

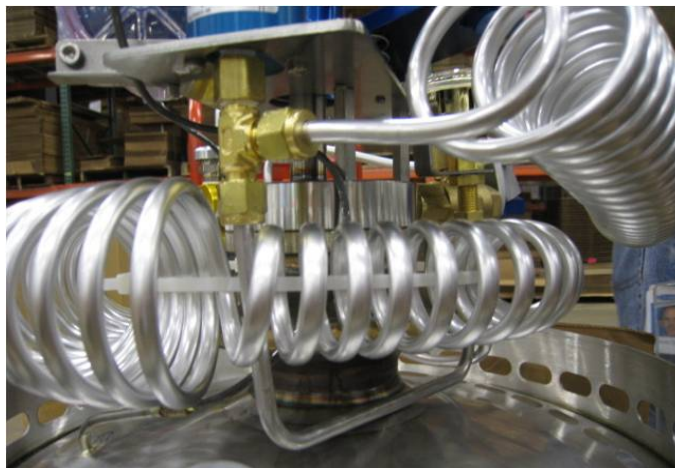
**DATE:** March 1, 2012

**MODELS:** All CAIRE Companion Reservoirs (C21, C31, C41)

**ISSUE:** Vaporizing Coil Design Modification

**NOTES:** Effective February 20<sup>th</sup>, 2012, the vaporizing coil (#15055709) design on all Companion reservoirs will be modified. Reservoirs beginning with the serial number #CBB3012070245 will have the re-designed coil. The purpose of this change is to decrease the amount of frost accumulation on the coils during operation and to keep the control valves frost and ice free.

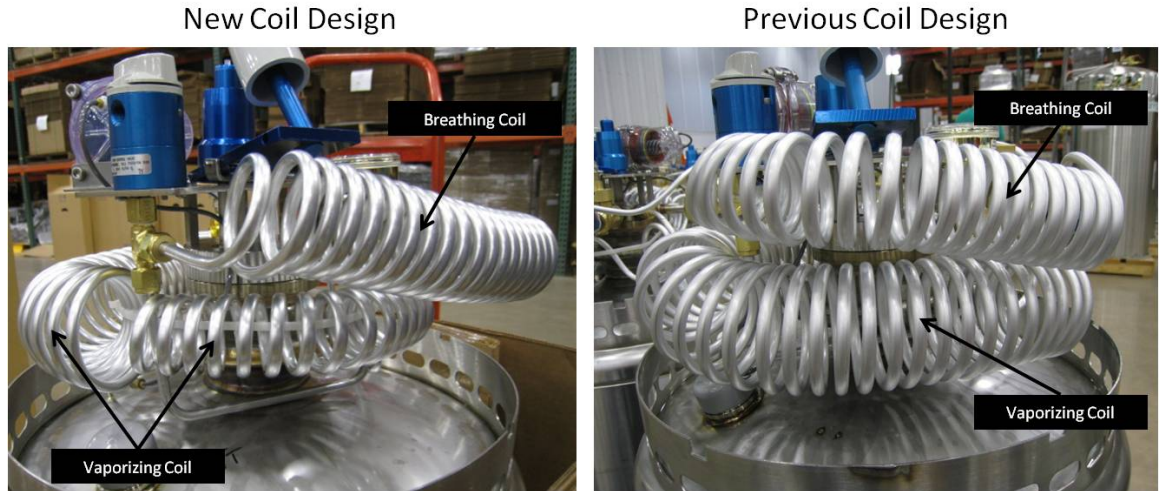
The vaporizing coil will now have two distinct sections. The first section will be tightly wound and have a smaller diameter. Liquid oxygen (LOX) will travel through this more compact section when it first exits the manifold during withdrawal. The diameter of the vaporizing coil will then increase to a less tightly wound section with a larger overall diameter. This change in coil diameter is illustrated in Figure 1 below.



*Figure 1 - - Sections of Vaporizing Coil*

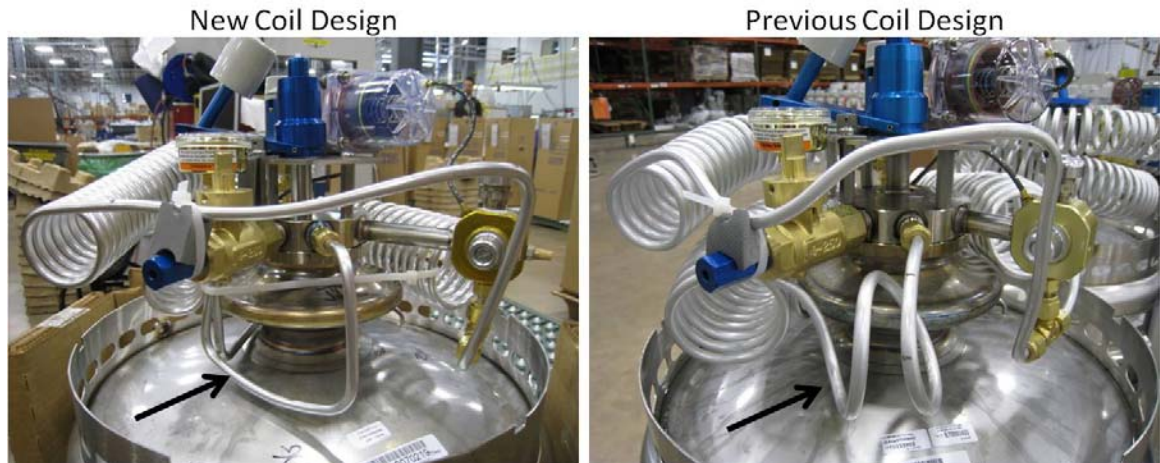
Previously, the entire length of the vaporizing coil was the same diameter throughout the flow path. The addition of this more compact section will bring the warming coils in closer to the manifold and further away from the shroud. This will decrease the amount of frost that can accumulate on the shroud during

normal operation, and thereby reduce water run-off. Figure 2 below illustrates the change in the coil design.



**Figure 2 - - Coil Diameter Design Change**

This modification will also change the coil shape after it exits the manifold. Previously, the spiral section of coil began immediately after the connection to the manifold. With the revised design, there will be a straight section of coil leading from the manifold to the smaller diameter spiral section. This too will serve to reduce frost accumulation. It will also keep the control valves ice and frost free, as well as ensure that the vent valve remains functional. Figure 3 below illustrates this design change.



**Figure 3 - - Manifold Outlet Design Change**

The new vaporizing coil will be a direct replacement of the older style and the two coils will be interchangeable. A replacement vaporizing coil is orderable using part number #15055709.

This design change will not affect the specifications or performance of the Companion reservoirs.

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