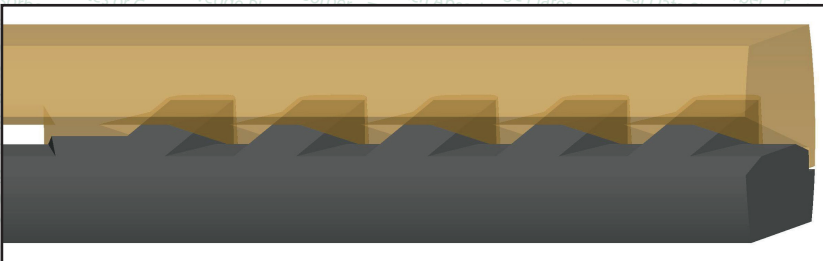


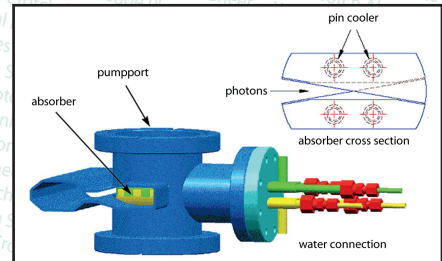
Wedge Plates or Crotch Absorber

FMB has over 20 years experience in building absorbers for all absorber applications at storage rings and synchrotron beamlines all over the world. Absorbers made by FMB are widely used at many synchrotrons for safe and reliable absorption of electrons or photons.

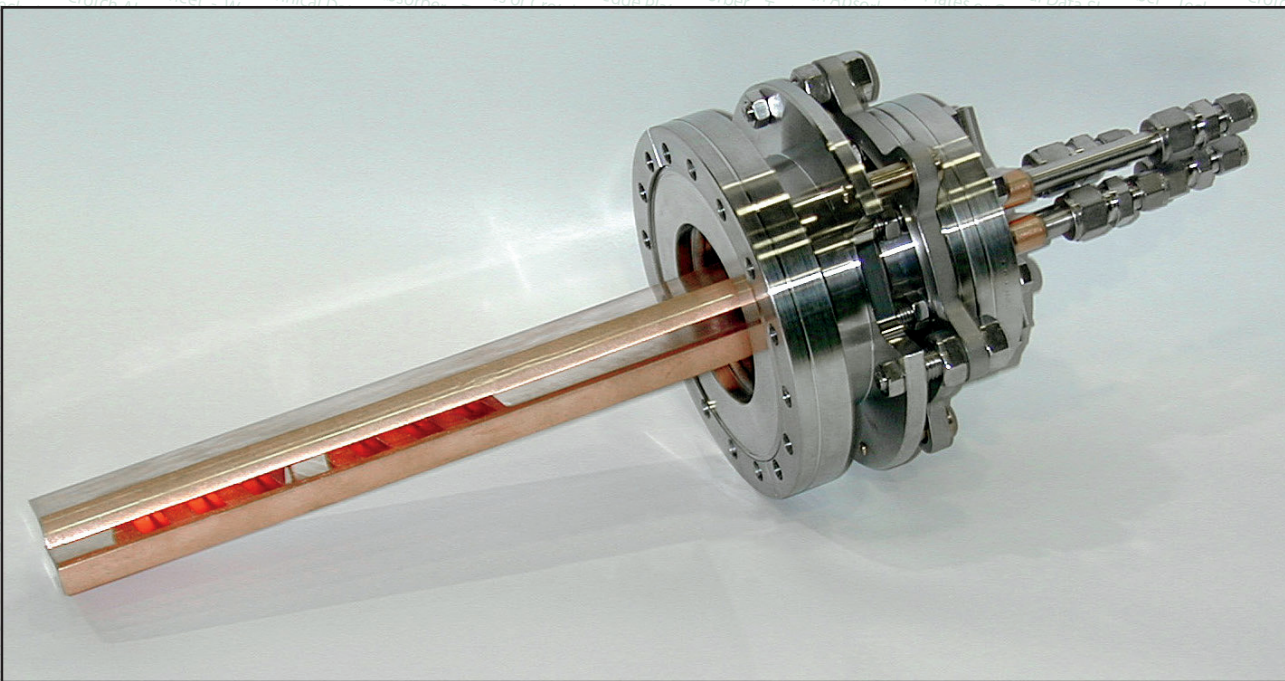
Wedge plates absorbers (also referred to as Crotch absorbers) are absorbers predominantly inserted in the crotch part of a dipole chamber. They are suitable for wide flat shaped photon beams with high total powers as well as for high power densities.



wedge detail



absorber unit example



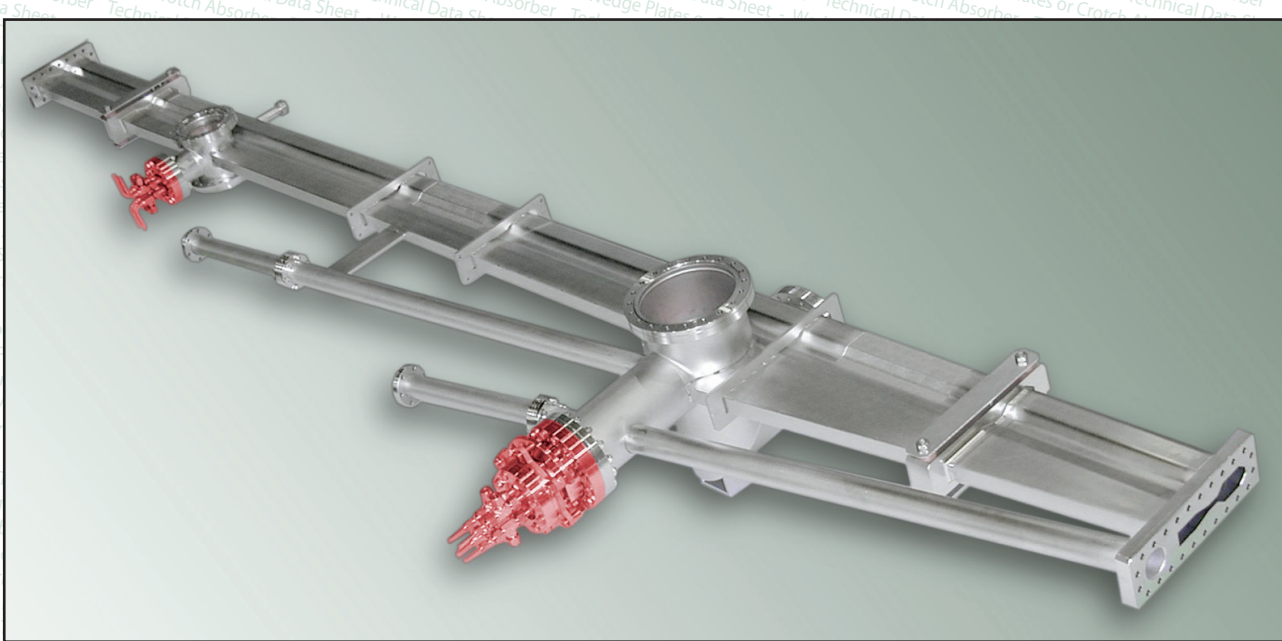
crotch absorber insert with alignment

A wedge plates absorber consists of two separate plates fixed in a base flange. Each plate has a number of parallel wedges with intermediate grooves on the absorbing side. The wedges of each plate fit the grooves of the other plate without contact. The plates can expand under heat load with moderate stress generation (S. Hermle et al; Proceedings of PAC 1999, New York, p.1360-1362). For radiation the gap between the plates is fully closed apart from the customer specified aperture(s).

Size and geometry of the plates will be adapted to the beam characteristics at the place of the absorber in order to achieve safe absorption.

The plates are made of a copper material and can be water-cooled independently or in-line to resist the thermal load of the radiation source.

Wedge Plates or Crotch Absorber



crotch absorber inserts mounted in vacuum chamber

Parameter	Specification
Type:	Wedge plates absorber insert
Number of plates:	2
Plate material:	OFHC-Copper / Glidcop on request
Plate design and dimensions:	Suggested by FMB, dependent on beam specifications at installation position
Number. of apertures / aperture dimensions:	As specified by customer
Maximum absorbed power / thermal power density:	5 kW and more, dependent on space available at installation position / up to 50 W/mm ² (with Glidcop, design-dependent)
Cooling:	Water cooling
Cooling scheme:	Plates independent or in-line by outer connection
Base flange:	DN 63/100/150 CF fixed (others on customer request)
Flange material:	1.4429 (similar 316LN) (others on customer request)
FEA calculation:	FEA calculation report for thermal and stress analysis
Temperature measurement: (optional)	1 / 2 thermocouple K-type in plate(s), Feedthrough miniature TC flat pin (others on customer request)
Manual aligner (optional):	Manual absorber alignment; normal to port ± 3 mm (resolution < 0.1 mm), tilt ± 2 deg



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