

>MODERATE TO EXTREME-HIGH VACUUM

FOOD PROCESSING
CHEMICAL
>**VACUUM**
POWER GENERATION
PHARMACEUTICAL
INDUSTRIAL

AndersonDahlenInc
Shaping bright ideas into brilliant results

Taking Your Next Job to a Higher Level

Anderson Dahlen partners with our customers to offer a total solution, providing a variety of vacuum products to meet very specific requirements. These range from critical components and assemblies, to one-of-a-kind research chambers for National Labs and R&D groups, to production chambers for world-class equipment manufacturers. We have three production facilities located near Minneapolis, which provide efficient collaboration of our total engineering and manufacturing resources.

Our team is dedicated to providing custom vacuum products to your specifications while maintaining excellent workmanship and quality standards, delivering your product on-time and at the lowest possible cost. Trust your next job to the craftsmen of Anderson Dahlen.

To get started, call 763-852-4700.
Or visit us on the Web at: AndersonDahlen.com.

VACUUM QUALITY	TORR	PA	ATMOSPHERE
Atmospheric pressure	760	1.013×10^5	1
Low vacuum	760 to 25	1×10^5 to 3×10^3	1 to 3×10^{-2}
Medium vacuum	25 to 1×10^{-3}	3×10^3 to 1×10^{-1}	3×10^{-2} to 1×10^{-6}
High vacuum	1×10^{-3} to 1×10^{-9}	1×10^{-1} to 1×10^{-7}	1×10^{-6} to 1×10^{-12}
Ultra-high vacuum	1×10^{-9} to 1×10^{-12}	1×10^{-7} to 1×10^{-10}	1×10^{-12} to 1×10^{-15}
Extreme-high vacuum	$<1 \times 10^{-12}$	$<1 \times 10^{-10}$	$<1 \times 10^{-15}$

Applying Our Expertise to Vacuum Chamber Manufacturing

With seven decades of experience in custom stainless steel fabrication, Anderson Dahlen's capabilities for metal forming, large-scale machining, and critical welding are ideal for manufacturing vacuum chambers. Our engineering and manufacturing resources support customers representing a wide variety of vacuum applications and processes.

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Anderson Dahlen Inc
6850 Sunwood Drive NW
Ramsey, MN 55303

763 852 4700 Main
763 852 4790 Fax
Info@AndersonDahlen.com
AndersonDahlen.com
ISO 9001: 2008 Certified

Countless Applications, Unparalleled Expertise.

Anderson Dahlen customers represent a wide spectra of vacuum processes and applications:

- Epitaxial and Thin-film Deposition
- Semiconductor Processing
- Vacuum Annealing and Sintering
- Nuclear and Particle Physics Research
- Space Simulation

Engineering and design

We provide modeling and analysis to ensure that sufficient mechanical support is included in the design, and able to meet and certify to ASME, NQA-1 and other codes. Many chambers also involve double-wall designs, integrated water cooling or other thermal management. Most systems involve numerous flanges and ports, standard and custom. We usually manufacture these in-house, but also work with customers to source and integrate specific requirements or components of their choice.

Expert finishing

Surface finish is an important aspect of vacuum chambers, impacting both appearance and performance. Anderson Dahlen is an expert at finishing stainless steel and other metals. From mechanical grinding and polishing to chemical passivation or electro-polish, we have the resources to produce the best and most consistent finish your chamber might require.

Custom components

Most chambers include integrated or related components such as baseplates, hinged doors, domed lids, frames and hardware or flanges. Anderson Dahlen can include these items as part of our custom design and fabrication; we can provide these as separate items or integrated.

High-quality manufacturing, very competitive costs

Anderson Dahlen has been fabricating custom stainless steel products since 1978. Our manufacturing engineers use the latest engineering and design software, as well as advanced modeling and analytical tools. We have the experience and knowledge necessary to fabricate chambers, weldments or related components of virtually any size or complexity. And accomplish it at the lowest cost and in the shortest lead time.

We offer consultation for the manufacturability of one-of-a-kind items to high-volume parts. Our team will find a way to meet your budget and technical requirements.

Large-scale project expertise

Anderson Dahlen specializes in engineering and fabrication of large-scale projects. Our team is ready to support one-time builds of custom equipment or repeat manufacture and delivery of process modules and systems. Components, chambers, sub-assemblies or turnkey process tools ... we can deliver the level of integration that your business requires.



<Moderate to Extreme High Vacuum>

Anderson Dahlen manufactures custom chambers and assemblies for a wide range of vacuum applications. From vacuum furnace and sintering processes, to thin film coating and vacuum deposition, or space simulation and nuclear science... trust us to deliver precisely what you need.

Anderson Dahlen
builds chambers
up to 20' length (14'
diameter), with
typical vacuum
range of 1×10^{-3}
to 1×10^{-9} Torr

Applied Vacuum
builds chambers
up to 5' length or
diameter, with
typical vacuum
range of 1×10^{-6}
to 1×10^{-11} Torr

Applied Vacuum Technology is a specialized product division focused on high and ultra-high chambers, assemblies and components. AVT's products tend to be smaller in scale and typically designed for higher vacuum ranges, extending into extreme vacuum (XHV) applications.

VACUUM RANGE IN TORR

Advancing the Science of Ultra-High Vacuum

Custom design and manufacturing.

AVT engineers use SolidWorks® 3D design software which enables rapid visualization of your requirements, and quick translation to manufacturing drawings. Also, COSMOSXpress® stress analysis utility helps identify unacceptable chamber wall deformations and weld stresses. These powerful software tools help us deliver products that exceed your performance expectations.

Chambers and assemblies.

AVT has the technical experience and knowledge necessary to fabricate even the most complex vacuum chambers and assemblies in Stainless Steel, Aluminum, Titanium and other alloys. We manage a range of production volume; ranging from one-of-a-kind research chambers for National Labs and Universities, to repeat production of chambers for world-class equipment manufacturers.

Specialized components.

AVT manufactures CF, ISO and KF style vacuum flanges. We can easily add custom features, or fabricate turnkey items from a variety of metals: 300 series Stainless Steels (including 316LN ESR); specialty alloys such as Nitronics®, Inconel® and Hastelloy®; also OFHC Copper, Titanium, Aluminum, Niobium and Molybdenum.

Providing custom solutions at a higher level, improving performance, exceeding expectations – these are our primary goals.

Since 1989, AVT has fabricated custom products for vacuum applications including surface analysis, mass spectroscopy, epitaxial and thin film deposition, UHV feedthroughs, ion pumps and accelerator beam lines. Our quality system is certified to ISO 9001:2008 and Nuclear Quality Assurance (NQA-1). AVT's engineering and manufacturing resources will help take your requirements from initial concepts, to fully engineered designs, to tested products ready for your use.