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Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

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ADDITIONAL:

Payment Terms:
 50% / 40% / 10%
Other: please specify

Penalty Clause Yes / No
 Please specify: _____

Blue Book Completion:

Signed	<i>Dolcener</i>	Date	8/5/25
Verified	<i>S. McV</i>	Date	8/8/25

3 - MACHINE SPECIFICATION

Client:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

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	

3 - MACHINE SPECIFICATION

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Ref No.	Product Description	Required
GC Units <i>continued</i>		
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	Y
70101-1	ABCA2 spares kit (Inc. With ABCA2)	
70101-2	ABCA2 Spares Kit for AB Analytica Systems	Y
70101-3	ABCA2 Autosampler Upgrade Kit	
SI1767	CVL505 – Barcode Reader	
SC9973	13C Urea breath test kit for Helicobacter pylori infection	Y
SC9974	Helicobacter 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 (Inc. With Integra2)	
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	

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21802/3	GEO 20-22 + E-Mag +Hd	
21802/4	GEO 20-22 Inlet	
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	Y
Printer	Printer	
INST1	Installation and start up training at customer's site by Sercon Engineer	Y
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	Y
SCONTRACT	Maintenance Service Contract - 1 year	

3 - MACHINE SPECIFICATION

Client:	Metabolic Solutions Inc.		
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SPECIFICATION REQUIREMENTS			
Voltage	110 Volts 50/60Hzs		Y
Plug Type	SI2510	3 Metre USA/Japan plug to IEC C 13	Y
	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		Y
	Complies with all Export Requirements		

3 - MACHINE SPECIFICATION

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Job Number:	IN1341	Date:	10/06/2024

SPECIAL REQUIREMENTS (DETAILED SPECIFICATION)

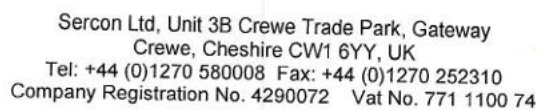
**4 Day on site service visit to be carried out on the customers existing systems
 After the ABCA2 installation, this will take a second week on site**

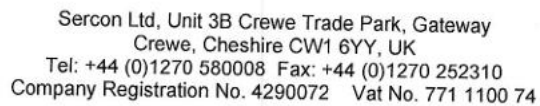
Approved by Sales: Garry Armstrong	Date: 13/06/2024
Approved by Tech.: Maer O'Connor	Date: 13/06/2024

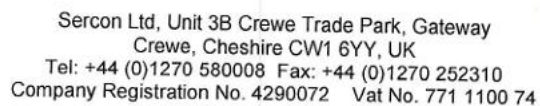
4 - LOG SHEET

Client:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

Date	Action Taken	By Whom
30/5/24	Gas box leak checked	AD
	VerSA Software configured and needle position configured for each sample and each	
	Valco and needle flow set. Valve 3 and 13 crimped down to 2ml/min. Vacuum pumping down overnight	
31/5/24	Overnight vacuum 4.8e-5. Conditioned the filament and left to settle for half a day. Set isolation valve crimp	AD
	Attempted to begin tuning for CO ₂ , moving magnet. 1 st beam not behaving as normal. Checked head amp cable, reset system controls.	
	Short on collector found. Collector removed and fixed by HR.	
31/6/24	Collector now back on system. Short no longer present. 1 st beam behaving more normal.	HC
	magnet positioned to CO ₂ and suitable tuning found.	
	Crimped down valve 13 to give reasonable sens.	
	Ran breaths and 5% to compare against ref gas and crimp down valve 3 to give correct comparison.	HC
4/6/24	Breath and 5% coming out with low values. Flows checked, needle injection depth checked. Peak tubing checked on both ends to confirm sample was getting	







6 - ABCA2 TEST / ACCEPTANCE SPECIFICATION

Customer:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024
Unit Serial Number	2060211-2024/1341		
Gas Box Serial Number	60101/1 2024/1341		
Autosampler Serial Number			

¹³ C				
Ref Gas Injection Precision	100% CO ₂ (n=5)	≤0.1‰ 0.03 RECORD VALUE HERE	Test ☒ Sheet ☐	Install ☐ Sheet ☐
Ref gas in tubes precision	10ml 5% CO ₂ (n=5)	≤0.1‰ 0.09 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 RECORD VALUE HERE	Test ☐ Sheet ☐	Install ☐ Sheet ☐
Linearity	0.5% - 8.0% CO ₂ in Exetainer	≤0.3 ‰ change 0.27 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.:	☒ ☒ ☒ 802.9.0	Date 12.06.24	Initial AD

Flow Meter S/N. 102793

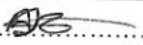
Leak Detector S/N. 118494

Multi-Meter S/N.

Special Tests

Linearity to be better than 0.3‰ and recorded

0.27

Sales Signature: 	(Required)	Date: 12/6/24
Test Signature: 	(Completed)	Date: 12.06.24
Install Signature: 	(Completed)	Date: 9.7.24

Data to be transferred to:

\\CENTRAL-SERVER\\CentralFiles\\SER SPREADSHEETS\\Instrument Performance Spreadsheet.xls

7: ASSEMBLY AND TEST RECORD

Client:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

 PRODUCT: Versa

 SERIAL NUMBER: 60101/12024/1341

 ASSEMBLED:
 (Name) Steve Lowndes

 Date: 09/05/2024

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

 Date: 9/5/24

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

 Date: 9/5/24

 SYSTEM TEST:
 (Name) [Signature]

 Date: 9/5/24

 PRE-DESPATCH
 INSPECTION:
 (Name) [Signature]

 Date: 08/07/2024

P.A.T. Test results

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

 Earth Continuity _____ Ω

 Insulation _____ $M\Omega$

Earth Leakage Current _____ mA. @ _____ kVA.

Tested by: _____

Date: _____

7: ASSEMBLY AND TEST RECORD

Client:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

PRODUCT:

ABCA2

SERIAL NUMBER:

20602/1-2024/1341

~~20602/2024/1341~~

ASSEMBLED:

(Name)



Date:

9/5/2024

 PRE-TEST
INSPECTION:

(Production name)



Date:

9/5/24

 PRE-TEST
INSPECTION:

(Test name)



Date:

24/6/24

SYSTEM TEST:

(Name)

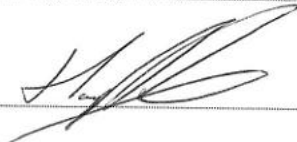


Date:

24/6/24

 PRE-DESPATCH
INSPECTION:

(Name)



Date:

8/07/24

P.A.T. Test results

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

Earth Continuity

0.072

Ω

Insulation

>300

MΩ

Earth Leakage Current

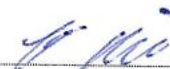
1.30

mA. @

0.09

kVA.

Tested by:



Date:

9/5/2024

8 - Serial Numbers Record Document

Client:	Metabolic Solutions Inc.		
Quotation Number:	17731	Date:	14/05/2024
Job Number:	IN1341	Date:	10/06/2024

Units	S/N
MS/ABCA	20602/2024/1341
Integra 2	
Prep Unit 1	
Prep Unit 2/Misc	
Electronics Upgrade	
CETAC	
Gas Box	
Autosampler	
BCR	
Dual Heater Block	
IT24401014 - New Turbo delivered 10.12.24	
Pump Kit and Optics	S/N
Turbo pump S	IT 23211006
Turbo pump A	
Rotary Pump	F32018L23 025
Voltage	110V 110 / 240
Gauge S	
Gauge A	
Source	FRG700CF35 L12307F018
Collector 1	
Collector 2	
Magnet	21-12-23 ①

Parts	S/N
Fan PSU	
24V PSU	

PCBs	S/N
Electronics Box	20240004
Prep PCB	
VFC PCB	
Watchdog PCB	
Head Amp PCB 1	
Head Amp PCB 2	
Electromagnet RP	

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

PC	S/N
PC	GR44R04
Monitor	BLX C2Y3
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:

Source - 20101-238
 Collector - 20301-156



Packing List

Reference: 15374

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Consignee:

Metabolic Solutions
460 Amherst Street
Nashua, NH 03063
USA

Tel: +44 (0) 1270 580008
Reference: IN1341

Contact Name: Martin A. Baker
Contact Tel Number: 001 603 598 6960

BOX: 1

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	20602/1	ABCA 2	20602/1-2024/1341

Packed by:

Date:


05/07/2020

Claims for damage or shortages must be made within 3 days



S080_v4

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072
Page 1 of 4

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74
19/01/2017



Packing List

Reference: 15374

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Consignee:

Metabolic Solutions
460 Amherst Street
Nashua, NH 03063
USA

Tel: +44 (0) 1270 580008
Reference: IN1341

Contact Name: Martin A. Baker
Contact Tel Number: 001 603 598 6960

BOX: 2

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	20101/1	VERSA 2	20101/1-2024/1341
☒ 5	SI1770	Versa racks	

Barcode reader already fitted to versa

Packed by:

Date:


08/10/2024

Claims for damage or shortages must be made within 3 days



S080_v4

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072
Page 2 of 4

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19/01/2017

Packing List

Reference: 15374

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Consignee:

Metabolic Solutions
460 Amherst Street
Nashua, NH 03063
USA

Tel: +44 (0) 1270 580008
Reference: IN1341

Contact Name: Martin A. Baker
Contact Tel Number: 001 603 598 6960

BOX: 3

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	SI2391	Monitor (US mains cable inside)	B4XC2Y3
☒ 1	SI2918	PC (us mains cable inside)	GR44R04
☒ 1	SI1719	Rotary pump	F32018L23025
☒ 1	SI0101	Permanent magnet	21-12-23 number 1
☒ 1	SI1730	Needle	
		MSK box	
		- Versa power supply	
		- Us mains cable inside	
		- Ribbon cable	
		- Flow cable	
		- Pipes x3	
		software and manuals backup USB inside PC box	
		windows recovery USB inside PC box	
☒ 1	SI70101/1	ABCA 2 spare kit	

Packed by: 

Date:

08/10/2024



sercon

S080_v4

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072
Page 3 of 4

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
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VAT No.: 771 1100 74
19/01/2017

Packing List

Reference: 15374

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0) 1270 580008
Reference: IN1341

Consignee:

Metabolic Solutions
460 Amherst Street
Nashua, NH 03063
USA

Contact Name: Martin A. Baker
Contact Tel Number: 001 603 598 6960

BOX: Dimensions and weights

	<u>L</u>		<u>W</u>		<u>H</u>		
Box 1	<u>96</u>	x	<u>86</u>	x	<u>98</u>	cm	gw <u>104</u> kg
Box 2	<u>99</u>	x	<u>84</u>	x	<u>80</u>	cm	gw <u>67</u> 66.8 kg
Box 3	<u>99</u>	x	<u>84</u>	x	<u>107</u>	cm	gw <u>73</u> kg



COLLECTION NOTE

Job Number: **IN1341**
Customer: Metabolic Solutions Inc.
Contact: Martin A. Baker

Collection on

Date:

10/7/24

No.

of boxes:

3

By:

Company:

UCH

Vehicle

Reg No.

RV70CZK

Signature:

Print:

PAUL FLOSSATT



S062_v3

Sercon Ltd
Unit 3B Crewe Trade Park
Gateway, Crewe, Cheshire
CW1 6JT U.K.
Registered in England and Wales: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74
19/01/2017