Customer Support Note 012

Removing and replacing cold traps on TT24-7

Disclaimer: It is vital that this Customer Support Note is read carefully before proceeding and that any instructions contained within the document are followed closely. Markes International will not accept responsibility for any damage done to instrumentation or personnel if any instructions within this document are not followed exactly. Any ongoing warranty or contract may be voided if failure to follow these instructions results in damage to the instrumentation. If anything is unclear, you must clarify the details with a Markes representative before proceeding.

Cold traps may need to be replaced during routine maintenance of the instrument, or to change the cold trap for one with different sorbents inside. The following instructions explain how to safely remove and replace each of the cold traps in a TT24-7 (series 2 or 'xr'). The process is the same for both Trap A and Trap B.

WARNING: Ensure the instrument is switched off before removing the cold trap. Failure to do so will damage the trap heaters.

CAUTION: Cold traps are made of glass and are extremely fragile.

1. Removing the cold trap

- Stop any running methods, open direct control and set the instrument to standby (Figure 1, highlighted in red).
- Select the 'Exchange Split Tube' option (Figure 1, highlighted in blue).

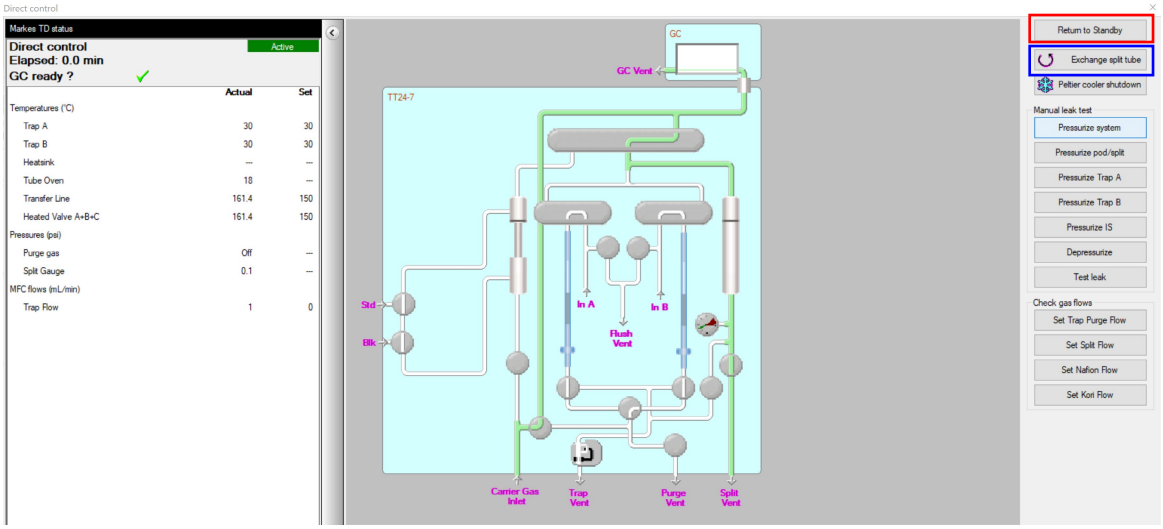

Figure 1: 'Return to Standby' and 'Exchange Split Tube' options.

- Turn off the power to the TT24-7, and turn the purge gas off at the Gas 01 regulator.
- The software will then come up with an error message, because the instrument is no longer in communication. Select the option to shut down the software.

WARNING: Do not proceed unless power has been switched off.

- Carefully remove the pneumatics downstream of the cold traps by unscrewing the cold trap brazed connector (highlighted in red in Figure 2), loosening the screws either side of the trap pneumatics (highlighted in blue in Figure 2) and slowly pulling the trap pneumatics assembly towards the front of the instrument. Ensure that the trap pneumatics are kept in a horizontal plane during movement to minimise any damage to the cold trap (Figure 3).

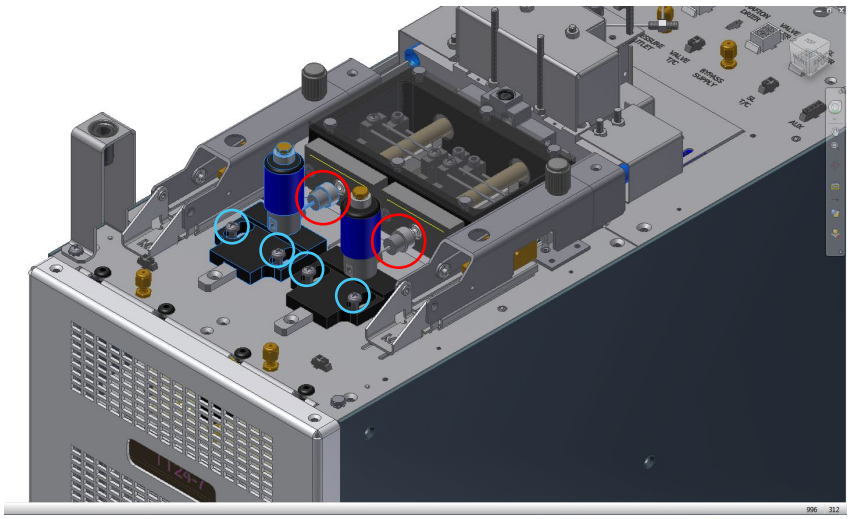

Figure 2: Trap pneumatics with brazed connector and screws highlighted.

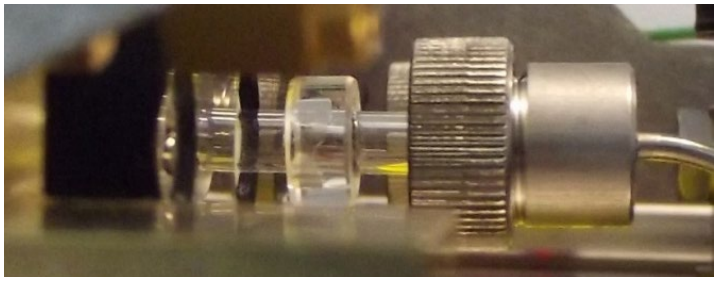

Figure 3: Keeping components on the same plane.

- Rotate the pneumatics to the side, in order to access the glass collar of the cold trap.
- Gently pull the cold trap out of the trap box. You may feel some resistance initially, but once the cold trap is clear of the O-ring in the heated valve, this will ease.

2. Replacing the cold trap

- Select the new cold trap and insert it into the instrument. Ensure the cold trap is fed in slowly (a few millimetres at a time) to minimise chance of any damage (Figure 4). When the trap reaches the end, gently apply a small amount of pressure to guide it into the O-ring in the heated valve.
- If the cold trap is installed correctly, the glass collar should be approximately 2 mm from the heat sink assembly (Figure 5).

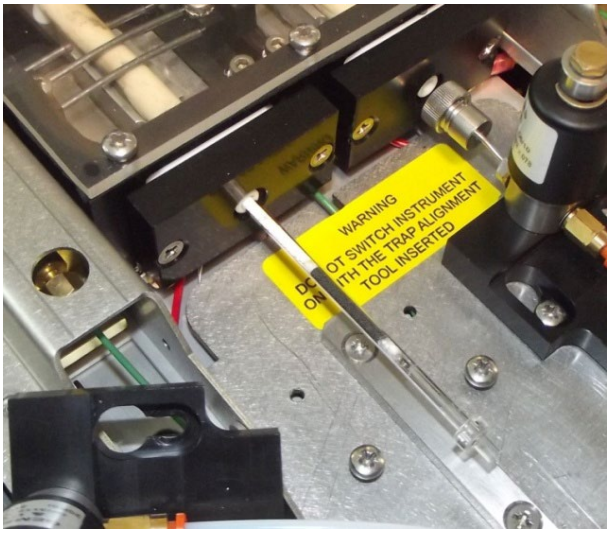

Figure 4: Feeding the cold trap into the trap box.

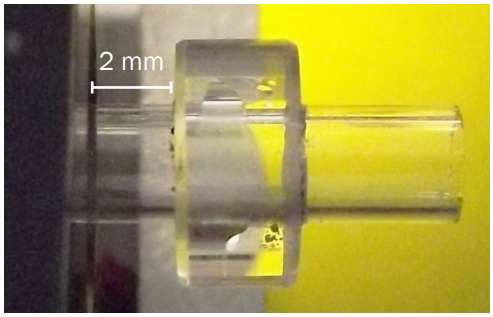

Figure 5: Final position of the cold trap.

- Re-connect the pneumatics. When connecting the brazed connector to the cold trap, take care to keep it on the same horizontal plane, to ensure the cold trap does not snap. If the connector does not slide easily onto the cold trap, remove the trap pneumatics and check the seating of the O-ring inside the thumb-screw.
- Align the trap pneumatics with the cold trap and trap box, and tighten the screws either side to fix the trap pneumatics onto the instrument (Figure 6). Take care to hold the assembly in place until the screws have been fully tightened.

Figure 6: Fixing the trap pneumatics onto the system.

- Turn the purge gas and the instrument back on.
- Reopen the software and allow the heated valves to come up to temperature.
- If the cold traps have been replaced with new cold traps, please ensure they are conditioned fully before analysis is performed.

For all technical support queries, please contact Markes International.

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