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Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

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ADDITIONAL:

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

Penalty Clause Yes / No
 Please specify: _____

Blue Book Completion:

Signed	<i>G. O'Connor</i>	Date	30/6/22
Verified	<i>S. Massey</i>	Date	30/6/22

3 - MACHINE SPECIFICATION

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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	Y
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	Y
EA Units		
10202/11	iso-EArth	Y
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	Y
70501-11	Simultaneous CNS Consumables Kit (approx. 10000 analysis)	
70501-3	Sample Prep Kit (Inc.)	Y
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)	Y
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	Y
SI2743	Liquid Sampler Mounting Plate	Yx2
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	

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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	
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 Helicobacter pylori infection	
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 (<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	

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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)	Y
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	Y
71501-1	HT-EA Pyrolysis Start Up kit O and H	Y
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	Y
TRAIN	Training in UK for one person for 3 days	
SCONTRACT	Maintenance Service Contract - 1 year	

3 - MACHINE SPECIFICATION

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SPECIFICATION REQUIREMENTS			
Voltage	230 Volts 50/60Hzs		Y
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	Y
	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		

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SPECIAL REQUIREMENTS (DETAILED SPECIFICATION)

Requires an extra mounting plate for the liquid autosampler
This will aid swapping between the EA and HT-EA

Aim to ship September by sea freight

Approved by Sales: <i>G Armstrong</i>	Date: 15/06/2021
Approved by Tech.: <i>M O'Connor</i>	Date: 15/06/2021

3 - MACHINE SPECIFICATION

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[illegible]

SHIPPER: SERCON LIMITED UNIT 3B CREWE TRADE PARK GATEWAY CREWE CW1 6JT	
CONSIGNEE: UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION,CHILE. FACULTAD DE CIENCIAS RUT: 71.915.800-5	
NOTIFY PARTY: UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION,CHILE. RUT: 71.915.800-5	
OCEAN VESSEL: GUAYAQUIL EXPRESS	VOYAGE NO.: 149S
PLACE OF RECEIPT: CREWE	PORT OF LOADING: LONDON GATEWAY
PORT OF DISCHARGE: VALPARAISO	PLACE OF DELIVERY: VALPARAISO

BILL OF LADING

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B / L NO.:
3EB21110580



MARITIME SERVICE LINE

FOR PARTICULARS OF DELIVERY APPLY WITH B / L TO:

MSL CHILE S.A.
RUT:77910940-2/ CTC.NADIA & HECTOR
HENDAYA60 OF. 1001 PISO 10
E-MAIL: IMPORT@MSLCORPORATE.CL
SANTIAGO, CHILE
TEL : 5629794800

NOT NEGOTIABLE UNLESS CONSIGNED "TO ORDER"

Excess Value Declaration: Refer to Clause 6(3) (B)+(C)on reverse side

MARKS & NO'S	NO OF PKGS	KIND OF PACKAGES, DESCRIPTION OF GOODS	GROSS WEIGHT kgs	M3
UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION,CHILE. FACULTAD DE CIENCIAS	4	BOXES NON HAZARDOUS SCIENTIFIC EQUIPMENT HS CODE: 90273000 4@100X86X108CM	420.00	3.715
Totals:			420.00	3.715

Container No.: MNBU3423421	TOTAL NUMBER OF PACKAGES OF OTHER UNITS RECEIVED: (IN WORDS) FOUR
SEAL No.: U468840	

FREIGHT AND CHARGES	RATE	PER	PREPAID	COLLECT	RECEIVED by the Carrier the goods as specified above in apparent good order and condition unless otherwise stated, to be transported to such place as agreed, authorised or permitted herein and subject to all the terms and conditions appearing on the front and reverse of this Bill of Lading to which the Merchant agrees by accepting this Bill of Lading, any local privileges and customs notwithstanding. The particulars given above as stated by the shipper and the weight, measure, quantity, condition, contents and value of the Goods are unknown to the Carrier. In WITNESS whereof one (1) Original Bill of Lading has been signed if not otherwise stated below, the same being accomplished the other (s), if any, to be void. If required by the Carrier one (1) Original Bill of Lading must be surrendered duly endorsed in exchange for the Goods or delivery order.

JURISDICTION AND LAW CLAUSE The Contract evidenced by or contained in this Bill of Lading is governed by the law of England and any claim or dispute arising hereunder or in connection herewith shall be determined by the Courts in England and no other Court.					
FREIGHT PAYABLE AT: ORIGIN		NUMBER OF ORIGINAL B (S) L: (0) EXPRESS COPY		PLACE AND DATE OF B (S) L ISSUE: London, 10 Dec 2021	
SIGNED ON BEHALF OF THE CARRIER: AS AGENTS FOR THE CARRIER				SHIPPED ON BOARD 10 Dec 2021	

4 - LOG SHEET

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

Date	Action Taken	By Whom
9/9/21	ISO EARTH PLACED INTO TEST. P.A.T. TESTED - PASSED	PH PH.
	HT-EP PLACED INTO TEST. P.A.T. TESTED - PASSED	PH PH.
9/9/21	COMPUTER SET UP	I.D.
6.10.21	Leak checked the system replaced FMC (leaky at full scale) checked in the set up set V13 pump to 50 ml/min. set standby flow to 15 ml/min. Purifiers checked O ₂ line pressure tested.	
7.10.21	Reduced carrier flow down to Marginal leak check AM found small leak on the TCD Reduced then reduced main flow at the GC column. found the issue with knurled nut of the autosampler. found major He leak. Suspected material failure at the adapter thread. (Replaced for new conlog + nut) repositioned the autosampler to make the best fit. → full flow achieved. Pressure test 11:40: full autosampler leaked from compression springs. Leak check 11:45: full leak 6 psi / 5 minutes.	

4 - LOG SHEET

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
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Date	Action Taken	By Whom
	unable to fire the filament. (found filament offset to one side) Pumps on B-57 Filament fired ok Height adjusted as required. CO ₂ peak shape + 2% stability : PASS CO ₂ ref gas Precision:	
8-10-21	Ref Gas Specs 2022 CO ₂ ref gas Precision + Lin: 0.02 + 0.2% std. N ₂ ref gas Precision + Lin: 0.07 + 0.2% std. List of jobs: EA: Real samples: Precision test Precision + Linearity 2022: HD Precision + tuning	
21-OCT-21	TEE ON OXYGEN MOVED TO AFTER MAC DRAWING TO BE UP ISSUED	LM
26-Oct-21	All ref gas Specs run + Data/250°C Specs complete only HD to test + liquid sample	SM
	ref gas CO ₂ P - 0.03 N ₂ P - 0.08 L - 0.25 L - 0.08 PREC Dual 600°C/100N CO ₂ - 0.10 N ₂ - 0.08 Lin 250°C/100N CO ₂ - 0.16 N ₂ - 0.30	SM
	Test liquid sample next	SM
27/10/21	20-22 Set to H ₂ Peak ok + Stability H ₂ ref gas batch put on B-24	SM



Client:	UCSC C/O: SOTEQ, Chile			
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S028_v3

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
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HS20-22			
Reference Gas Precision (n=5)			
¹³ C	(CO ₂)	0.06	0.03
¹⁵ N		0.06	0.06
¹⁸ O	(CO ₂)	0.06	
³⁴ S	(SO ₂)	0.1	
² H		0.4	0.24

Reference Gas Linearity			
¹³ C	≤0.02‰/nA	0.26	
¹⁵ N	≤0.02‰/nA	0.11	

IsoEarth & IsoEarth+					
Combustion (n=5)					
¹³ C	100 µg C	0.1		10 µg C	0.8
¹⁵ N	100 µg N	0.15		10 µg N	1.5
³⁴ S	25 µg S	0.3		10 µg S	1.0
Dual	400 µg C	0.1	0.1	100 µg N	0.15

Spec 0.5

Linearity

0.16

0.30

Integra2			
¹³ C	100 µg C	0.2	
¹⁵ N	100 µg N	0.3	
Dual	100 µg N & 400 µg C	0.4 & 0.15	
³⁴ S	30 µg S	0.5	
¹⁸ O	100 µg O	0.5	

6 - TEST / ACCEPTANCE SPECIFICATION

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HT-EA			
Pyrolysis (n=5)			
¹⁸ O	100 µg O or 1 µl water	0.3	
² H	200 µg H or 1 µl water	1.0	0.97

Aqua, µCarbs & GasBox					
Equilibrations (n=5)					
¹⁸ O	0.2 ml water	0.1			
² H	0.2 ml water	2.0			
Carbonates (n=5)					
¹³ C	100 µg CaCO ₃	0.08			
¹⁸ O	100 µg CaCO ₃	0.1			
Gas Analysis (n=5)					
¹³ C	5% CO ₂	0.1		Air CO ₂	0.1
¹⁸ O	5% CO ₂	0.1		Air CO ₂	0.2
² H	0.5 ml H ₂	1.5			
¹⁵ N	0.5 ml N ₂	0.1		100 ppm N ₂ O	0.5
¹³ C	Breath (12 ml)	0.1			
DIC (n=5)					
¹³ C	15ppm (0.5ml)	0.15			

LC-I			
(n=5)			
¹³ C		0.2	

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GC Orchid							
Combustion (n=3 for each analyte)							
¹³ C	3 Alkanes	100 ng C	0.2		10 ng C	0.5	
¹⁵ N	2 Amines	100 ng N	0.5		14 ng N	1.5	
Pyrolysis (n=3 for each analyte)							
² H	3 Alkanes	250 ng H	3.0		25 ng H	10.0	
¹⁸ O	3 FAMES	100 ng O	0.5		20 ng O	2.0	
Water pyrolysis (n=5)							
² H	0.1 µl water	3.0					
¹⁸ O	0.1 µl water	0.4					

CryoRange							
(n=5)							
¹³ C	Air CO ₂ (12ml)	0.1		Air CH ₄ (125ml)	0.2		
¹⁵ N	Air N ₂ (1ml)	0.1		Air N ₂ O (125ml)	0.4		
¹⁸ O	Air CO ₂ (12ml)	0.15		Air N ₂ O (125ml)	0.7		
¹⁸ O	Air O ₂ (1ml)	0.1					
² H	Air CH ₄	3.0					
¹³ C	TOC (5ppm)	0.4					
¹³ C	Laser						

6 - TEST / ACCEPTANCE SPECIFICATION

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Geo2			
Internal precision (no change overs)			
² H	200 Bar µl	0.15	
¹³ C	100 Bar µl	0.01	
¹⁵ N	100 Bar µl	0.01	
¹⁸ O	100 Bar µl	0.015	
³⁴ S	100 Bar µl	0.015	
Single cold finger volumes (10 change overs)			
¹³ C	20 Bar µl	0.01	
¹⁸ O	20 Bar µl	0.015	
¹³ C	3 Bar µl	0.02	
¹⁸ O	3 Bar µl	0.03	
CAPS (n=5)			
¹³ C	50 µg CaCO ₃	0.03	
¹⁸ O	50 µg CaCO ₃	0.06	
WES (n=5)			
² H		1.0	
¹⁸ O		0.05	
Manifold (10 tubes)			
² H		0.5	
¹³ C		0.02	
¹⁵ N		0.02	
¹⁸ O		0.03	
³⁴ S		0.03	



Sercon Ltd, Unit 3B Crewe Trade Park, Gateway
Crewe, Cheshire CW1 6JT, UK
Tel: +44 (0)1270 580008 Fax: +44 (0)1270 252310
Company Registration No. 4290072 Vat No. 771 1100 74

Test acceptance - 6

6 - TEST / ACCEPTANCE SPECIFICATION

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Special tests

Sales Signature: <i>S. O'Connor</i>	Date: <i>18/11/21</i>
Test Signature: <i>S. Masdel</i>	Date: <i>18/11/21</i>

7: ASSEMBLY AND TEST RECORD

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

PRODUCT:

HS2022

SERIAL NUMBER:

20402/3-2021/1262

ASSEMBLED:

(Name)

ABun

Date:

6.10.2021

 PRE-TEST
 INSPECTION:

(Production name)

P. Mayo

Date:

6.10.2021

 PRE-TEST
 INSPECTION:

(Test name)

S. Masley

Date:

6.10.2021

SYSTEM TEST:

(Name)

S. Masley
(RE PACKED)

Date:

15/11/2021

 PRE-DESPATCH
 INSPECTION:

(Name)

ABun John Moran

Date:

18/11/21
15.10.2021
Sm

P.A.T. Test results

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

Earth Continuity

0.078
 Ω

Insulation

>300
 $M\Omega$

Earth Leakage Current

0.30mA

mA. @

0.05

kVA.

Tested by:

P. Mayo

Date:

5/10/21

Batch Picking List

Works Order Number WO01353
BOM Reference 20402/3
BOM Description HS 2022 + Hd Collector+ E-Mag
Qty Required 1.000
Qty Outstanding 1.000
Manuf.Instructions
Works Order Notes

Sales Order No. Quantity DueDate

Drawings			
Reference/Description	Valid From	ValidTo	Revision Number Date

Required By	
Works Order No.	BOM Reference Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
10.00	20102 HS Source Assy	1.000	0.000	0.000	1.000	MARKS OFFICE Each
20.00	20301 Standard Collector Assy	1.000	0.000	0.000	1.000	MARKS OFFICE Each
30.00	20501 Hd Collector Assy	1.000	0.000	0.000	1.000	MARKS OFFICE Each
40.00	41902 Single channel 100G amp assy	1.000	0.000	0.000	1.000	D-U1 Each
50.00	41903 Three channel 100M/5G/5G amp assy	1.000	0.000	0.000	1.000	D-U1 Each
60.00	70101/11 20-22 Head Amp Inverter PCB Cable	1.000	0.000	0.000	1.000	B-H1 Each
70.00	70101/12 20-22 Source Cable	1.000	0.000	0.000	1.000	B-H1 Each
80.00	70101/13 Standard Head Amp Cable	1.000	0.000	0.000	1.000	B-H1 Each
90.00	70201-1 Analyser spares kit - Included	1.000	0.000	0.000	1.000	Z Each
100.00	SI0005 20-20 H/D Flight Tube Assembly	1.000	0.000	0.000	1.000	D-Z Each
110.00	SI0022 Capillary Crimp Parts A & B	6.000	0.000	0.000	6.000	B-I4 Each
120.00	SI0049 Big Magnet Adjusting Foot	1.000	0.000	0.000	1.000	B-I3 Each
130.00	SI0050 Magnet Foot	2.000	0.000	0.000	2.000	B-I3 Each
140.00	SI0086 Ref Gas Bracket	4.000	0.000	0.000	4.000	D-W3 Each

Batch Picking List

150.0i	SI0112 NW10/16 Clamping Ring Stainless Steel - Edwards	1.000	0.000	0.000		1.000	D-Z5 Each
160.0i	SI0113 NW10/16 Adapt/Cent Viton® SS - Edwards	1.000	0.000	0.000		1.000	D-Z5 Each
170.0i	SI0155 Windows based data system	1.000	0.000	0.000		1.000	Each
180.0i	SI0196 Reducing Union 1/4 x 1/16 SS	2.000	0.000	0.000		2.000	B-J7 Each
190.0i	SI0198 Tee Union 1/16 SS	1.000	0.000	0.000		1.000	B-J7 Each
200.0i	SI0204 Bulkhead Union 1/16 SS	2.000	0.000	0.000		2.000	B-J7 Each
210.0i	SI0205 Bulkhead Union 1/8 SS	5.000	0.000	0.000		5.000	B-J7 Each
220.0i	SI0344 2P red illuminated round rocker switch,10A	4.000	0.000	0.000		4.000	B-H5 Each
230.0i	SI0346 SPCO Relay - 24V DC	3.000	0.000	0.000		3.000	B-H3 Each
240.0i	SI0347 SPCO Relay Base	3.000	0.000	0.000		3.000	B-H3 Each
250.0i	SI0355 DPCO Relay - 24V DC	1.000	0.000	0.000		1.000	B-H3 Each
260.0i	SI0366 Flow Meter AWM3100V	1.000	0.000	0.000		1.000	B-J3 Each
270.0i	SI0373 34 Way IDC Header DIN Rail Terminal	1.000	0.000	0.000		1.000	B-H9 Each
280.0i	SI0374 Connector,Terminal,Screw,Single Pole,Interlocking,Tab/Tab	8.000	0.000	0.000		8.000	B-H6 Each
290.0i	SI0375 Terminal Block End Plate	2.000	0.000	0.000		2.000	B-H6 Each
300.0i	SI0376 DPCO Relay Base	1.000	0.000	0.000		1.000	B-H3 Each
310.0i	SI0385 25 Way Machine Cont Straight D Skt, 750Vac	1.000	0.000	0.000		1.000	D-X4 Each
320.0i	SI0387 9 Way Machine Cont Straight D Plug, 750Vac	1.000	0.000	0.000		1.000	D-X4 Each
330.0i	SI0388 9 Way Machine Cont Straight D Skt, 750Vac	1.000	0.000	0.000		1.000	D-X4 Each
340.0i	SI0508 24V PSU	1.000	0.000	0.000		1.000	B-H9 Each
350.0i	SI0524 3 Way Socket Housing, 2.54mm Pitch	1.000	0.000	0.000		1.000	D-W3 Each

Batch Picking List

360.0i	SI0534 3307 Telescopic Slide 457mm L 483mm	1.000	0.000	0.000	1.000	B-H9 Each
370.0i	SI0570 15 way Solder Contact ZD skt 5A 400 Vac	3.000	0.000	0.000	3.000	D-X4 Each
380.0i	SI0620 IEC Insulatated Cover	1.000	0.000	0.000	1.000	B-H4 Each
390.0i	SI0630 80mm Fan Guard	6.000	0.000	0.000	6.000	B-H7 Each
400.0i	SI0631 9 Way D Hood	2.000	0.000	0.000	2.000	D-X4 Each
410.0i	SI0632 15 Way D Hood	2.000	0.000	0.000	2.000	D-X4 Each
420.0i	SI0685 20-20 ElectroMagnet Assembly	1.000	0.000	0.000	1.000	D-V4 Each
430.0i	SI0687 1/8" PTFE Ferrules - Blank	1.000	0.000	0.000	1.000	B-J5 Each
440.0i	SI0697 MOVPT-1-50 Pneumatic Valve	3.000	0.000	0.000	3.000	B-K3 Each
450.0i	SI0701 1/4" PTFE Ferrules Pk/1	2.000	0.000	0.000	2.000	B-J7 Each
460.0i	SI0703 1/8-1/16" PTFE Reducing Ferrule Pk/1	7.000	0.000	0.000	7.000	B-J5 Each
470.0i	SI0710 VALCO Tee - 1/16	1.000	0.000	0.000	1.000	B-J9 Each
480.0i	SI0762 PSR16-16 PTFE Sealing Rings Pk/20	0.600	0.000	0.000	0.600	B-J6 Each
490.0i	SI0777 Nylon Pillars Male-Female M4x25mm	4.000	0.000	0.000	4.000	D-W3 Each
500.0i	SI0793 80mm DC Fan	6.000	0.000	0.000	6.000	B-H7 Each
510.0i	SI0794 Female NiPt D Screwlock assembly, 13mm	2.000	0.000	0.000	2.000	D-X Each
520.0i	SI0847 IEC Cord - Socket	2.000	0.000	0.000	2.000	B-I2 Each
530.0i	SI0895 Blue Cat5e UTP patch lead, 2m	1.000	0.000	0.000	1.000	B-H1 Each
540.0i	SI0896 Yellow Cat5e UTP patch lead, 2m	1.000	0.000	0.000	1.000	B-H1 Each
550.0i	SI0900 25 Way D Hood	1.000	0.000	0.000	1.000	D-X4 Each
560.0i	SI0903 I.E.C Socket Mount	1.000	0.000	0.000	1.000	B-H5 Each

Batch Picking List

570.0i	SI0960 IEC Cord - Plug	1.000	0.000	0.000		1.000	B-I2 Each
580.0i	SI0961 System Controller - Electronics Box	1.000	0.000	0.000		1.000	D-V3 Each
590.0i	SI1052 3 Way MOLEX Clip	1.000	0.000	0.000		1.000	B-J2 Each
600.0i	SI1196 Female NiPt D screwlock assembly, 8mm	6.000	0.000	0.000		6.000	D-X Each
610.0i	SI1236 Levelling Foot - M10x38mm	5.000	0.000	0.000		5.000	B-H8 Each
620.0i	SI1244 Seal Kit	1.000	0.000	0.000		1.000	B-J3 Each
630.0i	SI1245 SOL Cable	6.000	0.000	0.000		6.000	B-J3 Each
640.0i	SI1255 M5 Plug	2.000	0.000	0.000		2.000	B-J3 Each
650.0i	SI1328 Mains Filter	1.000	0.000	0.000		1.000	B-H4 Each
660.0i	SI1329 24Vdc Power Supply, Switchmode, 2x4inch	1.000	0.000	0.000		1.000	B-H5 Each
670.0i	SI1330 Cover Kit for 2x4inch Power Supplies	1.000	0.000	0.000		1.000	B-H5 Each
680.0i	SI1331 PSU Connector Kit	1.000	0.000	0.000		1.000	B-H5 Each
690.0i	SI1344 IEC Connector Clamp Kit	2.000	0.000	0.000		2.000	B-H4 Each
700.0i	SI1418 80mm Fan Screen Filter	6.000	0.000	0.000		6.000	B-H7 Each
710.0i	SI1478 Double Flange	1.000	0.000	0.000		1.000	B-H8 Each
720.0i	SI1481 4 WAY REF GAS MANIFOLD	1.000	0.000	0.000		1.000	B-J2 Each
730.0i	SI1482 34 Way IDC Bump Polarised Socket, 1A	1.000	0.000	0.000		1.000	D-X4 Each
740.0i	SI1491 IEC Insulation Cover	1.000	0.000	0.000		1.000	B-H4 Each
750.0i	SI1513 VFC PCB	1.000	0.000	0.000		1.000	B-O3 Each
760.0i	SI1548 4A Fuse, Anti Surge 5x20mm	1.000	0.000	0.000		1.000	B-K7 Each
770.0i	SI1554 3-Station Manifold - M5	1.000	0.000	0.000		1.000	B-J2 Each

Batch Picking List

780.00	SI1580 Source Mounting Pillar	2.000	0.000	0.000		2.000	D-U2 Each
790.00	SI1595 37 Way D Plate	3.000	0.000	0.000		3.000	D-U3 Each
800.00	SI1754 Emag Drive Panel with Cable	1.000	0.000	0.000		1.000	Each
810.00	SI1794 37 Way IDC D Socket - Metal	1.000	0.000	0.000		1.000	D-X4 Each
820.00	SI1795 37 Way IDC D Plug - Metal	2.000	0.000	0.000		2.000	D-X4 Each
830.00	SI1797 Fuse Holder Insulation Cover	2.000	0.000	0.000		2.000	B-H6 Each
840.00	SI1812 E-Mag Screw	3.000	0.000	0.000		3.000	B-I3 Each
850.00	SI1821 3 Port valve	6.000	0.000	0.000		6.000	B-J3 Each
860.00	SI1899 1/16 x M5 Fitting	12.000	0.000	0.000		12.000	B-J6 Each
870.00	SI1900 Dowty Seal - M5	12.000	0.000	0.000		12.000	B-J6 Each
880.00	SI2285 Mag Terminal Cover Black	4.000	0.000	0.000		4.000	B-I3 Each
890.00	SI2288 Internal USB 4.5m	1.000	0.000	0.000		1.000	B-H2 Each
900.00	SI2289 Oil Mist Eliminator	1.000	0.000	0.000		1.000	D-Z6 Each
910.00	SI2294 NW10 x 3/8" Bsp Adapter	1.000	0.000	0.000		1.000	D-Z5 Each
920.00	SI2296 Precision Flow Control	1.000	0.000	0.000		1.000	B-J4 Each
930.00	SI2304 Screwdriver bayonetcap fuseholder 5x20mm	2.000	0.000	0.000		2.000	B-H6 Each
940.00	SI2351 4 Port PCI Express (PCIe) SuperSpeed USB 3.0 Card Adapter	1.000	0.000	0.000		1.000	Each
950.00	SI2352 2 Port Native PCI Express RS232 Serial Card with 16950 UAR	1.000	0.000	0.000		1.000	Each
960.00	SI2391 PC Monitor	1.000	0.000	0.000		1.000	Each
970.00	SI2411 KVT 20 Split Cable Gland (inc locknut)	1.000	0.000	0.000		1.000	B-H2 Each
980.00	SI2412 KT 5 insert	1.000	0.000	0.000		1.000	B-H2 Each

ate: 09/09/2021
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Sercon Limited

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Batch Picking List

990.00	SI2512 3 Metre UK 13 amp Fused plug to IEC C 13	1.000	0.000	0.000	1.000	B-I1 Each
1,000.	SI2529 HP OFFICEJET PRO 6230 Colour InkJet Printer	1.000	0.000	0.000	1.000	Each
1,010.	SI2579 20-22 Cabinet Wave Assy	1.000	0.000	0.000	1.000	C Each
1,020.	SI2614 HS2022 Artwork	1.000	0.000	0.000	1.000	C Each
1,030.	SI2626 C2G 2m USB 2.0 A/B Cable - Black	1.000	0.000	0.000	1.000	Each
1,040.	SI2663 nEXT85 HS2022 KIT	1.000	0.000	0.000	1.000	D-Z Each

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Sercon Limited
Batch Picking List

Works Order Number WO01367
BOM Reference 41902
BOM Description Single channel 100G amp assy
Qty Required 1.000
Qty Outstanding 1.000
Manuf.Instructions
Works Order Notes

Sales Order No. Quantity DueDate

Drawings			
Reference/Description	Valid From	ValidTo	Revision Number Date

Required By	
Works Order No.	BOM Reference Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
20.00	SI0035 Feedthru' Connector	2.000	0.000	2.000	2.000	D-X6 Each
30.00	SI1599 Brass Clip	2.000	0.000	2.000	2.000	D-X Each
40.00	SI1802 M3x8mm Hex Spacer	0.000	0.000	0.000	0.000	B-H2 Each
50.00	SI2235 Head Amp Plate Blank Rev 003	1.000	0.000	1.000	1.000	D-U1 Each
60.00	SI2237 Head amp Cover Rev 003	1.000	0.000	1.000	1.000	D-U1 Each
70.00	SI2253 Brass F-F threaded hex spacer, M3x40mm	0.000	0.000	0.000	0.000	B-H2 Each
80.00	SI2260 15 way IDC DIN41652 class2 D plug	0.000	0.000	0.000	0.000	B-H2 Each
90.00	SI2261 15 way IDC DIN41652 class2 D socket	0.000	0.000	0.000	0.000	B-H2 Each
10.00	SI2527 Single channel 100G amp pcb	1.000	0.000	1.000	1.000	D-U1 Each

Works Order Number
 BOM Reference
 BOM Description
 Qty Required
 Qty Outstanding
 Manuf.Instructions
 Works Order Notes

WO01368
 41903
 Three channel 100M/5G/5G amp assy
 1.000
 1.000

Sales Order No. Quantity DueDate

Drawings			
Reference/Description	Valid From	Valid To	Revision Number Date

Required By		
Works Order No.	BOM Reference	Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
20.00	SI0035 Feedthru Connector	4.000	0.000	4.000	4.000	D-X6 Each
30.00	SI1599 Brass Clip	4.000	0.000	4.000	4.000	D-X Each
40.00	SI1802 M3x8mm Hex Spacer	0.000	0.000	0.000	0.000	B-H2 Each
50.00	SI2235 Head Amp Plate Blank	1.000	0.000	1.000	1.000	D-U1 Each
60.00	SI2237 Head amp Cover	1.000	0.000	1.000	1.000	D-U1 Each
70.00	SI2253 Brass F-F threaded hex spacer, M3x40mm	0.000	0.000	0.000	0.000	B-H2 Each
80.00	SI2260 15 way IDC DIN41652 class2 D plug	0.000	0.000	0.000	0.000	B-H2 Each
90.00	SI2261 15 way IDC DIN41652 class2 D socket	0.000	0.000	0.000	0.000	B-H2 Each
10.00	SI2526 Three channel 100M/5G/5G amp pcb	1.000	0.000	1.000	1.000	D-U1 Each

Batch Picking List

Works Order Number
 BOM Reference
 BOM Description
 Qty Required
 Qty Outstanding
 Manuf.Instructions
 Works Order Notes

WO01369
 70101/11
 20-22 Head Amp Inverter PCB Cable
 1.000
 1.000

Sales Order No.
 Quantity DueDate

Drawings			
Reference/Description	Valid From	ValidTo	Revision Number

Required By		
Works Order No.	BOM Reference	Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
10.00	SI0386 25 Way Machine Cont Straight D Plug, 750Vac	1.000	0.000	1.000	1.000	D-X4 Each
20.00	SI0570 15 way Solder Contact ZD skt 5A 1000 Vac	1.000	0.000	1.000	1.000	D-X4 Each
70.00	SI0599 4 Core Screened Cable 7 x 0.2mm	0.000	0.000	0.000	0.000	D-X6 Each
30.00	SI0632 15 Way Screwdown Cover w/jackscrew,D hood	2.000	0.000	2.000	2.000	D-X4 Each
50.00	SI0900 25 way screwdown cover w/jackscrew,D hood	1.000	0.000	1.000	1.000	D-X4 Each
60.00	SI2242 Inverter PCB	1.000	0.000	1.000	1.000	B-O4 Each
40.00	SI2439 6 Pair Twisted Pair Industrial Cable	0.000	0.000	0.000	0.000	Each

Batch Picking List

Works Order Number	WO01370
BOM Reference	70101/12
BOM Description	20-22 Source Cable
Qty Required	1.000
Qty Outstanding	1.000
Manuf.Instructions	
Works Order Notes	

Sales Order No.	Quantity	DueDate
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Drawings			
Reference/Description	Valid From	ValidTo	Revision Number
			Date

Required By		
Works Order No.	BOM Reference	Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
10.00	SI1127 Plug Housing, 9way	1.000	0.000	1.000	1.000	D-U2 Each
20.00	SI1128 Strain Relief, 9way	2.000	0.000	2.000	2.000	D-U2 Each
30.00	SI1157 Cable for Source	0.000	0.000	0.000	0.000	D Each
40.00	SI1334 Crimp pin, mate-n-lok Pk/100	0.000	0.000	0.000	0.000	D-W2 Each
50.00	SI1476 Feedthrough Boss	1.000	0.000	1.000	1.000	D-U2 Each
60.00	SI1477 FeedThrough Boss Cover	1.000	0.000	1.000	1.000	D-U2 Each
70.00	SI1599 Brass Clip	9.000	0.000	9.000	9.000	D-X Each

Batch Picking List

Works Order Number
 BOM Reference
 BOM Description
 Qty Required
 Qty Outstanding
 Manuf.Instructions

 Works Order Notes

WO01371
 70101/13
 Standard Head Amp Cable
 1.000
 1.000
 To be used on
 HD cable for 20/22.1 METER LONG
 ABCA/2 2 METERS LONG.
 INTEGRA/2 1.2 METERS LONG.

 To be used on
 HD cable for 20/22.1 METER LONG
 ABCA/2 2 METERS LONG.
 INTEGRA/2 1.2 METERS LONG.

Sales Order No. Quantity DueDate

Drawings				
Reference/Description	Valid From	ValidTo	Revision Number	Date

Required By			
Works Order No.	BOM Reference	Quantity	

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
10.00	SI0567 15 Way Solder Contact ZD Plug 5A 400 Vac	1.000	0.000	1.000	1.000	D-X4 Each
20.00	SI0570 15 way Solder Contact ZD skt 5A 400 Vac	1.000	0.000	1.000	1.000	D-X4 Each
30.00	SI0632 15 Way D Hood	2.000	0.000	2.000	2.000	D-X4 Each
40.00	SI2439 6 Pair Twisted Pair Industrial Cable	0.000	0.000	0.000	0.000	Each

7: ASSEMBLY AND TEST RECORD

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

PRODUCT:

 ISO-EARTH
 10202/11-2021-1262

SERIAL NUMBER:

2040

 ASSEMBLED:
 (Name)

Haydon

Date:

9/9/21

 PRE-TEST
 INSPECTION:
 (Production name)

P. Hayes

Date:

9/9/21

 PRE-TEST
 INSPECTION:
 (Test name)

S. Madsen

Date:

9/9/21

 SYSTEM TEST:
 (Name)

S. Madsen

Date:

15/11/21

 PRE-DESPATCH
 INSPECTION:
 (Name)

 P. Hayes PRE-PAKED
 S. Madsen

Date:

18/11/21

P.A.T. Test results

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

Earth Continuity

0.085

Ω

Insulation

100

MΩ

Earth Leakage Current

0.25

mA. @

0.05

kVA.

Tested by:

P. Hayes

Date:

9/9/21

Date: 08/09/2021
Time: 14:34:53

Sercon Limited

Page: 1

Batch Picking List

Works Order Number WO01346
BOM Reference 10202/11
BOM Description Iso EArth
Qty Required 1.000
Qty Outstanding 1.000
Manuf.Instructions
Works Order Notes

Sales Order No. Quantity DueDate

Drawings	Reference/Description	Valid From	Valid To	Revision Number	Date
	10202/1			1.0	16/05/2012

Required By	Works Order No.	BOM Reference	Quantity
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Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
840.00	10202-S Sercon 50 Position Autosampler Assy	1.000	0.000	0.000	1.000	Each
10.00	70501-1 Consumables for C and N for Combustion Only (Inc.)	1.000	0.000	1.000	1.000	Z@ Each
20.00	70501-3 Sample Preparation Kit (Inc.)	1.000	0.000	1.000	1.000	Z@ Each
30.00	SC0030 Thermocouple K-Type- 1.5mm PK/1	2.000	0.000	2.000	2.000	A-G3 Each
40.00	SC0082 GC Column for ANCA-SL/GSL PK/1 (U shaped)	1.000	0.000	1.000	1.000	A-D2 Each
50.00	SC0085 Cap Kit for Threaded Joints Caps & PTFE Backed Sil Seals pk	2.000	0.000	2.000	2.000	A-B3 Each
60.00	SC2495 Scrubber Tube 220mm	2.000	0.000	2.000	2.000	A-B3 Each
70.00	SI0008 GSL Top Hat Adaptor	1.000	0.000	1.000	1.000	B-I5 Each
80.00	SI0076 Tube Coupling	4.000	0.000	4.000	4.000	B-I5 Each
90.00	SI0196 Reducing Union 1/4 OD x 1/16 OD SS	4.000	0.000	4.000	4.000	B-J7 Each
100.00	SI0198 Tee Union 1/16 SS	2.000	0.000	2.000	2.000	B-J7 Each
110.00	SI0201 1/16 O/D x 10-32 UNFM.SS	4.000	0.000	4.000	4.000	B-N2 Each
120.00	SI0204 Bulkhead Union 1/16 SS	10.000	0.000	10.000	10.000	B-J7 Each
130.00	SI0205 Bulkhead Union 1/8 SS	9.000	0.000	9.000	9.000	B-J7 Each

Batch Picking List

140.0	SI0212 Reducing Union 1/8 OD x 1/16 OD SS	4.000	0.000	4.000	4.000	B-J7 Each
150.0	SI0329 Flatpack Fan (for GSL)	1.000	0.000	1.000	1.000	B-I7 Each
160.0	SI0344 2P red illuminated round rocker switch,10A	1.000	0.000	1.000	1.000	B-H5 Each
170.0	SI0345 SSR Safety Cover	4.000	0.000	4.000	4.000	B-I5 Each
180.0	SI0346 SPDT plug-in power Relay - 10A 24V DC coil	2.000	0.000	2.000	2.000	B-H3 Each
190.0	SI0347 SPCO Relay Base	2.000	0.000	2.000	2.000	B-H3 Each
200.0	SI0366 Flow Meter AWM3100V	2.000	0.000	2.000	2.000	B-J3 Each
210.0	SI0373 34 Way IDC Terminal Block	1.000	0.000	1.000	1.000	B-H9 Each
220.0	SI0374 Terminal Block Section	15.000	0.000	15.000	15.000	B-H6 Each
230.0	SI0375 Terminal Block End Plate	3.000	0.000	3.000	3.000	B-H6 Each
240.0	SI0378 Blk Re-wireable Straight Plug, 10A 250Vac	3.000	0.000	3.000	3.000	B-H5 Each
250.0	SI0508 24V PSU	1.000	0.000	1.000	1.000	B-H9 Each
260.0	SI0559 Solid State Relay 10A rms 24-280 Vac	4.000	0.000	4.000	4.000	B-I5 Each
270.0	SI0581 Toroidal Transformer 1000VA 2x55V o/p	1.000	0.000	1.000	1.000	B-I9 Each
280.0	SI0607 Anti Surge T HBC Min Fuse 6.3A 5x20mm	2.000	0.000	2.000	2.000	B-K7 Each
290.0	SI0620 IEC Insulatated Cover	1.000	0.000	1.000	1.000	B-H4 Each
300.0	SI0630 80mm Fan Guard	4.000	0.000	4.000	4.000	B-H7 Each
310.0	SI0701 1/4" PTFE Ferrules Pk/1	4.000	0.000	4.000	4.000	B-J7 Each
320.0	SI0703 1/8-1/16" PTFE Reducing Ferrule Pk/1	11.000	0.000	11.000	11.000	B-J5 Each
330.0	SI0708 SSUE 16/16 Stainless Steel Union	1.000	0.000	1.000	1.000	B-J9 Each
340.0	SI0793 80mm DC Fan	4.000	0.000	4.000	4.000	B-H7 Each

Batch Picking List

350.0	SI0807 Thermostat	1.000	0.000	1.000	1.000	B-I6 Each
360.0	SI0847 IEC Cord - Socket	3.000	0.000	3.000	3.000	B-I2 Each
370.0	SI0902 Toggle Switch	1.000	0.000	1.000	1.000	D-X6 Each
380.0	SI1052 3 Way MOLEX Clip	1.000	0.000	1.000	1.000	B-J2 Each
390.0	SI1167 Reducing Union 1/4-1/8	2.000	0.000	2.000	2.000	B-J9 Each
400.0	SI1168 1/4 Nut Knurled (brass)	2.000	0.000	2.000	2.000	B-J9 Each
420.0	SI1241 3 Way Solenoid Valve	7.000	0.000	7.000	7.000	B-J4 Each
430.0	SI1242 2 Way Solenoid Valve	3.000	0.000	3.000	3.000	B-J4 Each
440.0	SI1245 SOL Cable	1.000	0.000	1.000	1.000	B-J3 Each
450.0	SI1251 Autosampler Solenoid Valve	1.000	0.000	1.000	1.000	B-J3 Each
460.0	SI1255 M5 Plug	2.000	0.000	2.000	2.000	B-J3 Each
470.0	SI1328 Mains Filter	1.000	0.000	1.000	1.000	B-H4 Each
480.0	SI1344 IEC Connector Clamp Kit	1.000	0.000	1.000	1.000	B-H4 Each
490.0	SI1418 80mm Fan Screen Filter	4.000	0.000	4.000	4.000	B-H7 Each
500.0	SI1482 34 Way IDC Bump Polarised Socket, 1A	2.000	0.000	2.000	2.000	D-X4 Each
510.0	SI1548 4A Fuse, Anti Surge 5x20mm	1.000	0.000	1.000	1.000	B-K7 Each
520.0	SI1603 Bulkhead Fitting 4mm - 1/8	1.000	0.000	1.000	1.000	B-K5 Each
530.0	SI1604 Male Connctor 1/8 UNION 1/8	1.000	0.000	1.000	1.000	B-K5 Each
540.0	SI1689 Threaded Adaptor for GSL/INTEGRA. (NO COUPLING NUT)	2.000	0.000	2.000	2.000	B-N3 Each
550.0	SI1690 Coupling Nut for SI1689 & SI0043	2.000	0.000	2.000	2.000	B-N3 Each
590.0	SI1797 Fuse Holder Insulation Cover	3.000	0.000	3.000	3.000	B-H6 Each

Batch Picking List

610.0	SI1899 1/16 x M5 Fitting	25.000	0.000	25.000	25.000	B-J6 Each
620.0	SI1900 Dowty Seal - M5	25.000	0.000	25.000	25.000	B-J6 Each
630.0	SI2244 Male Elbow 4mm to M5	3.000	0.000	3.000	3.000	B-K4 Each
640.0	SI2288 Internal USB 4.5m	1.000	0.000	1.000	1.000	B-H2 Each
650.0	SI2304 Screwdriver bayonetcap fuseholder 5x20mm	3.000	0.000	3.000	3.000	B-H6 Each
660.0	SI2311 MicroFlow Mass Flow Controller Helium	1.000	0.000	1.000	1.000	B-N2 Each
670.0	SI2319 MicroFlow Mass Flow Controller Oxygen	1.000	0.000	1.000	1.000	B-N2 Each
680.0	SI2346 Thermal Conductivity Detector	1.000	0.000	1.000	1.000	B-N2 Each
700.0	SI2409 EA Furnace 186mm Dia	2.000	0.000	2.000	2.000	B-M2 Each
710.0	SI2411 KVT 20 Split Cable Gland (inc locknut)	1.000	0.000	1.000	1.000	B-H2 Each
720.0	SI2412 KT 5 insert	1.000	0.000	1.000	1.000	B-H2 Each
730.0	SI2435 Electronic Pressure Regulator	2.000	0.000	2.000	2.000	B-N2 Each
740.0	SI2468 EArth Cabinet Rev002	1.000	0.000	1.000	1.000	C Each
750.0	SI2472 Bulkhead Retainer 1/16"	2.000	0.000	2.000	2.000	B-J8 Each
770.0	SI2581 Cartridge Heater - 6.5mm -40mm L - 230V - 125W	1.000	0.000	1.000	1.000	B-N2 Each
780.0	SI2582 EArth System PCB	1.000	0.000	1.000	1.000	B-O3 Each
790.0	SI2589 TCD GC Assy	1.000	0.000	1.000	1.000	B-N2 Each
800.0	SI2600 TCD Heated Block	1.000	0.000	1.000	1.000	B-N2 Each
810.0	SI2603 Telescopic Rail	1.000	0.000	1.000	1.000	B-N3 Each
820.0	SI2621 iso EArth Artwork	1.000	0.000	1.000	1.000	C Each
830.0	SI2666 O Ring ID 4.47 OD 7.93 x 1.78 (1 bag 50 5.26)	4.000	0.000	4.000	4.000	B-N2 Each

20

Batch Picking List

5

1.000

7: ASSEMBLY AND TEST RECORD

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

PRODUCT:

HT-ER WAVE

SERIAL NUMBER:

11501/4-2021/1262

ASSEMBLED:

(Name)

[Signature]

Date:

9/9/21

 PRE-TEST
INSPECTION:

(Production name)

P. Hays

Date:

9/9/21

 PRE-TEST
INSPECTION:

(Test name)

S. Masoff

Date:

9/9/21

SYSTEM TEST:

(Name)

S. Masoff

Date:

15/10/21

 PRE-DESPATCH
INSPECTION:

(Name)

[Signature] RE-PAKED

Date:

18/10/21

P.A.T. Test results

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

Earth Continuity

0.038.
 Ω

Insulation

7300
 $M\Omega$

Earth Leakage Current

0.25

mA. @

0.05

kVA.

Tested by:

P. Hays

Date:

9/9/21

Batch Picking List

Works Order Number
 BOM Reference
 BOM Description
 Qty Required
 Qty Outstanding
 Manuf.Instructions
 Works Order Notes

WO01348
 11501/4
 HT-EA (With Autosampler)
 1.000
 1.000

Sales Order No.
 Quantity DueDate

Drawings			
Reference/Description	Valid From	Valid To	Revision Number
			Date

Required By		
Works Order No.	BOM Reference	Quantity

Seq	Product Code	Qty Required	Qty Allocated	Qty Issued	To Issue	Bin Location/UOM
270.00	10202-S Sercon 50 Position Autosampler Assy	1.000	0.000	1.000	1.000	Each
10.00	70801-1 Pyrolysis Start Up Kit high temp for Solids	1.000	0.000	1.000	1.000	Each
20.00	71501-1 HT-EA Pyrolysis Start Up Kit O and H (Used In Build)	1.000	0.000	1.000	1.000	Each
30.00	SC0085 Cap Kit for Threaded Joints Caps & PTFE Backed Sil Seals pk	1.000	0.000	1.000	1.000	A-B3 Each
40.00	SC2010 Separation Column Oxygen 1m ANCA-SL/GSL	1.000	0.000	1.000	1.000	A-D2 Each
50.00	SC2495 Scrubber Tube 220mm	1.000	0.000	1.000	1.000	A-B3 Each
60.00	SI0008 GSL Top Hat Adaptor	1.000	0.000	1.000	1.000	B-I5 Each
70.00	SI0043 HT Threaded Adaptor with 1" BDP Nut (no coupling nut)	1.000	0.000	1.000	1.000	B-N3 Each
80.00	SI0076 Tube Coupling	2.000	0.000	2.000	2.000	B-I5 Each
90.00	SI0198 Tee Union 1/16 SS	1.000	0.000	1.000	1.000	B-J7 Each
100.00	SI0199 Male Connector 1/16 OD x 1/8 NPTM SS	3.000	0.000	3.000	3.000	B-J7 Each
110.00	SI0204 Bulkhead Union 1/16 SS	2.000	0.000	2.000	2.000	B-J7 Each
120.00	SI0205 Bulkhead Union 1/8 SS	5.000	0.000	5.000	5.000	B-J7 Each
130.00	SI0329 Flatpack Fan (for GSL)	1.000	0.000	1.000	1.000	B-I7 Each

Batch Picking List

140.0	SI0349 PID Temp Controller 9900 230 V	1.000	0.000	1.000	1.000	B-I7 Each
150.0	SI0374 Terminal Block Section	2.000	0.000	2.000	2.000	B-H6 Each
160.0	SI0375 Terminal Block End Plate	1.000	0.000	1.000	1.000	B-H6 Each
170.0	SI0567 15 Way Solder Contact ZD Plug 5A 400 Vac	1.000	0.000	1.000	1.000	D-X4 Each
180.0	SI0630 80mm Fan Guard	4.000	0.000	4.000	4.000	B-H7 Each
190.0	SI0648 M3x13mm Nylon Pillar Male-Female,	2.000	0.000	2.000	2.000	D-W3 Each
200.0	SI0703 1/8-1/16" PTFE Reducing Ferrule Pk/1	6.000	0.000	6.000	6.000	B-J5 Each
210.0	SI0793 80mm DC Fan	4.000	0.000	4.000	4.000	B-H7 Each
220.0	SI0926 0/60 psi Gauge 1/8 BSPT	1.000	0.000	1.000	1.000	B-K3 Each
240.0	SI1242 2 Way Solenoid Valve	1.000	0.000	1.000	1.000	B-J4 Each
250.0	SI1245 SOL Cable	1.000	0.000	1.000	1.000	B-J3 Each
260.0	SI1251 Autosampler Solenoid Valve	1.000	0.000	1.000	1.000	B-J3 Each
280.0	SI1329 24Vdc Power Supply, Switchmode, 2x4inch	1.000	0.000	1.000	1.000	B-H5 Each
290.0	SI1330 Cover Kit for 2x4inch Power Supplies	1.000	0.000	1.000	1.000	B-H5 Each
300.0	SI1331 PSU Connector Kit	1.000	0.000	1.000	1.000	B-H5 Each
310.0	SI1349 Pneumatic Bulkhead Check Valve - 4mm	2.000	0.000	2.000	2.000	B-K4 Each
320.0	SI1418 80mm Fan Screen Filter	2.000	0.000	2.000	2.000	B-H7 Each
330.0	SI1603 Bulkhead Fitting 4mm - 1/8	1.000	0.000	1.000	1.000	B-K5 Each
340.0	SI1604 Male Connector 1/8 UNION 1/8	1.000	0.000	1.000	1.000	B-K5 Each
350.0	SI1689 Threaded Adaptor for GSL/INTEGRA. (NO COUPLING NUT)	1.000	0.000	1.000	1.000	B-N3 Each
360.0	SI1690 Coupling Nut for SI1689 & SI0043	2.000	0.000	2.000	2.000	B-N3 Each

Batch Picking List

380.00	SI1712	2.000	0.000	2.000		2.000	B-J9
	Brass Tube Fitting, Male Connector 1/8in.ODx1/4in.Male NPT						Each
400.00	SI1774	1.000	0.000	1.000		1.000	B-J9
	1/8 Female Coupling BSP						Each
420.00	SI1899	2.000	0.000	2.000		2.000	B-J6
	1/16 x M5 Fitting						Each
430.00	SI1900	2.000	0.000	2.000		2.000	B-J6
	Dowty Seal - M5						Each
450.00	SI2296	1.000	0.000	1.000		1.000	B-J4
	Precision Flow Control						Each
460.00	SI2307	1.000	0.000	1.000		1.000	B-J4
	60 psi Regulator						Each
470.00	SI2471	1.000	0.000	1.000		1.000	B-J8
	Bulkhead Retainer 1/8"						Each
480.00	SI2472	1.000	0.000	1.000		1.000	B-J8
	Bulkhead Retainer 1/16"						Each
490.00	SI2509	1.000	0.000	1.000		1.000	
	High Temp Furnace Section						Each
500.00	SI2554	1.000	0.000	1.000		1.000	B-N3
	EFIT Single Phase Power Controller						Each
520.00	SI2599	1.000	0.000	1.000		1.000	C
	HT-EA Furnace Unit Rev001						Each
530.00	SI2603	1.000	0.000	1.000		1.000	B-N3
	Telescopic Rail						Each
540.00	SI2604	1.000	0.000	1.000		1.000	B-N2
	Rocker Switch (DPST)						Each
550.00	SI2605	1.000	0.000	1.000		1.000	B-N2
	Orange Neon Indicator						Each
560.00	SI2606	1.000	0.000	1.000		1.000	B-N2
	Green Neon Indicator						Each
570.00	SI2607	1.000	0.000	1.000		1.000	B-N2
	M16 x 1.5 IP68 Cable Gland (Pk5)						Each
580.00	SI2608	1.000	0.000	1.000		1.000	B-N3
	30A Rail Mount Fuse Holder						Each
590.00	SI2630	1.000	0.000	1.000		1.000	B-N2
	WPE 10 Earth Terminal Block						Each
600.00	SI2631	3.000	0.000	3.000		3.000	B-N2
	End Bracket						Each
610.00	SI2632	2.000	0.000	2.000		2.000	B-N2
	End Plate						Each
620.00	SI2633	1.000	0.000	1.000		1.000	
	Fused DIN Rail Terminal						Each

Batch Picking List

630.0	SI2634 Blue 800 V Feed Through Terminal Block	1.000	0.000	1.000	1.000	B-N2 Each
640.0	SI2635 Brown 800 V Feed Through Terminal Block	1.000	0.000	1.000	1.000	B-N2 Each
650.0	SI2637 Magnetic Safety Switch	1.000	0.000	1.000	1.000	B-N3 Each
660.0	SI2652 Valve Adapter Plate	1.000	0.000	1.000	1.000	D-U3 Each
670.0	SI2660 HT-EA Artwork	1.000	0.000	1.000	1.000	C Each
510.0	SI2725 Single Phase Transformer 0/55/110V 2.0kVA	1.000	0.000	1.000	1.000	Each

8 - Serial Numbers Record Document

Client:	UCSC C/O: SOTEQ, Chile		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

Units	S/N
MS/ABCA	
Integra 2	
Prep Unit 1	
Prep Unit 2/Misc	
Electronics Upgrade	
CETAC	
Gas Box	
Autosampler	42645 / HT-EA 42634
BCR	
Dual Heater Block	

Pump Kit and Optics	S/N
Turbo pump S	210450586
Turbo pump A	1210419253
Rotary Pump	210450250
Voltage	110 / 240
Gauge S	210498661
Gauge A	210498683
Source	2010245-186
Collector 1	202 20301-105
Collector 2	21015 20501-041
Magnet	116

Parts	S/N
Fan PSU	
24V PSU	

Additional System Info:
Liquid autosampler 210936

PCBs	S/N
Electronics Box	20210011
Prep PCB	202000004
VFC PCB	20001
Watchdog PCB	
Head Amp PCB 1	202
Head Amp PCB 2	21015
Electromagnet RP	

Furnaces	S/N
Combustion	
Reduction	
HT-EA	11501/4-2021/1262
GC Oven	
Furnace 1	
Furnace 2	

PC	S/N
PC	IT70MF3
Monitor	CU-0VHJMO-GUCOO-148
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



To SERCON LIMITED UNIT 3B CREWE TRADE PARK GATEWAY CREWE CW1 6JT		Document Title Booking Confirmation	Issuing Office Manchester			
		Bill of Lading No. 3EB21110580	Your Reference P022018			
Shipper AS To		Master Reference	Our Reference 8SE2101038			
		Date 30-Nov-2021				
Consignee UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION ALLONSO DE RIBERA 28500 FACULTAD DE CIENCIAS, CHILE		 Website : www.interspanfreight.com E-mail : info@interspanfreight.com Interspan Freight Solutions Ltd Unit J, Ashburton Point, Wheel Forge Way Manchester M17 1EH Phone : 01618480070				
Container No./Trl No.	Place of Receipt CREWE					
Vessel/Flight GUAYAQUIL EXPRESS	Port of Departure LONDON GATEWAY					
Port of Discharge VALPARAISO	Place of Delivery 2850 FACULTAD					
Date of Shipment/Arrival 10/12/21-12/01/22	Terms DELIVERED AT PLAC					
Marks & Numbers		Container Number	Number & Kind of pkgs	Description of Goods	Gross Weight (Kgs)	Measurement (M3)
ADDRESSED:- UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCI ALLONSO DE RIBERA 28500 FACULTAD, DE CIENCIAS			4 X BOXES STC NON HAZARDOUS SCIENTIFIC EQUIPMENT		420.00	3.715
					Value	



Company Reg. No. 3881695 VAT Reg. No. GB 748 3946 84

1921

B O O K I N G C O N F I R M A T I O N

THANK YOU FOR YOUR LATEST BOOKING PLEASE FIND HERewith THE SHIPPING DETAILS

Hi Jo
we will collect from you at sercon on 03rd December

Yours faithfully,

Chris McGuinness

All business is transacted in accordance with the trading conditions of the British International Freight Association (STC latest edition) copies of which are available on request.

11 – Installation Report

Client:	UCSC Concepcion		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

Contact:	Gustavo Saiz Rueda		
Date of Visit:	20 th – 27 th June 2022 (Extended over weekend)	No. of Days:	8
Engineer:	Lee Martin		

Details of visit:

20th June 2022

Units placed on the benches. It has been determined that the customer was expecting a trapping loop and there has been some miscommunication about this in preliminary agreements although it was never quoted. There are no reference gases as a result so this will need to be resolved to set up the magnet. 2 pin IEC plugs provided don't fit the 3 pin sockets so multiplug adaptors purchased and fitted for the computer and HS2022 and IsoEarth. HTEA arrived with UK plug so 2 pin plug wired in as prepared in the factory. HTEA powers up ok but left off for now. HS2022 and IsoEarth turned on and mass spec pumping after fitting rotary pump. Source switched on at 5e-07 vacuum.

21st June 2022

Helium plumbed into all 3 units. IsoEarth pressure tests ok so furnaces up to temperature. Carrier flow meter not working. Cable bells out ok and new flow meter tried but still an issue. IsoEarth tripped the circuit breakers while rebooting so mass spec vented. Breaker back on and mass spec pumping with source turned on. Left to pump overnight and furnaces back on.

22nd June 2022

Flow meter turned out to be fitted back to front so this has been resolved (original back in) and a normal flow now reading. Purge crimp has seized in transit to display 10ml/min. Crimp opened up at set to 33ml/min. Gases arrived but struggling with connections to the regulators. Nitrogen and Hydrogen hooked up so magnet positioned preliminarily.

23rd June 2022

All gases now hooked up. Peak shapes established, IsoEarth linearity pass after some magnet movement. HTEA flows established and up to temperature with molybdenum liner setup.

24th June 2022

Hydrogen coincidence off so specs recommenced. More time needed so install extended until 27th June. Day 1 of training commenced covering stable isotope theory, hardware and basic tuning. Linearity pass on IsoEarth after magnet retune.

25th June 2022

Glassy carbon tube setup installed on HTEA and hydrogen batch run with ok precision. Ref gas specs all passed and IsoEarth precision pass. GC baked out at 140 degrees overnight.

26th June 2022

Hydrogen and oxygen precision pass (n=4 because one sample not dropped on oxygen batch). HTEA switched over to liquid autosampler but suspected switching at temperature has cracked alumina tube. HTEA cooled for tube swap the following day. Comms with liquid autosampler established but no samples run. This is to be fitted again at a later date and some samples run with remote support from Sercon.

27th June 2022

Glassy carbon tube has cracked at the bottom fitting so molybdenum lined tube fitted. Replacement or repaired tube to be determined upon return to UK. Training completed. Customer batches run on hydrogen

11 – Installation Report

Client:	UCSC Concepcion		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

and oxygen pyrolysis with good precision and no carryover. Distinct delta values too though accuracy unproven without the benefit of known standards (Sercon cystine used). Visit concluded.

Customer intends to shut down instruments post install and put everything on a UPS and restart. They have been well briefed on the procedure but should ask for any assistance if needed.

Final specs:

13C ref gas precision- 0.02 permil
 15N ref gas precision- 0.06 permil
 Deuterium ref gas precision- 0.40 permil
 13C 400ug C Precision- 0.05 permil
 15N 100ug N Precision- 0.16 permil
 13C 50-500ug C linearity- 0.011 permil
 15N 20-200ug N linearity- 0.21 permil
 Deuterium 200ug pyrolysis precision- 0.54 permil (cystine)
 18O 100ug O pyrolysis- 0.42 permil (cystine)

Recommendations:

Service@sercongroup.com if there are any questions or issues.

Some temporary gas lines were installed in the absence of the trapping loop. While these were leak checked, it must be reinforced that gas lines into the units are the responsibility of the customer, with a reminder to adhere to basic gas safety guidelines, particularly with the hydrogen ref gas line which needs to be temporarily fitted and refitted across the lab to tune the instrument.

Faults and Shortages:

1. A trapping loop is needed. Leonardo at SOTEQ will be installing this with instruction from Sercon. The scheduling will be determined by Sercon and SOTEQ and communicated with the customer as soon as possible. Hardware wise, both preps will need to be routed through HTEA isolation valve and this valve relocated and used in the setup (swapping lines to prep 1 bulkhead as required). Software will need reconfiguring to reflect this. IsoEarth isolation valve can stay mounted for the GC that the customer possibly intends to purchase. Holes are already drilled to mount the trapping loop. 1M of 6 thou tubing will also be needed.
2. HTEA needs 4mm nylon tubing sent out.
3. Some screws missing from the chassis to be sent out with tubing.
4. Tube couplings for HTEA (missing item) were sent by both Sercon and SOTEQ. The latter arrived first so Leonardo can be reimbursed with the ones arriving from Sercon, possibly when he installs the trapping loop. This shipment also contains a zero volume union.
5. A comms error is cooling furnaces when GC temperature is changed in HTEA project. New exe possibly needed and can be installed remotely. In the meantime, customer is advised only to change GC temperature in IsoEarth project (if a bakeout is required for example).
6. Broken glassy carbon tube needs to be addressed. A new replacement tube is to be sent out to the customer along with original alumina tube taken back to the factory..
7. Customer reports that complimentary reference standards were promised in initial discussions but not delivered. These have been approved to be added to an existing order
8. Liquid autosampler performance still not verified though comms established and HTEA otherwise checked. Remote support to be provided. A USB extender will be needed to connect the PC to the autosampler if PC is to remain far from the HTEA.
9. Some nitrogen imprecision has been noted on a 20mg soil batch though. Suggestions for improvement have been passed on to the customer along with some complimentary vanadium pentoxide combustion agent which will be sent out.

Follow up:

11 – Installation Report

Client:	UCSC Concepcion		
Quotation Number:	13348	Date:	19/05/2021
Job Number:	IN1262	Date:	06/06/2021

Remote support to be provided when liquid autosampler is used for the first time. GoToMyPc will need to be installed so a guide will be sent out.

Engineer:	Lee Martin	Date:	6 th July 2022
Signed:			

12 – Installation Acceptance and Warranty Certificate

Client:	UCSC		
Quotation Number:	13348	Date:	19/05/2022
Job Number:	IN1262	Date:	06/06/2022

Contact:	Gustavo Saiz Rueda
System:	HS2022, Isoearth, HTEA
Software:	V 40. 2. 02
Engineer:	Lee Martin
Installation Date:	20 th – 27 th June 2022

Warranty commences:	7 th July 2022
Warranty Expires:	7 th July 2024

Customer Acceptance:

 Name: Gustavo Saiz

 Signature: 

 Date: 7th July 2022

Engineer's Signature:

On behalf of Sercon Limited

 Name: Lee Martin

 Signature: 

 Date: 7th July 2022

Notes:

 Details of install outlined in associated report dated 6th July 2022.

Invoice to:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCIÓN
ALONSO DE RIBERA
2850-CONCEPCIÓN
CHILE. FACULTAD DE CIENCIAS
RUT: 71915800-5

VAT Reg No: CL

Customer Order No: 463041

Invoice

Invoice No. 13348a

Invoice/Tax Date 10/06/2021

Due Date 10/06/2021

Account No. UCS001

Instrument No. IN1262

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		Agent: Soluciones Técnicas y Químicas Ltda Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz HS2022			
1	20402/3	HS2022 + Hd Collector + E-Mag EA Unit			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	SI2743	Automatic Liquid Sampler 15 positions Configured: RIGHT			
2	SI2744	Mounting Plate & Accessories HT-EA UNIT			
1	11501/4	HT-EA Wave			
1	71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples			
1	WARR2	2 year warranty			
1	INST	Installation and start up training at Customer's site			
1	CIP	Estimated CIP - Destination Airport			
Total amount of order: 123,819.30					
50% payable with order:			61,909.65	0.00	0.00
40% payable on delivery: 49,527.72					
10% payable on installation: 12,381.93					

Delivery address:

SR. GUSTAVO SAIZ
UNIVERSIDAD CATOLICA DE LA
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

This invoice is issued in: Pound Sterling

Total Net Amount	£	61,909.65
Total VAT Amount	£	0.00
Invoice Total	£	61,909.65

Payment Details:-

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.

IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

Invoice to:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCI
ALONSO DE RIBERA
2850-CONCEPCION
CHILE. FACULTAD DE CIENCIAS
RUT: 71915800-5

VAT Reg No: CL

Customer Order No. 463041

Invoice

Invoice No. 13348b

Invoice/Tax Date 22/11/2021

Due Date 22/11/2021

Account No. UCS001

Instrument No. IN1262

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		Agent: Soluciones Técnicas y Químicas Ltda Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz HS2022			
1	20402/3	HS2022 + Hd Collector + E-Mag EA Unit			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	SI2743	Automatic Liquid Sampler15 positions Configured: RIGHT			
2	SI2744	Mounting Plate & Accessories HT-EA UNIT			
1	11501/4	HT-EA Wave			
1	71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples			
1	WARR2	2 year warranty			
1	INST	Installation and start up training at Customer's site			
1	CIP	Estimated CIP - Destination Airport			
		Total amount of order: 123,819.30			
		40% payable on delivery:	49,527.72	0.00	0.00
		10% payable on installation:	12,381.93	0.00	0.00

Delivery address:

SR. GUSTAVO SAIZ
UNIVERSIDAD CATOLICA DE LA
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

This invoice is issued in: Pound Sterling

Total Net Amount	£	61,909.65
Total VAT Amount	£	0.00
Invoice Total	£	61,909.65

Payment Details:-

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.

IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

Invoice to:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCIÓN
ALONSO DE RIBERA
2850-CONCEPCIÓN
CHILE. FACULTAD DE CIENCIAS
RUT: 71915800-5

VAT Reg No: CL

Customer Order No. 463041

Invoice

Invoice No. 13348c

Invoice/Tax Date 22/11/2021

Due Date 22/11/2021

Account No. UCS001

Instrument No. IN1262

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		Agent: Soluciones Técnicas y Químicas Ltda Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz HS2022			
1	20402/3	HS2022 + Hd Collector + E-Mag EA Unit			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	SI2743	Automatic Liquid Sampler 15 positions Configured: RIGHT			
2	SI2744	Mounting Plate & Accessories HT-EA UNIT			
1	11501/4	HT-EA Wave			
1	71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples			
1	WARR2	2 year warranty			
1	INST	Installation and start up training at Customer's site			
1	CIP	Estimated CIP - Destination Airport			
		Total amount of order: 123,819.30			
		10% payable on installation:	12,381.93	0.00	0.00

Delivery address:

SR. GUSTAVO SAIZ
UNIVERSIDAD CATOLICA DE LA
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

This invoice is issued in: Pound Sterling

Total Net Amount	£	12,381.93
Total VAT Amount	£	0.00
Invoice Total	£	12,381.93

Payment Details:-

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.

IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

Orden de Compra Aprobada


**UNIVERSIDAD CATOLICA DE LA SANTISIMA
CONCEPCION**

RUT : 71915800-5
Giro : UNIVERSIDAD
Dirección : ALONSO DE RIBERA N° 2850 CONCEPCION, Concepción
Teléfono : 412345032

ORDEN DE COMPRA
NRO: [462363]



Fecha Publicación: 03/06/2021

PROVEEDOR:	DESPACHAR A:
Sr(es) : SERCON LIMITED RUT : 1380683-7 Dirección : UNIT 3B CREWE TRADE PARK , GATEWAY CREWE , OTRO Giro : -- Contacto: PENDIENTE +44 (0) 1270 580008, NO TIENE leonardoal@soteq.cl	Contacto : SR. GUSTAVO SAIZ Dirección de Entrega : ALONSO DE RIBERA 2850- FACULTAD DE CIENCIAS Ciudad : CONCEPCION Teléfono : 41-2345117 Fecha de Entrega : 06/09/2021 Condición de Pago : 30 DÍAS FECHA RECEPCIÓN FACTURA O RECEPCIÓN CONFORME DE PRODUCTO Y/O SERVICIO, EN DIAS 10 Y 25 DE CADA MES A TRAVÉS DE TRANSFERENCIA BANCARIA

Item	Código Item	Centro de Gestión	Descripción Item	Cantidad	Unid. Medida	Precio Unitario	Valor Exento?	Total
1	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	20402/3 HS2022 + Hd Collector + E-Mag	1	C/U	70.361.349	SI	70.361.349
2	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	10202/11 iso-Earth	1	C/U	26.865.242	SI	26.865.242
3	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	70501-6 C & N Combustion Only Consumables Kit (approx. 5000 samples)	1	C/U	2.050.584	SI	2.050.584
4	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	SI2743 Automatic Liquid Sampler 15 positions Configured: RIGHT	1	C/U	4.635.135	SI	4.635.135
5	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición	SI2744 Mounting Plate & Accessories	2	C/U	278.108	SI	556.216

08-06-2021senegocia

		de Equipamiento Científico FIAEC 2019						
6	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	11501/4 HT-EA Wave	1	C/U	12.686.364	SI	12.686.364
7	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	71501-3 HT-EA Sensitivity Start Up Kit for O & H in small samples	1	C/U	1.575.946	SI	1.575.946
8	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	INST Installation and start up training at Customers site	1	C/U	6.952.703	SI	6.952.703
9	24030066	413274 - BIP 217/ 2020 Crear Fondo para la Adquisición de Equipamiento Científico FIAEC 2019	CIP Estimated CIP - Destination Airport	1	C/U	1.854.054	SI	1.854.054
TOTAL NETO:								0
EXENTO:								127.537.593
Exento								0
TOTAL PESO CHILENO:								127.537.593

OBSERVACIONES: TOTAL AMOUNT Pound Sterling 123.819,30 (2 year warranty)

CARLOS MAURICIO SOBARZO CAAMAÑO
Vicerrector(a)

1. **CONDICIONES DE PAGO:** 30 DIAS FECHA RECEPCION FACTURA O RECEPCION CONFORME DE PRODUCTO Y/O SERVICIO, EN DIAS 10 Y 25 DE CADA MES A TRAVES DE TRANSFERENCIA BANCARIA.

2. **IMPORTANTE:** NO SE ACEPTARÁN PRECIOS NI CANTIDADES DIFERENTES A LAS INDICADAS EN ESTA ORDEN DE COMPRA. DE NO CUMPLIRSE CON LA ENTREGA DE LA MERCADERÍA EN LA FECHA ESTIPULADA, LA UNIVERSIDAD SE RESERVA LA FACULTAD DE ANULAR EL PEDIDO. AGRADECEMOS FACTURAR SEGÚN LOS VALORES INDICADOS EN LA PRESENTE OC.

ID_OC senegocia: 3227581

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OC SEGURA

Compruebe la autenticidad de la orden de compra

Lea el código QR y compruebe que la orden de compra es auténtica y ha sido validamente emitida por Senegocia desde <https://www.senegocia.com/>

1 Consignor (Name, or name of firm, and full address). SERCON LTD UNIT 3B CREWE TRADE PARK GATEWAY CREWE CW1 6JT UNITED KINGDOM		Vat No.		No.		APPLICATION	
2 Consignee name & address, if not known state "To Order for shipment to....." (country of destination). UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION, CHILE. FACULTAD DE CIENCIAS RUT: 71.915.800-5 CHILE						P022018	
4 Transport details (Optional) SEAFREIGHT		3 Country of Origin ("UNITED KINGDOM" or country of origin concerned see overleaf) United Kingdom		UNITED KINGDOM CERTIFICATE OF ORIGIN			
6 Item number; marks, numbers, number and kind of packages; description of goods (For goods not packed indicate number or "in bulk") UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION, CHILE. FACULTAD DE CIENCIAS RUT: 71.915.800-5		5 Remarks		7 Quantity (expressed in gross or net weight or other units of measure) Total Gross: 420.00 KG			
8 I, the undersigned, -APPLY for the issue of a certificate of origin indicating that the goods described above originate in the country shown in box 3. DECLARE that the particulars given in this application and the supporting documents and information furnished to the competent authorities with a view to the issue of this certificate are correct, that the goods to which such documents and information relate are those in respect of which this application is made, that the goods fulfil the conditions laid down by the rules concerning the common definition of the concept of the origin of goods. -UNDERTAKE to furnish, at the request of the competent authorities, such additional information and supporting documents as may be required for the issue of the certificate.							
9 Applicant (if not the consignor) Interspan Freight Solutions UNIT J ASHBURTON POINT, WHEELFORGE WAY, TRAFFORD PARK, MANCHESTER, M17 1EH				Manchester Chris McGuiness Place and date The signature must be followed by the name in block capitals			

TO BE COMPLETED IN BLOCK CAPITALS

The applicant must declare the following additional information relevant to the origin of the goods described overleaf. This information forms part of the declaration. Tick appropriate box/boxes below and supply the additional information in the space provided:

1. The goods were manufactured/produced (delete as appropriate) in the United Kingdom Wholly from United Kingdom materials or components by the company named below. ☐
2. The goods whilst not comprised wholly of United Kingdom components or materials, are entitled to be considered as of United Kingdom origin by virtue of the economically justified substantial process which has occurred in the United Kingdom, as indicated below. ☒ (2)
3. The goods are of foreign origin as proved by the documents attached to this application as per Standard Rules (e.g. foreign certificate of origin, certified invoice, customs declaration or other documents). ☐

.....
.....
.....

Insert above either: name and address of manufacturer
 name and address of processor with description of process(es), or
 name and address of foreign manufacturer (Attach proof of origin as per Standard Rules).

Goods Manufactured by:
THOR SPECIALITIES (UK) LIMITED, WINCHAM AVENUE, WINCHAM, CHESHIRE, UNITED KINGDOM CW9 6GB.

NOTES FOR GUIDANCE IN COMPLETING CERTIFICATES AND APPLICATIONS

Box 3 Country of Origin

- (i) For goods of UNITED KINGDOM origin insert "UNITED KINGDOM".
- (ii) For goods of non-UNITED KINGDOM origin insert the name of the individual country of origin. Do not use groupings such as the European Free Trade Association (EFTA).
- (iii) Where a certificate includes goods of more than one origin, it is permissible to insert in Box 3 the words "As shown in Box 6" and to indicate the country of origin clearly against each item listed in Box 6.

Box 4 Transport details

Although completion of this box is not essential, it is strongly recommended to state the means of transport in order to facilitate identification and association of the Certificate with the consignment of goods to which it relates.

Box 7

State quantity expressed in gross or net weight or other units or measure.

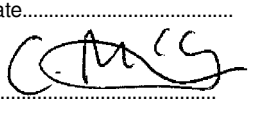
Box 8

The signature on the application form must be a handwritten original signature unless the certificate is produced by an approved electronic system. Applicants must NOT sign box 8 on the Original or Copy Certificates.

RULES TO BE OBSERVED WHEN COMPLETING A CERTIFICATE OF ORIGIN AND THE APPLICATION FOR SUCH CERTIFICATE

1. The form shall be completed in typescript in one of the official languages of the United Kingdom or, depending on the practice and requirements of the trade, in any other language. If prepared in a foreign language an English translation is required.
2. The certificate and the application must not contain erasures or superimposed corrections. Alterations are to be made by crossing out the erroneous entries and adding the correct entries as required. Any such alteration must be authenticated by the person making it and endorsed by the competent authorities.
3. A horizontal line must be drawn immediately below the final entry. Lines must be drawn through unused spaces to make any subsequent addition impossible.
4. If the needs of the export trade so require, one or more extra copies of this certificate may be made.

MOVEMENT CERTIFICATE

1. Exporter Name, full address, country Vat No. SERCON LTD UNIT 3B CREWE TRADE PARK GATEWAY CREWE CW1 6JT UNITED KINGDOM		EUR1 No.	
3. Consignee Name, full address, country (Optional) UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION, CHILE. FACULTAD DE CIENCIAS RUT: 71.915.800-5 CHILE		2. Certificate used in preferential trade between The United Kingdom and CHILE (Insert appropriate countries or groups of countries or territories)	
6. Transport details (Optional) SEAFREIGHT		4. Country, group of countries or territory in which the products are considered as originating UK	5. Country, group of countries or territory of destination CHILE
7. Remarks		7. Remarks	
(1) If goods are not packed indicate number of articles or state "in bulk" as appropriate	8. Item number: marks and numbers UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION, ALONSO DE RIBERA 2850 CONCEPCION, CHILE. FACULTAD DE CIENCIAS RUT: 71.915.800-5	Number and kind of packages (1): description of goods 4 BOXES NON HAZARDOUS SCIENTIFIC EQUIPMENT	9. Gross weight (kg) or other measure (litres, cu. m., etc) Gross: 420.00 KG
10. Invoices (Optional)		10. Invoices (Optional)	
Tariff Headings: 9027		Tariff Headings: 9027	
11. Customs Endorsement Declaration certified Export document (2): Form.....Number..... Customs office..... Issuing country or territory: UNITED KINGDOM Date Signature		12. Declaration by the Exporter I, the undersigned, declare that the goods described above meet the conditions required for the issue of this certificate. Manchester Place and date..... Signature..... 	

The conditions under which a movement certificate EUR1 may be issued are specified in the relevant Protocol concerning the definition of originating products annexed to the preferential trade agreements between the UK and the country / countries or group(s) of countries or territories named in box 2 overleaf.

Penalties for furnishing untrue information

It is an offence under the Customs and Excise Management Act 1979, Section 167, to provide, or cause to be provided, untrue information or evidence to an officer of HM Revenue & Customs. Accordingly, any person who does so in support of an application for the issue of a movement certificate, or in the course of any subsequent verification, may be liable to penalties.

Complaints

The Adjudicator reviews complaints not settled to your satisfaction by HM Revenue & Customs. The recommendations of the Adjudicator are independent and the service is free. The Adjudicator only looks at complaints, not general enquiries. Phone the Adjudicator on 0300 057 1111 or go to their website www.adjudicatorsoffice.gov.uk

Declaration by the exporter only

I, the undersigned, exporter of the goods described overleaf, have read the relevant guidance and:

1. Declare that these goods meet the conditions required for the issue of the attached certificate
2. Specify as follows the circumstances which have enabled these goods to meet the above conditions

The goods shown on the movement certificate were manufactured by the exporter and are classified under 9027 They satisfy the appropriate qualifying process in the preferential agreement

3. Submit the following supporting documents

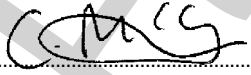
INVOICE AND AUTHORISATION

4. Undertake to submit, at the request of an officer of HM Revenue & Customs, any supporting evidence which the officer may require for the purpose of issuing the attached certificate, and undertake, if required, to agree to any inspection of my accounts, and any check on the processes of manufacture of the above goods, carried out by the said officer of HM Revenue and Customs.

5.

C 1444 issued date stamp

Place **Manchester** Date

Signature 

Name in capital letters **Chris McGuinness**

Status of signatory **Export Clerk**

Company name **INTERSPAN FREIGHT SOLUTIONS LTD**

12 – Installation Acceptance and Warranty Certificate

Client:	UCSC in Conception		
Quotation Number:	13348	Date:	17/10/2023
Job Number:	IN1262	Date:	17/10/2023

Contact:	Leonardo Alvarez
System:	HS2022 (with 1 trapping loop) – HTEA – ISO Earth – Liquid Sampler – 2x Blue Sercon Autosamplers
Software:	Callisto 40.2.2 HTA Autosampler Manager 2021
Engineer:	James Hanson
Installation Date:	17/10/2023

Warranty commences:	AS PREVIOUS
Warranty Expires:	AS PREVIOUS

Customer Acceptance:

Name: GUSTAVO SAIZ

Signature: [Signature]

Date: 17-00-23

Engineer's Signature:

On behalf of Sercon Limited

Name: James Hanson

Signature: [Signature]

Date: 17/10/23

Notes:

Trapping loop added to system on PREP 2 line, to be interchangeable between the HTEA and Iso Earth for tuning samples; removing the need for ref gas. Installation details available in installation report.

CONSIGNEE:

UNIVERSIDAD CATOLICA DE LA
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Contact: SR. GUSTAVO SAIZ

Tel: 41-2345117

Order Number: 463041

SHIPPED BY:

Ref: 13348

Sercon Limited
Unit 3B Crewe Trade Park
Gateway
Crewe
CW1 6JT
U.K.

IN1262

Tel: +44 (0) 1270 580008

COMMERCIAL INVOICE

Date: 22/11/2021

Customer 463041

Reference:

Shipper / Exporter:

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

Delivery Address:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Contact: Joanne O'Connor
Tel: +44 (0) 1270 580008
Invoice 13348 IN1262
Reference:

Contact Name: SR. GUSTAVO SAIZ
Cust Tel Number: 41-2345117

Country of Export: UK
Country of Manufacture: UK
Country of Destination: CL Chile

Shipping Marks /

4 BOXES @ 100x86x108cms Total GW: 420kg

UK Commodity Code: 90273000

Quantity	Product Code	Product Description	Amount £
		Agent: Soluciones Técnicas y Químicas Ltda Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz HS2022	
1	20402/3	HS2022 + Hd Collector + E-Mag EA Unit	68,310.00
1	10202/11	iso-EArth	26,082.00
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)	1,990.80
1	SI2743	Automatic Liquid Sampler 15 positions Configured: RIGHT	4,500.00
2	SI2744	Mounting Plate & Accessories HT-EA UNIT	540.00
1	11501/4	HT-EA Wave	12,316.50
1	71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples	1,530.00
1	WARR2	2 year warranty	0.00
1	INST	Installation and start up training at Customer's site	6,750.00
1	CIP	Estimated CIP - Destination Airport	1,800.00

SerCon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe, CW1 6JT U.K.
Tel: +44 (0) 1270 580008



None of the goods contained in this consignment
are restricted by IATA or shipping regulations

Signed *J O'Connor*

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

Total Invoice
Value: £ 123,819.30

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310

www.sercongroup.com
VAT No.: 771 1100 74

11 – Installation Report

Client:	UCSC in Conception		
Quotation Number:	13348	Date:	17/10/2023
Job Number:	IN1262	Date:	17/10/2023

Contact:	Leanardo Alvarez		
Date of Visit:	16 th and 17 th October 2023	No. of Days:	2
Engineer:	James Hanson		

Details of visit:

Day 1 - System found at full vacuum, hot tubes and all ok. System vented. Trapping loop installed on PREP 2 line at the back of the 20-22. Isolation valve on the top was V5 for the iso earth sample path. V5 piping and valves all kept the same and moved to the right internal wall. Clinch nuts on wall of chassis not the best, trap loop mounted and stable but not perfect. Tie bases added to stabilise. Piping remade to join prep 1 iso valve with the new trap loop iso valve path to the source in a 3 way valco. System set to pump down overnight, hitting 1.2e-7 at the end of the day, source fired. Customer advised me they have double peaks, upon inspection they seem to have a very high blank and are not checking the blank after changing new tubes. COM tube found to be made very inconsistently. Data shows high peak and double peak on samples for N only. 4e-9 blanks seen, generally consistent within the data during runs but varies 0.5nA at times.

Day 2 – System found at 2.4e-8 vacuum, reaching 1.0e-8 in a few minutes. Crimps set for isolation valve for prep 1 and prep 2 lines. 3.1e-6 for both. Trap loop reprogrammed and added to both bitmaps, customer will have to use the Prep 2 line only for their samples. Customer advised and understands they need to swap the lines at the back of the 20-22 for the prep system they are using. Tuning samples sent through the trapping loop, successfully trapped and customer trained and tested on this. Blank investigated, found to be a sheared O ring at the top of the sampler foot. Reprogramming blank runs to remove oxygen and sampler turning was the test, taking the foot out of the leaking one confirmed the issue. Replacement to be organised by Leonardo with next consumables order. Grub screw on leaking autosampler now has tape round it. Customer advised to test the blank with new tubes to prove the tubes are equilibrated. Oxygen flow increased from 40ml to 60ml. Autosampler swapped for their one from the HTEA, blank hitting 1.5e-10 within spec. System leak tested and sniffed with Helium sniffer. Customer tested and proved competent with setting up and closing the system for trapping loop runs to tune. Trapping loop functioning as normal.

Recommendations:

Use ruler and be more accurate with making tubes to ensure hot spot is where the sample lands, use the manual. Ensure measurements are more precise.
 Test the blanks of the system after new tubes are installed – ensure 3.0e-10 is attained. Common leak positions explained to the customer.
 Stop running the system if you notice double peaks or high blanks, advised to run blanks out of the sample run to confirm low signal before committing to samples.
 Install new O ring for autosampler when it arrives.
 Follow up with me regarding poor data – email the .bch files to service@sercongroup.com.

Faults and Shortages:

Follow up:

- Liquid sampler operation and training to be discussed through service@sercongroup.com

Engineer: James Hanson

Date: 17/10/2023

Signed:



Order Date 10/06/2021
Order Ref. 13348
Cust. Ref. 462363
Account Ref. UCS001

Order Acknowledgement

Invoice address

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Delivery address

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

VAT No.

Contact: SR. GUSTAVO SAIZ
Tel: 41-2345117

Quantity Ordered	Product Code	Product Description	Unit Price £	Net Price £
Agent: Soluciones Técnicas y Químicas Ltda				
Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz				
HS2022				
1	20402/3	HS2022 + Hd Collector + E-Mag Continuous flow isotope ratio mass spectrometer. Including high sensitivity source, electro magnet and HD collector. System configured for m/z 2 to 66 for the analysis of H2, CO2, N2, N2O, NO, O2, SO, SO2, CO and CH4 (converted to CO2). Windows based data system and printer. 70201-1 - Analyser spares kit includes a filament, copper gaskets, source tool kit, pump oil, snoop and ferrules	75,900.00	75,900.00
EA Unit				
1	10202/11	iso-EArth High performance elemental analyser including TCD. Flexible system can be configured for CN or S analysis. Includes autosampler for solids. 70501-3 - Includes sample preparation kit - micro spatula, mirror, forceps, sample tray and syringe 70501-1 - Includes start up consumables kit for C and N combustion	28,980.00	28,980.00
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)	2,212.00	2,212.00
1	SI2743	Automatic Liquid Sampler 15 positions Configured: RIGHT	5,000.00	5,000.00
2	SI2744	Mounting Plate & Accessories	300.00	600.00
HT-EA UNIT				

Order Date 10/06/2021
Order Ref. 13348
Cust. Ref. 462363
Account Ref. UCS001

Order Acknowledgement

Invoice address

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Delivery address

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

VAT No.

Contact: SR. GUSTAVO SAIZ
Tel: 41-2345117

Quantity Ordered	Product Code	Product Description	Unit Price £	Net Price £
1	11501/4	HT-EA Wave For high temperature pyrolysis for H & O. Includes solid autosampler. Additional autosampler required for liquid injections. 70801-1 - Pyrolysis start up kit high temp for solids. 71501-1 - HT-EA Pyrolysis start up kit O and H (Used In Build)	13,685.00	13,685.00
1	71501-3	HT-EA Sensitivity Start Up Kit for O & H in small samples	1,700.00	1,700.00
1	WARR2	2 year warranty	0.00	0.00
1	INST	Installation and start up training at Customer's site	7,500.00	7,500.00
1	CIP	Estimated CIP - Destination Airport	2,000.00	2,000.00
10 % Sales discount applied to total				
	DISCOUNT	Net Discount of 10%		-13,757.70

Total Net Amount £ 123,819.30
Total VAT Amount £ 0.00
Order Total £ 123,819.30

Quotation

To: Soluciones Técnicas y Químicas Ltda (SOTEQ)
Barros Borgoño 71
Of 1105
Providencia
Santiago
Chile

VAT No.

Quotation Date: 19/05/2021
Quotation Reference: 13348
Customer Ref: UCSC in Concepcion
Account Ref. SOL002
Quotation Validity: 31/05/2021

Quantity	Product Code	Product Description	Unit Price £	Discount £	Net Price £
Agent: Soluciones Técnicas y Químicas Ltda Customer: UCSC in Concepcion Contact: Professor Gustavo Saiz					
HS2022					
1	20402/3	HS2022 + Hd Collector + E-Mag Continuous flow isotope ratio mass spectrometer. Including high sensitivity source, electro magnet and HD collector. System configured for m/z 2 to 66 for the analysis of H2, CO2, N2, N2O, NO, O2, SO, SO2, CO and CH4 (converted to CO2). Windows based data system and printer. 70201-1 - Analyser spares kit includes a filament, copper gaskets, source tool kit, pump oil, snoop and ferrules	75,900.00	0.00	75,900.00
EA Unit					
1	10202/11	iso-EArth High performance elemental analyser including TCD. Flexible system can be configured for CN or S analysis. Includes autosampler for solids. 70501-3 - Includes sample preparation kit - micro spatula, mirror, forceps, sample tray and syringe 70501-1 - Includes start up consumables kit for C and N combustion	28,980.00	0.00	28,980.00
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)	2,212.00	0.00	2,212.00
1	SI2743	Automatic Liquid Sampler15 positions Configured: RIGHT	5,000.00	0.00	5,000.00
2	SI2744	Mounting Plate & Accessories	300.00	0.00	600.00
HT-EA UNIT					

Quotation

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1	INST	Installation and start up training at Customer's site	7,500.00	0.00	7,500.00
1	CIP	Estimated CIP - Destination Airport	2,000.00	0.00	2,000.00

10% Sales discount applied to total

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

This quotation is issued in Pound Sterling

Total Net Amount £ 123,819.30
Total VAT Amount £ 0.00
Order Total £ 123,819.30

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

Packing List

Customer Reference: 462363

Shipper / Exporter:

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

Tel: +44 (0)1270 580008
Reference: IN1262_13348

Consignee:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Contact Name: SR. GUSTAVO SAIZ
Contact Tel Number: 41-2345117

BOX: 1

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	70201-1	Analyser spares kit	
☒ 1	70501-6	Consumables kit	
☒ 2	SI2744	Mounting plate & Accessories	
☒ 1	71501-1	HT-EA Pyrolysis start up kit	
☒ 1	71501-3	HT-EA sensitivity start up kit	
☒ 1		Liquid autosampler manual	
☒ 1		pc	IT70MF3
☒ 1		monitor	CN-ONHJMO-QUCOO-148

Packed by:

Date:

[Signature]
19/NOV, 21

Claims for damage or shortages must be made within 3 days



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Packing List

Customer Reference: 462363

Shipper / Exporter:

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

Tel: +44 (0)1270 580008
Reference: IN1262_13348

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ALONSO DE RIBERA
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CHILE

Contact Name: SR. GUSTAVO SAIZ
Contact Tel Number: 41-2345117

BOX: 2

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	11501/4	HT-EA UNIT	11501/4-2021/1262
☒ 1	SI2743	Automatic liquid sampler	210936
☒ 1		Automatic liquid sampler parts (box 1)	
☒ 1		Automatic liquid sampler parts (box 2)	
☒ 2	10202-S	Autosampler	42643 / 42634
☒ 1	70801-1	Pyrolysis start up kit	
☒ 1	70501-1	Start-up consumables	
☒ 1	70501-3	sample preparation kit	

Packed by:

Date:

Handwritten signature
18, NOV, 21

Claims for damage or shortages must be made within 3 days



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



Packing List

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Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1262_13348

Consignee:

UNIVERSIDAD CATOLICA DE LA SANTISIMA CONCEPCION
ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Contact Name: SR. GUSTAVO SAIZ
Contact Tel Number: 41-2345117

BOX: 3

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	20402/3	HS2022 UNIT	20402/3-2021/1262

Packed by:

Date:

[Signature]
19, NOV, 21

Claims for damage or shortages must be made within 3 days



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19/01/2017



Packing List

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Reference: IN1262_13348

Consignee:

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ALONSO DE RIBERA
2850-FACULTAD DE CIENCIAS
CHILE

Contact Name: SR. GUSTAVO SAIZ
Contact Tel Number: 41-2345117

BOX: 4

Quantity	Product Code	Product Description	Serial Number: if available
1	10202/11	ISO-EARTH	10202/11-2021/1262

Packed by:

Date:

19, NOV, 21

Claims for damage or shortages must be made within 3 days



S035b_v6

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19/01/2017



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2. Introduction

This pre-installation guide is issued to help users prepare a site for the installation of Sercon instruments prior to the arrival of the installation engineer on site. The guide gives details of the system's bench space, electrical, environmental and gas requirements. Observing the site requirements will avoid delays during installation.

When all the requirements have been met, please complete and return the pre-installation survey to Sercon and an installation date will be confirmed.

3. Bench space

The table below gives the dimensions and weight of the HS2022, and inlets which may be associated

System	Width	Height	Depth	Weight
HS2022	820 mm	800 mm	610 mm	120 kg
EA	820 mm	800 mm	700 mm	100 kg
HT-EA	600 mm	570 mm	700 mm	
GC	580 mm	500 mm	540 mm	50 kg
Orchid	500 mm	600 mm	570 mm	20 kg
Furnace controller	400 mm	400 mm	400 mm	20kg
Cryo Range	820 mm	550 mm	590mm	110 kg
μCarbs	570 mm	520 mm	500 mm	100 kg
Aqua	570 mm	520 mm	500 mm	100 kg

The bench needs to be sturdy to support the weights shown above. Access to the back of the units is required, so please ensure that the benches are not against the walls. A minimum clearance of 50cm is required at the back of unit.

Additional space is required for the PC, monitor and printer.



4. Power Requirements

All mass spectrometers require a clean, stable source of power.

The system should be connected to a separate single-phase, continuous duty, 220-240 VAC, 48-62 Hz power line, with a maximum break of 10 ms. 1500 VA minimum service is required for the system.

110V compatible instruments can also be supplied.

In the case of a differing mains voltage, a transformer must be used.

Summary of power requirements of the HS2022, and inlets which may be associated

System	Power	Power Point
HS2022	0.8 kVA	1
EA	1.5 kVA	1
HT-EA	3.0 kVA	1*
GC	3.0 kVA	1
Orchid	1.0 kVA	1
Furnace controller	0.8 kVA	1
Cryo Range	0.8 kVA	1
μCarbs	2.5 kVA	2
Aqua	2.5 kVA	2

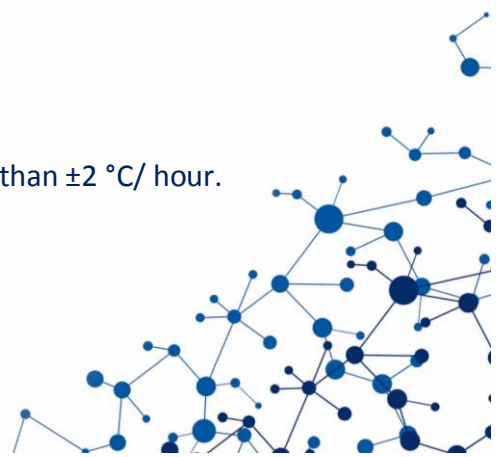
In situations where power breaks may exceed 10 milliseconds, a UPS is required. A UPS also helps to smooth out the power supply if it is not particularly stable. Please contact Sercon for information on suitable UPS units.

5. Environmental Requirements

5.1 Room temperature

The permissible temperature range is 17°C - 30°C.

Approximately 20°C is preferable with temperature variations of less than ± 2 °C/ hour.



5.2 Humidity

The relative humidity must not be lower than 20% and not exceed 70% at any temperature.

The optimum relative humidity level is 40%-60%.

5.3 Air conditioning

We recommend the installation of air conditioning, if the specified limits will be frequently exceeded on account of unfavourable climatic conditions. Direct sunlight on the system should be avoided.

Please ensure that the air-conditioning unit is not blowing across the electromagnet.

6. Gases

The system requires gas cylinder connections with 1/8" compression fittings (Swagelok or similar) and 1/8" diameter GC grade stainless steel or copper tubing for all gases (except the compressed air). The length of the tubing will be entirely dependent upon where your gas bottles are located in the lab. This should ideally be kept to a minimum. Standard 2-stage regulators that are capable of delivering a pressure of at least 3.5 Bar are required.

A 1/8" Swagelok Tee Union is required for splitting the helium (and hydrogen for the GC, if used). Additional Tee unions are needed to split the helium for additional inlets, unless connections are provided on the bench for each one.

Helium

Carrier gas. 99.998% with 10vpm or less of N₂.

A large (10 m³) cylinder should last at least 6 weeks.

Oxygen

Required for combustion and re-oxidising catalysts in some inlets.

99.998% with 0.5 - 5vpm or less of N₂.

A large (10 m³) cylinder should last several years under normal operating conditions.

Reference Gases



The HS2022 mass spectrometer is fitted with a reference gas injector system. Appropriate reference gases should be available for the samples you are interested in - CO₂, N₂, H₂, etc. These should be of high purity – 99.99%. Please check the Gas Requirement Check List at the end of this document

Compressed Air

A compressed air supply of 50 – 60 psi (approx. 3.5 Bar) is needed for pneumatic solenoid operations. This can be from a compressor or gas bottle. Alternatively, the valves can be operated using the helium supply but this will increase helium consumption. The compressed air is connected to the instruments by 1/8" nylon tubing.

For additional inlet-specific gases please see the Gas Requirement Check List at the end of this document

7. Installation and Service

7.1 Instrument Arrival

When the instrument arrives, please make an immediate visual inspection for damage. If any damage is apparent, please take the following steps:

- Note the nature and extent of the damage, including photographs
- Request an inspection and written damage report from a representative of the carrier to signify their concurrence with your observation.
- Contact Sercon and report the damage.

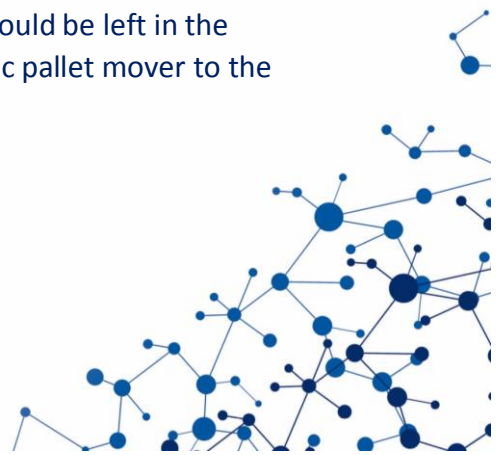
Caution:

Damage discovered 15 days after delivery of the equipment generally cannot be recovered. Such damage will be at the expense of the customer.

If the delivery receipt indicates that material has been received in apparent good order and condition and no exceptions are taken, Sercon will not accept liability for damage

7.2 Moving the equipment

Do not drop or mishandle the shipping containers. The equipment should be left in the shipping crates and, upon delivery, be taken by a forklift or a hydraulic pallet mover to the installation site.



7.3 Installation

When the instrument is on site and ready for installation, please contact Sercon who will arrange for an engineer to install it if arrangements have not already been made.

During the installation, the engineer will train the customer in the fundamentals of mass spectrometer operation and routine maintenance as well as application and software training. To receive maximum benefit from this onsite training opportunity, the instrument operator(s) should be available during the entire installation.

Additional training courses are available at our factory - please contact us for details.

8. Reference Materials

The HS2022 measures stable isotope abundances in your samples and compares them to reference materials of known isotopic composition. We suggest that you obtain a variety of suitable working reference materials, which can then be used to calibrate your instrument.

An effective reference compound is one that closely matches your samples in both elemental composition and isotopic enrichment.

Sercon is a supplier of reference materials. Please see https://serconlimited.com/sercon_systems/standards/

9. Consumables for Elemental Analyser Systems

New systems are supplied with appropriate start-up kits to allow system specification tests during installation. Further consumable supplies are available from Sercon. Please contact consumables@sercongroup.com or browse our online catalogue at sercon-consumables.com

10. Pre-Installation Survey

To ensure an efficient, trouble-free, installation of your Sercon instrument, could you please complete the attached questionnaire.

Simply answer each of these brief questions to confirm compliance with the pre-installation requirements, and return to service@sercongroup.com





Pre-Installation Guide HS2022



Pre-Installation Checklist

- | | |
|---|-------------------------------------|
| 1. Bench and storage space is sufficient | ☒ |
| 2. Main power 110V or 220-240V | ☒ |
| 3. There are enough electricity plugs for the system | ☒ |
| 4. Room temperature and humidity is adequate | ☒ |
| 5. Gases, regulators & connecting tubing are on site | ☒ |
| 6. All relevant safety precautions are complied with | ☒ |
| 7. Sercon instrument has arrived on site | ☒ |
| 8. Sercon instrument has been inspected for shipping damage | ☒ |
| 9. System moved to installation site | ☒ |

Gas Requirement Check List for Sercon Instruments

Please check you have all of the required gases necessary for analysis using the table for the inlets you have ordered.



Gas	Grade	Use	
HS2022			
Helium	99.998	Carrier	☒
Nitrogen	99.999	Tuning / Stability / ref gas	☐
Carbon dioxide	99.999	Tuning / Stability / ref gas	☐
Hydrogen	99.999	Tuning / Stability / ref gas	☐
EA			
Helium	99.998	Carrier	☒
Oxygen	99.998	Combustion	☒
Compressed Air		Solenoid Operation	☒
HT-EA			
Helium	99.998	Carrier	☒
Compressed Air		Solenoid Operation	☒
GC-CP			
Helium	99.998	Carrier	☐
Oxygen	99.998	Oxidation of combustion tube	☐
Synthetic Air [Zero Grade]	20% O ₂ /80% N ₂	Flame Ionization Detector	☐
Hydrogen	99.999	Flame Ionization Detector	☐
Liquid Nitrogen		If N ₂ combustion option selected	☐
Cryo Range			
Helium	99.998	Carrier	☐
Oxygen	99.998	Oxidation of combustion tube	☐
μCarbs***			
Helium	99.998	Carrier	☐
Aqua			
Helium	99.998	Carrier	☐
Carbon dioxide	99.999	Equilibration Gas**	☐
Hydrogen	99.999	Equilibration Gas**	☐

*** Phosphoric acid is required for carbonate / DIC measurements

**Pure H₂ and CO₂ can be used for the equilibration of water samples but may affect the results of smaller water samples (<100μL). 5% gases (i.e. 5% H₂ or CO₂ in helium) are preferable for smaller samples and give more manageable sample sizes in general. The use of 5% gases is recommended but is at the customer's discretion.



Contact Name:	Dr Gustavo Saiz	
Customer Name:	Universidad Católica de la Santísima Concepción	
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Edificio de Investigación e Innovación		
Av. Alonso de Ribera 2850, UCSC. Concepción.		
CHILE		
Tel No:	+56 97587 9457	Email: gsaiz@ucsc.cl
Fax:		
Date of delivery:		
Customer Signature		
Date:	18 March 2022	

Please return to service@sercongroup.com





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innovators in isotopes

Pre-Installation Guide HS2022

Service/ Maintenance email support: service@sercongroup.com

Sales: sales@sercongroup.com

Website: www.sercongroup.com

Telephone: +44 (0) 1270 580 008

Fax: +44 (0) 1270 252 310

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