Markets

Orbel's main market goals are mission critical applications. Characteristics of such applications are:

- Loss of Life
- High Reliability
- High Value Projects
- Long Life Projects

Orbel's markets of service can be broken down into the following:

Government	Transportation	Wireless	Instrumentation
• Aircraft • Avionics • Communications • Hardened Electronics • Nuclear • Optics • Satellites • Specialty Batteries • GPS	• Aerospace • Automotive Center Stack • Avionics • Battery Bus Bars • Circuit Breakers • Drones • LIDAR • Optics • GPS	• Agriculture • Antennas • Battery Bus Bars • Battery Contacts • Circuit Breakers • Communications • Connectors •Data Collection • Internet of Things • Maritime • Oil Field Connectivity • Remote Metering • Satellites	• Artificial Intelligence • Avionics • Energy Management • GPS • High End Audio • Medical • Optics • Power Supplies • R/F Microwave • Research • Shielded Rooms • Test Equipment

Talking Points

Why should an account choose Orbel over the competition?

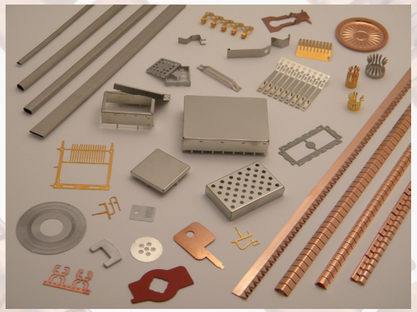
- Focused on light gauge metal forming, heat treating and electroplating.
- Proven performance since 1961.
- Knowledgable about requirements of the Mil/Aero, Automotive and Instrumentation markets.
- State-of-the-art QC System.
- Vertically integrated facility.
- Sophisticated supply chain.
- Continuous capital investment.
- Global network for production and distribution.
- ITAR, NADCAP and AS-9100 Rev. D Certified facility

Product Categories

Orbel has capabilites to produce many products, with product lines that can have wide and deep varieties. While wholly custom parts are certainly manageable, Orbel's true strength is within the following product types:

- Beryllium Copper Parts*
- Board Level Shields
- Battery Contacts
- Fabric Over Foam
- Finger Stock Gaskets
- Grounding Clips
- Grounding Springs
- PC Board Stiffeners

*especially with electroplating



Tolerances

Orbel has the ability to work with tight tolerances. If a requirement calls for tolerances outside of Orbel's standard tolerances, please consult with the factory. Our standard tolerances are:

Etched Blanks

- Material thickness of 0.001 to 0.015": +/- 0.003"

Forming

- Universal/Soft Tooling: +/- 0.010" and +/- 3° per bend*
- Secondary Tooling: +/- 0.005" and +/- 2° per bend*

Plating

- All plating except gold and silver: +/- 50 micro inches up to 200 micro inches**
- Gold and silver plating: +/- 10 microinches up to 50 micro inches**

* Cumulative to each bend.

** Above upper limit, consult factory.

Stock Materials

Orbel stocks metals that are used frequently across many products. These materials are:

Beryllium Copper Alloy 25

- 0.003 x 12" 1/2 Hard
- 0.005 x 12" 1/4 Hard
- 0.008 x 12" 1/2 Hard
- 0.010 x 12" 1/4 Hard
- 0.010 x 12" 1/2 Hard
- 0.015 x 12" 1/2 Hard

Nickel Silver 770 CDA

- 0.008 x 12" 1/2 Hard
- 0.010 x 12" 1/2 Hard
- 0.012 x 12" 1/2 Hard
- 0.015 x 12" 1/2 Hard

Copper CDA 110

- 0.0014 x 12" 1/2 Hard
- 0.0028 x 12" 1/2 Hard
- 0.0050 x 12" 1/2 Hard
- 0.0100 x 12" 1/2 Hard

Cold Rolled Steel 1010

- 0.005 x 12" 1/2 Hard
- 0.008 x 12" 1/2 Hard
- 0.010 x 12" 1/2 Hard

Brass

- 0.005 x 12" 1/2 Hard
- 0.010 x 12" 1/2 Hard

Stainless Steel

- 0.005 x 12" 1/2 Hard
- 0.010 x 12" 1/2 Hard

Nickel 200/201

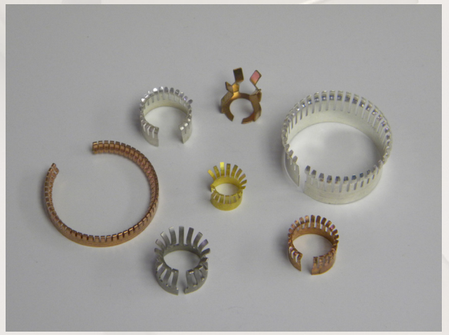
- 0.0050 x 12" Annealed
- 0.0100 x 12" Annealed

Other gauges and alloys are capable of being worked with as well. Please check with the factory for any unique demands or requirements.

In-House Rack Plating

Electroplating/Finish Type	ASTM	AMS	Comments
• Copper*	B734	2418	Matte
• Electroless Nickel	B733	2404	Mid-Phos
• Gold*	B488	2422	Semi Bright
• Passivation*	A967	2700	
• Silver*	B700	2451	Semi Bright
• Sulfamate Nickel	B689	2424	Low Stress
• Sulfate Nickel	B689	2403	Bright & Matte Options
• Tin	B545	2408	Bright & Matte Options
• Tin/Lead Solder 60/40	579	P 81728	Matte

* NADCAP Plating Accredited



Heat Treating

Orbel is a NADCAP Certified Heat Treating Facility, specializing in Beryllium Copper Heat Treating, AMS-H-1799. Heating and soaking the components for a precise time at a precise temperature, followed by a controlled cooling cycle in an atmospheric chamber, brings out the maximum mechanical properties in relation to stress. Through this process, Orbel will increase the tensile strength and stress relaxation characteristics of beryllium copper products.

Go To Market Methods

Orbel has various methods of reaching the market. These methods are:

Distribution

- DigiKey
- Regional Distributors

Direct to Customers

- Sales Rep. Network
- Inside Sales Team
- Technical Outside Sales

To support this network, Orbel has a team of Customer Support, Applications Engineering and Internal Engineering personnel to further assist.

Quality Policy

With customer satisfaction of principal concern, provide integral metal components and related services that meet our customers' expectations on time, at all times. To this end, the Organization is committed to consistently measuring our success against documented objectives while continiously improving our Quality Management System, processes and resources.

Mission Statement

Orbel provides top-quality products and services, allowing our customers to offer unique and innovative products to their markets.

Orbel will exceed expectations in quality, delivery, and cost through continuous improvement and customer interaction.

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ORBEL Reference Guide

In the electronics industry there are endless possibilities and opportunities for a thin gauge metal specialist like Orbel to leverage.

This reference guide is to be used to assist you and your team with identifying and pursuing prospective projects that Orbel's capabilities are aligned to support.

Thank you,
The Orbel Team