

Cold Mass Nr. 2020

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

3
CM -> Heat Exch.

4
Heat Exch -> Vacuum

Fuga calibrata / Calibrated leak parameter

Calibrated leak N°	4011007195	4011007225	4011007195
Data calibr. / calibration date	09/10/02	09/10/02	09/10/02
Temp. calibratore 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 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 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

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

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

$$= \frac{q_{PK} (S_F - R_F)}{S_{PK} - R_{PK}} \cdot \frac{1}{C}$$

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): 780RFM05442 rev.0

Strumentazione / Test equipment

Helium Mass Spectrometer type:

Pressure gauge type:

Pumping group:

Prepared by: Name / Date

Approved by: Name / Date

Checked by: Name / Date

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

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 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

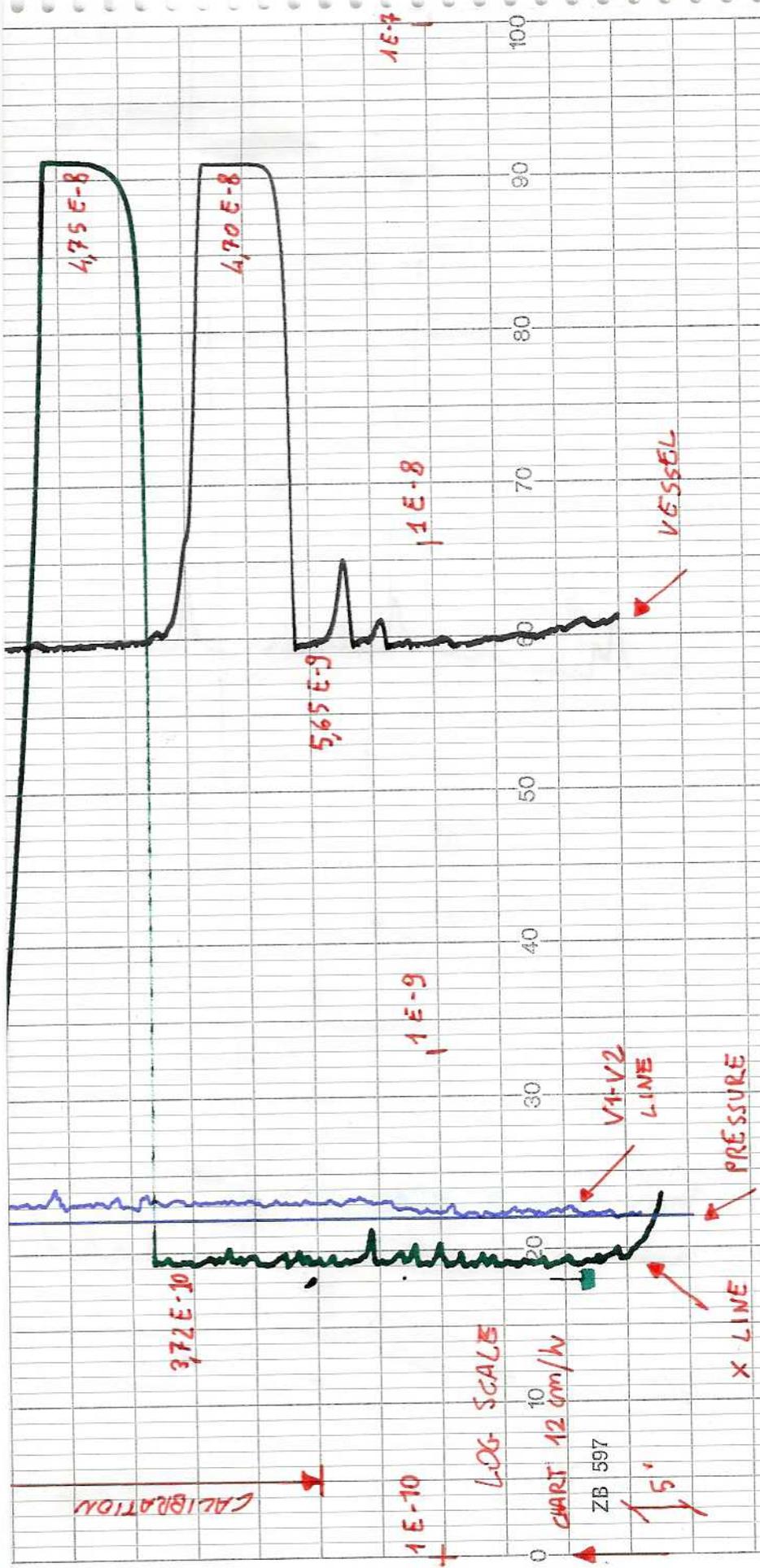
YES

YES

YES

YES

Note / Remarks
Test performed after welding of flange (Ø100) about the capillary tube cold head, installed on the top of the cold mass



LEAK - TEST COLD MASS 2020 22-07-03

(AFTER WELDING OF FLANGE ABOUT THE CAPILLAR)
(TUBE COLD HEAD .

