



**WORLD LEADER**

**HERMETIC CONNECTORS ■ HERMETIC PACKAGING**



**ADVANCING THE SCIENCE OF HERMETIC SEALING**

## FOUNDATION

SRI Hermetics was founded on the principle of using advanced engineering and material science to create the world's leading hermetic electrical connectors and electronic packaging solutions. Since our inception, we have developed and introduced many new technologies to the industry, setting new performance standards and displacing the traditional methods of glass to ferrous alloy sealing.

Our exclusive ceramic dielectric material, Ceramax, is one of the core technologies used to produce our advanced connector line. Ceramax is a multi-phase devitrified ceramic compound used as a direct replacement for glass. When fused to copper alloy or stainless steel contacts, Ceramax seals provide superior hermetic reliability in environments that would simply destroy competing products.

The ability to join dissimilar metals through the use of advanced processes such as explosion welding, vacuum brazing, diffusion bonding and laser welding is another core technology area that SRI Hermetics has developed for the manufacturing of high performance hermetic assemblies. Many of our exclusive joining processes strengthen weak points within an assembly by eliminating solder joints while providing the ability to customize physical properties such as thermal conductivity, weight, stiffness or expansion rate.

These advanced joining technologies, coupled with our use of Ceramax dielectric compounds, allow SRI Hermetics to produce assemblies from materials not normally used by alternative suppliers, providing performance and reliability standards unequaled in the industry.



Ceramax dielectric compound



Titanium connectors with copper contacts and Ceramax seals



Sub-D Connector Assembly illustrating our patented technology



A dramatic moment during the explosion welding process



Explosively welded aluminum to stainless steel

SRIH's explosively welded metals are supplied exclusively by High Energy Metals, Inc.

# TECHNOLOGY AND PROCESS CAPABILITY

SRI Hermetics is a design and manufacturing company that specializes in the science of hermetic sealing. We structured our business with a complement of equipment, processing, technology and expertise to provide our customers with turn-key solutions for their mission critical electronic packaging.

## Ceramax Seals

- Copper Alloy Contacts
- Nickel Alloy Contacts
- Titanium Alloy Contacts
- Aluminum Alloy Contacts

## Engineering

- 3D Design
- Design-to-Cost Analysis
- Process Support

## Metal-to-Metal Joining

- Explosion Welding
- Laser Welding
- Vacuum Brazing/Soldering
- Diffusion Bonding
- Furnace H<sub>2</sub> Brazing/Soldering

## Metal-to-Ceramic Joining

- Active Brazing

## Precision Machining

- Milling
- Turning

## Wire Assembly

- Wire Attachment
- Harness Termination



Conveyor Furnace Brazing in a hydrogen atmosphere

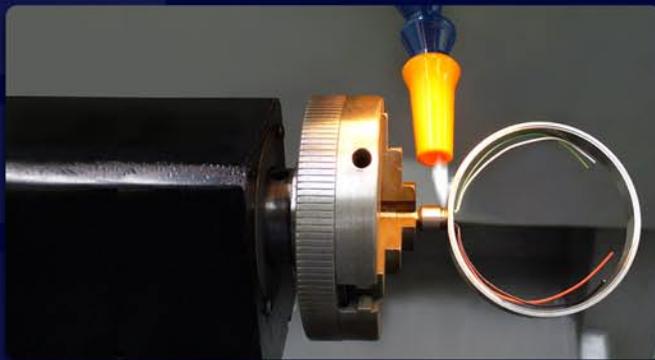


Vacuum Brazing copper to stainless steel

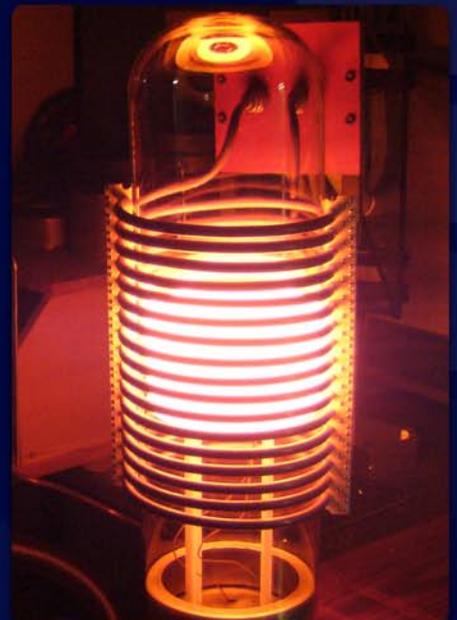


Composite metal sintering and densification

Precision Laser  
Welding of small  
metal components



High temperature processing in a controlled atmosphere using inductive energy



HIGH RELIABILITY

# VACUUM BRAZING



## Connectors

The application of SRI Hermetics' advanced technology is primarily focused on the design and manufacture of high reliability hermetic connectors. Many of our connectors incorporate Ceramax dielectric compounds in conjunction with bi-metal components produced through explosion welding, furnace brazing, vacuum brazing, diffusion bonding and/or laser welding. We fabricate connector bodies from virtually any metal with a few of the most popular being aluminum, stainless steel and titanium. We offer a wide range of contact materials including copper, stainless steel, aluminum, titanium and many others. SRI Hermetics typically designs connectors with Mil-Spec compliant interfaces, yet we are a custom manufacturer and welcome all unique inquiries. With our proven design practices and the use of advanced technologies we protect our customers' electronics from the most hostile environments with the world's most reliable hermetic connectors.



# CERAMAX SEALS

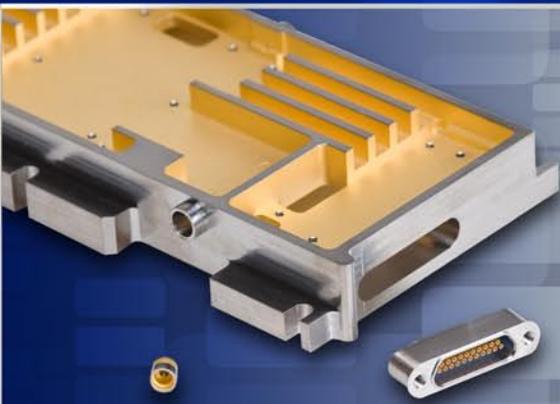


# PRECISION MACHINING

**WARNING!**



TOOL RELEASE  
→



## Chassis Assemblies

SRI Hermetics provides world-class electronic packaging solutions. Our facility is fully integrated with all the necessary equipment, processes and personnel to manufacture higher level assembly components and populate them with our connectors. Many of our current customers started a business relationship with us due to our advanced connector technology, but have come to realize better value and improved quality by also using SRI Hermetics for their chassis assembly work. We are packaging experts and have years of experience providing cost effective turn-key hermetic products. We work in all standard materials such as stainless steel, ferrous alloys, titanium and aluminum, but also have extensive experience working with metal/ceramic composite materials. The depth of our packaging technology enables us to provide our customers a full range of materials and processes necessary for optimum chassis configuration.

ENVIRONMENTAL  
TESTING

COPPER  
ALLOY  
CONTACTS



### Vacuum Assemblies

The durability of our Ceramax sealed connectors has been recognized by the vacuum industry as providing significant advantages over traditional glass sealed products. Our rugged ceramic seals, when packed into high density clusters, allow our customers to obtain the greatest number of discreet signals in the smallest amount of space without the fear of hermetic failure. SRI Hermetics produces many high density multi-pin connectors in standard formats such as Sub-D, Sub-C, Micro-D and Nano configurations designed to weld into higher level vacuum assemblies. These connectors are available in stainless steel, titanium and aluminum alloys that can be laser welded into standard or custom flanges at our facility. Our next generation vacuum products provide the ultimate performance and reliability for critical applications.

# EXPLOSION WELDING

Haas Automation Inc.

# LASER WELDING



## Advanced Materials

The engineers at SRI Hermetics have been working with complex alloys, metal-to-metal composites and metal matrix composites for over 20 years. We have solved some of the most demanding packaging problems through the innovative use of advanced materials. Each material has its own strengths and weaknesses and each application presents its own challenges. Our technical staff has the experience to identify these unique challenges and provide solutions through the application of metallic combinations or composites. Enhancing a product's physical properties through the integration of advanced materials is a complex task, but with our proven solutions and expertise even the most sophisticated packaging requirement can be addressed.

### Composites

- Aluminum/Graphite
- Aluminum/Silicon/Carbide
- Aluminum/Silicon
- Copper/Molybdenum
- Copper/Graphite
- Copper/Tungsten

### Combinations

- Titanium to Aluminum/Silicon
- Titanium to Aluminum
- Stainless Steel to Copper
- Stainless Steel to Aluminum



SRI HERMETICS SPECIALIZES IN THE DESIGN AND MANUFACTURE  
OF HIGH PERFORMANCE HERMETIC CONNECTORS AND  
THEIR INTEGRATION INTO HIGHER LEVEL ASSEMBLIES



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