

SERVICE REPORT

Job Number:	SE0747		
Customer:	Queen Mary University		
Contact:	Ella Considine /Ionanna Bechlivanidi		
Instrument:	Integra 2 (20802-2013337)		
Date of Visit:	08 July 2026	Days:3	
Engineer:	Henry Connell Cooke		
Reason for Visit:			
Service			
Service Contract?	Yes		
Warranty?	No	Expires:	N/A
Details of Visit:			
Day 1 ☐ Arrived to a system out of use since the customer could not get a flow reading ☐ Leak checking the system quickly found a Helium leak out of the bottom fitting of the water trap. Upon further inspection there was a blockage, caused by what was likely fragments of an old o-ring within the metal fitting. The line was removed and cleaned with compressed air, and the trap given new o-rings. Flow returned. ☐ Pre specs could not be run since the furnaces were cold ☐ Tubes not changed since no samples had been run through them, visual inspection showed the copper had not oxidised in the month or so it had sat without helium ☐ System switched off and source removed. Old filament looked well worn. Magnet grub screws felt close to rounding but were swapped for new, along with filament, copper gasket and source flange screws ☐ Oil changed in rotary pump. Old oil did not look too discoloured, since this is a new rotary, installed by the customer a few months ago ☐ System switched back on and turbo pump reached full speed quickly. Furnaces heated up over time and passed pressure test at full temp of 1000 for combustion and 600 for reduction ☐ Filament conditioned when vacuum reached 1.6E-8. Conditioning went smoothly Day 2 ☐ N2 peak shape first found using trapped air. Tuning and trap jumping completed, followed by CO2 with a beet mix sample. ☐ Initial precision run looked good (N2 = CO2 = 0.07 ‰) , but the following linearity run gave 1.18 ‰ for N2. CO2 passed spec with a 0.33 ‰ Linearity ☐ Multiple retunes were necessary before finding a linear N2 tuning, giving a result of 0.21 ‰			

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Day 3

- ☐ When precision was reran using this better tuning, the N2 precision became more inconsistent. N2= 0.38 ‰ after reprocessing, which passes spec, but only barely. This run also gave the best CO2 precision result of 0.02 ‰. Since the N2 linearity results were better than this. The water trap was changed, rather than attempting further retuning
- ☐ With a new water trap, N2 Precision improved to 0.18 ‰
- ☐ Customer is advised to change the tubes if their samples become inconsistent
- ☐ Best results can be seen below, all meeting the specifications

	N2	CO2
Precision (n=5, 100 ug N, 400 ug C)	0.18 ‰	0.02 ‰
Linearity (n=6, 20-200 ug N, 50-500 ug C)	0.21 ‰	0.33 ‰

Follow Up:

Please email me henry.cooke@sercongroup.com or support@sercongroup.com if you have any questions in the future

Parts Used:	Stock Number:	Quantity:	Charge:
N/A			N/A
Total:			N/A
Engineer:	Henry Connell Cooke		Date: 10 July 26
Signed:	<i>Henry Connell Cooke</i>		
Customer:	Ella Considine		Date: 13 July 2026
Signed:	<i>E Considine</i>		