Collimator Design Meetings

Minutes of the meeting 85 (15/09/2006)

Present: R. Assmann, A. Bertarelli, R. Chamizo (partially), B. Goddard, V. Maire, M. Mayer, R. Perret, S. Redaelli

Excused: O. Aberle, A. Grudiev

2 in 1 Collimators (TCLI(a), TCTV(b))

A short presentation on 2in1 collimators requirements was given by S. Redaelli. The drawings of the TCLI(a) and TCT(b) presented by Roger were reviewed. No major showstoppers emerged during the discussions and the **design was approved**.
In spite of this, several recommendations were given:

- The stroke initially proposed (-27mm / + 8mm) can be accepted, but an aperture increased to 28mm would be preferable. This figure is compatible with present design, so it is decided to increase the total stroke to 36 mm (-28mm / +8mm)
- The 5th axis stroke (+5 mm / -10mm) is sufficient to ensure a correct aperture for the 2nd non-collimated beam
- A requirement for an additional alignment system to adjust the collimator jaws with respect to each beam crossing-angle, was considered but quickly abandoned as it is not strictly necessary and would exceedingly complicate and slow-down the design.
- Tungsten jaw could be made lighter by replacing the 2 tapered ends with copper and reducing the thickness from 30 mm to 20 mm.
- Material for TCLI jaw must be Carbon/Carbon as for TCLI(b) standard collimators.
- A clutch device shall be included in the 2in1 design.
- Remarks transmitted by e-mail by A. Grudiev (see below) will be taken into accont
  … I looked to the drawings send by Roger. I think all my recommendations concerning the impedance has been implemented as we discussed last time with Roger and Alessandro. Only two things are not clear from the drawings. I would like to mention them below so that you can discuss them in the meeting.
  1. good thermal contact between the ferrites in the transition regions behind the longitudinal (the longer ones) rf fingers. We discussed this with Alessandro last time. These ferrites can get up to 1 W of average power per piece.
  2. to provide good electrical contact in the vacuum flange region as close to the elliptical beam pipe as possible. we discussed this problem with you in my office last time …

A drawing showing the approved design and already including some of these recommendations is attached (T0002094PL). Roger will now proceed to the detail design giving highest priority to the components to be ordered first (i.e. Carbon/Carbon jaw, Glidcop supports, Tungsten jaw, Stainless steel components).

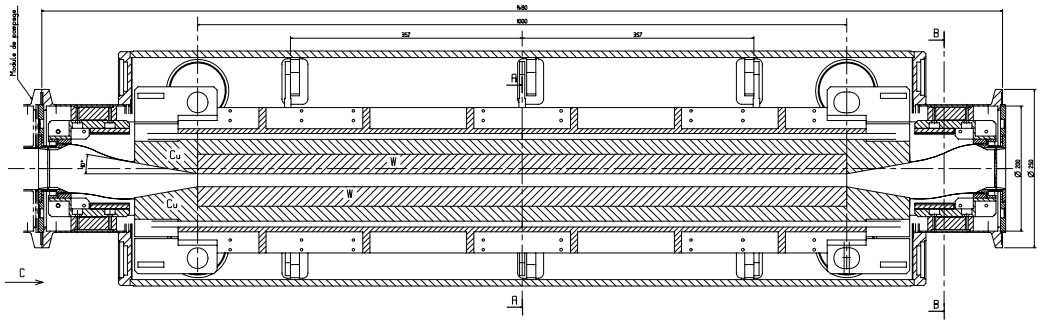
TCDD mobile collimators

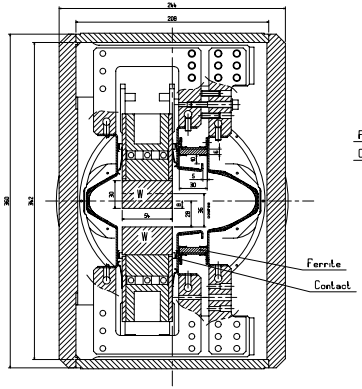
Paper drawings will be distributed by Vincent Maire to discuss formal approval.
1 TCDDM shall be installed at point 2 (upstream of ALICE), plus 1 in reserve.
Deadlines are not yet clearly defined, though TCDDM should not be installed for phase I.
Manfred will verify if manufacturing is feasible in TS workshops within June 2007.

AUTEUR	: PERR-EST
DATE CREAT	: 11-SEP-2006
HISTORIQUE	: PERR*11-SEP-06, PERR*13-SEP-06, PERR*18-SEP-06
COEF POLYGON	: 2.00000
ESPACE	: 300.00000
UNITE	: 0.10000

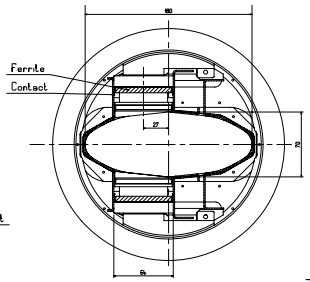
T0002094PL

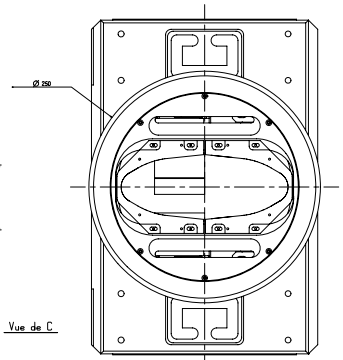
LHCT.TCLI__SPECOLL000.T000





Coupe BB





Sections TCLIA T0002094PL

TYPE	: PLAN
VERS EUCLID	: E32.4000 MODIF:E32.4000
MACH-OUVR	: LARGE HADRON COLLIDER
ACTIVITE	: INSTRUMENTATION FAISCEAU
FONCT-UTIL	: COLLIMATEUR
DESIGNATION	: DIVERS SECTION COLLIMATEUR TCLIA
CODE EQU-BAT	:
REMARQUES	:
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