

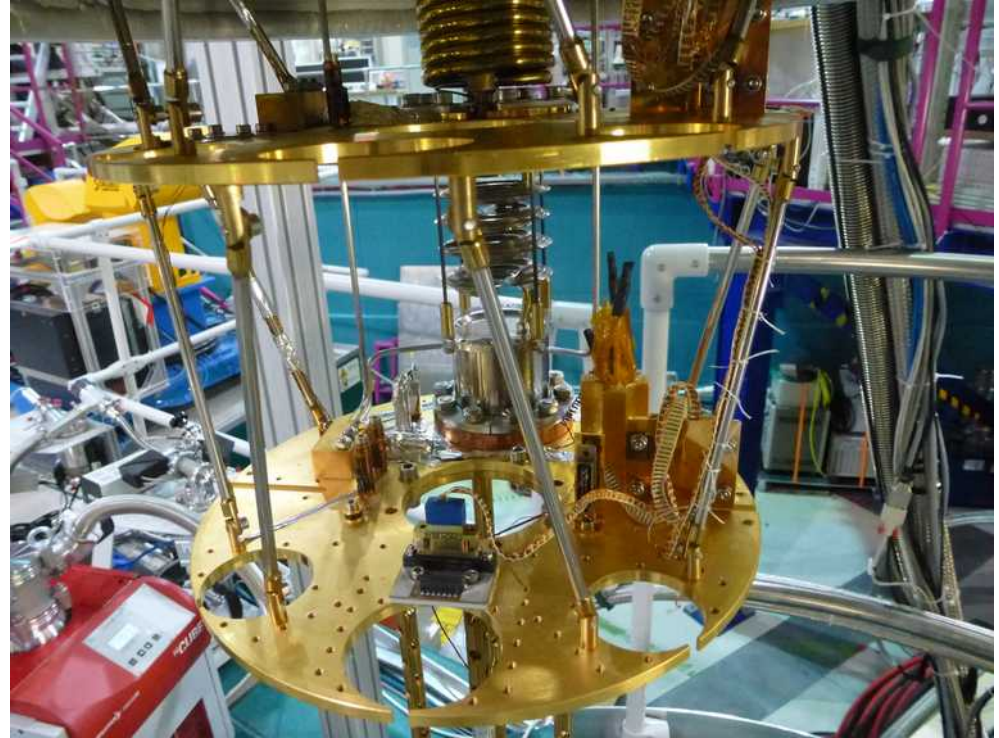
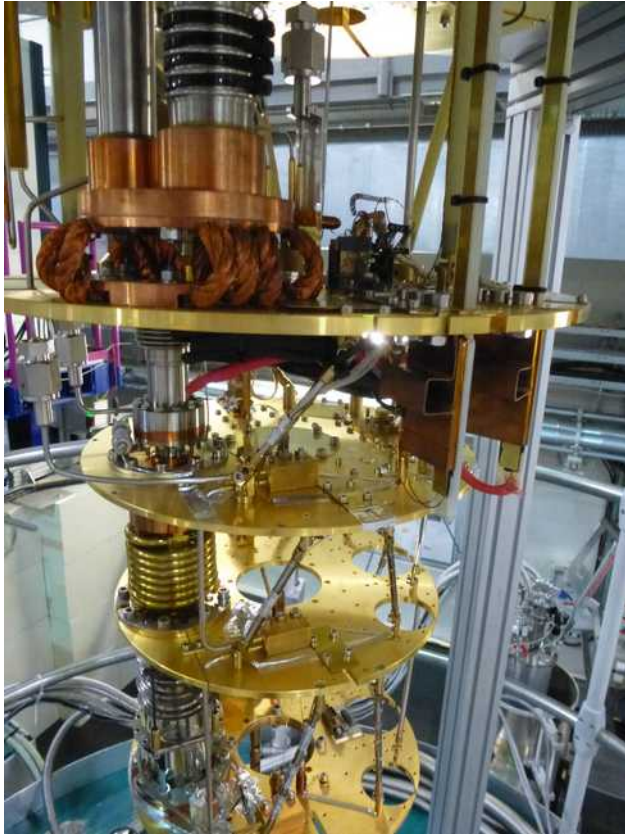
# Good and bad experiences when buying cryostats

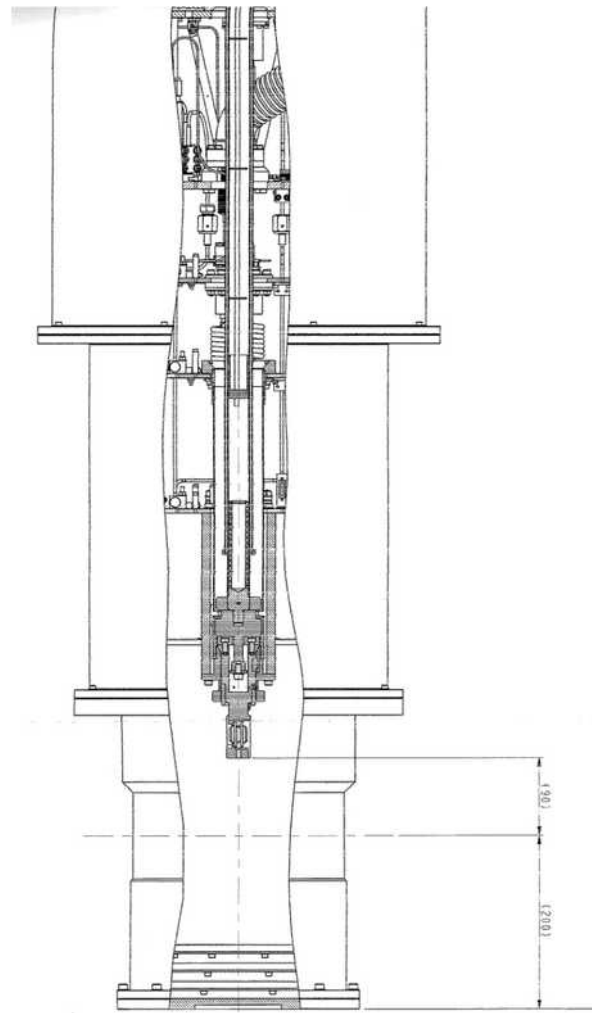
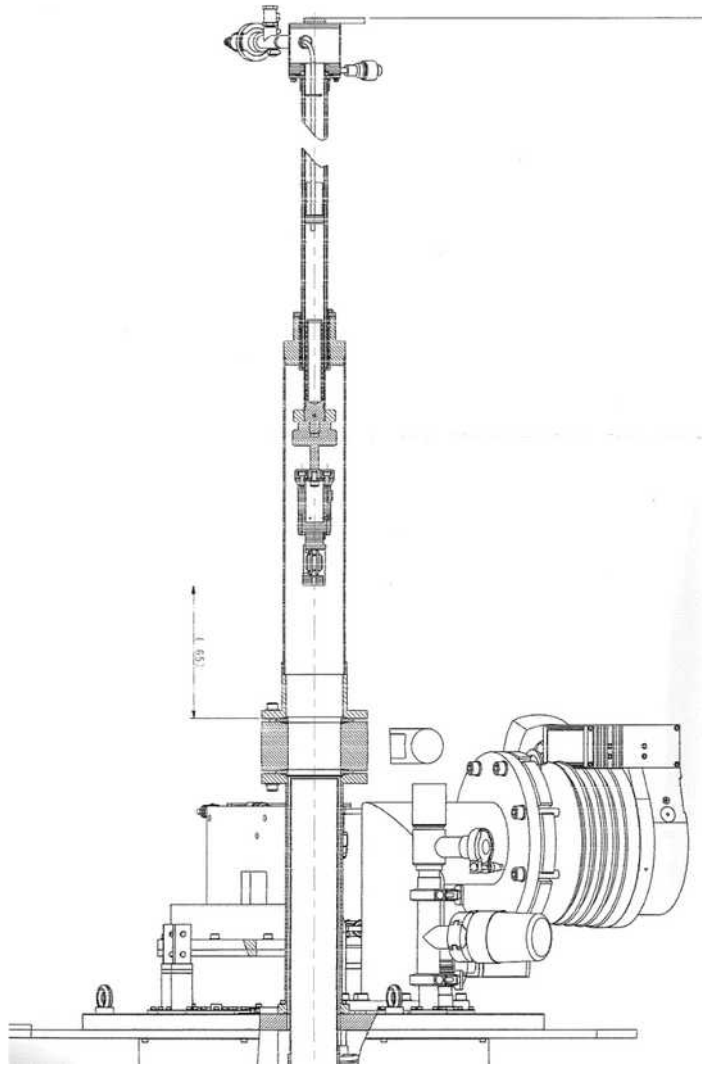
## TRISP / NREX

1. Dilution cryostat from Oxford Instruments  
+ sample transfer stick  
cryofree  
 $T < 10\text{mK}$ ,  $200\mu\text{W}$  @  $100\text{mK}$
2. He-3 cryostat from Entropy (Munich)  
Design by J. Peters, H. Kolb  
base  $0.5\text{K}$ , cooling time: 4h



## Oxford Instruments Triton-200





cryostat (300 k€):

- delivery
- OI technician spent 1 month at the FRM II
- 10 mK reached (last day of deadline)

sample transfer stick (70k€):

- very bad design, requires liquid He-4
- weak thermal coupling
- very high force needed

-> never again

**Better solution: Bluefors (Helsinki) or Entropy (Munich)**



## He-3 cryostat (Entropy, M-Sendling)



- design: Peters, Kolb, (Tralmer)
- GM cooler
- $T \sim 0.5\text{K}$
- fast: 4h to 0.5K
- FRM II control system (Enno Faulhaber)
  
- very good collaboration with Entropy

