Procedure name

WP-0278 Sepax final test

Select the type of device

	article N°	Denomination	Serial Number
☐	12000	Sepax S-100	
☐	13000	Sepax RM	

Tools

Multimeter: _____ SecuTest: _____

Test syringe 2ml with luer lock / Black filter / Test chamber / Empty test chamber / Kit with water/Torque wrench

Test Procedure

1. *Customer parameters:*

Check the **Service Menu** parameters

Serial Number: _____

Driver printer: _____

Piston position offset: _____

Toggle flags activated:

Fan Monitoring: ☐

Write summary data: ☐

Enable Printer: ☐

Covers Temp Sensor: ☐

Check the **Settings Menu** parameters:

AutoPrintData: ☐

Date and time are correct: OK: ☐

Language: _____

Check the **Traceability Setup** (if activated and in case of software update): N/A ☐

Enable Trace ID: ☐

Manual ID input: ☐

ISBT 128 only: ☐

Take the **Protocol** parameters in case of an upgrade of protocol or MAP:

Parameters: _____ Traceability ID: _____

_____ _____

_____ _____

_____ _____

2. *Air tests*

Attach the test syringe 2ml with luer lock to the line pressure detector.

+2ml of air _____ (1000 < value < 1344 mbar) Line+ OK: ☐

-2ml of air _____ (440 < value < 660 mbar) Line- OK: ☐

Install the empty test chamber in the centrifuge and connect to the line pressure detector.

Run the air pump to create:

0 mbar _____ chamber _____ line (ΔMax 20mbar) ΔChr Line0 OK: ☐

-300 mbar _____ chamber _____ line (ΔMax 20mbar) ΔChr Line- OK: ☐

+500 mbar _____ chamber _____ line (ΔMax 20mbar) ΔChr Line+ OK: ☐

Apply a pressure of 500 mbar, close the stopcock on the line sensor and monitor the pressure drop for 1 min.

Starting pressure _____ mbar **Pressure after 1min** _____ line (ΔMax 20mbar) Line drop OK: ☐

Install the test chamber in the centrifuge.

Apply maximum pressure (ELv 4000) _____ (1500 < value < 1800 mbar) Chr max OK: ☐

Apply maximum vacuum (ELv 4000) _____ (value < -700 mbar) Chr min OK: ☐

Apply vacuum or pressure (ELv 0) _____ (50< value < 150 mbar) Chr 0 OK: ☐

Check if nothing touches the compressor and create any vibrations!!

Perform the test below only in case of sealing system exchange. Otherwise choose N/A

Apply a pressure of 500mbar and block the circuit. Monitor the pressure drop during 1 minute

Starting pressure_____mbar **Pressure after 1 min**_____mbar (ΔMax 35mbar) Chr drop OK: ☐ N/A : ☐

Install the test chamber in the centrifuge, apply a pressure of 500mbar, block the pressure and run the centrifuge at 4000rpm.
Wait 2 min and then monitor the pressure drop during 1 min.
Pressure at 2 min _____ mbar **Pressure at 3rd min** _____ Chr (ΔMax 30mbar) Chr drop OK: ☐

3. Chamber volume detector tests

Adjust the ref 2.5V for piston captor with 2 CDD
Empty centrifuge: _____Pixels (=1) OK: ☐
Install the test chamber in the centrifuge.
PNC Position 1: _____ Pixels (69 < value < 76) OK: ☐
PNC Position 2: _____ Pixels Δ of position 1-2 (390<value<410) _____ Pos 1-2 OK: ☐
PNC Position 3: _____ Pixels Δ of position 2-3 (390<value<410) _____ Pos 2-3 OK: ☐
Put the value of position 1 in the Service menu at the position piston offset choice OK: ☐
Go back to the man_sepax to verify if the value is equal to 65 at the P value OK: ☐

4. Optical line sensor tests

Switch ON the Sepax and wait 10 min.
Without filter

Red LED	_____V	(5.5 < value < 6.0V)	(5.0 < value < 5,7V)	Red WF	OK ☐
Green LED	_____V	(5.5 < value < 6.0V)	(5.0 < value < 5,7V)	Green WF	OK ☐

Black filter

Red LED	_____V	(0.0 < value < 0.2V)	(0.0 < value < 0.2V)	Red WF	OK ☐
Green LED	_____V	(0.0 < value < 0.2V)	(0.0 < value < 0.2V)	Green WF	OK ☐

5. Security tests

Check the splash detector OK: ☐
Check the three chamber cover detectors OK: ☐
Check the two temperature sensors _____ (0.4< C <0.7) _____ (18°C< I <40°C) OK: ☐
For the cover temperature sensor, pass the finger on the reading window. The value must change OK: ☐

6. Electrical power adjust

Check different voltage on the top of each fuse.
GND

+ 5.1V	Fuse 1	_____	(5.0 < value < 5.2)	DC1 OK: ☐
+ 15.1V	Fuse 2	_____	(14.8 < value < 15.3)	DC2 OK: ☐

-15V.1 With Lambda power supply and -12.1 With XP-power supply or Sepax with SN> 653:

- 15.1V			(-15.3 < value < -14.8)	
- 12.1V	Fuse 3	_____	(-12.3 < value < -11.8)	DC3 OK: ☐
+ 26.1V	Fuse 4	_____	(25.5 < value < 26.3)	DC4 OK: ☐
+ 48.1V	Fuse 5	_____	(47.5 < value < 48.3)	DC5 OK: ☐

7. User function tests

There must be **three beeps** at start-up OK: ☐
Check that all the **LCD characters** are displayed OK: ☐
Note the **software** version n° : _____
Test the **touch panel** OK: ☐
Switch on the **blue LEDs** OK: ☐
Main fan and power fan turn OK: ☐

Write the switch configuration on the interface board.

		OFF	ON
(SW2 OFF = ETEL motor without SepaxNet (COM1) / SW2 ON = Etel motor with SepaxNet (COM4))	SW1	☒	☐
	SW2	☐	☐
(SW3 OFF = old piston captor 2CCD / SW3 ON = new piston captor 1CCD)	SW3	☐	☐
(SW4 OFF = ETEL motor / SW4 ON = SERVIDA motor)	SW4	☐	☐
(SW1 always OFF / SW5 always ON)	SW5	☐	☒

8. Centrifuge Tower Test – UCB protocol compatibility

Centrifuge **tower alignment**. The centrifuge should be perfectly centred OK: ☐
Centrifuge **feet stability** OK: ☐
Centrifuge **upper deck** (with plastic ring) is not touching (or not too close) to the device enclosure OK: ☐
The **distance** must be minimum 1mm to the U panel OK: ☐
Check if the centrifuge **covers** are neither broken nor bent, and do not create any vibrations OK: ☐
No internal component touching each other's (especially compressor, air buffer and centrifuge tower) OK: ☐

9. Stepper motor tests

Run the protocol "**test stpck pos** " with stop cock ramp and choose time 60s OK: ☐
With the **torque wrench**, control the stopcock blocked in the both direction OK: ☐

Electrical test according to IEC 62353

10. Electrical earth tests

Protective Earth Resistance / RCP mode

With the Secutest check the earth connection at 200mA. Test the following point. Max value <0.3Ω

The bolt under the rear power connection OK: ☐
The rear fan grill OK: ☐
A handle fixing bolt OK: ☐
The centrifuge earth bolt OK: ☐

11. Insulation test

Insulation Resistance / R-ISO mode

Connect the Sepax to the Secutest with 500V. Test the bolt of the centrifuge cover. Min Value >70M Ω
Centrifuge cover's bolt OK: ☐

12. Earth leakage test

Leakage / ICD mode

Current Normal Condition / Differential _____ Max value < 0.5mA OK: ☐
Single Fault Current / Alternative Equ. _____ Max value < 1 mA OK: ☐

13. Current and voltage tests

In function mode

Current Consumption	_____	Max value 0.65A Max value 1A	@230Vac @110Vac	OK: ☐

Other tests

14. Protocol tests

Run the **protocol test** service using a kit with water OK: ☐
Attach the test file printout (if printer available)

15. Visual control

Check the **exterior appearance** of the Sepax OK: ☐

16. AS-610 Traceability

Installed	YES: ☐	NO: ☐
Check the functionality of the barcode reader reading a barcode test (see below)	OK: ☐	N/A: ☐
Check the thermal printer exterior appearance and functionality	OK: ☐	N/A: ☐
Check the printer power supply and power cable exterior appearance	OK: ☐	N/A: ☐
Check the Sepax Net printing	OK: ☐	N/A: ☐

17. Comments

18. Parts exchanged

Article Number	Designation	Old SN	New SN

	Reference	Manufacturing date
In case of battery exchange		

Tests conclusion

Tests passed for the Sepax **PASS:** ☐ **NOT PASS** ☐

Approval

Date: _____ Signed: _____