

CONCEPTUAL SPECIFICATION

AUXILIARY INJECTION PROTECTION COLLIMATOR [LHC-TCLIB]

The TCLIB is a two-sided auxiliary injection protection collimator located between the the matching section quadrupoles Q5 and Q6 in IR2 (right side) and IR8 (left side). Together with another auxiliary collimator (TCLIA) it complements the primary injection protection absorber TDIS in case of injection kicker (MKI) failures. The present TCLIB accommodates low-Z absorber blocks (C) with a total active length of 1m. It is complemented by a mask in front of Q6 (TCLIM) which is required to absorb secondary showers from the TCLIB such that damage to the Q6 and other downstream equipment is prevented. It is to be evaluated if the present TCLIB design, in particular the absorber material, can be retained for the HL-LHC era or if a new design is required due to the increased beam brightness.

Layout Versions	LHC sectors concerned	CDD Drawings root names (drawing storage):
V 1.0	LSS2/LSS8	LHC-TCLIB To be created by S. Chemli

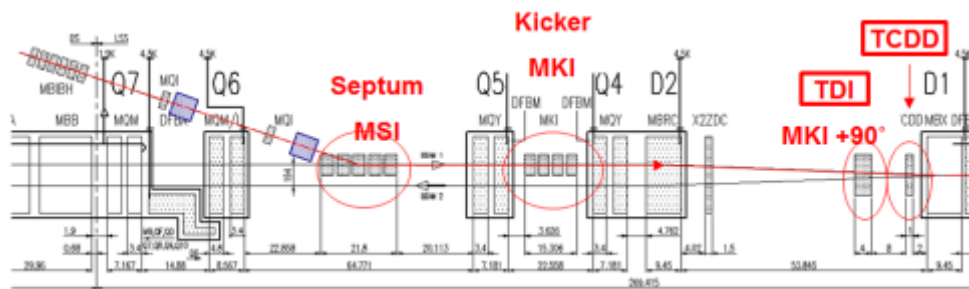
TRACEABILITY

Project Engineer in charge of the equipment A. Lechner, O. Aberle	WP Leader in charge of the equipment J. Uythoven
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Main Points

- TCLI**B** is an auxiliary injection protection collimator at the other side of the IP than the TDI(S) – just like the TCLI**A**
- Completes protection by TDIS for different phase errors
- Protects downstream Q6 against damage
 - Together with **TCLIM**, mask
- Presently 1 m C blocks. Compatibility with bright LIU beams to be checked, as for the TDIS, taking into account realistic failure scenarios
 - Survival of absorber and protection
- Possibly change of absorber material and/or length

Layout



IP

