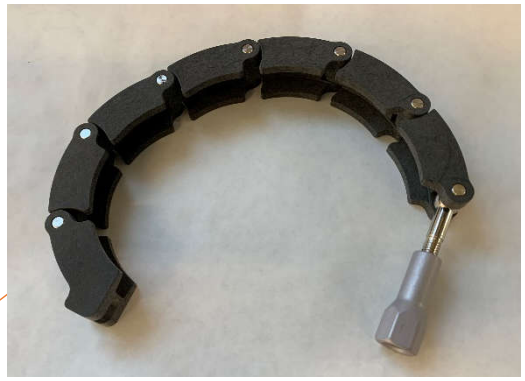
Trouble Shooting: **Pressure is not building up**

In the occasion pressure is not building up enough in the system please check the following:

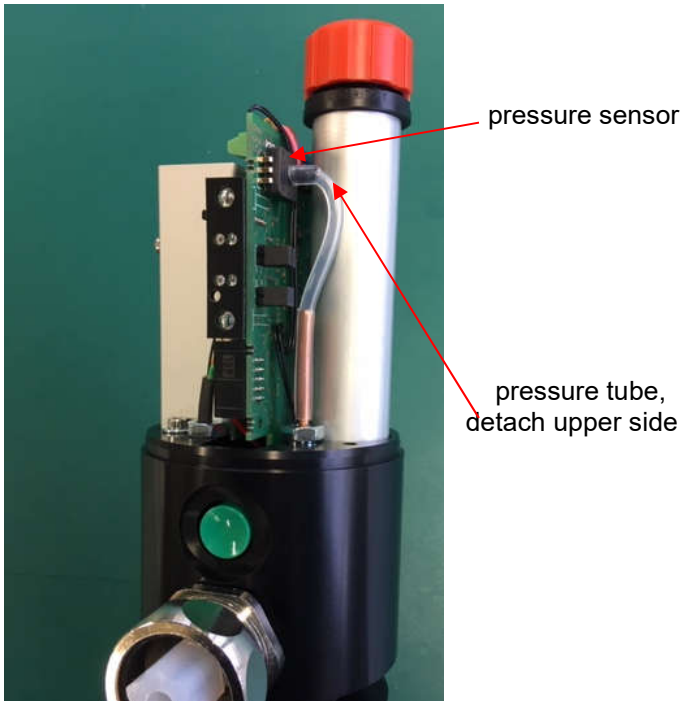
1. Check in case the orange screw on top of the pump housing is installed correctly and tightly seals on the safety release tube. Also check in case the rubber O-ring is present and not cracked

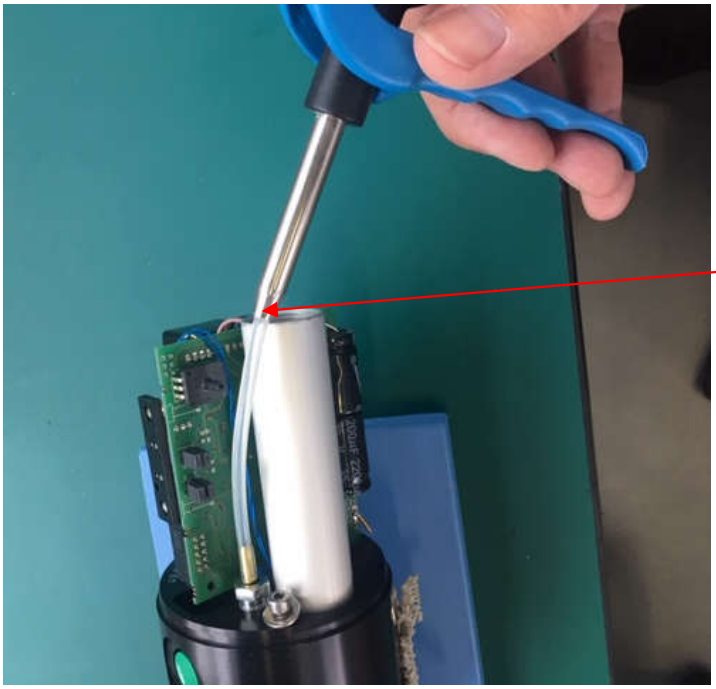
2. Check in case the rubber O-ring between the pump and the Dewar is not missing or is cracked
3. Check in case the chain clamp is correctly installed covering the pump flange and Dewar flange and fit tight



4. **Warm up and dry the pump for minimal 4 hours** (see enclosed Service Manual chapter 9). It could be the possibility of blockage in the riser pipe due to moisture or ice building up.

If you have the feeling that the risepipe or the pressure measuring tube is frozen, you need to warm the pump up to room temperature, and may be dry the rise pipe and measuring tube.
Please put the pump in its floorstand, or lay the pump on a table and wait for all ice and condense water has disappeared. You may help a little by warming it with a electrical hairdryer. But be careful. The protection pipe, around the heater and rise pipe, is made of PVC, and will deform at temperatures above 70 C.
After all condense water is disappeared, it could be possible to see if there is an ice block in the rise pipe. The most obvious place is high in the risepipe, almost at the pumphead. So this may not be easy to see.
You may blow with dry air from the fill line into the pump, to blow the last water downwards out of the rise pipe. Off course the air should flow freely through this when the ice block is removed.
Second place of freezing is the pressure measuring tube. (red tube of 3,3 mm for pumps from before 2011, or transparent tube for pumps after 2011)
At the bottom, next to the heater, there is a set of two small resistors mounted in this pressure tube. These resistors evaporate LN2 during pumping, to make sure this pressure tube is fully filled with N2 gas all the time.
If the pump is out of the LN2, condense water may occur here, which will turn into ice when the pump is replaced in the LN2 before it was dried. If done many times, some ice may appear here, and even some water can go upwards in this tube. To make really sure that all water is out, you may careful blow with dry air from above true this tube. To do this first remove the top cover of the pump, this can be done after removing the orange safety valve (turn left) Now the silicon tube in the pumphead can be removed from the pressure sensor on the PCB. Then you can blow in the silicone tube downwards through this pressure tube. Watch if any water comes out, and blow until there is no water left.





Blow some dry air through the pressure tube to remove the moisture.
Do not build up any pressure in the tube because it can damage the tube internally.

NOTE:
When the pump warms up while laying on a table, water can run into the risepipe and/or pressure measuring tube. When laying on a table, it can take quite a long time before all water is dried out.
It is highly recommended to let the pump warm up while it is standing upright, so in its floorstand. In that position most water will fall out, instead of going into the pipes

Please see here the note again:
NOTE: When the pump is in the LN2, the power should be kept on the pump. When the power is OFF, the leading hose of the pump may freeze because water vapor will enter the pump slowly and freeze the exhaust. There is a small heater element in the pumphead to prevent this. If the pump is longer (several hours) without power, the pump could internally freeze. Only solution then is to warm up the pump completely.