D.I.S

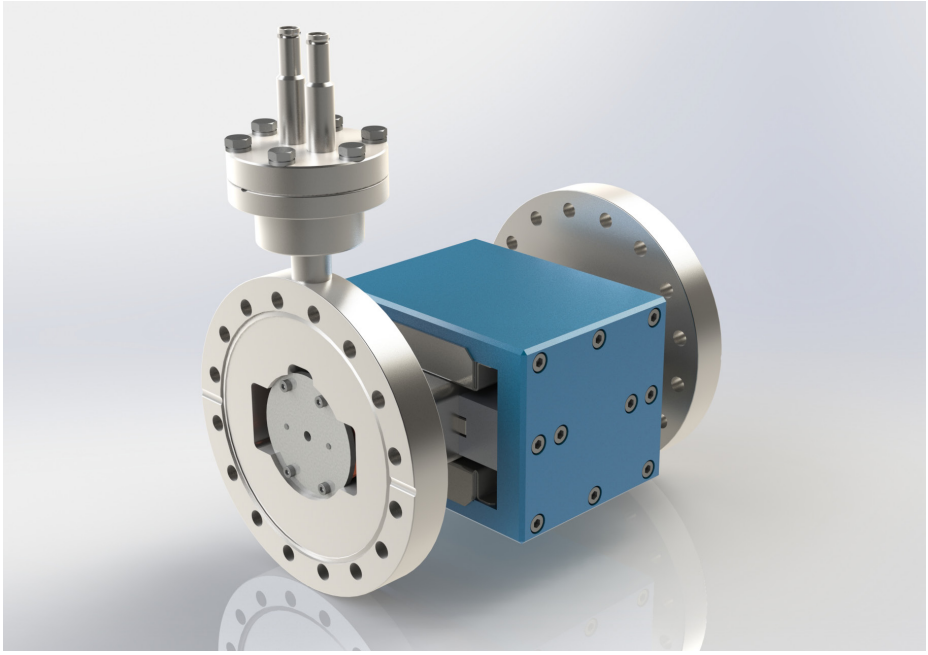
D.I.S Germany GmbH

WIEN FILTER

Generally, Wien filters are used for separating charged particle beams by velocity using orthogonally superimposed magnetic and electric fields.

The Wien filter features different entry and exit apertures for defining mass and charge state resolution and for collimating the beam.

It can be used for beam power loads of up to 30 W in broad pressure ranges, down to ultra-high vacuum conditions.



Wien filter with standard DN100CF flanges and high voltage feedthrough.

Special Features:

- suitable design for operation with high power, large diameter beams of light ions (e.g. helium)
- apertures of different diameters up to 15 mm
- all beam-stressed parts (e.g. electrodes, apertures) can be made of highly sputter resistent materials (e.g. tungsten)
- broad application range (concerning beam energy and beam diameter) due to availability of magnet yokes of different magnetic flux
- alternative electric feedthrough options

Optional Supplementing Devices:

- power supply for electrodes
- with optional control software
- Faraday cup as current measurement device for charged particle beams, measuring range starting at pA

Please do not hesitate to contact us to find a solution suitable for your special application.

further reading and related products:
M. Schmidt, H. Peng, G. Zschornack, and S. Sykora, „A compact electron beam ion source with integrated wien filter providing mass and charge state separated beams of highly charged ions", Review of Scientific Instruments, vol. 80, no. 6, p. 063301, 2009

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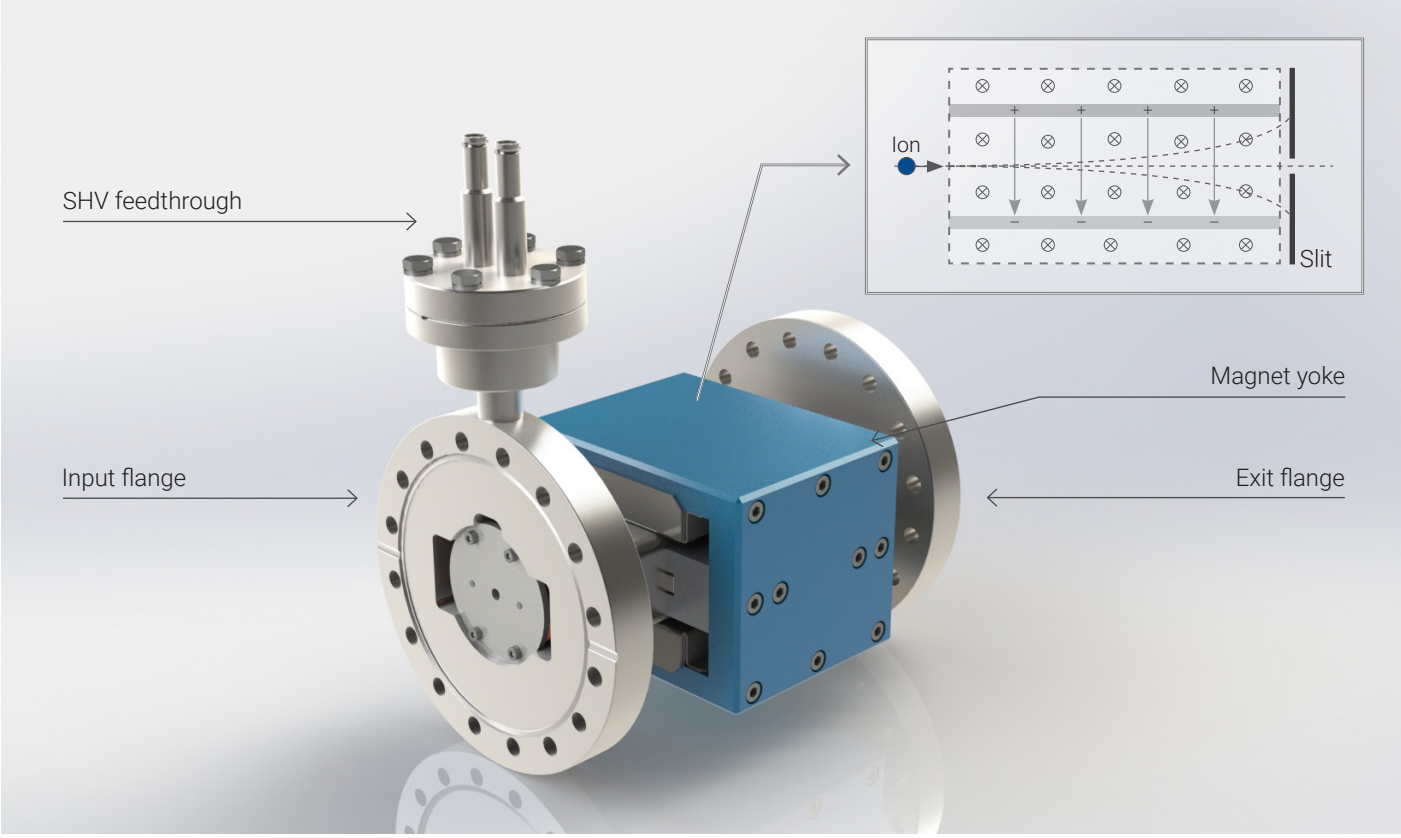

Labeled Wien filter and schematic sketch of the Wien filter's operating principle in the upper right corner.

TECHNICAL DATA	
category	charged particle beam diagnostics
maximum beam power	up to 30 W with passive cooling
pressure operating range	down to $1 \cdot 10^{-10}$ mbar
applicable current range	pA up to mA
mounting flange	DN100CF (standard), other flange dimensions and types on customer request
connections	SHV 10 kV
maximum bakeout temperature	150 °C
weight	25 kg
approx. box size (length x width x height)	250 mm x 160 mm x 270 mm (DN100CF flanges)

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