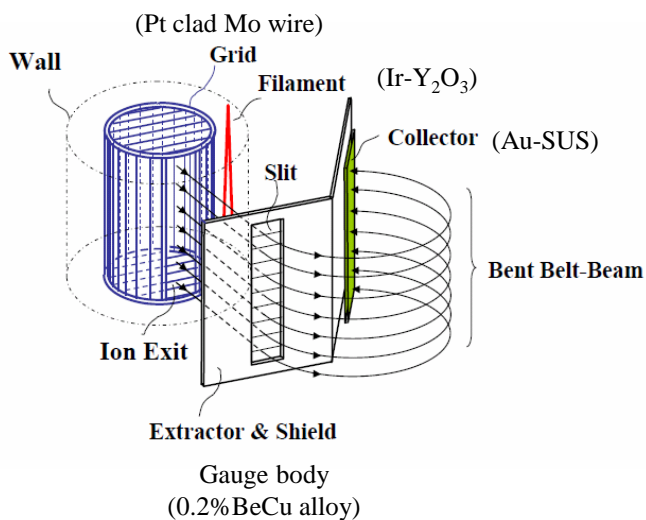


XHV gauge head:3B-Gauge

Measurable as low as 10^{-12} Pa($\sim 10^{-14}$ Torr)

Ultra-low outgassing vacuum component

- Reduction of soft X-ray & ESD by Bent Belt-Beam method.
- Full-closed cylindrical cage-grid with an axial-slit.
- Low outgassing hot-cathode gauge by using 0.2% BeCu alloy body.



What is Bent Belt-Beam (BBB) gauge ?

3BG is a commercially extreme-high vacuum hot-cathode ionization gauge head that can measure pressure as low as 5.4×10^{-12} Pa, by reducing the limit imposed by soft x-rays, electron-stimulated desorption(ESD), and outgassing.

The gauge construction includes a cylindrical grid, which is close at both ends; ions are drawn from the grid through a long, axial slit made in the cylindrical surface.

Thus, the ion beam that emerges forms a “belt”.

This belt-like ion beam is guided on a terminates on a plate collector arranged after a beam trajectory rotation of 240° . These elements are embedded in a solid cylinder of 0.2% BeCu alloy, which has a low emissivity (radiation factor) and high thermal conductivity. As a result, the effects of heat radiation and outgassing(caused by the hot-cathode filament)and soft x-ray photoemission(the grid is the soft x-ray source) are reduced in the deflector/collector region. This electrode arrangement can also greatly decrease the flux of soft x-rays and ESD in the direction of the belt ion beam because it sets to 90° the angle between the extracted gas-phase ion beam and the maximum flux of soft x-rays and ESD.

In addition, it achieves an extremely low pressure measurement limit by minimizing loss in the ion transport, and because the collector is well hidden, being located after the large deflection of the ion beam.

Operational parameters & date

Electron energy: 120eV (standard)

Filament potential: 100V (standard)

Filament power: 2V \times 1.5A at 1.6mA

Deflector bias = 155V (between 1~4mA)

Degas:Electron bombardment (450V \times 10~45mA)

Bakeout temperature: 280°Cmax

Size: ICF070 (1.1kg)

Connector: BNC & 8 pin burndy-j

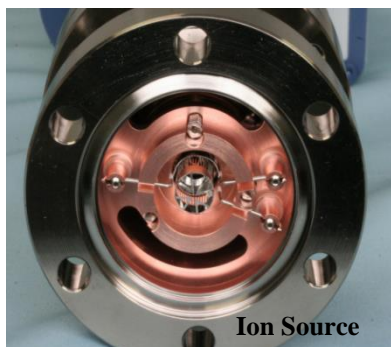
Sensitivity factor: 5~8 $\times 10^{-2}$ Pa-1 (at 1~4mA)

X-ray limit < 5×10^{-12} Pa

3BG can operate with Prevac MG14 or Leybold IM540

Ultra-Low Out Gassing RGA, WATMASS MPH

Possible to Gas Analysis 10^{-13} Pa XHV area



- Excellent RGA in XHV/UHV application
- Ultra-Low Outgassing from an Ion Source
- Modified sensor with 0.2% BeCu alloy
- Pt-Ir alloy Grid with High Power Degas
- Significant Reduction for H_2 and ESD noise (ESD: Electron Stimulated Desorption)

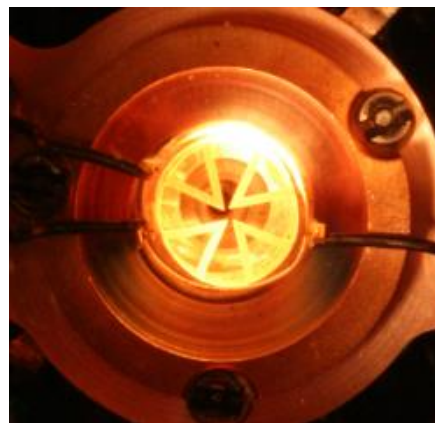
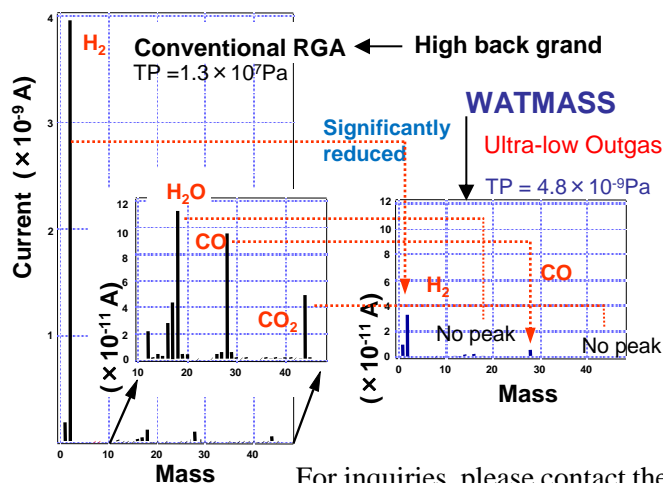
Specifications

Mass Range: 100, 200, 300amu
Detector Type: FC/EM
Ion Energy: 70eV
Filament Type: Y_2O_3Ir , Dual
Sensitivity: 4.5×10^{-6} A/Pa (100amu FC Sensor)
Measurement Speed: 1.8msec (Min.)
Sensor Operating Temp: 200°C (FC), 150°C (EM)
Max. Bakeout Temp.: 300°C (Electronics Removed)
TCP/IP Ethernet Connectivity
Software: FabGuard Explorer
(Windows 7, 8.1, 10)

WATMASS MPH 100amu



Conventional type vs. XHV Sensor



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