

Heated Sample Line



Part #0723-10, 0723-25, 0723-50, 0723-100
Part # 0723-100HD (triple insulation)

User Manual



Questions? Contact us at 800-223-3977 or online at
<http://www.cleanair.com/equipment/Express/main.html>

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IMPORTANT!!!**BEFORE YOU BEGIN READ THIS!!!**

READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE USING THIS SYSTEM!

SAVE THESE INSTRUCTIONS!!!

- **To Avoid Accidents...**
 - ✓ Keep your work area clean and well lit.
 - ✓ Keep bystanders away.
 - ✓ Exercise common sense.

- **Electrical Safety...**
 - ✓ Do not operate in combustible environments.
 - ✓ DO NOT operate these products when wet or in water.
 - ✓ ALWAYS be sure that the components of this system are running with the correct voltage (see section 1.1).
 - ✓ Never remove a grounding prong or modify a plug.
 - ✓ Do not cut or alter the heated sample line in any way.
 - ✓ Do not abuse the power cord or plug. Remove by handling plug only.

- **Personal Safety...**
 - ✓ The parts of this system are heated in excess of 500 degrees Fahrenheit. Use caution when handling your equipment during and after a test.
 - ✓ Stay alert and watch what you are doing.
 - ✓ Dress appropriately. Wear the appropriate personal safety devices.
 - ✓ BE SURE to read all tags and stickers attached to the line.

- **Equipment Maintenance...**
 - ✓ Clean Air Express can not ensure that our Heated Sample Line is compatible with any other temperature controllers but our own. It is HIGHLY recommended that one of Clean Air Express's digital temperature controllers (0725RNT, 0725PM, 0725R) be used with this product. See <http://www.cleanair.com> or call (800) 223-3977 for more information
 - ✓ Maintenance and repairs should be performed by one of Clean Air Express's trained technicians.
 - ✓ When removing the hose from its spool take care that the hose does not kink. This may cause damage to the core.
 - ✓ While the line is hot or heating up it SHOULD NEVER come in contact with itself. This can possibly result in permanent damage to the line.
 - ✓ Avoid wrapping the hose with tape or other insulating materials.

Customer Feedback

Clean Air Engineering takes pride in our quality products and services. We strive to provide the highest quality products and services in the industry. We realize the importance of end user input in the continual improvement of our products and services. Customer feedback is of paramount importance. **We encourage your feedback with any suggestions or problems that can help us improve our performance.** A customer feedback form is available online at <http://www.cleanair.com/About/feedback.html>. To emphasize our commitment to quality products and complete customer satisfaction, Clean Air Engineering's manufacturing division, CAE Express, offers what we feel is the best and most comprehensive warranty in the environmental industry.

1 Safety

Safety should always be considered first, and proper safety procedures should be followed.

1.1 Temperature

Clean Air Express's temperature controllers are capable of heating lines to very high temperatures. Exercise caution around the exterior of the box, lines, and probes as they can all become very hot when the assembly is on.

1.2 Electrical Shock

The Heated Sample Line is powered by a standard 120 VAC line, meaning potentially fatal shocks are possible. It is no more dangerous than many household appliances in this regard; however, care must be taken to avoid shock. Before performing any maintenance on this or an assembly containing it, **turn off** and **unplug all devices** from the 120 VAC line.



1 Principles of Operation

Maintaining a steady temperature around 250°F is important so that moisture, acid gas, and other constituents of the gas stream do not condense within the sample lines. This can result in the damage of equipment as well as the loss of important data. The Heated Sample Line helps to ensure the accuracy of gas samples by providing a heated route for the gas in order to help prevent scrubbing.

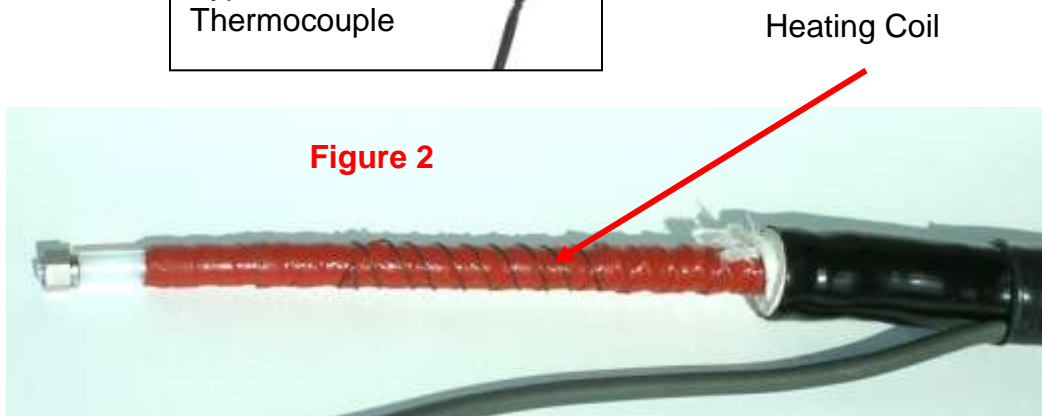
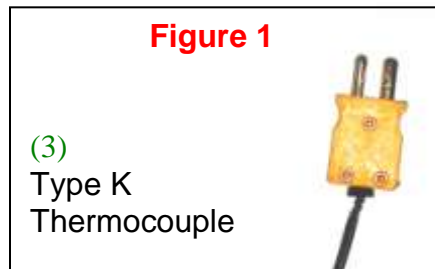
1.3 Lengths, Voltages, Watts

Part Number	Voltage	Watts	Length
0723-10	120	300	10
0723-25	120	750	25
0723-50	120	1500	50
0723-100	120	2500	100
0723-100HD*	120	3000	100

***NOTE:** The HD model is manufactured to operate at a temperature of 400 degrees Fahrenheit.

2.2 System Components

The Heated Sample Line consists of a Teflon sample line (which can also be ordered as stainless steel), a smaller Teflon calibration gas line, a power cord, and two type K thermocouples (3) located 1/3 of the way from each end. The second thermocouple is a spare in case of breakage. The lines are heated by coils throughout the length of the line (see figure 2). They are very durable as well as flexible.



2.3 System Operation

See below for pictures.

Insert one of the thermocouples (3, Figure 1) into the corresponding input on the temperature controller; the second is simply a spare. It is unnecessary to plug the second thermocouple into anything. Connect the calibration gas line (2) and the sample line (1). Plug in the temperature controller and the heated sample line (4), as well as any other equipment (120V). Select the desired temperature. Allow 10-15 minutes for the system to warm up then begin sampling.

CAUTION!! – If the light on the temperature controller does not blink when it gets near the target temperature, overheating is very likely! The most likely cause is a bad relay in the temperature controller.

NOTE – In the event of an overload, the circuit breaker on the temperature controlling device will pop out. Simply push it in to reset.

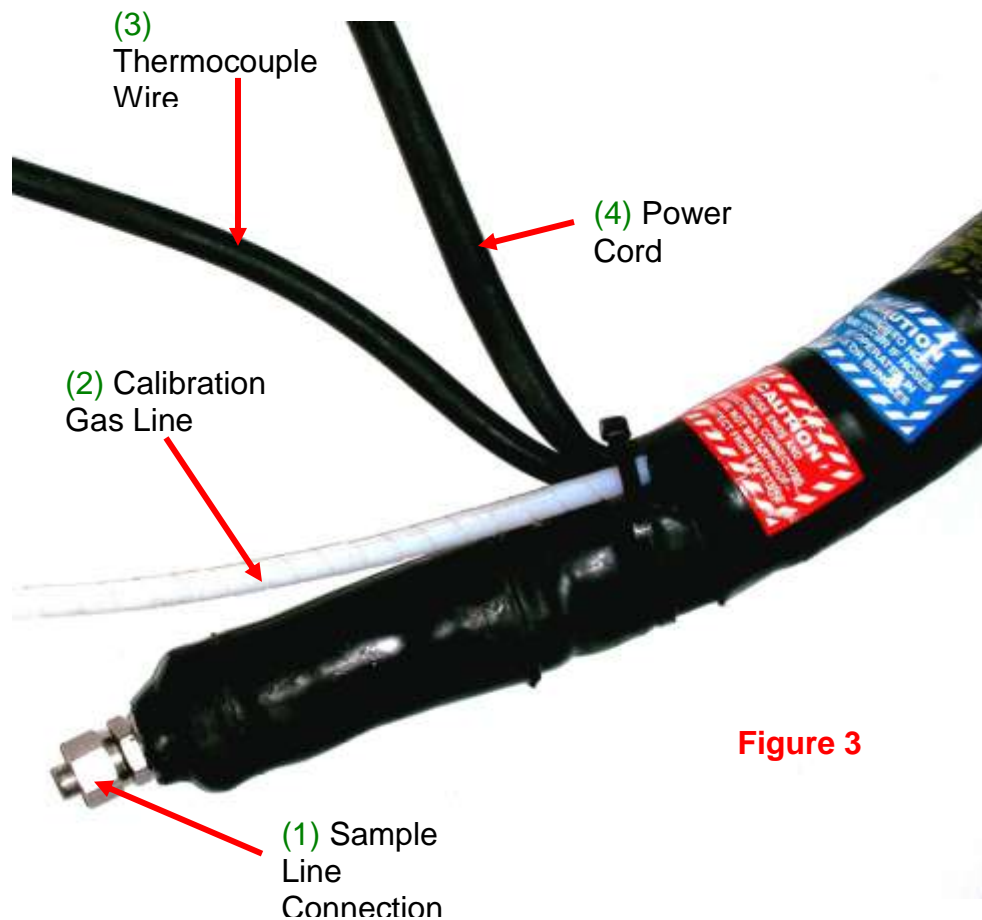



Figure 3

3 Maintenance and Inspection

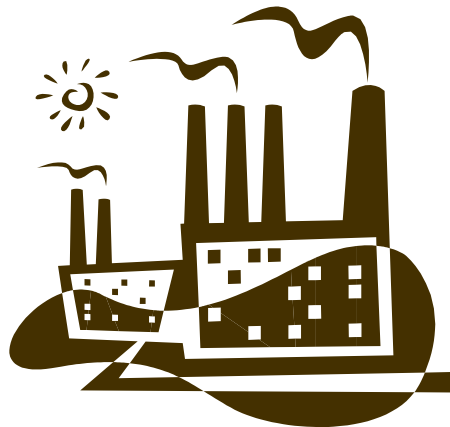
 **CAUTION!!** – Do NOT disassemble this product! For internal maintenance contact Clean Air Express.

3.1 *External maintenance*

If dirty, the outside of the lines can be cleaned with mild soap. Thermocouple plugs can also be damaged relatively easily, but are simple to replace. Order part number **0316M** from Clean Air Express.

3.2 *Maintenance Issues*

For any other maintenance issues, concerns, or questions, please contact Clean Air Express at (800)-223-3977. Clean Air Express can also be reached by mail at 212 N. Woodwork Lane Palatine, IL 60067; by fax at (847)-991-8924 or on the web at <http://www.cleanair.com/equipment/Express/main.html>

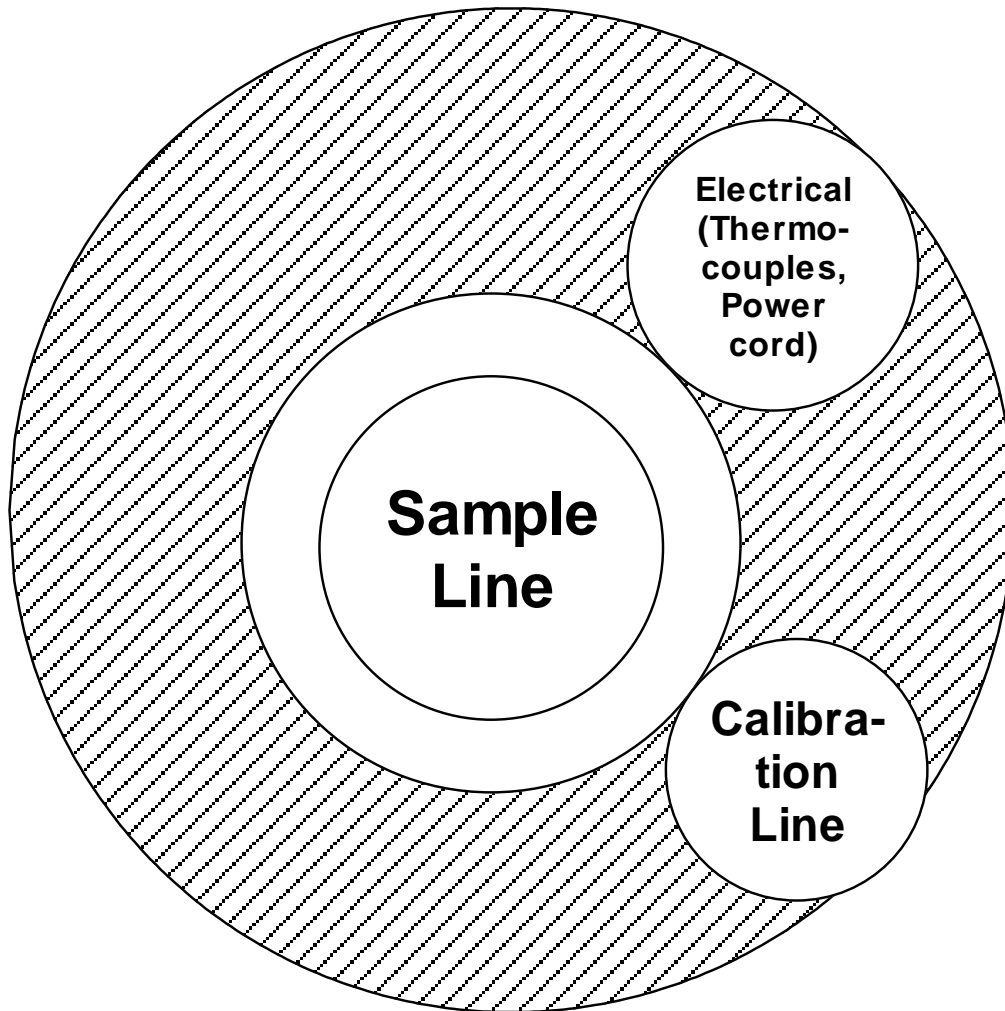


4 Troubleshooting

- **Heated Sample Line Controller not heating the sample lines**

There is no easy way to repair/replace a burned-out probe heater or heated sample line in the field. However, often the source of failure is not a burned-out heater, but a bad connector. Check the connectors for a broken or bent pin, and repair/replace as necessary. If the connectors and pins are fine, check to make sure the breaker is not tripped. Reset the breaker if it has tripped. If resetting the breaker fails, or immediately trips again, unplug the assembly and look for shorts in the circuit. Do NOT disassemble the controller; contact Clean Air Express for maintenance.
- **Overheating**

The overheating of this product or the assembly it is contained in is most often a result of either a thermocouple or temperature controller problem. If a thermocouple's insulation is compromised and the bare wires allowed to come in contact with a surface, it will report the temperature at that point, rather than at its tip. This can fool the temperature controller into keeping a heater on continuously. Try using the spare thermocouple instead. If none of the thermocouples has failed, it means that the temperature controller itself has failed and needs to be replaced. This could be due to disengagement of the temperature sensor, a locked switch, or a bad relay.



CLEAN AIR ENGINEERING
 PARTS LIST
 HEATED SAMPLE LINE

May 22, 2008

Parent Part #: 0723-
 *dependent on length

Type: F

COMPONENT	DESCRIPTION	QTY	UM	TYPE
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0723G	HEATED SAMPLE LINE GUARD SAFETY YELLOW	2.0	EA	R
9801100	HEATED SAMPLE LINE 100'	1.0	EA	R
0419SRU	UNION 3/8" T-1/4" T S.S.	2.0	EA	R
0316M	STD MALE THERMOCOUPLE PLUG TYPE K	2.0	EA	R
94032	3 PIN CABLE CLAMP	1.0	EA	R
94031	3 PIN AMPHENOL MALE INSERT	1.0	EA	R
9403	3 PIN CABLE PLUG (SHELL ONLY)	1.0	EA	R

Our Guarantee

Clean Air Engineering warrants products to be free from defects and workmanship for a period of one year after delivery date. The sole and exclusive remedy for defective goods shall be repair or replacement of defective parts or payment price of the goods for which damages are claimed, at Clean Air Engineering's option.

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