 5ml)	2.0	Good	Trough mode
Microplate	2.0	Bad	Odd / even tips twice
Strip Rack	2.0	Good	Odd / even tips twice

Pass / Fail Criteria

'z-in-dev' smaller or equal 'Error Limit [mm]': 1.5
'Liquid det err' equals 0
'Clot error' equals 0
How these results are achived:

For tips that are expected to find liquid (prefill volume > 0 or destination is a trough):
1) 'Liquid det err' is incremented if no liquid is detected.
2) 'z-in-dev': max difference of the found levels measured over 'Cycles'.
3) 'Clot error' is incremented if no exit signal occures within 'Clot Error Limit'.

For tips that are not expected to find liquid (no prefill and destination is not a trough):
1) 'Liquid det err' is incremented if liquid is detected.
2) 'Clot error' is incremented if an exit signal occures within 'Clot Error Limit'.

Detailed Results

Summary

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-dev	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Trough (Prefill > 5ml)

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	42.9	43.1	42.8	42.9	43.1	42.9	43.0	43.5
z-in-max	42.9	43.2	43.0	43.0	43.2	43.0	43.0	43.6
z-in-dev	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Microplate

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	72.4	72.1	71.7	71.8	72.0	71.6	71.7	72.0
z-in-max	72.7	72.2	71.8	71.9	72.0	71.8	71.8	72.2
z-in-dev	0.3	0.1	0.1	0.1	0.0	0.2	0.1	0.2
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Strip Rack

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	16.8	17.2	17.0	16.5	17.0	17.0	16.6	17.2
z-in-max	16.8	17.2	17.0	16.7	17.0	17.2	16.8	17.2
z-in-dev	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Gravimetric Pipetting Precision Test: Passed

Test Configuration Details

Common

Use next tip for each dispense:	enabled
Liquid type:	Tap water
Density [mg/ul]:	1.000
Liquid Conductivity:	Bad
LLD Mode:	Trough mode

Fixed Tip

Standard

Pipetting Tubing: Standard

100 ul

Test

Cycles: 12

Max CV [%]: 0.750

Aspiration

Aliquotes:	1
Aspiration Delay [msec]:	200
Aspiration Retract Speed [mm/sec]:	20.0
Aspiration Speed [ul/sec]:	150
Aspiration Submerge [mm]:	2.0
Aspiration Volume [ul]:	100.000
Calibration Volume [ul]:	3.000
Detect Speed [mm/sec]:	60
Low-Volume by Aspiration:	disabled

Dispense

Break Off Speed [ul/sec]:	150
Delay Before Pinch [msec]:	500
Dispense Delay [sec]:	0.0
Dispense Speed [ul/sec]:	600
Dispense Volume [ul]:	100.000
Dispense by Dilutor:	enabled
Dispense on LL:	disabled
Dispense on LL Offset [mm]:	0.0
Low-Volume Active:	disabled

Liquid Structure

Air Gap Aspiration Speed [ul/sec]:	70
Conditioning Volume [ul]:	0.000
Conditioning Volumes count:	0
Delay After Conditioning [msec]:	0
Excess Volume [ul]:	0.000
Leading Air Gap [ul]:	0.000
Partition Leading Air Gap [ul]:	0.000
Partition Trailing Air Gap [ul]:	0.000
Partition Volume [ul]:	0.000
System Trailing Air Gap [ul]:	20.000
Trailing Air Gap [ul]:	10.000

Wash

Low-Volume by Wash:	disabled
Wash Speed [ul/sec]:	1000
Wash Volume [ul]:	1000

Pass / Fail Criteria

CV of each channel and over all CV: less or equal 'Max CV [%]'.
No '0' dispenses are allowed. Limit for '0' dispenses: 10% of nominal volume.

History

	Channels	Start time	Operator comment
1. Validation	1, 2, 3, 4, 5, 6, 7, 8	12/Mar/2014 13:14:22	First run

Detailed Results

Fixed Tip / Standard / Pipetting Tubing: Standard / 100 ul

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8	All
Meas 1	98.760	99.400	99.000	99.500	98.960	99.380	98.960	98.720	-
Meas 2	99.120	99.000	98.920	99.300	98.920	99.580	98.700	98.680	-
Meas 3	99.300	99.220	98.820	99.160	99.020	99.500	99.000	98.560	-
Meas 4	99.100	99.140	99.020	99.100	99.020	99.440	98.780	98.840	-
Meas 5	99.000	99.100	98.940	99.000	99.020	99.680	98.760	98.680	-
Meas 6	99.040	99.240	99.100	99.080	98.940	99.720	98.720	98.620	-
Meas 7	99.100	99.080	99.140	99.140	98.800	99.580	98.860	98.580	-
Meas 8	98.820	99.160	99.200	99.020	98.860	99.520	98.720	98.460	-
Meas 9	98.920	99.200	99.000	99.420	98.880	99.600	98.840	98.840	-
Meas 10	98.900	99.140	98.940	99.640	98.860	99.560	98.640	98.780	-
Meas 11	99.380	99.680	98.980	99.700	99.000	99.660	99.140	98.720	-
Meas 12	99.000	99.020	99.180	99.380	98.880	99.620	98.820	98.700	-
Mean [mg]	99.037	99.198	99.020	99.287	98.930	99.570	98.828	98.682	99.069
Mean [ul]	99.037	99.198	99.020	99.287	98.930	99.570	98.828	98.682	99.069
Acc [%]	-0.963	-0.802	-0.980	-0.713	-1.070	-0.430	-1.172	-1.318	-0.931
CV [%]	0.183	0.187	0.116	0.242	0.076	0.099	0.146	0.115	0.304

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8	All
Max CV [%]	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750
Status	passed	passed	passed	passed	passed	passed	passed	passed	passed

Colorimetric Pipetting Precision Test: Not Applicable

Test Configuration Details
Pass / Fail Criteria
Detailed Results

TECAN. **QC Report**

(3)

Safety Device Test

Safety.dll Version:	1.13.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal
Safety Serial Number:	7230367
Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 14:07:37
Test Result:	**Passed**
Tests done:	**All**
Test Configuration:	**User Defined**
Device Default Settings:	**na**

Operator: Service tecan **Date:** 12 Mar 2014 **Signature:** RE

Device

Configuration

Firmware Version: V1.30-04/2008
Bootware Version: V1.10-12/99

Available Options

Door Lock 1 (left)
Door Lock 2 (right)
Alarm Device: standard
Pause / Resume Button

Door Lock Test: Passed

Test Configuration Details

The door lock test is performed once

Pass / Fail Criteria

All questions about the door locks are confirmed with OK
The sensors recognize the open/locked status correctly

Detailed Results

Door Lock 1 (left): Passed
Door Lock 2 (right): Not configured for test

Pause / Resume Button Test: Passed

Test Configuration Details

The Pause / Resume button test is performed once

Pass / Fail Criteria

Pause Button interrupts received correctly

Detailed Results

Pause / Resume Button: Passed

Alarm Device Test: Passed

Test Configuration Details

The alarm device test is performed once

Pass / Fail Criteria

All questions about the alarm device are confirmed with OK

Detailed Results

Alarm Green:	Passed
Alarm Red / Acoustic:	Passed

TECAN. **QC Report** (4)

Te-Shake Device Test

TeShake.dll Version:	1.17.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal
Te-Shake Serial Number:	7990
Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 14:09:15
Test Result:	**Passed**
Tests done:	**Not All**
Test Configuration:	**Default**
Device Default Settings:	**Default**

Operator: Service tecan **Date:** 12 Mar 2014 **Signature:** [signature]

Device

Configuration

Shaker Type:	1 Heating Plate
Firmware Version:	V1.10-07/2001
Bootware Version:	V1.20-09/99

Diagnostics

Power up Counter:	857
Operating Time [minutes]:	281436
Initialization Counter:	2350
Movement Counter:	9506
Overload Counter:	0

Plates

Eppendorf [Plate Type]: 1

Mechanical Burn-In / Validation: Passed

Test Configuration Details

Shake Time [sec]:	60
Minimum Speed [rpm]:	1200
Maximum Speed [rpm]:	1200
Interval Time [sec]:	30
Interval Step [rpm]:	100
Heating Block Connected:	Yes

Pass / Fail Criteria

Maximum Number of Initialization Errors:	0
Maximum Move errors:	0

Detailed Results

Move Errors:	0
Initialization Errors:	0

Test Configuration: Default

Heating Burn-In: Not Done

Test Configuration Details
Pass / Fail Criteria
Detailed Results

Heating Validation with TEMPO110: Not Done

Optional test to validate the heating plate surface temperature on request of customer (on site)
Test Configuration Details
Pass / Fail Criteria
Detailed Results

TECAN. **QC Report** (5)

Te-VacS Device Test

TeVacS.dll Version:	1.15.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal
Te-VacS Serial Number:	7019
Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 14:14:01
Test Result:	**Passed**
Tests done:	**All**
Test Configuration:	**User Defined**
Device Default Settings:	**na**

Operator: Service tecan **Date:** 12 mar 2014 **Signature:**

Liquid Level Sensor Test: ***Passed***
Pressure Sensor Calibration Test: ***Passed***
Extraction Valve Function Test: ***Passed***
Pump Performance Test: ***Passed***
Ventilation Valve Function Test: ***Passed***
Leakage Test: ***Passed***

Device Settings

Type: Chemical resistent

Duty Cycle timing

On Time [ms]: 6
Off Time [ms]: 16

Duty Cycle usage

Control Valve:	off
Extraction Valve 1:	off
Ventilation Valve 1:	off
Extraction Valve 2:	off
Ventilation Valve 2:	off

Test Configuration

External gauge used: **no**
Vacuum blocks used: **1**
Ambient pressure equalisation timeout [s]: **15**
Pressure and Timeout

	Pressure [kPa]	Timeout [s]
Maximum pump performance	70	50
Extraction valve	45	3
Leakage test initial	60	40
Maximum leakage	3	60
Ventilation valve	12	3

Detailed Results

Ambient Pressure Equalisation Time [s]: 4.313

Extraction Valve

	Maximum Pump Performance Time [s]	Flowrate Pressure [kPa]
Valve 1	11.547	65
Valve 2	11.016	66

Ventilation Valve

	Leakage Test Initial Time [s]	Leakage Pressure [kPa]	Flowrate Pressure [kPa]
Valve 1	9.891	2	31
Valve 2	9.813	3	30

TECAN. **QC Report**

Instrument Information

Information.dll Version:	1.15.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal
Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 09:20:48

Operator: Service tecan **Date:** 12 Mar 2014 **Signature:**

Instrument Information

Instrument Properties

Type: freedom evo
Size: 150
Arm order

	Arm	Addr	Movable Range [mm]	Deviation [mm]	Deviation Limit [mm]
1	LiHa	C5	1002.3	1.3	na
2	RoMa	C1	1002.6	1.6	na

Diagnostics Data

Power Ups:	1039
On Time [h]:	18988.57
Downloads:	4
Page erases:	129

Device Information

	Device	Firmware	Bootware	Serial Number
C2T00	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-

	Device	Firmware	Bootware	Serial Number
C2T02	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C2T04	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T00	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T02	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T04	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T06	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T08	DCSERVO2	V1.21-04/2007	V1.00-05/2003	-
C6T0A	DCSERVO2	V1.20-8/2005	V1.00-05/2003	-
C6T20	XP2000	V1.10-03/2006	V1.02-04/2002	504217493
C6T21	XP2000	V1.10-03/2006	V1.02-04/2002	706003100
C6T22	XP2000	V1.10-03/2006	V1.02-04/2002	706003101
C6T23	XP2000	V1.10-03/2006	V1.02-04/2002	706003102
C6T24	XP2000	V1.10-03/2006	V1.02-04/2002	706003103
C6T25	XP2000	V1.10-03/2006	V1.02-04/2002	706007314
C6T26	XP2000	V1.10-03/2006	V1.02-04/2002	706007315
C6T27	XP2000	V1.10-03/2006	V1.02-04/2002	706007316
C5	LIHACU	V1.40-11/2006	V1.00-10/2000	510000060
C6T30	MPO	V2.00-11/99	V1.00-11/99	1001
O7	ORBI	V1.10-07/2001	V1.20-09/99	7990
C1	ROMACU	V2.21-09/2007	V1.00-10/2000	708000317
O2	SAFY	V1.30-04/2008	V1.10-12/99	7230367
O5	SPE	V2.10-12/01	V1.00-11/99	7019
M1	TECU	V1.40-12/2007	V1.10-07/2005	708000319

LiHa Arm

Address: C5
Serial Number: 510000060
Firmware Version: V1.40-11/2006
Bootware Version: V1.00-10/2000
Tips: 8
Spacing: 9.0 - 38.0 mm variable
Lower DiTi Eject: available
LLD Type: Standard ilid
Axes Parameters

	Offset	Displ	Range	Scale	Accel	Speed	Move Speed
X	1.0	-15.1	987.2	0.9996	160.0	1000.0	100.0
Y	1.0	-88.9	284.5	1.0000	240.0	350.0	35.0
Ys	1.0	9.0	38.0	1.0012	240.0	350.0	35.0
Z1	8.5	39.0	171.0	1.0000	200.0	400.0	40.0
Z2	8.5	39.0	171.0	1.0000	200.0	400.0	40.0
Z3	8.5	39.0	171.0	1.0000	200.0	400.0	40.0
Z4	8.4	39.0	171.0	1.0000	200.0	400.0	40.0
Z5	8.5	39.0	171.0	1.0000	200.0	400.0	40.0
Z6	8.4	39.0	171.0	1.0000	200.0	400.0	40.0

	Offset	Displ	Range	Scale	Accel	Speed	Move Speed
Z7	8.5	39.0	171.0	1.0000	200.0	400.0	40.0
Z8	8.5	39.0	171.0	1.0000	200.0	400.0	40.0

Diagnostics Data

	Moves	Moves (cl)	Distance	No-Loads	Fetched DiTi's	Piercings	Status
X	122893	122893	24470	24	-	-	ready
Y	112041	112041	9194	15	-	-	ready
Ys	112048	112048	9158	9	-	-	ready
Z1	418760	418760	23821	94	11445	0	ready
Z2	358038	358038	21832	50	10231	0	ready
Z3	352405	352405	21417	100	9791	0	ready
Z4	351959	351959	21406	65	9797	0	ready
Z5	349130	349130	21229	52	9649	0	ready
Z6	348713	348713	21230	51	9648	0	ready
Z7	347511	347511	21142	57	9612	0	ready
Z8	339770	339770	21594	60	9733	0	ready

Te-Fill: NA

RoMa Arm

Address: C1
Serial Number: 708000317
Firmware Version: V2.21-09/2007
Bootware Version: V1.00-10/2000
Type: Eccentric Gripper, CW Rotator, Standard Z-Range
Axes Parameters

	Offset	Displ	Range	Scale	Accel	Speed	Move Speed
X	2.0	127.9	1130.5	0.9997	160.0	1000.0	100.0
Y	1.0	-61.0	323.8	1.0180	100.0	350.0	80.0
Z	1.0	0.0	253.9	1.0000	85.0	130.0	50.0
R	4.4	0.0	275.5	0.9950	60.0	200.0	60.0
G	2.0	56.0	139.0	1.0000	30.0	40.0	10.0

Gripper PWM [%]: 75
Diagnostics Data

Gripped Plates: 9300
Axes

	Moves	Moves (cl)	Distance	No-Loads	Status
X	44910	44910	6723	10	ready
Y	46153	46153	4036	1	ready
Z	135848	135848	5625	1	ready
R	27227	27227	2356	13	ready
G	22571	22571	513	24	ready

Version Information

System Modules

	Version	Description	Copyright	Original Filename	Product Name
SnSFrame.exe	6.3.13.0	Instrument Setup and Service Application	Copyright © Tecan Schweiz AG 2004 - 2009	SnSFrame.exe	Setup and Service
Genesis.dll	1.17.13.401	Device library for GENESIS Instruments	Copyright © Tecan Schweiz AG 2008	Genesis.dll	Setup and Service
Panel.dll	1.17.13.0	Base classes for concreate Panel Modules	Copyright © Tecan Schweiz AG 2008	Panel.DLL	Setup and Service
OSpp.dll	1.15.13.0	C++ wrapper for WinApp functions	Copyright © Tecan Schweiz AG 2008	OSpp.dll	Setup and Service
GUIExtensions.dll	1.16.13.0	GUI Extensions based on MFC controls. Used by Panel base classes and concrete panels	Copyright © Tecan Schweiz AG 2008	GUIExtensions.dll	Setup and Service
TCSDriver.dll	1.2.13.0	TCSDriver Tecan Communication Server	Copyright © Tecan Schweiz AG 2008	TCSDriver.dll	Setup and Service
TLSDriver.dll	1.5.13.0	TLSDriver - Tecan Login Server	Copyright © Tecan Schweiz AG 2008	TLSDriver.dll	Setup and Service
ZLIB.dll	1.1.3.1	zlib data compression library	(C) 1995-1998 Jean-loup Gailly & Mark Adler	zlib.dll	ZLib.DLL
VPEP3236.dll	3.60.0.4	Virtual Print Engine Professional Edition	Copyright © 1995 - 2005 IDEAL Software® GmbH. All rights reserved.	-	Virtual Print Engine Professional Edition

Panels

	Version	Description	Copyright	Original Filename	Product Name	Product Version
BasicSetup.dll	1.17.13.0	Setup module for basic setups	Copyright © Tecan Schweiz AG 2008	BasicSetup.dll	Setup and Service	6.3
CheckCarrierPosition.dll	1.8.13.0	Tool to check carrier positions according to worktable DB	Copyright © Tecan Schweiz AG 2008	CheckCarrierPosition.DLL	Setup and Service	6.3
CommandTool.dll	1.15.13.0	Tool module for FW Commands	Copyright © Tecan Schweiz AG 2008	CommandTool.dll	Setup and Service	6.3
DiTiTest.dll	1.10.13.0	Setup and QC Test module for DiTiTest	Copyright © Tecan Schweiz AG 2008	DiTiTest.DLL	Setup and Service	6.3
Incubator.dll	2.3.13.0	Setup and QC Test module for Incubator	Copyright © Tecan Schweiz AG 2008	Incubator.DLL	Setup and Service	6.3
Information.dll	1.15.13.0	Tool module for Information	Copyright © Tecan Schweiz AG 2008	Information.dll	Setup and Service	6.3
IOModule.dll	1.13.13.0	Setup and QC Test module for I/O-Option	Copyright © Tecan Schweiz AG 2008	iomodule.DLL	Setup and Service	6.3
LiHa.dll	1.17.13.0	Setup and QC Test module for LiHa	Copyright © Tecan Schweiz AG 2008	Liha.dll	Setup and Service	6.3
LiquidSystem.dll	1.10.13.0	Setup and QC Test module for Liquid System	Copyright © Tecan Schweiz AG 2008	Liquid System.DLL	Setup and Service	6.3
LoadingInterface.dll	1.13.13.0	Setup and QC Test module for Loading Interface of EVO	Copyright © Tecan Schweiz AG 2008	LoadingInterface.DLL	Setup and Service	6.3
MoveTest.dll	1.17.13.0	QC Test Module for RoMa, LiHa and PosID Move Tests	Copyright © Tecan Schweiz AG 2008	MoveTest.dll	Setup and Service	6.3

	Version	Description	Copyright	Original Filename	Product Name	Product Version
PMP.dll	1.10.13.0	Setup and QC Test module for PMP	Copyright © Tecan Schweiz AG 2008	PMP.DLL	Setup and Service	6.3
PosID2.dll	1.14.13.0	Setup and QC Test module for PosID2	Copyright © Tecan Schweiz AG 2008	PosID2.DLL	Setup and Service	6.3
PosID3.dll	1.10.13.0	Setup and QC Test module for PosID3	Copyright © Tecan Schweiz AG 2008	PosID3.DLL	Setup and Service	6.3
Repositioner.dll	1.14.13.0	Setup and QC Test module for Repositioner	Copyright © Tecan Schweiz AG 2008	Repositioner.DLL	Setup and Service	6.3
Results.dll	1.13.13.0	Setup and QC Test module for Results	Copyright © Tecan Schweiz AG 2008	Results.DLL	Setup and Service	6.3
RoboticDevices.dll	1.10.13.0	Tool module for robotic devices	Copyright © Tecan Schweiz AG 2008	RoboticDevices.DLL	Setup and Service	6.3
RoMa.dll	1.17.13.0	Setup and QC Test module for RoMa	Copyright © Tecan Schweiz AG 2008	RomaModule.DLL	Setup and Service	6.3
Safety.dll	1.13.13.0	Setup and QC Test module for Safety	Copyright © Tecan Schweiz AG 2008	Safety.DLL	Setup and Service	6.3
SpoMpo.dll	1.13.13.0	Setup and QC Test module for SPO-MPO	Copyright © Tecan Schweiz AG 2008	SpoMpo.DLL	Setup and Service	6.3
Supervisor2.dll	1.13.13.0	Setup and QC Test module for Supervisor2	Copyright © Tecan Schweiz AG 2008	Supervisor2.DLL	Setup and Service	6.3
TeFill.dll	1.6.13.0	Setup and QC Test module for Te-Fill	Copyright © Tecan Schweiz AG 2008	TeFill.DLL	Setup and Service	6.3
TeLink.dll	1.14.13.0	Setup and QC Test module for Shuttle	Copyright © Tecan Schweiz AG 2008	Shuttle.DLL	Setup and Service	6.3
TeMags.dll	1.17.13.0	Setup and QC Test module for Te-MagS	Copyright © Tecan Schweiz AG 2008	TeMags.dll	Setup and Service	6.3
TeShake.dll	1.17.13.0	Setup and QC Test module for Te-Shake	Copyright © Tecan Schweiz AG 2008	TeShake.DLL	Setup and Service	6.3
TeVacS.dll	1.15.13.0	Setup and QC Test module for Te-VacS	Copyright © Tecan Schweiz AG 2008	TeVacS.dll	Setup and Service	6.3

TECAN. **QC Report**

Liquid Handling System

LiquidSystem.dll Version:	1.10.13.0
Panel.dll Version:	1.17.13.0
Genesis.dll Version:	1.17.13.401
GUIExtensions.dll Version:	1.16.13.0
OSpp.dll Version:	1.15.13.0
Setup and Service Version:	6.3.13.0
Computer Name:	PROD-2655.prodnet.internal

Instrument Type:	EVO
Instrument Serial Number:	708000319
Tools [Type, SN]:	None specified
Date:	12/Mar/2014 12:04:37

Test Result: **Passed**
Tests done: **Not All**
Test Configuration: **Default**

Operator: Service tecan **Date:** 12mar2014 **Signature:**

Devices

LiHa Arm

Serial Number:	510000060
Address:	C5
Firmware Version:	V1.40-11/2006
Bootware Version:	V1.00-10/2000

Liquid Channel Configuration

	Tip Type	Pipetting Tubing	Syringe Volume [ul]
Tip 1	Fixed Tip Standard	Standard	1000
Tip 2	Fixed Tip Standard	Standard	1000
Tip 3	Fixed Tip Standard	Standard	1000
Tip 4	Fixed Tip Standard	Standard	1000
Tip 5	Fixed Tip Standard	Standard	1000
Tip 6	Fixed Tip Standard	Standard	1000
Tip 7	Fixed Tip Standard	Standard	1000
Tip 8	Fixed Tip Standard	Standard	1000

Aspiration Tubing Configuration

Tubing type: Standard

FaWa

Serial Number:	1001
Address:	C6T30
Firmware Version:	V2.00-11/99
Bootware Version:	V1.00-11/99

Worktable: Retskemisk fixed tip LD 2014

FaWa Test: Passed

Test Configuration Details

Pump duration before opening the valves[ms]:	1000
Duration with open valves[ms]:	3000
Pump duration after closing the valves[ms]:	200
Tube inner diameter [mm]:	13.0

Pass / Fail Criteria

Minimum expected throughput: see detailed results

Detailed Results

Tips

	Throughput	Min throughput	Within limit
Tip 1, Standard	2030 ul/s	1600 ul/s	Yes
Tip 2, Standard	2039 ul/s	1600 ul/s	Yes
Tip 3, Standard	2083 ul/s	1600 ul/s	Yes
Tip 4, Standard	2101 ul/s	1600 ul/s	Yes
Tip 5, Standard	2052 ul/s	1600 ul/s	Yes
Tip 6, Standard	2021 ul/s	1600 ul/s	Yes
Tip 7, Standard	2044 ul/s	1600 ul/s	Yes
Tip 8, Standard	2061 ul/s	1600 ul/s	Yes

Liquid Level Detection Test: Passed

Test Configuration Details

LLD

Common

Cycles:	15
Clot Error Limit [mm]:	4.0
Error Limit [mm]:	1.5
Air Gap [ul]:	30
LLD Speed [mm/sec]:	60.0
Clot LLD Speed [mm/sec]:	40.0
Source Liquid Conductivity:	Bad
Prefill LLD Mode:	Trough mode
Prefill Aspiration Speed [ul/sec]:	100
Prefill Dispense Speed [ul/sec]:	300
Prefill Submerge [mm]:	2.0
Retract Speed [mm/sec]:	20.0
User prompt on error:	enabled

LLD Source Racks

	Name	FirstWell	WellCount
Trough (Prefill > 5ml)	QCTROUGH.RF	1	1
Microplate	QCTROUGH.RF	1	1
Strip Rack	QCTROUGH.RF	1	1

LLD Dest Racks

	Name	FirstWell	WellCount	Interleaved Wells
Trough (Prefill > 5ml)	QCTROUGH.RM	1	1	0
Microplate	MP96_RoMa.RF	1	8	0
Strip Rack	QCTUBE1.R1	1	8	0

LLD Prefill Volume

	Tip1 [ul]	Tip2 [ul]	Tip3 [ul]	Tip4 [ul]	Tip5 [ul]	Tip6 [ul]	Tip7 [ul]	Tip8 [ul]
Trough (Prefill > 5ml)	0	0	0	0	0	0	0	0
Microplate	200	200	200	200	200	200	200	200
Strip Rack	600	600	600	600	600	600	600	600

LLD Liquid

	Submerge [mm]	Liquid Conductivity	LLD Mode
Trough (Prefill > 5ml)	2.0	Good	Trough mode
Microplate	2.0	Bad	Odd / even tips twice
Strip Rack	2.0	Good	Odd / even tips twice

Pass / Fail Criteria

'z-in-dev' smaller or equal 'Error Limit [mm]': 1.5
'Liquid det err' equals 0
'Clot error' equals 0
How these results are achived:

For tips that are expected to find liquid (prefill volume > 0 or destination is a trough):

1) 'Liquid det err' is incremented if no liquid is detected.
2) 'z-in-dev': max difference of the found levels measured over 'Cycles'.
3) 'Clot error' is incremented if no exit signal occures within 'Clot Error Limit'.

For tips that are not expected to find liquid (no prefill and destination is not a trough):

1) 'Liquid det err' is incremented if liquid is detected.

2) 'Clot error' is incremented if an exit signal occures within 'Clot Error Limit'.

Detailed Results

Summary

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-dev	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Trough (Prefill > 5ml)

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	42.9	43.1	42.8	42.9	43.1	42.9	43.0	43.5
z-in-max	42.9	43.2	43.0	43.0	43.2	43.0	43.0	43.6
z-in-dev	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Microplate

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	72.4	72.1	71.7	71.8	72.0	71.6	71.7	72.0
z-in-max	72.7	72.2	71.8	71.9	72.0	71.8	71.8	72.2
z-in-dev	0.3	0.1	0.1	0.1	0.0	0.2	0.1	0.2
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Strip Rack

	Tip 1	Tip 2	Tip 3	Tip 4	Tip 5	Tip 6	Tip 7	Tip 8
z-in-min	16.8	17.2	17.0	16.5	17.0	17.0	16.6	17.2
z-in-max	16.8	17.2	17.0	16.7	17.0	17.2	16.8	17.2
z-in-dev	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0
z-out-min	na	na	na	na	na	na	na	na
z-out-max	na	na	na	na	na	na	na	na
z-out-dev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid det err	0	0	0	0	0	0	0	0
Clot error	0	0	0	0	0	0	0	0
Passed	yes	yes	yes	yes	yes	yes	yes	yes

Gravimetric Pipetting Precision Test: Not Done

Test Configuration Details
Pass / Fail Criteria
History
Detailed Results

Colorimetric Pipetting Precision Test: Not Applicable

Test Configuration Details
Pass / Fail Criteria
Detailed Results

DANAK
CAL Reg.nr. 9

Kalibreringscertifikat / Calibration Certificate

FORCE TECHNOLOGY

Nummer/number:	9.12-1820
Task/file:	113-30947
Dato/date:	2013-10-03
Side/page:	1 af 4/1 of 4
Bilag/appendices:	Ingen/none.

Opgave/task: Akkrediteret kalibrering af konventionel værdi af masse.
Accredited calibration of conventional value of mass.

Kundeudstyr/items: 1 stk. 10 g E2, 1 stk. 1 g E2, 1 stk. 100 mg E2, 1 stk. 10 mg E2.

Kunde/customer: Tecan Nordic AB Danmark
Himmellevvej 29
4000 Roskilde

Attentionperson/for the attention of: Niels Andersen
Ordre/order:

Resultater/results: Se side 2/calibration results are on page 2.

Kal. Dato/date of calibration: 2013-10-03 / 03/10/2013

Kal. af/operator: KLP

Metode/procedure: Instruktionerne 2-09-0206 og 2-09-0208 samt OIML D 28 (2004).
Instructions numbered 2-09-0206 and 2-09-0208. OIML D 28 (2004).

Udstyr/equipment: Se side 4/Equipment is listed on page 4.

Sporbarhed/traceability: Kalibreringsresultaterne er sporbare til den internationale kilogram prototype i Paris. Dansk Fundamental Metrologi A/S vedligeholder sporbarheden.
The mass standards are traceable to the international prototype of the kilogram. The traceability is maintained by Danish Fundamental Metrology A/S.

Underskrifter/signatures:

Flemming Grud Madsen
Kontrollant/Controller 2013-10-03
fgm@force.dk

Klaus Poulsen
Underskriftberettiget/Signatory
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Udstyrs-betegnelse	Lod-mærkning	Konventionel værdi af masse ± ekspanderet usikkerhed	Massefylde ± ekspanderet usikkerhed, dækningsfaktor er 2	Masse: Dæknings-faktor / Friheds-grader	Lodkode
Designation of equipment	Mark on weight	Conventionel value of mass ± expanded uncertainty	Density ± expanded uncertainty, coverage factor is 2	Mass: Coverage factor / degrees of freedom	Weight Code

Måleværdi tillagt måleusikkerhed er indenfor tolerance: Overensstemmelse.
The measurement result is within the tolerance when added the measurement uncertainty: Compliance.

ZO 158	10,000011 ± 0,000020 g	7950 ± 140 kg/m3	2 / > 50	06-04-02-01-01-10
128235	1,000005 ± 0,000010 g	7950 ± 140 kg/m3	2 / > 50	06-02-02-01-03-10
15836	100,0033 ± 0,0050 mg	7950 ± 140 kg/m3	2 / > 50	05-02-02-01-03-10
15833	10,0022 ± 0,0026 mg	7950 ± 140 kg/m3	2 / > 50	05-02-02-01-03-10

Der er ved beregning af måleusikkerhed anvendt en dækningssandsynlighed på 95 %.
A confidence level of 95 % is used for calculation of measurement uncertainty.

Luftens massefylde/The density of air 1,189 - 1,191 kg/m3

Lodkoden er sammensat af Form, Fabrikat, Materiale, Overflade, Emballage og Klasse
Den har formen Form- Fabrikat-Materiale-Overflade-Emballage-Klasse
Weight Code is composed of Shape, Manufacturer, Material, Surface, Packing and Class.
It is written as Shape-Manufacturer-Material-Surface-Packing-Class.

Form/Shape
01 Anden form
Undefined
02 Cylinder
Cylindrical
03 Blok
Parallelepiped
04 Plade
Sheet
05 Tråd
Wire
06 Cylinder med fladt håndtag
Cylindrical with lifting knob
07 Cylinder med knap
Cylindrical with small knob
08 Kroglod
With hook
09 Tønde
Barrel shaped
10 Ring
Ring shaped
11 Omvendt keglestub
Truncated cone
12 Kegle med hank
Conical with handle
13 Kegle med knap
Conical with small knob
14 Sekskant
Hexagonal
15 Kasse
Box shaped
16 Skivelod
Disc shaped

Fabrikat/Manufacturer
01 Ukendt/Unknown
02 Mettler-Toledo
03 Haigis
04 Zwiebel
05 Kern
06 Sartorius
07 Oertling
08 Avery
09 Ohaus
10 Precisa
11 SFK
12 Crisplant
13 Novo Nordisk
14 Justervæsenet
15 Dantest
16 FORCE
17 Andet/another

Materiale/Material
01 Andet
Undefined
02 Rustfrit stål
Stainless steel
03 Messing
Brass
04 Nysølv
Nickel silver
05 Aluminium
Aluminium
06 Gråt støbejern
Cast iron (grey)
07 Hvidt støbejern
Cast iron (white)
08 Kulstofstål
Carbon steel
09 Jern
Iron
10 Glas
Glass
11 Betonkerne
Core of concrete
12 Blykerne
Core of lead

Overflade/Surface
01 Som materialet
Same as material
02 Rustfrit stål
Stainless steel
03 Fornikling
Nickel plating
04 Forkroming
Chromium plating
05 Galvanisering
Galvanisation
06 Metallisering
Metal coating
07 Varmforzinkning
Hot galvanisation
08 Maling
Paint
09 Fosfatering
Phosphate coating

Emballage/Packing
01 Ingen
None
02 Andet
Undefined
03 Æske
Box
04 Kasse
Box
05 Kuffert
Case
06 Plastpose
Plastic bag

Klasse/Class
01 Ingen/None
02 Midterste toleranceklasse
Medium accuracy
03 OMIL R111 M3
04 OMIL R111 M2-3
05 OMIL R111 M2
06 OMIL R111 M1-2
07 OMIL R111 M1
08 OMIL R111 F2
09 OMIL R111 F1
10 OMIL R111 E2
11 OMIL R111 E1
12 OMIL R47 n= 1000
13 OMIL R47 n= 3000
14 OMIL R47 n= 5000
15 OMIL R47 n= 10000
16 Kundevalgt/specified
17 Anden/another

Metode:

FORCE instruktion 2-09-0206 og 2-09-0208 samt OIML D 28 (2004).

Testloddets masse bestemmes ved sammenlignende vejning med massenormaler. Testloddet vejes eventuelt sammen med en eller flere massenormaler.

Luftens massefylde beregnes i henhold til "Equation for the Determination of the Density of Moist Air /1981/91)".

Måleusikkerheden beregnes som foreskrevet i EA-4/02.

Den rapporterede ekspanderede usikkerhed er angivet som standardusikkerheden multipliceret med en dækningsfaktor som svarer til en dækningssandsynlighed på ca. 95 %. Antallet af effektive frihedsgrader er beregnet og rundet ned til nærmeste heltal. Dækningsfaktoren er bestemt ved opslag i tabel med valgte frihedsgrader f og t- værdier som stammer fra tabel med fraktiler t95,45 % i t-fordelingen t(f).

Procedure:

FORCE instruction 2-09-0206 and 2-09-0208 and OIML D 28 (2004).

Calibration is performed by comparing the test weight with one or more mass standards on a mass comparator. The test weight might be weighed together with one or more mass standards.

The airdensity is calculated according to "Equation for the Determination of the Density of Moist Air (1981/91)".

The uncertainty of measurement is calculated according to EA-4/02.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by a coverage factor k. The coverage factor k corresponds for a t-distribution with veff effective degrees of freedom to a coverage probability of approximately 95%.

Udstyr/equipment:

Miljøudstyr **Climate measurement equipment**		**Massekomparator** **Mass comparator**		**Massenormaler** **Mass standards**	
A70143	x	V01008		X00011 (E2)	
A70146	x	V01009		X00012 (E1)	
A70147	x	V01010		X00013 (E1)	x
A70148		V01016	x	X01011 (F1)	
A70149		V01017	x	X01012 (F1)	
A70180		V01019		X02002 (F2)	
A70181		V01031		X02003 (F2)	
A70168	x			X02009 (F2)	
A75017	x				
A75024					

Version: 1.00
Id.: A268-93

Service rapport nr.: 10789342

Rapport udskrevet 01-10-2013

Rekvirent

Tecan Nordic
Himmerlevvej 29
4000 Roskilde

Afdeling
Kontakt Niels Andersen
Kontakt init

Emne (UUT)

Vægt/platform Fabrikat **Mettler Toledo** Type **AG285**
Serie nr. **1120503480** ID. nr.
Kapacitet **210 g**

Placering Bygning Rum

Vejeområde(r)

	Fra	Til	Deling
	0,00000 g	**80,00000 g**	**10 ug**
	80,0000 g	**210,0000 g**	**100 ug**

Betingelser

Rummiljø **Ok** Nivellering **Ok** Vejebord **OK** Rengøring **Ok**
Int. lod **Bruges** Auto. nulindtræk **On** Metode **Laboratorie**

Serviceaktiviteter

Følsomhed justeret **Ja** **Internt lod**
Nivelleret **Nej** Exc. belastning justeret **Nej** Linearitet justeret **Nej**
Opstilling **Stabilt arbejdsbord** Repareret **Nej**
Bemærkninger **Vægten meget ustabil grundet manglene hus. Vægten kan ikke akkrediceres.**

Anvendte normaler

	ID nr.	Certifikat nr.	Kalibreret dato	OIML, klasse
1	**23725**	**MTm3P00008-K04**	**23-01-2013**	**E2**

Sporbarhed
Anvendte lodnormaler er sporbare til BIPM via følgende kalibreringslaboratorier:
Mettler Toledo AG i Schweitz (Reg nr 032), SP i Sverige (RMP01) , FORCE (Reg. nr 9) og TI (Reg. nr 200).

Service rapport afsluttet af Ruperth Rasmussen 01-10-2013

Dato: 1-10-2013 Navn: R. Rasmussen

MT-DK Kalibreringslaboratorium, Naverland 8, DK-2600 Glostrup

Service rapport nr.: 10789342

Rapport udskrevet 01-10-2013

Før service

Repeterbarhed

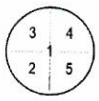
Gentagelse 01	100,0006 g	Gentagelse 02	100,0009 g
Gentagelse 03	100,0009 g	Gentagelse 04	100,0010 g
Gentagelse 05	100,0009 g		

Anvendt belastning : 100,0001 g

Gennemsnit: 100,00086 g **Standard afv. 0,00015 g** **S(rel) 0,000152 %**

Minimum: 100,0006 g **Maksimum 100,0010 g** **Difference 0,00040 g**

Excentrisk afprøvning



Pos 1 start	100,0005 g	Pos 4	100,0009 g
Pos 2	100,0000 g	Pos 5	100,0000 g
Pos 3	100,0004 g	Pos 1 slut	100,0005 g

Anvendt belastning : 100,0001 g **Excentrisk belastningsfejl 0,0005 g**

Vejeprøve Laboratorie

Prøve nr.	Nominel belastning	Anvendt belastning	Visningsfejl	Visninger:
1	0,01000 g	0,0100013 g	**-0,00009 g**	0,00991 g
2	0,10000 g	0,1000025 g	**0,00018 g**	0,10018 g
3	1,00000 g	0,9999819 g	**-0,00003 g**	0,99995 g
4	10,00000 g	10,000015 g	**0,00023 g**	10,00024 g
5	50,00000 g	50,000044 g	**0,00010 g**	50,00014 g
6	100,0000 g	100,000087 g	**0,0003 g**	100,0004 g
7	150,0000 g	150,000131 g	**0,0005 g**	150,0006 g
8	200,0000 g	200,00013 g	**0,0008 g**	200,0009 g

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Service rapport nr.: 10789342

Rapport udskrevet 01-10-2013

Efter service

Repeterbarhed

Gentagelse 01	100,0001 g	Gentagelse 02	100,0000 g
Gentagelse 03	100,0000 g	Gentagelse 04	99,9999 g
Gentagelse 05	99,9998 g		

Anvendt belastning : 100,0001 g

Gennemsnit: 99,99996 g

Minimum: 99,9998 g

Standard afv. 0,00011 g

Maksimum 100,0001 g

S(rel) 0,000114 %

Difference 0,00030 g

Excentrisk afprøvning

Pos 1 start	100,0000 g	Pos 4	100,0000 g
Pos 2	99,9997 g	Pos 5	99,9998 g
Pos 3	100,0000 g	Pos 1 slut	99,9998 g

Anvendt belastning : 100,0001 g

Excentrisk belastningsfejl **0,0003 g**

Vejeprøve Laboratorie

Prøve nr.	Nominel belastning	Anvendt belastning	Visningsfejl	Visninger:
1	0,01000 g	0,0100013 g	**0,00004 g**	
2	0,10000 g	0,1000025 g	**-0,00002 g**	0,01004 g
3	1,00000 g	0,9999819 g	**-0,00001 g**	0,09998 g
4	10,00000 g	10,000015 g	**-0,00001 g**	0,99997 g
5	50,00000 g	50,000044 g	**-0,00014 g**	10,00000 g
6	100,0000 g	100,000087 g	**-0,0001 g**	49,99990 g
7	150,0000 g	150,000131 g	**-0,0001 g**	100,0000 g
8	200,0000 g	200,00013 g	**0,0002 g**	150,0000 g
				200,0003 g