

Cold Mass Nr. **2070**

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

2
CM -> cold bore tubes

3
CM -> Heat Exch.

4
Heat Exch -> Vacuum

Fuga calibrata / Calibrated leak parameter

Calibrated leak N°:	4011007195	4011007225	4011007195	4011007195
Data calibr. / calibration date	08/10/02	08/10/02	08/10/02	08/10/02
Temp. calibratore fuga / Calibration Temp.	23,0 °C	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	1,40E-07 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.

Segnate 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 stabilizz. segnale / Time to achieve stabilised leak signal

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

SENSIBILITA' DEL TEST / Sensitivity of the leak test

Condizioni del test / Leak test conditions

Pressione del sistema / System pressure

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

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

CALCOLO DELLA FUGA / Leak evaluation

$$= \frac{q_{FR}}{S_{FR} - R_{FR}} \left(\frac{S_F}{R_{FR}} - \frac{R_F}{C} \right) \frac{1}{C}$$

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): 780RM09442 rev.0

Strumentazione / Test equipment

Helium Mass Spectrometer type:

Pressure gauge type:

Pumping group:

Prepared by: Name / Date

PIU S. - Caserza B. 23/03/2004

Approved by: Name / Date

F. Terzi 23/03/2004

Approved by: Name / Date

P. Gagliardi 23/03/2004

Read 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

Note / Remarks

on c.b.t. lines

PFEIFFER HLT 260

rotary vane pump PFEIFFER DUO 20 m3/h

rotary vane pump PFEIFFER DUO 20 m3/h

on heat exchanger line

PFEIFFER HLT 260

rotary vane pump PFEIFFER DUO 20 m3/h

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

1,0E-09 mbar l s-1 at 26 bar

YES

YES

YES

YES

YES



