

Cold Mass Nr. **2071**

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

Heat Exch -> Vacuum

CM -> Heat Exch. **3**

CM -> cold bore tubes

Calibrated leak N°	4011007195	4011007225	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

Fuga calibrata / Calibrated leak parameter

Calibrazione del sistema / System calibration

Cont. He nelle linee 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 dei 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

$$= S_{FR} \frac{q_{FR}}{S_{FR} - R_{FR}} \frac{1}{C}$$

SENSIBILITA' DEL TEST / Sensitivity of the leak test

Condizioni del test / Leak test conditions

Pressione del sistema / System pressure

Segnale residuo del cercatighe ad inizio test / Residual signal prior to SF measurement

Segnale dei LD a fine test / Signal given by the leak after 30 min. (>3)

CALCOLO DELLA FUGA / Leak evaluation

$$= \frac{q_{FR}}{S_{FR} - R_{FR}} \frac{1}{C}$$

VALORE DI RIFERIMENTO / REF. VALUE (MAX)

CONFORMANCE

Doc. di riferimento / Ref. documents

CERN contract number: F302/LHC/LHC
CERN technical spec.: LHC NMS-98-198 rev.2
Leak test procedure (Ref. N°. Revision): 780RM09442 rev.0

Strumentazione / Test equipment

Helium Mass Spectrometer type:
Pressure gauge type:
Pumping group:

Prepared by: Name / Date

PIU S. - Caserza B. 17/03/2004

Approved by: Name / Date

F. Terzi 17/03/2004

Checked at CERN by: / Signature / Date

P. Gagliardi 17/03/2004

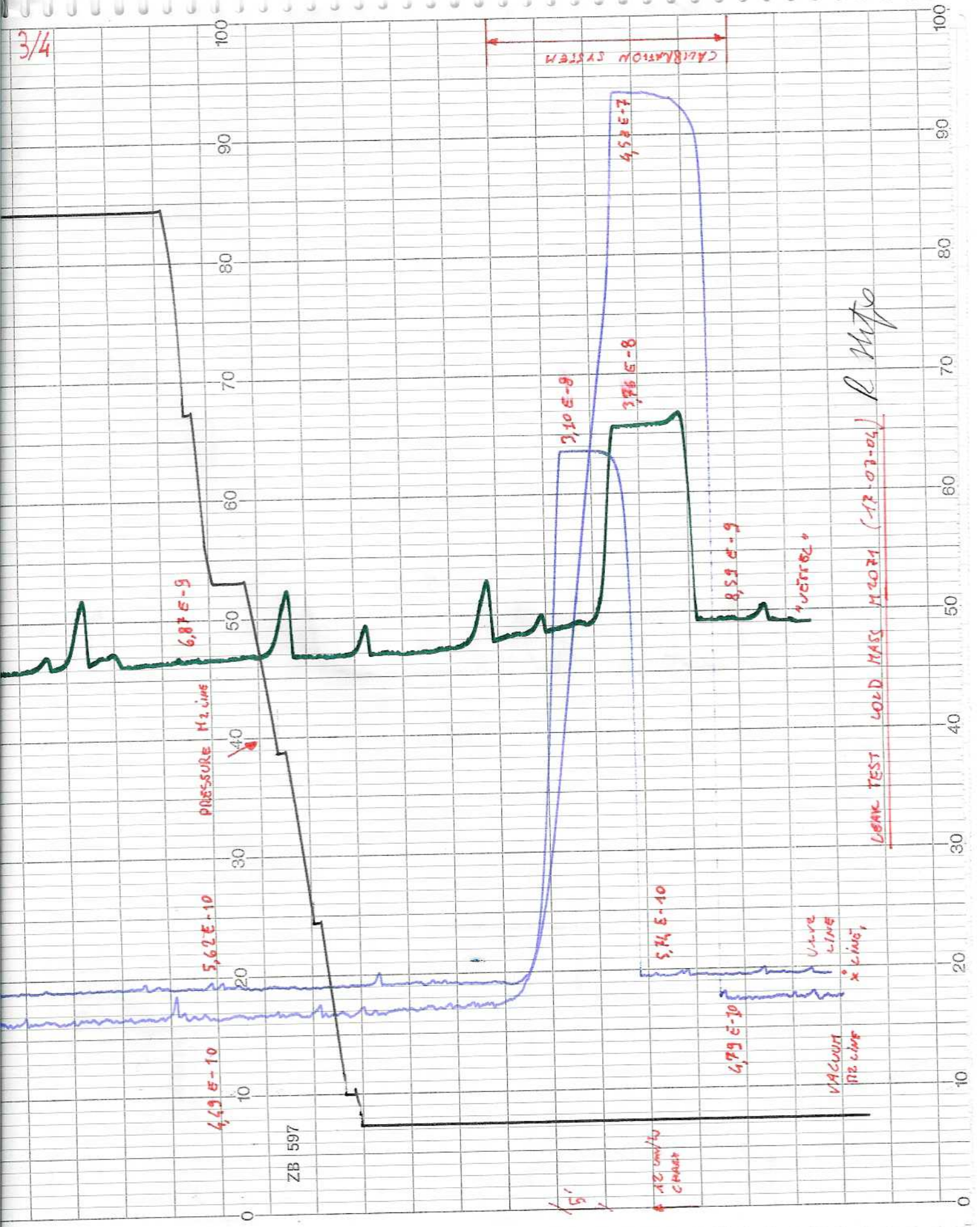
on vessel PFEIFFER HLT 260 full range compact PFEIFFER PKR 251 turbo pump LEYBOLD PT 360 l/s rotary vane pump PFEIFFER DUO 65 m3/h	on heat exchanger line PFEIFFER HLT 260	on c.b.t. lines PFEIFFER HLT 260	on vessel PFEIFFER HLT 260 full range compact PFEIFFER PKR 251 turbo pump LEYBOLD PT 360 l/s rotary vane pump PFEIFFER DUO 65 m3/h
rotary vane pump PFEIFFER DUO 20 m3/h	rotary vane pump PFEIFFER DUO 20 m3/h	rotary vane pump PFEIFFER DUO 20 m3/h	rotary vane pump PFEIFFER DUO 65 m3/h
1,0E-09 mbar l s-1 at 26 bar	1,0E-06 mbar l s-1 at 26 bar	1,0E-10 mbar l s-1 at 26 bar	1,0E-09 mbar l s-1 at 5 bar
YES	YES	YES	YES

Note / Remarks

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

R. Hofe

3/4



ZB 597

R. White

LEAK TEST LOAD MASS M2071 (12-07-04)

CALIBRATION SYSTEM

PRESSURE Hz LINE

VACUUM Hz LINE

12 cm³/h
CHECK

VALVE LINE
* KING

5'

4/4

