



Ansaldo Superconduttori

LHC - Cold masses: HELIUM MASS SPECTROMETER LEAK TEST REPORT

ITP Nr. 23 24

Cold Mass Nr. 2022

Step Nr. 1
Volume / Volume to be tested CM -> Vacuum

Heat Exch -> Vacuum 4

Fuga calibrata / Calibrated leak parameter

Calibrated leak N°.	4011007195	4011007195	4011007195
Data calibr. / calibration date	08/10/02	08/10/02	08/10/02
Temp. calibrazione fuga / Calibration Temp.	23.0 °C	23.0 °C	23.0 °C
Valore nom. fuga calibrata / Calibrated leak nom. value	3.00E-08 mbar l s-1	3.30E-08 mbar l s-1	3.00E-08 mbar l s-1

Calibrazione del sistema / System calibration

Conc. He nella linea di test (100%) / Volumetric fraction of tracer gas in the injection envelope

T ambiente / Test temp.

Fuga calibrata con correz. T ed età / Size of calib. leak after corr. for ageing and T

Segnale residuo prima delle misure di SFR / Residual signal prior SFR meas.

Segnale del LD / Signal given by the calibrated leak

Min. dev. segnale (=2x amp. segn. residuo) / Smallest read. signal dev. (= 2 x ampl. of RFR noise)

Tempo di attesa stabiliz. segnale / Time to achieve stabilised leak signal

$$= \frac{S_m}{S_{FR}} \left(\frac{q_{FR}}{S_{FR}} - R_{FR} \right) C$$

SENSIBILITA' DEL TEST / Sensitivity of the leak test

Condizioni del test / Leak test conditions

Pressione del sistema / System pressure

Segnale residuo dei cercatughe ad inizio test / Residual signal prior to SF measurement

Segnale del LD a fine test / Signal given by the leak after 30 min. (>30)

$$= \frac{q_{EX}}{S_{FR}} \left(\frac{S_{FR}}{S_{FR}} - R_{FR} \right) C$$

CALCOLO DELLA FUGA / Leak evaluation

VALORE DI RIFERIMENTO / REF. VALUE (MAX)

CONFORMANCE

Doc. di riferimento / Ref. documents

CERN contract number: F302LHC/LHC

CERN technical spec.: LHC MMS-98-198 rev.2

Leak test procedure (Ref. N°. Revision): 78ORM09442 rev.0

Strumentazione / Test equipment

Helium Mass Spectrometer type:

Pressure gauge type:

Pumping group:

Prepared by: Name / Date

Caserza - 17/06/03

Approved by: Name / Date

Terzi - 17/06/03

Checked by: Name / Date

Gagliardi - 17/06/03

Checked at CERN by / Signature / Date

on vessel

PFEIFFER HLT 260
full range compact PFEIFFER PKR 251
turbo pump LEYBOLD PT 360 l/s
rotary vane pump PFEIFFER DUO 65 m3/h

on c.b.t. lines

PFEIFFER HLT 260
rotary vane pump PFEIFFER DUO 20 m3/h

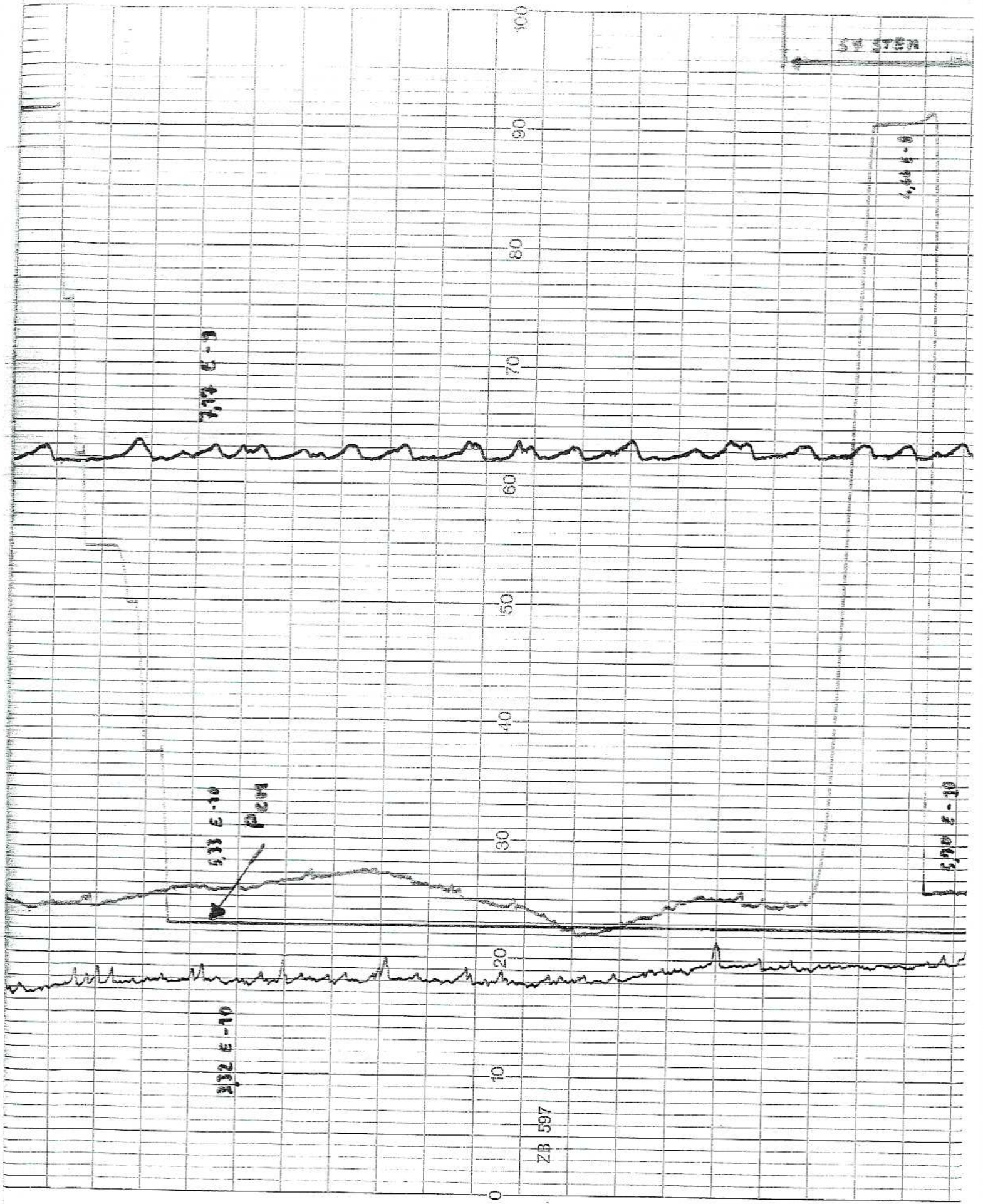
on heat exchanger line

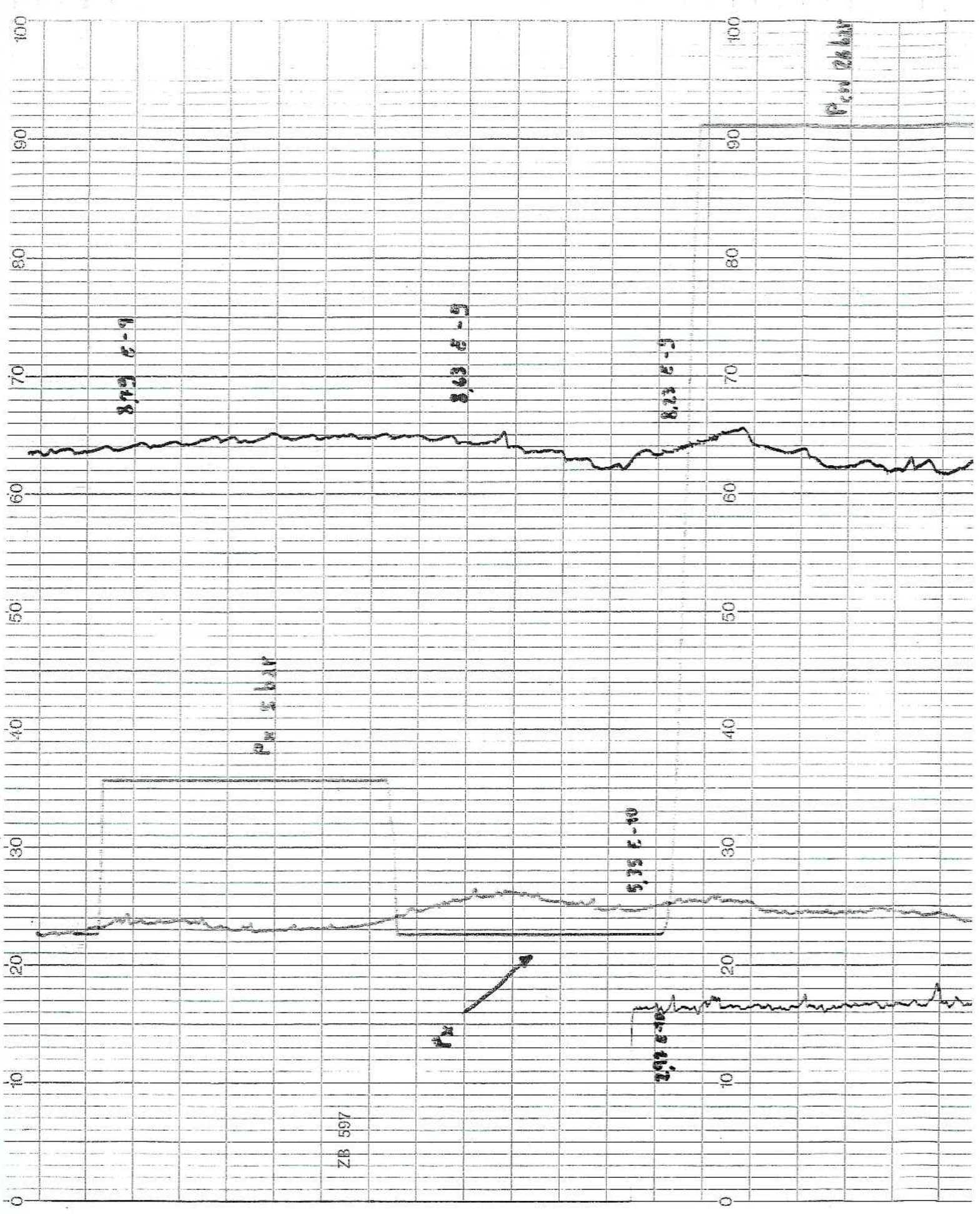
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Note / Remarks





ZB 597

P.W. 25 bar