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Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

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ADDITIONAL:

Payment Terms:

50% / 40% / 10%

Other: please specify

Penalty Clause Yes / No

Please specify:

Blue Book Completion:

Signed	<i>D. O'Connor</i>	Date	18/6/25
Verified	<i>S. Meade</i>	Date	19/6/25

Quotation

To: University of Birmingham
 School of Sport & Exercise Science
 Edbaston
 BIRMINGHAM
 B15 2TT

VAT No.

Quotation Date: 14/02/2025
Quotation Reference: 18597
Customer Ref:
Account Ref: UNI011
Quotation Validity: 14/05/2025

Quantity	Product Code	Product Description	Unit Price £	Discount £	Net Price £
Proposal for ABCA2 IRMS breath testing system					
1	20602	Complete Sercon ABCA2 system High performance, high sample throughput IRMS for 13C breath tests. Including 240 place XYZ autosampler and gas box. Includes 70101-1 - ABCA2 spares kit - filament, copper gaskets, source tool kit, pump oil, 100 12 ml Exetainer vials, tubing and needle. Including Windows based PC	59,000.000	0.00	59,000.00
1	SI1767	CVL505 - Barcode Reader Bar code reader for error free sample loading, secure patient identification and GLP compliance.	1,500.000	0.00	1,500.00
1	SC8500	12ml 15.5x101mm Breath Sampling Vial. Blue Open Top Screw Cap with Butyl Septa, pk/1000 Flat Bottom. Non Coated Vial. Non Evacuated. Vial+Cap+Septa are pre-assembled together. 1000pcs/pk	320.000	0.00	320.00
1	INST	Installation and start up training at Customer's site	7,750.000	0.00	7,750.00
1	WARR2	2 year warranty	0.000	0.00	0.00
1	DEL	Delivery to Site	500.000	0.00	500.00

This quotation is issued in Pound Sterling

Total Net Amount £ 69,070.00

Total VAT Amount £ 13814.00

Order Total £ 82,884.00

* The price quoted does not include any local taxes or duties
 See separate document for terms and conditions

Payment Details:-

50% with order, 40% on delivery and 10% installation
 Payment is required within 30 DAYS of invoice date by bank transfer.
 All bank transfer charges are the responsibility of the customer.

Sercon Bank Details:-

National Westminster Bank, 36 High Street,
 Nantwich, Cheshire CW5 5GA U.K.

Sterling: IBAN: GB74NWBK54101736755133
 Euro: IBAN: GB14NWBK60721013806831
 US Dollar: IBAN: GB94NWBK60730113806556
 BIC: NWBKGB2LXXX



UNIVERSITY OF BIRMINGHAM

Purchase Order UOB581500

Supplier
Sercon Limited
Europa House
Coppicemere Drive
CREWE
Cheshire
CW1 6GZ

Invoice To
Email preferred: apinvoices@contacts.bham.ac.uk
Post: **University of Birmingham**
Accounts Payable, Finance Dept.
Aston Webb
BIRMINGHAM
West Midlands
B15 2TT
UNITED KINGDOM

Deliver To
School of Sport Exercise & Rehab
Sciences
School of Sport, Exercise and
Rehabilitation Sciences
The University of Birmingham, Y14
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT
UNITED KINGDOM

For payment enquires following submission of your invoice,
please contact:
Email preferred: apqueries@contacts.bham.ac.uk
Telephone: 0121 502 7662

Order	UOB581500
Order Date	27-MAR-2025
Change Order	0
Change Order Date	27-MAR-2025
Revision	0

Notes GBP = Pound Sterling

Customer Account Number	Supplier Number	Payment Terms	Freight Terms	FOB	Shipping Method
	29540	30 Days			
Deliver To Contact					
Gareth Wallis E-mail: G.A.WALLIS@BHAM.AC.UK					

Line	Item	Quantity	UOM	Unit Cost	Taxable	Net Price	Tax	Gross Price
1	ABCA2 IRMS breath testing system (Quote Reference 18597)	1	Each	69,070.00	STANDARD	69,070.00	13,814.00	82,884.00

Delivery Date:

17/03/2025

Net Value	69,070.00 GBP
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The Purchase Order number must be clearly stated on all Supplier documents, including delivery notes and invoices. Failure to include the Purchase Order number will result in the invoice being returned and payment being delayed.

Payment is due in 30 days from the date of the correct Supplier invoice or the receipt of the correct Supplier invoice whichever is the later, unless superseded by an official University contract.

Terms and Conditions are available at: <https://www.birmingham.ac.uk/documents/finance/conditions-of-purchase.docx>

Vat Reg No: GB729856187

3 - MACHINE SPECIFICATION

Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

Ref No.	Product Description	Required
HS2022 (continuous flow)		
20402/1	HS2022 Ref Gas + P Mag	
20402/2	HS2022 Ref Gas + E-Mag	
20402/3	HS2022 Ref Gas + Hd Collector + E-Mag	
20402/4	HS2022 Ref Gas + Hd Collector+E-Mag+Trap Loop	
20501	Hd Collector Assy ***	
50101/2	Trapping Loop Assy	
70201-1	70201-1 Analyser spares kit – Included	
EA Units		
10202/11	iso-EArth	
10202/13	iso-EArth+	
10202/14	iso-Earth HT Furnace Upgrade	
10202/15	Iso-Earth (Without Autosampler)	
11802/1	Earth+PC	
11802/2	EArth+Clarity+PC	
70501-1	Consumables for C and N for Combustion Only	
70501-11	Simultaneous CNS Consumables Kit (approx. 10000 analysis)	
70501-3	Sample Prep Kit (Inc.)	
70501-4	GSL Combustion and Gas C & N Start Up Kit	
70501-5	Simultaneous NCS Consumables Kit	
70501-6	C&N Combustion Only Consumables Kit (approx. 5000 samples)	
70501-8	Simultaneous CNS Consumables Kit (approx. 5000 samples)	
70601-1	Sulphur Start Up Kit (Inc. with Sercon EA Systems)	
70601-2	Sulphur Consumables Kit for 1000 Samples	
70601-4	Sulphur Consumables Kit (approx. 5000 Samples)	
70801-2	Pyrolysis Consumables Kit-Low temp for Solids	
71701-1	Sub Microgram Nitrogen Analysis Start Up Kit	
SI2040	PN150 Pneumatic Autosampler with one no.50 pos, carousel	
SI2345	ME Micro Balance	
SI2737/A	Sercon 50 Position Autosampler Assy	
SI2789	Extra 50 Position Carousel	
SI2744	Automatic Liquid Sampler 15 Position	
SI2743	Liquid Sampler Mounting Plate	
Headspace Equilibration		
10202/10	XYZ Gas Sampling Control Box	
10302/1	Aqua System	
11103	µCarbs for CF	
11103-1	µCarbs for DI	
11601	200 Place Dual Heated Block 240 Volt	
11801	Sercon XYZ Gas Autosampler	
71107-1	CF oxygen-18 equilibration kit	
71107-2	DI Oxygen-18 Equilibration kit	
71201-1	CF deuterium equilibration kit	
71201-2	DI Deuterium Equilibration kit	
71801-1	WES-DI start up kit (Inc. with WES-DI)	
GC Units		
10402/2	Orchid module 1500C (Will run Hd 70901-1 C Spares Kit Inc)	
10901	Nitrogen Option (71301-1 N Spares kit Included)	
HP7890/1	Agilent 7890B GC System	
HP7890/2	Agilent 7890B GC with Auto Injector	
HP7890/3	Agilent 7890B GC + Auto Injector + 150 Vial Sample Tray	
SI2561	Nexis GC 2010 Plus	

Ref No.	Product Description	Required
S027_v11		
*** When ordered alone IN no. / Blue book NOT required		

3 - MACHINE SPECIFICATION

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GC Units *continued*

SI2564	Nexis GC-2030
70901-3	GC Pyrolysis H and O Start Up Kit
70901-4	GC Pyrolysis H Spares Kit
70901-5	GC Combustion C Spares Kit (approx. 5000 samples)
70901-6	GC Pyrolysis h Start Up Kit (approx. 5000 samples)
71301-1	GC N Spares kit

ABCA2 Units

10502/1	ABCA2 Sercon XYZ Autosampler
10602	ABCA2 Gas Box
20602	Complete Sercon ABCA2 system
20603	ABCA IR Analyser
70101-1	ABCA2 spares kit (<i>Inc. With ABCA2</i>)
70101-2	ABCA2 Spares Kit for AB Analitica Systems
70101-3	ABCA2 Autosampler Upgrade Kit
SI1767	CVL505 – Barcode Reader
SC9973	13C Urea breath test kit for <i>Helicobacter pylori</i> infection
SC9974	<i>Helicobacter</i> Test kit for children age 3-11 (45mg)

Integra2 Units

20802/4	Integra2
70201-2	Integra2 analyser spares kit - Included
70401-1	Integra-2 consumables (<i>Inc. With Integra2</i>)

Trace Gas Systems

10802/4	CryoPrep
10802/5	Automated LN refiller
10802/6	CryoFlex (TOC)
10802/7	CryoGas
10802/8	CryoFlex (LA)
SI2533	Silicon Carbide Vertical Furnace
SI2731	213nm Laser Ablation System
SI2733	isoScell 100 sampler chamber
71001-1	Cryoprep Spares Kit
71001-5	CryoGas Consumables Kit

TOC Units

14001	Thermalox Environmental TOC-IRMS
14002	Thermalox Environmental TOC-Standalone
14003	Thermalox Environmental TOC-Standalone No Sampler
SI2772	CO2 Detector, High sensitivity Option
SI2773	NOx detector Option
SI2774	Vacuum pump Option
SI2775	Stirred Vial rack Option
72101-1	TOC Start Up Kit
72101-2	TOC Chem Pack
72101-3	TOC & TN Instrument with heavy usage - one year
72101-4	TOC only - economy holding

GEO 20-22 (dual inlet)

10702	GEO 20-22 Water Equilibration System (D & 18O)
21802/1	GEO 20-22
21802/2	GEO 20-22 + E-Mag
21802/3	GEO 20-22 + E-Mag +Hd
21802/4	GEO 20-22 Inlet

3 - MACHINE SPECIFICATION

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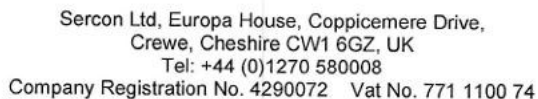
70301-1	GEO start up kit - Included	
70301-3E	Comprehensive GEO 20-22 spares kit for 5 years operation	
HT-EA		
11501/4	HT-EA (With Autosampler)	
11501/5	HT-EA With Liquid Option	
11501/6	HT-EA Stand Alone	
11501/7	HT-EA (Without Autosampler)	
SI2622	CTC PAL3-LSI-L-S	
SI2624	CTC PAL3-Kit-Standalone	
70801-1	Pyrolysis Consumables Kit-High Temp for Solids	
71501-1	HT-EA Pyrolysis Start Up kit O and H	
71501-2	HT-EA Pyrolysis Kit for Water injections	
71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples	
71501-4	HT-EA Sensitivity Consumables Kit for O & H in small samples	
71501-5	HT-EA Sensitivity Kit for O&H in Small Samples (5000 samples)	
71501-7	HT-EA Kit for Room Temp Equilibration	
71501-8	HT-EA Pyrolysis Kit for Water injections (approx. 1 year kit)	

Ref No.	Product Description	Required
Upgrades		
12101	Evacuation System ***	
12102	2 Ref Gas+ Dilutor Box ***	
20101	Standard Source Assy ***	
20102	HS Source Assy ***	
20301	Standard Collector Assy ***	
30202/1	System Control Upgrade (Pmag) installation not included	Edwards Or Pfeiffer
30202/2	System Controller Upgrade (Emag) installation not included	Edwards Or Pfeiffer
10202/7	Preparation PCB Upgrade	
30202/3	Hijack Box ***	
30302/4	nEXT85 Edwards Pumping System Upgrade Single - installation not included	
30302/5	nEXT85 Edwards Pumping System Upgrade Dual - installation not included	
30302/6	nEXT85 Edwards Pumping System Upgrade Triple- installation not included	
SI2542	ABCA2 Upgrade Kit	
CALLISTOW	Callisto software upgrade ***	
Specials		
11702	LC-I interface	
12202	Leco Interface Unit	
SI2320	Agilent 1260 Series Refractive Index Detection HPLC System	
71401-1	ABCA-G Start Up/Spares Kit	
71401-2	ABCA-G Equilibration Spares Kit - Room temp O only	
71401-3	ABCA-G Equilibration Spares Kit - Room Temp O & H	
71601-1	LC Interface Spares Kit	
ADDITIONS		
PC	Windows 7 based PC System with Callisto Software	
Printer	Printer	
INST1	Installation and start up training at customer's site by Sercon Engineer	
INST2	Installation and start up training at customer's site by Agents Engineer	
WARR	1 year warranty	
WARR2	2 year warranty	
TRAIN	Training in UK for one person for 3 days	
SCONTRACT	Maintenance Service Contract - 1 year	
SPECIFICATION REQUIREMENTS		
Voltage	Volts 50/60Hzs	

3 - MACHINE SPECIFICATION

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Plug Type	SI2510	3 Metre USA/Japan plug to IEC C 13	
	SI2511	2.5 Metre Australian plug to IEC C 13	
	SI2512	3 Metre UK 13 amp Fused plug to IEC C 13	
	SI2523	3metre Schuko (Euro) Plug to IEC C13 Socket	
	SI2514	2.5 metre Chinese mains to IEC C13	
Pallet	Stamped for export heat treated for 30 min @ 56 °C		
	Complies with all Export Requirements		



Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

Date	Action Taken	By Whom
14/4/25	1.0E-8 pumped down.	ow.
10/4/25	VERSA LEAKED CHECKED	ow
18/4/25	CHUCKER OVER + PANELS PUT ON	PH.
16/4/25	Checked exteriors - all look okay Started PC and Software, pumps on vacuum pumping down	AD
23/4/25	Versa configured + Autosampler positions calibrated All lines connected Crimps set of Ref 1+2 at ~2ml/min Flow meter calibrated Crimp set on isolation valve resulting in a vacuum of 4.9E-6 Filament conditioned Flows set	TI
24/4/25	CO ₂ peak found by magnet movement + tuning Started running spec5	TI
25/4/25	Crimp on isolation valve adjusted for a vacuum ~5E-6	TI
May 5 th 25	Breath peak much larger than ref so V3 crimp opened & V10 crimp closed from 4.9E-6 to 3.1E-6 V10 isolation valve & 6thou from V10 to source both replaced to to vacuum problems Flow meter recalibrated since it was reading too low Barcode reader tested - all good All specs passed.	HC/TI

Date	Action Taken	By Whom
------	--------------	---------

4 - LOG SHEET

Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

[illegible]

6 - ABCA2 TEST / ACCEPTANCE SPECIFICATION

Customer:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025
Unit Serial Number	20602/2025/1358		
Gas Box Serial Number	—		
Autosampler Serial Number	60101/1-2025/1358		

13C				
Ref Gas Injection Precision	100% CO ₂ (n=5)	≤0.1‰ 0.04 RECORD VALUE HERE	Test ☒ Sheet —	Install ☐ Sheet —
Ref gas in tubes precision	10ml 5% CO ₂ (n=5)	≤0.1‰ 0.06 RECORD VALUE HERE	Test ☒ Sheet —	Install ☐ Sheet —
Breath Precision	Breath in Exetainer (n=5)	≤0.2‰ 0.05 RECORD VALUE HERE	Test ☒ Sheet —	Install ☐ Sheet —
Sensitivity	10ml 5% CO ₂ in Exetainer	Major beam 5e-9 with trap of 150 2.4E-8 RECORD VALUE HERE	Test ☒ Sheet —	Install ☐ Sheet —
Linearity	0.5% - 8.0% CO ₂ in Exetainer	≤0.3 ‰ change 0.30 RECORD VALUE HERE	Test ☒ Sheet —	Install ☐ Sheet —
Peak Shape	Beam 1,2 and 2/1	Minimum 5V wide 2/1. Gradient acceptable due to single turbo pump	Test ☒ Sheet —	Install ☐ Sheet —
Stability	2/1 ratio over 600 seconds	Flat, no spikes or variations. Slight gradient acceptable	Test ☒ Sheet —	Install ☐ Sheet —
Software Test	All read backs Valves function Autosampler bed CETAC Firmware Version No.:	☒ ☒ ☒ v800.14.0.29870	Date 9/5/25	Initial TI

 Flow Meter S/N. ~~RE110604~~...

 Leak Detector S/N. ~~113426~~.....

 Multi-Meter S/N. ~~MCA1073973~~

Special Tests

Linearity to be better than 0.3‰ and recorded

Sales Signature: 	(Required)	Date: 9/5/25
Test Signature: 	(Completed)	Date: 9/5/2025
Install Signature: 	(Completed)	Date: 19/06/25

Data to be transferred to:

\\CENTRAL-SERVER\CentralFiles\SER_SPREADSHEETS\Instrument Performance Spreadsheet.xls

7: ASSEMBLY AND TEST RECORD

Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

PRODUCT:

ABCA2

SERIAL NUMBER:

20602/2025/1358

 ASSEMBLED:
 (Name)



Date:

09/04/25

 PRE-TEST
 INSPECTION:
 (Production name)

P. Haygo

Date:

15/4/25

 PRE-TEST
 INSPECTION:
 (Test name)



Date:

23/4/25

 SYSTEM TEST:
 (Name)



Date:

9/5/25

 PRE-DESPATCH
 INSPECTION:
 (Name)

P. Haygo

Date:

15/5/25
P.A.T. Test results

 In compliance with Low Voltage directive 73/23/EEC
 To Low Voltage standard EN61010 – 1:1993

Earth Continuity

0.069
 Ω

Insulation

>300
 $M\Omega$

Earth Leakage Current

Q. 1.30

mA. @

0.08

kVA.

Tested by:



Date:

09/04/25

7: ASSEMBLY AND TEST RECORD

Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

 PRODUCT: VERGA 1

 SERIAL NUMBER: 60101/1-2025/1358

 ASSEMBLED:
 (Name) V. Mi

 Date: 10/4/25.

 PRE-TEST
 INSPECTION:
 (Production name) P. Hays

 Date: 15/4/25

 PRE-TEST
 INSPECTION:
 (Test name) [Signature]

 Date: 23/4/25

 SYSTEM TEST:
 (Name) [Signature]

 Date: 9/5/25

 PRE-DESPATCH
 INSPECTION:
 (Name) [Signature]

 Date: 19/5/25

P.A.T. Test results

 In compliance with Low Voltage directive 73/23/EEC
 To Low Voltage standard EN61010 – 1:1993

 Earth Continuity _____ Ω
N/A

 Insulation _____ $M\Omega$

Earth Leakage Current _____ mA. @ _____ kVA.

Tested by: _____

Date: _____

8 - Serial Numbers Record Document

Client:	University of Birmingham		
Quotation Number:	18597	Date:	14/02/2025
Job Number:	IN1358	Date:	27/03/2025

Units	S/N
MS/ABCA	20602/2025/1358.
Integra 2	/
Prep Unit 1	/
Prep Unit 2/Misc	/
Electronics Upgrade	/
CETAC	60101/1-2025/1358.
Gas Box	
Autosampler	
BCR	1025 00 31
Dual Heater Block	

Pump Kit and Optics	S/N
Turbo pump S	240783855.
Turbo pump A	
Rotary Pump	240784783
Voltage	110 / 240
Gauge S	
Gauge A	
Source	20101-252
Collector 1	20301-169.
Collector 2	
Magnet	21-01-24 (5)

Parts	S/N
Fan PSU	
24V PSU	

PCBs	S/N
Electronics Box	2025003.
Prep PCB	
VFC PCB	
Watchdog PCB	
Head Amp PCB 1	25007
Head Amp PCB 2	
Electromagnet RP	

Furnaces	S/N
Combustion	
Reduction	
HT-EA	
GC Oven	
Furnace 1	
Furnace 2	

PC	S/N
PC	6R6R764
Monitor	87N2Y34
Printer	

Key

Pumps:	E: Edwards P: Pfeiffer
Furnaces:	V/S: Vecstar E: Elite
Magnet:	E: Electromagnet S: Standard
Turbos & Gauges:	S: Source A: Analyser
Collectors:	Std: Standard S: Sulphur HD: Hydrogen Deuterium

Additional System Info:

8 - Serial Numbers Record Document

Client:	University of Birmingham		
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Job Number:	IN1358	Date:	27/03/2025

<u>Units</u>	<u>S/N</u>
MS/ABCA	
Integra 2	
Prep Unit 1	
Prep Unit 2/Misc	
Electronics Upgrade	
CETAC	
Gas Box	
Autosampler	
BCR	
Dual Heater Block	

<u>Pump Kit and Optics</u>	<u>S/N</u>
Turbo pump S	
Turbo pump A	
Rotary Pump	
Voltage	110 / 240
Gauge S	
Gauge A	
Source	
Collector 1	
Collector 2	
Magnet	

<u>Parts</u>	<u>S/N</u>
Fan PSU	
24V PSU	

<u>PCBs</u>	<u>S/N</u>
Electronics Box	
Prep PCB	
VFC PCB	
Watchdog PCB	
Head Amp PCB 1	
Head Amp PCB 2	
Electromagnet RP	

<u>Furnaces</u>	<u>S/N</u>
Combustion	
Reduction	
HT-EA	
GC Oven	
Furnace 1	
Furnace 2	

<u>PC</u>	<u>S/N</u>
PC	
Monitor	
Printer	

Key

Pumps:	E: Edwards P: Pfeiffer
Furnaces:	V/S: Vecstar E: Elite
Magnet:	E: Electromagnet S: Standard
Turbos & Gauges:	S: Source A: Analyser
Collectors:	Std: Standard S: Sulphur HD: Hydrogen Deuterium

Additional System Info:

Packing List

Reference: UOB581500

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Tel: +44 (0) 1270 580008
Reference: IN1358

Consignee:

University of Birmingham, Y14
School of Sport Exercise & Rehab Sciences
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT

Contact Name: Prof. Gareth Wallis
Contact Tel Number: 0121 414 4129

BOX: 1

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	20602/1	ABCA	
☒ 1	SI2391	Monitor (with IEC)	

Packed by: *[Signature]*

Date: 15/5/25

Claims for damage or shortages must be made within 3 days

Packing List

Reference: UOB581500

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Consignee:

University of Birmingham, Y14
School of Sport Exercise & Rehab Sciences
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT

Tel: +44 (0) 1270 580008
Reference: IN1358

Contact Name: Prof. Gareth Wallis
Contact Tel Number: 0121 414 4129

BOX: 2

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	SI0103	Rotary Pump (with mains cable and oil inside box)	
☒ 1	SI0101	Permanent Magnet + feet	
☒ 1	SI2512	Mains Cables	
☒ 1	70101/21	Ribbon Cable – to gas box	
☒ 1	70101/20	Flow Cable – to gas box	
☒ 1	70101-1	ABCA Spares Kit	
☒ 1	SI2918	PC (Software – with USB Backup, recovery drive, manual, IEC and barcode manual inside box)	
☒ 1	SI3022	Power supply – Versa	
☒ 1	SI3267	Versa Needle (and pipe).	
☒ 1	SC8500	1000 Vials	

Packed by:

Date:

Claims for damage or shortages must be made within 3 days

Packing List

Reference: UOB581500

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Consignee:

University of Birmingham, Y14
School of Sport Exercise & Rehab Sciences
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT

Tel: +44 (0) 1270 580008
Reference: IN1358

Contact Name: Prof. Gareth Wallis
Contact Tel Number: 0121 414 4129

BOX: 3

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	SI2737	VERSA Autosampler	
☒ 1	SI1767	Barcode reader	
☒ 5	SI1770	VERSA racks	

Packed by: *[Signature]*

Date: 15/5/25

Claims for damage or shortages must be made within 3 days

BOX: Dimensions and weights

L

W

H

Packing List

Reference: UOB581500

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Tel: +44 (0) 1270 580008
Reference: IN1358

Consignee:

University of Birmingham, Y14
School of Sport Exercise & Rehab Sciences
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT

Contact Name: Prof. Gareth Wallis
Contact Tel Number: 0121 414 4129

Box 1	<u>99</u>	x	<u>86</u>	x	<u>107</u>	cm	gw	<u>111</u>	kg
Box 2	<u>99</u>	x	<u>86</u>	x	<u>107</u>	cm	gw	<u>102</u>	kg
Box 3	<u>99</u>	x	<u>86</u>	x	<u>81</u>	cm	gw	<u>70</u>	kg



COLLECTION NOTE

Job Number: **IN1359**
Customer: University of Birmingham
Contact: University of Birmingham, Y14
School of Sport Exercise & Rehab Sciences
Edgbaston
BIRMINGHAM
West Midlands
B15 2TT

Contact: Prof. Gareth Wallis
Tel: 0121 414 4129

Collection on
Date:

20/05/25

No. 3
of boxes:

By:
Company:

SPEEDY FREIGHT STOCKPORT

Vehicle
Reg No. WX13TFY

Signature:

[Signature]

Print:

GOMAR



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VAT No.: 771 1100 74
19/01/2017

ABCA2 Installation Acceptance Certificate

Job no.:	IN1358
Customer:	University of Birmingham
Address	University of Birmingham, Y14 School of Sport Exercise & Rehab Sciences Edgbaston BIRMINGHAM West Midlands B15 2TT
Contact:	Prof. Gareth Wallis
System:	ABCA2 with verSA
ABCA2 Serial Number	20602/2025/1358
Gas Box Serial Number	10202/14-2025/1358
Autosampler Serial Number	N/A
Software:	V800.14.0.24820
Engineer:	Thomas Iordanidis
Installation Start Date:	09/06/2025
Installation Completion Date:	13/06/2025
Maintenance Required by Date:	12/06/2026
Delivery Date:	20/05/2025
Warranty Commences:	13/06/2025
Warranty Expires:	12/06/2027
Consignor:	Sercon Limited Europa House, Coppicemere Drive Crewe, Cheshire CW1 6GZ U.K.
Outstanding Installation Requirements:	N/A

I hereby agree that the installation has been completed and meets the manufacturer's specifications and that basic training has been provided.

Customer Acceptance		Date:	13/06/2025
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Engineer's Signature		Date:	13/06/2025
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¹³C			
Ref Gas Injection Precision	100% CO ₂ (n=5)	≤0.1‰	Observed Precision: 0.02 Pass/Fail: PASS Sheet Number:
Ref gas in tubes precision	5% CO ₂ in Exetainers (n=5)	≤0.1‰	Observed Precision: 0.04 Pass/Fail: PASS Sheet Number:
Breath Precision	Breath in Exetainers (n=5)	≤0.2‰	Observed Precision: 0.08 Pass/Fail: PASS Sheet Number:
Sensitivity	5% CO ₂ in Exetainers	Major beam 5e-9 with trap of 150	Observed Sensitivity: 2.2 E-8 (22na) Pass/Fail: PASS Sheet Number:
Linearity	0.5 to 8.0% CO ₂ in Helium: Exetainers	≤0.5 ‰ change	Observed Linearity: 0.30 Pass/Fail: PASS Sheet Number:
Peak Shape	Beam 1,2 and 2/1	Minimum 5V wide 2/1. Gradient acceptable due to single turbo pump	Observed Peak Shape: PASS Pass/Fail: PASS Sheet Number:
Stability	2/1 ratio over 600 seconds	Flat, no spikes or variations. Slight gradient acceptable	Observed Stability: Good Stability Pass/Fail: PASS Sheet Number:

Special Tests

Linearity 0.3‰ if required

Specification Acceptance

Engineer Signature:		Date:	13/06/2025
Customer Signature:		Date:	13/06/2025

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Customer Training Checklist

Tuning Parameters:

- What do they mean with respect to what is actually happening in the source?
- How do they affect peak shape, sensitivity and stability?

Gas Box and ASX7400 overview.

- Describe the sample pathway for tube injection, internal ref gas loop loading, ref gas pulse
- Adjusting the autosampler bed layout
- Replacing the needle
- Leak Checking

Running Samples

- How to create the sample list? BCR vs Disk File
- Choosing the correct references and method set up for your application, from tube, ref gas pulse, internal loop loading.
- Event files, when to modify them and how
- Timings, how to adjust the timings to ensure the sample peak is completely integrated
- Measuring and setting the helium flow; valco and syringe.
- Report set up, drift/undrift corrected

The Gas Handling

Routine Maintenance:

- Discuss routine maintenance, including filament and oil change, using the manual as a reference guide.
- A physical demonstration of replacing the needle.

Training Completed			
Engineer Signature:		Date:	13/06/2025
Customer Signature:		Date:	13/06/2025

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**Details of Visit:****Day 1 (09/06/2025):**

Arrived on site

Realised that no CO₂ was fitted for the installation and upon discussion with the customer a spare CO₂ cylinder was found – wrong fitting on cylinder the compatible one was ordered by the building manager to arrive on day 2

Helium bulk connection very old unable to screw on 1/8 nut – part replaced on customer wall and line fitted

Compressed air supply connection was too big to fit 3mm blue tubing – replaced part and used PTFE to restrict gas leaks

Gases to be connected and restored on beginning of Day 2

Started unboxing instruments and consumables

ABCA2 and Versa placed on bench top – upon initial inspection of both instruments no damage was identified from delivery

Edwards backing pump filled with Edwards 15 oil and fitted into the system

Source removed and inspected – no issues

Source placed back into the flight tube and no sorts were detected on the work bench or in the flight tube

All line connections at the back of the systems set up and systems turned on

Set up comms between PC and system, software, Barcode reader, Versa and all valves are fully operational

Pumped down instrument and vacuum started settling nicely

At a vacuum of 2.3 E-7 source checked again no sorts were detected and filament turned on

Filament fired quickly first time with the vacuum returning to 4.4 E-7 rapidly and left on overnight – trap and emission readbacks good

Day 2 (10/06/2025):

Vacuum settled nicely overnight and found at ~2.4 E-8

All gas cylinders and connections fitted, turned on and leak checked – all good

Gas box and glass syringe opened and inspected – all good

Versa positioning checked – all good

Checked and set flows to system: Valco: ~20.2 ml/min and needle: ~30.5 ml/min

Opened isolation valve and vacuum settled at 3.1 E-6 -all good

Magnet placed on top of the flight tube markings

Magnet moved and legs adjusted until CO₂ found

Started running specs

Day 3 (11/06/2025):

Overnight vacuum of 1.0 E-8

Carried on tuning the source and trap jumping

All specs passed

Flow sensor calibrated

Tested the BCR – all good

Day 4 (12/06/2025):

Started training with the customer

Ran reference gas and breath precision specs to demonstrate instrument performance

Ran a 15 breath sample batch using the barcode reader with the end barcodes at the end of the batch – all good, system displayed good breath precision of 0.10 for 12 samples.

Lid placed on ABCA and a CO₂ peak shape prior and after the fitting was taken showing that the magnet was not moved

Day 5 (13/06/2025):

Carried on training with the customer – customer demonstrated good knowledge of instrument setting up and software

Calibration warning code set and cleared

Handed instrument over to customer – install complete

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Recommendations:		
Continue with annual service of instrument and normal maintenance		
Connect the CO2 gas cannister to your argon line – once line is fixed to open up space		
Faults and Shortages:		
N/A		
Additional Parts Used:		
Part Description	Part Code	Cost
N/A	N/A	N/A

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