MERIT Installation at CERN

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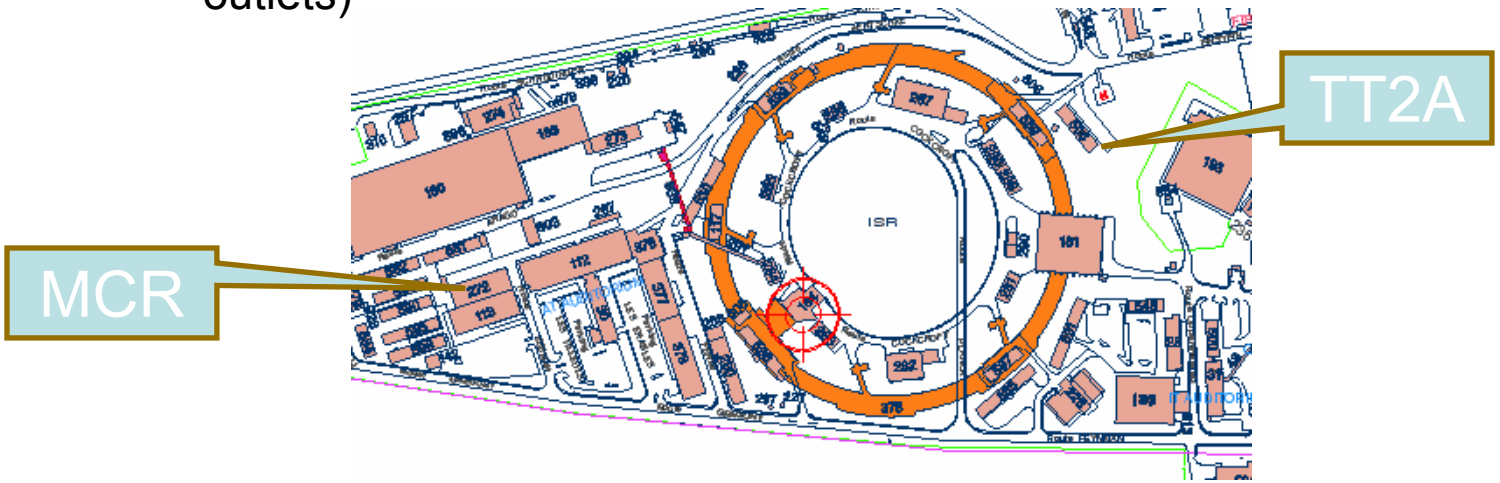
For the MERIT Collaboration

April 13, 2007

MERIT control room

- Located in building 272
  - 272 S-002
  - Equipped with 12 Ethernet ports (currently 4 PCs installed and 2 portable outlets)



- Communicates with the experimental setup in TT2/A ONLY via Ethernet (no hard wires).

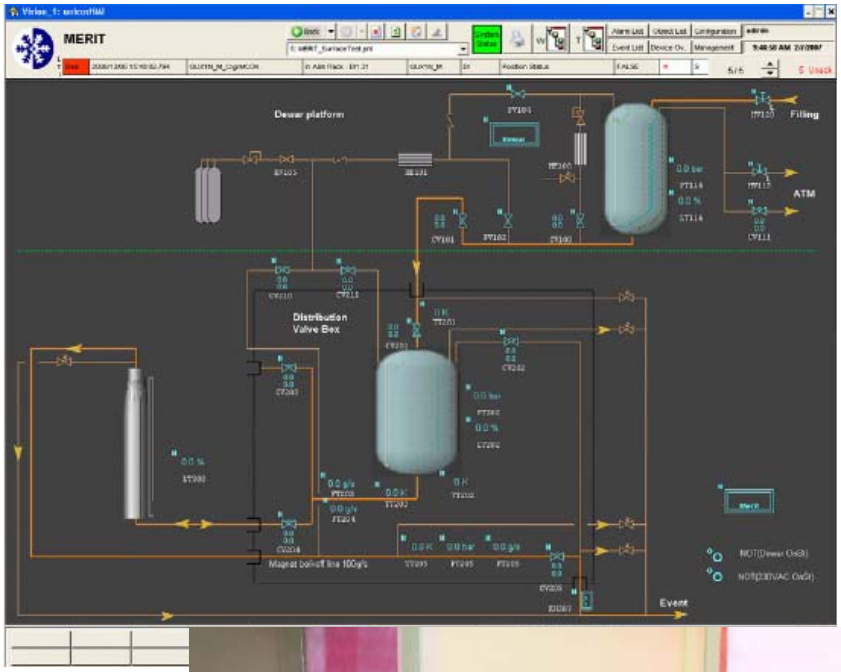
TT2A

- TT2A: Ready for goods reception.

Magnet and Mercury System Arrive at CERN 16 May 2007

Stored in West Hall (Bldg 180/183)

Cryo System Exercised in Bldg 180 via Control from Bldg 272

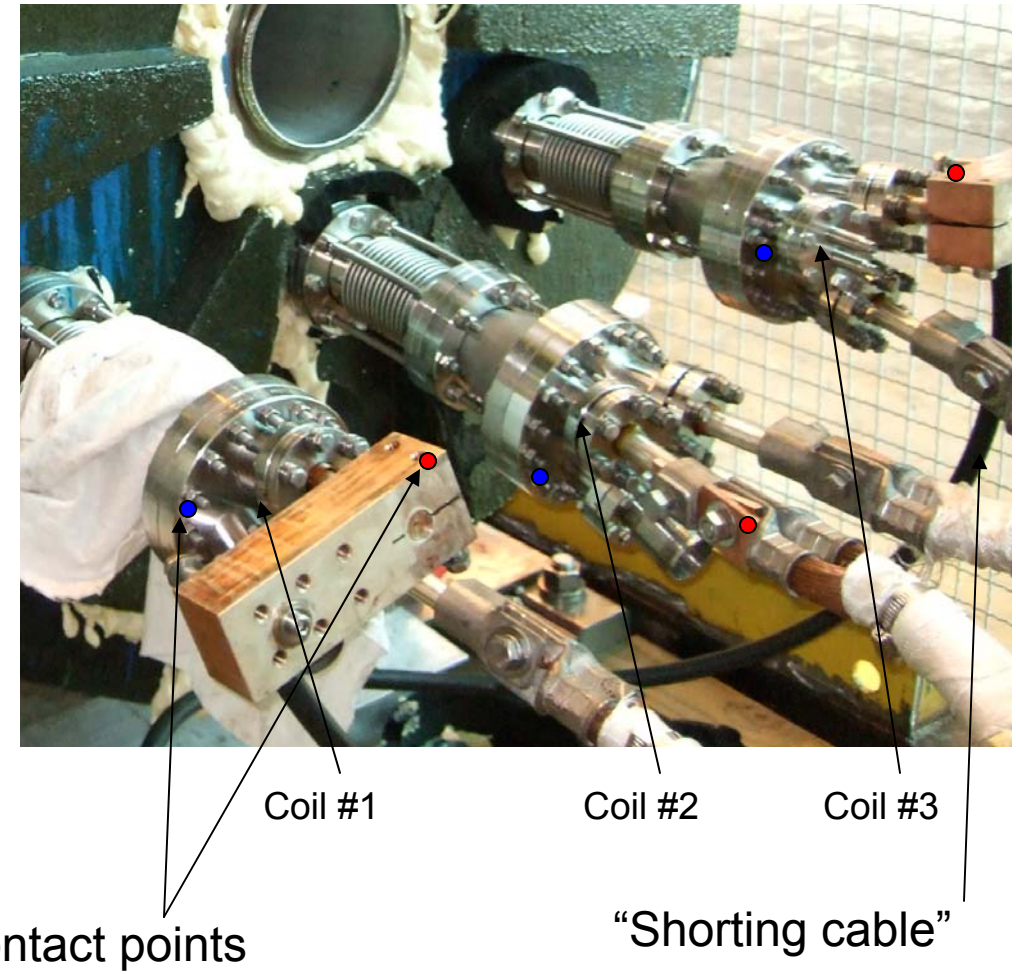


Test magnet with cryo system in Bldg 180 starting 10 April.

HiPot Test of Magnet @ 800 V

- Measure resistance between different points (I/V measurement). Slight bending of the middle coil might cause leakage current.

- Equipment:
  - Power supply: Caen N470
    - Current monitor at μA accuracy
  - Current meter: Keithley 2001
    - Tens of nA



Each coil ~ 100 GΩ, magnet ~ 30 GΩ (and "shorting cable" ~ 400 MΩ.

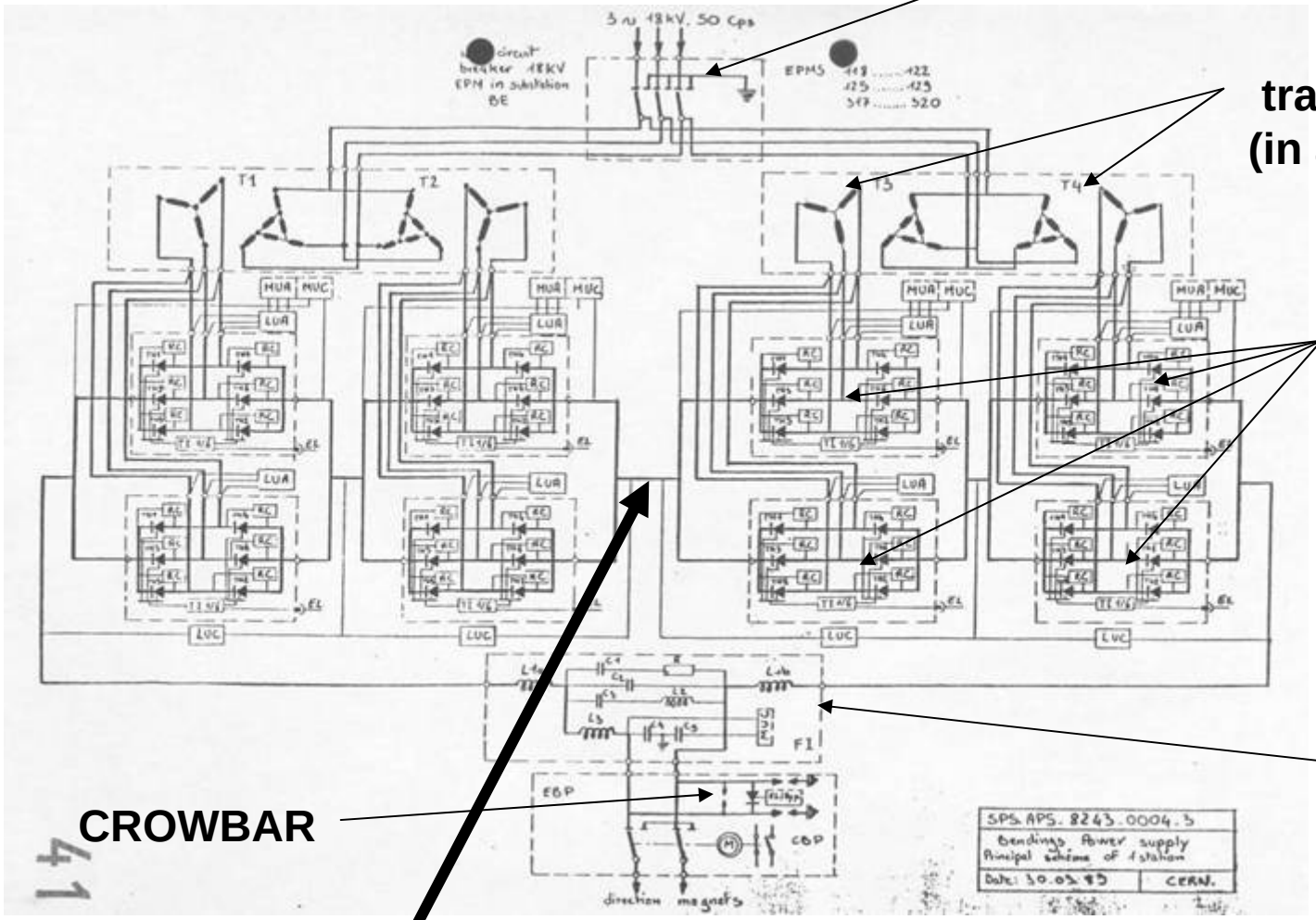
Room-Temperature Pressure Test of Magnet to 12.5 Bar

"Antler" of pressure relief valves added.
Cryostat held 12.5 bar of He gas for 1 hour.
No leaks detected with sniffer.

Cryocomp valve operator removed from vacuum jacket for proper operation of the pressure relief valve.

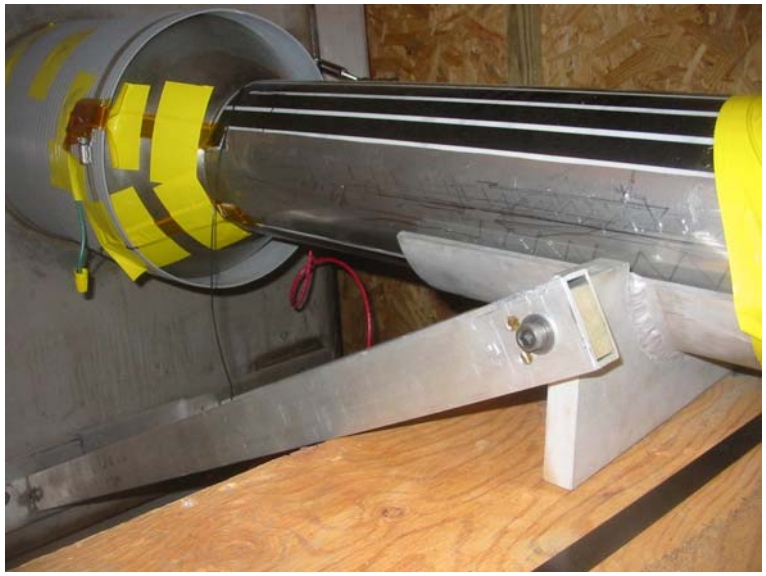
West Area power converter
8000Adc, 1000Vdc

Converter topology



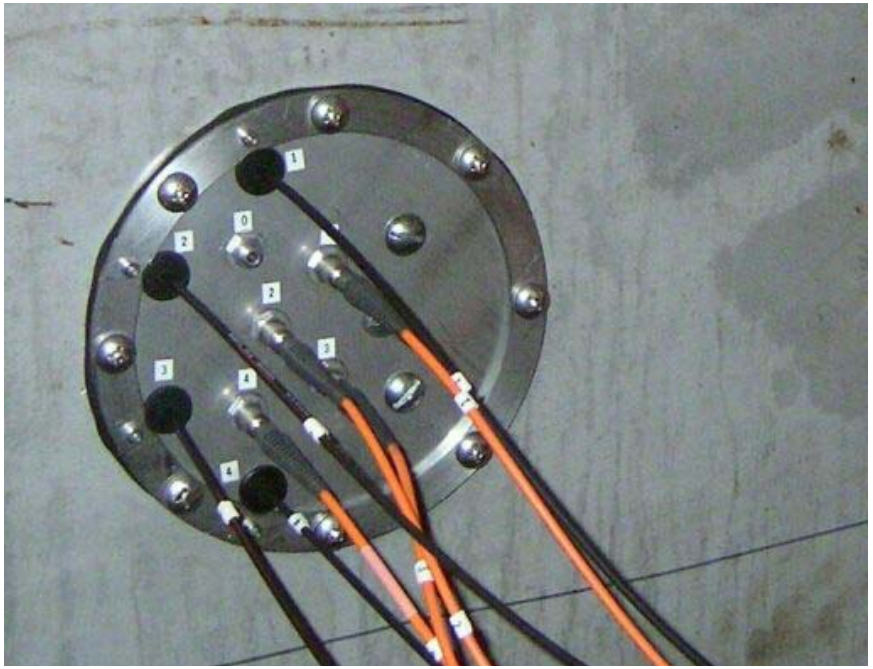
Connect midpoint of power supply to ground thru 1Ω, so magnet runs at ±350 V.

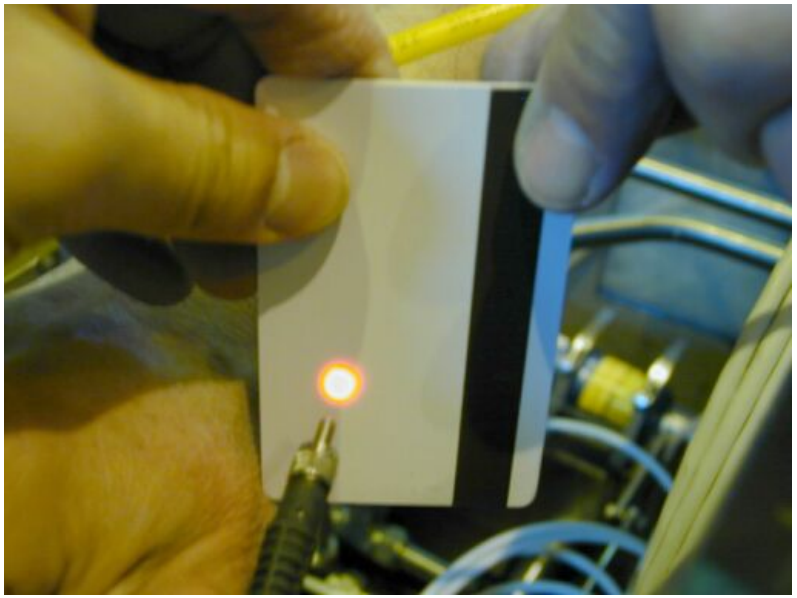
Mercury "Snout" Turnbuckles Worked Loose During Transport ⇒ Snout Fell 10 cm
Rubber Collar Stretched by ~ 5 cm.
¿Damage to the Primary Containment?



Snout
guy wires
restored by
M. Lazzaroni

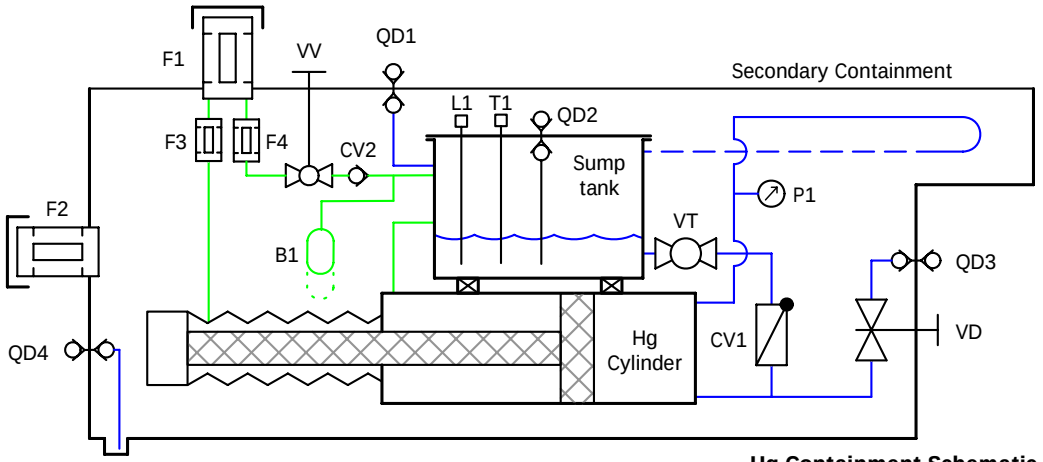
Check of Integrity of Fiberoptics using a Laser Pointer





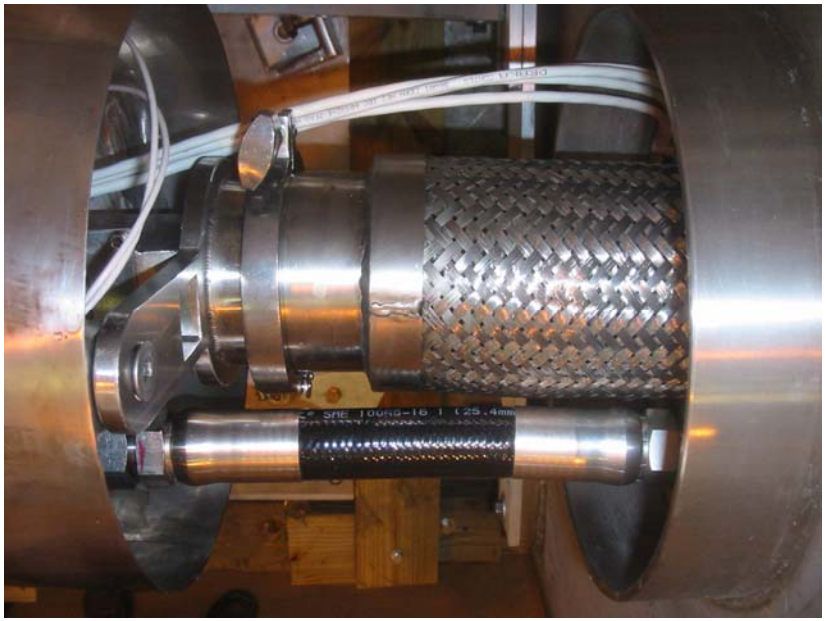
All fibers OK, tho image from fibers 1 and 3 less bright than those from 2 and 4.

Primary Containment Vessel Still Passes the 1-PSI Pressure Test



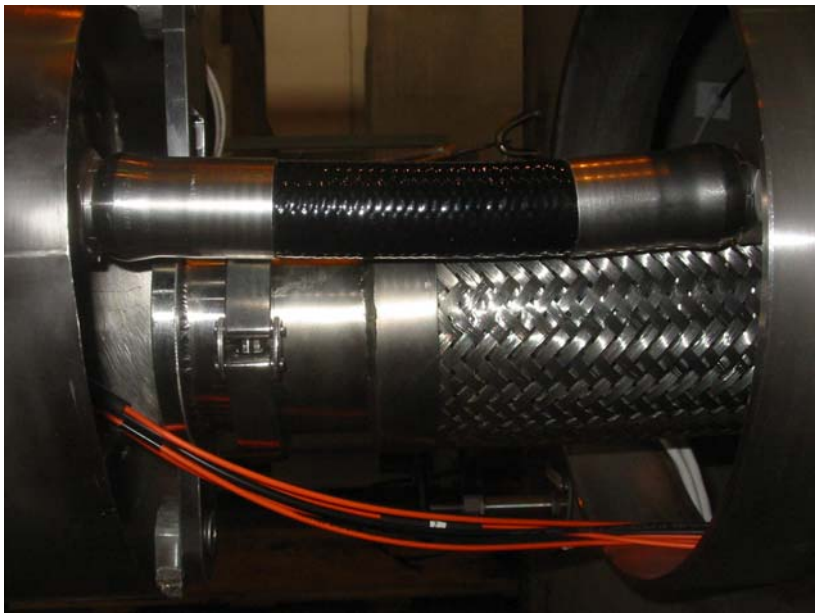
Removed rubber collar to inspect flexible Hg connectors. They still look good.

Top view

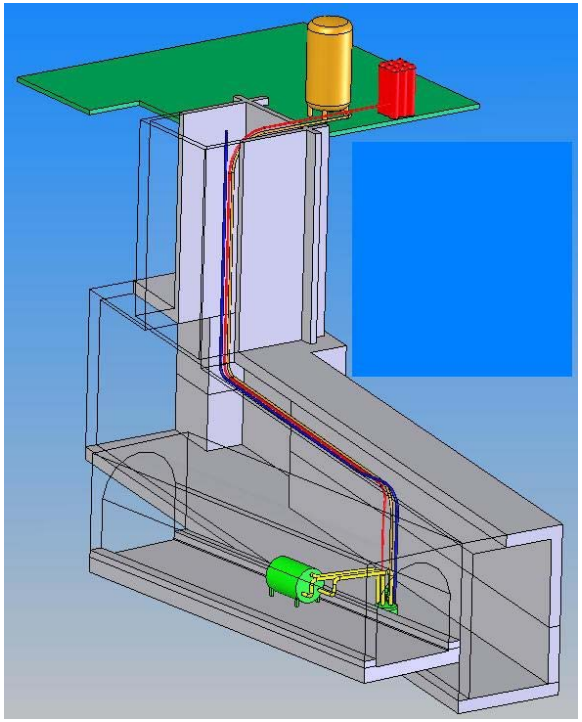


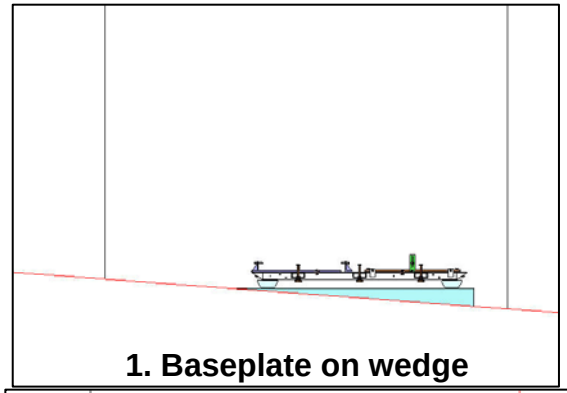
Beam

Side view

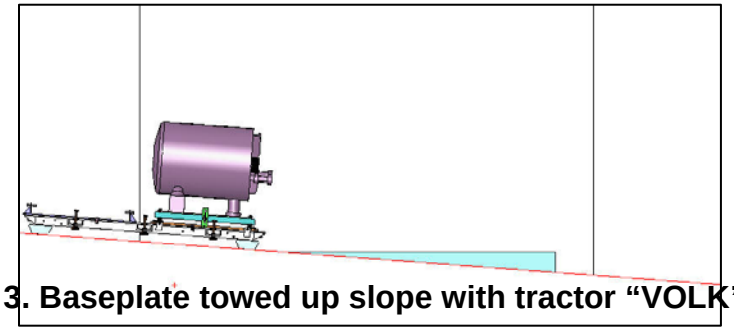


Installation of MERIT Equipment in TT2/TT2A Tunnels ~ 1 May

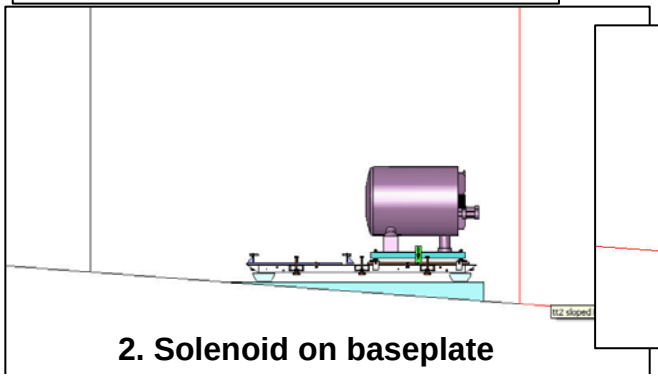




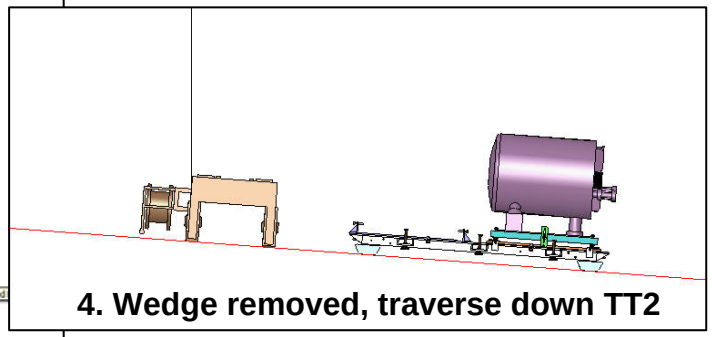
1. Baseplate on wedge



3. Baseplate towed up slope with tractor “VOLK’



2. Solenoid on baseplate



4. Wedge removed, traverse down TT2