

Vacuum chambers, vacuum apparatuses

for vacuum technology

KASAG Swiss AG develops and builds customer-specific vacuum chambers and apparatuses which satisfy the highest quality requirements. These are used in the fine vacuum ($> 10^{-3}$ mbar), high vacuum ($> 10^{-7}$ mbar) and even ultra high vacuum ($< 10^{-7}$ mbar to $> 10^{-9}$ mbar) sectors. Pore-free welding and sealing technology comprise the key criteria in the construction of vacuum chambers and apparatuses. Comprehensive in-house testing using helium leak detection guarantee the absolute leak-tightness of your products. With KASAG, you are definitely tight.



Vacuum chambers, vacuum apparatuses

Vacuum chambers and apparatuses usually comprise a welded design made from stainless steel and special materials in order to contain a specific volume. Design and engineering, as well as the leak-tightness of the welded seams and sealing technology pose particular requirements.

Vacuum generation

In order to generate a vacuum in a previously gas filled volume, gas particles must be removed from the volume. This can be achieved using vacuum pumps, for example.

Permeability

The movement of electrical charge carriers in the vacuum is disrupted by the innate magnetism of the adjacent components, and has a negative impact on the intended vacuum. High-technology applications may therefore only use materials which have no innate magnetism and low permeability levels. As stainless steel can be magnetic as well as non-magnetic, material selection is a crucial step in this process. Materials with lower permeability levels include 1.4435 ($\mu \leq 1.1$), or very high alloy materials such as 1.4539 and 1.4529.

During production, particular care must be paid to forming and welding, which increase permeability. Permeability can be reduced again using solution annealing.

Our test procedures for vacuum technology

All vacuum chambers and apparatuses manufactured by KASAG are tested according to the usual test procedures:

- X-ray RT, visual inspection VT
- Dye penetrant testing PT
- Material testing / Positive Material Identification PMI
- Helium leakage testing LT
- Surface roughness testing Ra / Rz
- Ferrite measurement Fe
- Wall thickness measurement, video endoscopy

Certifications, manufacturer approvals

ISO 9001 / ISO 3834-2

PED (EN13445 / AD-2000)

ASME (U-Stamp, Code Section VIII Div. 1)

China Stamp (A1), China License

TP TC 032/2013 (EAC), Customs Union

In addition to our existing manufacturing approvals, we are able to perform the respective approval procedures for almost every country around the world (e.g. Singapore, Japan, Malaysia, Canada, etc.).