ABCA2 Maintenance Report

Job Number:	SE0738		
Customer:	Cerba Laboratoire, Frepillon, France		
Instrument Serial #	n/a	Gas Box Serial #	n/a
ASX 7400 Serial #	n/a	Software Version	n/a
Contact:	Guillaume Chaplain		
Date of Visit:	02-04.09.2026	Days:	3
Engineer:	Robert Kamený		

Pre Maintenance Checks

Initial Tuning Parameters: n/a

HT	IR
Focus	eV
HP	Trap
Emission	
Vacuum	

Initial Performance Evaluation: n/a

Peak Shape	Sheet Number
Stability	Sheet Number
Ref Gas Precision	Sheet Number
Breath Precision	Sheet Number
Sensitivity	Sheet Number
5% in tube Precision	Sheet Number
Linearity	Sheet Number

Maintenance Checklist			
Filament Change	Initial:	n/a	Date: n/a
Oil Change	Initial:	n/a	Date: n/a
Filament Condition	Initial:	n/a	Date: n/a
Tune Optimisation	Initial:	n/a	Date: n/a
Replace Syringe O Rings	Initial:	n/a	Date: n/a
Gas Flow Check and Optimisation	Initial:	n/a	Date: n/a
Magnet Position Optimisation (If Applicable)	Initial:	n/a	Date: n/a
System Leak Check	Initial:	n/a	Date: n/a

Final Performance Evaluation: n/a

HT	IR
Focus	eV
HP	Trap
Emission	
Vacuum	

Final Performance Evaluation: n/a

Peak Shape	Sheet Number
Stability	Sheet Number
Ref Gas Precision	Sheet Number
Breath Precision	Sheet Number
Sensitivity	Sheet Number
5% in tube Precision	Sheet Number
Linearity	Sheet Number

Faults and Issues:

Sercon Ltd
Unit 3B Crewe Trade Park
Gateway, Crewe, Cheshire
CW1 6JT U.K.
Company Registration No.: 4290072
Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74

Units as found on arrival:

ABCA (Versa) (SN:20602-2023/1297)

- Versa Z arm seized in mid injection, about half- way across the horizontal plane
- Att. Error msg: CETAC run time error
- Att. 3x cooling fans found seized and will need to be replaced
- Engineer attempted hard re-boot of the versa and the rest of the system
- Everything re-started fine
- REF Gas and Breath Prec. achieved: 0.13&0.26‰ STD

ABCA 4 (SN:20602 2016/1119)

- Issue unknown
- Customer reported issues with filament
- Found source and HT powered off
- Att. continues compressed air leak on valco manifold (replaced during last service visit few weeks ago)
- Tried to run REF-Breath : no peaks coming through
- Att. printer error msg. pop up at the start up (selected windows to select default printer)
- Att. air flow isn't changing directions when valco supposed to turn up on activation
- Replaced the manifold (no improvement)
- Swapped the air lines over, no peaks coming through
- Removed the valco to free it up, managed to gain full travel whilst in hand, the valve has a tendency to turn partially when air re-connected but its not returning to its original position
- Att. ref gas started coming through after multiple attempts to turn the valco manually, but samples from the tube are still non existent
- Flows as indicated: needle in 30 (bulhead)- 30ml/min needle out, nafion 22ml/min, to m/s 25 ml/min

ABCA 1 (SN:20602 2016/1134)

- Customer reported Poor results from the tubes
- Att. rotary pump found to have excessive oil leak
- Unacceptable peak shape, but good 2/1 stability
- Investigation into poor peak shape: suspected magnet shift
- Att. excessive signal (over 30namps) when V13 on (crimped down to suit 1.2e-08 m/z 44)
- Peak shape improved after adjusted height +position of the magnet
- Ref gas prec: 0.04‰ STD
- Breath prec: not acceptable, no samples coming through
- Att. found the issue with the rubber o ring melted to the inside wall of the syringe, probably due to its age
- Service actions: syringe o rings, rotary pump oil, clean out
- Att. 2x cooling fans (24V) are seized and need to be replaced
- Att. rotary pump has a significant oil leak (need to be replaced)
- Ref gas prec (after service achieved) 0.03‰ STD

- Breath prec (after service achieved) 0.08‰ STD
- Ref gas prec (Day 2 after re-tuning)) 0.01‰ STD
- Breath prec (Day 2 after re-tuning) 0.04‰ STD

ABCA 3 (SN:20602 2013 38)

- Reported issue with the turbo pump
- Source and HT powered off
- Att. unable to control the cetac or any valves inside of the gas box
- Tried to hard re-boot the CETAC and Electronics (no improvement)
- Tried to upload different version of the software (600.0.109)
- Att. new version didn`t help with opening the software initially, ongoing issues with comm ports
- Att. unable to change comm ports due to restricted access. RK to contact local IT to remove proxy settings
- PC finished running updates (took almost full day)
- Software started running properly, re-gained the control over the CETAC as well
- REF gas prec: 0.01‰STD, Breath prec: 0.04‰STD
- Att. peak shape adequate, but baseline has a tendency to distort when lowering focus
- Decided to swap filament as this unit was due to receive its annual service
- Service actions: filament and syringe o rings exchanged
- Good vacuum after pumping overnight (5e-08mBAR)
- Att. ref gas peaks are coming through around 6e-07 (breath peaks around 1.3e-07)
- V13 crimped down to suit 1.2e-08
- Unit released back to service day 3 pm

Follow Up:

Recommended list of parts which need to be replaced :

ABCA (Versa): SN:20602-2023/1297: 3x cooling fans 24V

ABCA 1: SN:20602/1 -2016/1134: rotary pump

ABCA 4:SN:20602 -20161119: 6 way valco

Engineer:	Robert Kamený	Date:	08.09.2026
Signed:			

Customer:	G. CHAPLAIN	Date:	08 / 09 / 2026
Signed:			

Sercon Ltd
Unit 3B Crewe Trade Park
Gateway, Crewe, Cheshire
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