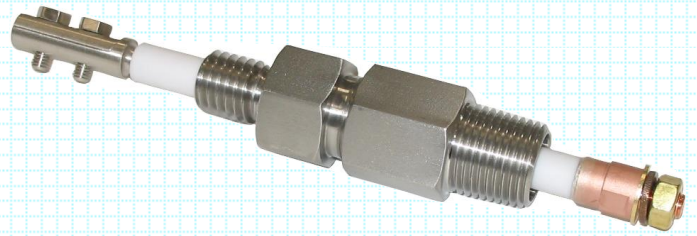




Vacuum Braze Specialists

Ceramic

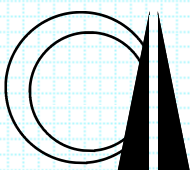


Omley Industries and ceramic vacuum brazing go way back...actually, all the way to the beginning. Our founder, Herbert Omley, was a ceramics engineer. In the late 1940's he developed and patented the active brazing process for bonding metals to ceramic. Today, the application of the technology Herb developed would far eclipse his wildest dreams. Since Herb's passing in 1983, Omley Industries has continued to specialize in vacuum brazing various types of ceramic.



Because of our rich history with ceramic brazing, Omley is often called on to braze materials and geometries that are considered to be problematic. Omley's customers are constantly pushing the technology envelope, requiring a brazing partner that has the ability and desire to help them achieve their objectives. That is why they come to Omley!

Included on the list of ceramics are Aluminum Oxide, Aluminum Nitride, Zirconium Oxide, Beryllium Oxide, Boron Nitride, and Silicon Nitride,



Feedthrus



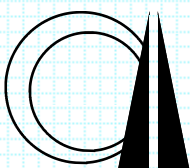
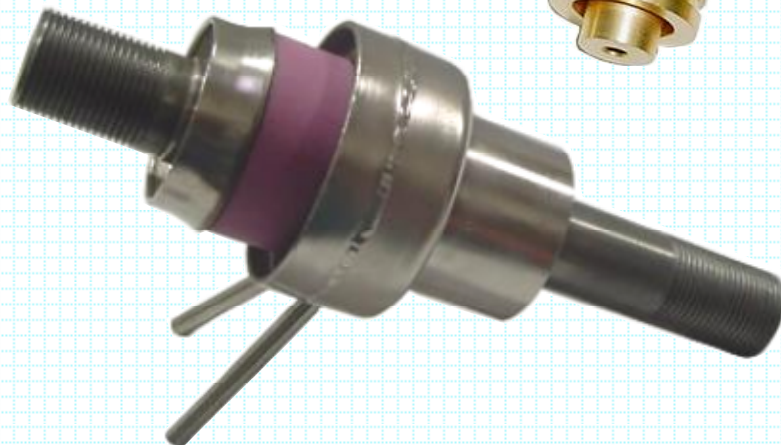
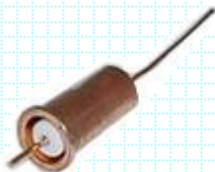
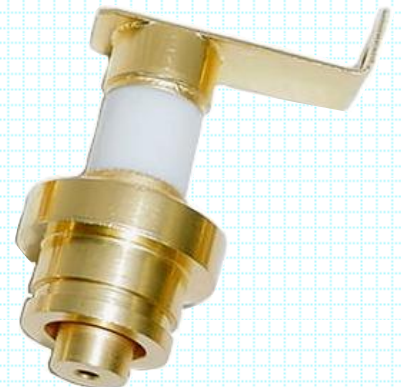
Helping customers design and manufacture feedthrus and insulators for OEM and special applications is one of our most significant strengths. Off-The-Shelf components do not work for all applications. When custom components are required, Omley Industries is there to put our extensive experience to work for you.



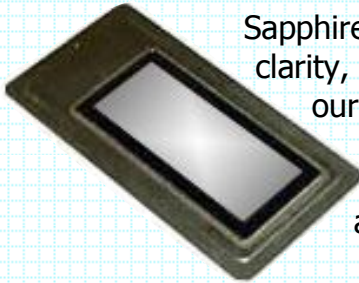
Feedthru designs can range from the small micro-amp signal feedthrus to applications requiring the transmission of several thousand amps. High amperage designs can include water cooling. Feedthrus can be built to operate in atmospheres ranging from ultra-high vacuum to very high pressure.

Feedthrus can be built to meet the following requirements.

- Non-magnetic
- Corrosion resistance
- RF transmission
- Cryogenic applications
- High temperature applications
- High vacuum
- High pressure
- High Voltage



Sapphire



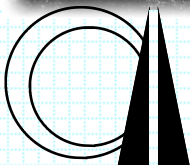
Sapphire is a remarkable material combining optical clarity, high strength and electrical isolation. With our many years of service, Omley has experience brazing sapphire in all kinds of geometries and for a wide array of applications.



Some of the more common applications include vacuum viewports, protective optical shields, sapphire-tipped process probes, CCD enclosures, lamp housings, and high pressure windows. Sapphire can also be used as an insulator material in feedthrough and line-break applications.



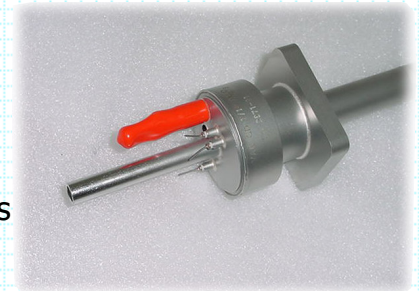
As is the case with all aluminum oxide materials, brazing can be accomplished using either the moly/manganese metalization process or the active brazing process. Each process has its strengths and limitations. Omley is very experienced with both processes and can make recommendations based the geometry and process requirements of your project.



Metals

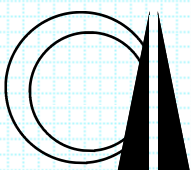
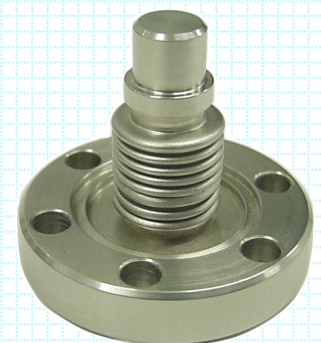
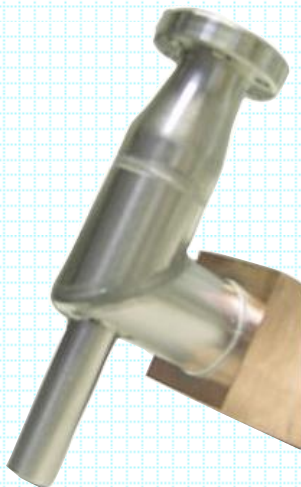
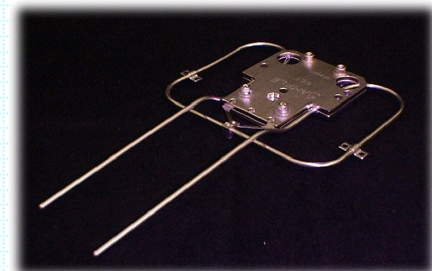
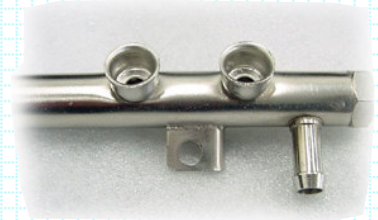


Metal-to-metal vacuum brazing opens up many design possibilities. Often, design features are not conducive to welding. Some combinations of metals, are not weldable. Vacuum brazing allows materials to be joined in a very clean manner with very robust results.

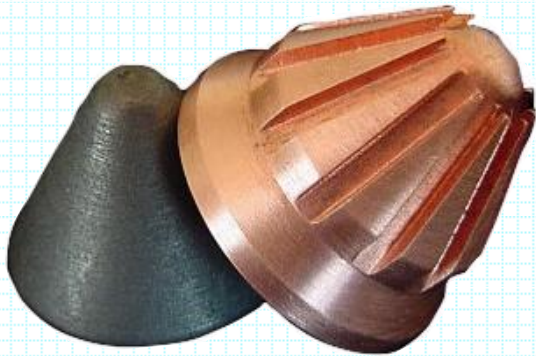


The benefits of vacuum brazing include:

- Full joint penetration—no virtual leaks.
- No induced contamination or trapped oxides.
- Allows the joining of multiple metals.
- Allows the joining of metals that are difficult or impossible to weld or braze in other atmospheres.
- Price competitive with welding.
- The vacuum brazing process cleans metal surfaces of any organic contaminants.
- Most metals can be vacuum brazed.

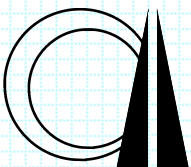
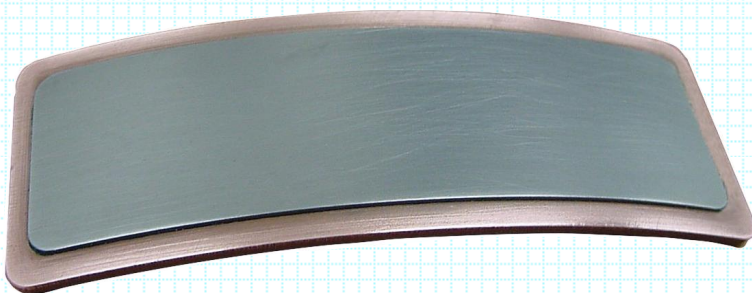


Beryllium

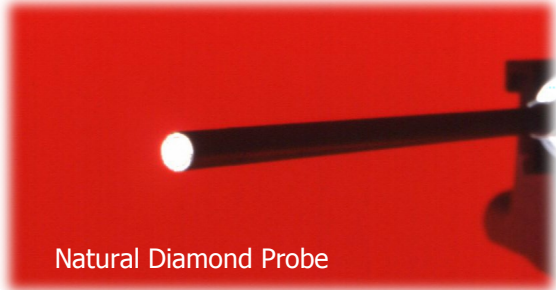


Achieving a reliable hermetic seal with Beryllium is no easy task, but Omley Industries has been successfully brazing Beryllium for years. Vacuum brazed beryllium X-Ray windows are robust, yielding stronger joints than diffusion bonding. They will withstand repeated high temperature cycles and are vacuum compatible.

Hermetic windows can be brazed using foil as thin as .003"(.075mm). Windows can be brazed into standard flange styles or into custom mounts. Beryllium structures can also be brazed. While stainless steel is the most common pairing with Beryllium, other metals can be brazed to Beryllium as well.



Special Applications



Natural Diamond Probe



Thin Foil Brazing

Special application projects often involve structures or materials that cannot be joined using any other process. Assemblies that will be used in extreme operating conditions require special attention to both the design and brazing parameters. Sometimes, all of these come together in one project. When knowledge, experience and creativity are needed to take your project to the next step, come to Omley Industries.



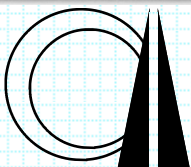
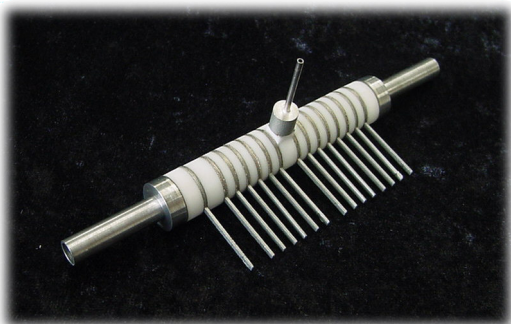
Material Braze Testing



Omley Industries works with national, university and industry labs worldwide to help design and manufacture their prototype assemblies. Quite often the technological requirements are very extreme, requiring new brazing protocols to be developed. The road to solutions frequently involves testing processes and measuring results. Omley works closely with customers throughout this process to ensure our customers receive every possible chance for success.



CVD Diamond Window



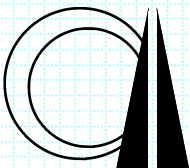
Location

In the beautiful
Rogue River Valley



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