

BOYD

CORPORATION

WWW.BOYDCORP.COM

POWER SOLUTIONS

A decorative graphic consisting of a honeycomb pattern of hexagons. The hexagons are arranged in a staggered grid. The colors of the hexagons transition from a warm orange on the left side to a cool blue on the right side. The hexagons are outlined in white, creating a clean, geometric look.

One Company, Many Solutions

Power Converting Solutions

Boyd is an innovative precision converter with extensive experience in the Power Industry ranging from high-end thermal interface materials to dielectric insulators, EMI shielding, air baffles and ducting, liquid cooling systems, O-Rings and gaskets.

We turn concepts into components. From design to manufacturing to packaging and logistics, Boyd provides full service solutions that transform your innovative ideas into reality.



Product Development Assistance

Boyd's product development assistance unifies industrial design, engineering and manufacturing to accelerate your time to market. To ensure success, cross-functional teams are assembled from mechanical design, sourcing, manufacturing engineering, quality and production to meet your specific manufacturing challenges. Recognizing that cost and time savings are key to your success, Boyd enhances your product development process from initial investigation through final production.

Quick-Turn Prototyping

Today's marketplace demands compressed product development cycles and swift results. Boyd integrates global access to materials with quick-turn prototyping techniques to accelerate prototype delivery. Same or next day samples often achievable.

Sealing & Protection Solutions

- Air Baffles & Diverters
- Air Duct Gaskets & Filters
- Direct Chip Cooling Gasket Seals
- Electrical Insulators
- EMI Shield and I/P Gaskets
- Enclosure & Door Seals
- Seals for Water & Dust Ingress
- High Pressure / Temperature Seals
- Hoses for Liquid Cooling Systems
- Identification & System Information Labels
- Installation Direction Graphics & Insulators
- LED Crosstalk Management
- Liquid Cold Plate Connector O-Rings
- Noise and Vibration Damping
- Absorption Gaskets
- Thermal Interface Material

High Temperature Seals & Gaskets

Our high performance seals and gaskets are designed to reliably seal high temperature, pressure, and compressive environments in turbines and generators. With over 250 material compounds, Boyd is able to provide standard and custom sealing solutions to fit customer needs.

Electrical Insulation for Power

Boyd's Electrical Insulators are designed to manage high levels of electrical energy in harsh settings with excellent dielectric strength and breakdown resistance, helping to extend the lifetime of electrical equipment and reduce electrical failure.



Power Thermal Solutions

Aavid, Thermal Division of Boyd Corporation, provides solutions and services utilizing both traditional cooling systems and breakthrough technologies ranging from standard heat sinks to custom two phase or liquid cooling.

Aavid meets thermal management challenges with solutions that enable cooling for high heat loads with longer lifetime and higher reliability.



Applications

- Power Inverter Cooling
- Cabinet Solutions
- Power Supply Units
- Battery & Energy Storage Systems
- Generator Solutions
- Turbines & Engines
- Power Distribution Cooling
- Smart Grid Solutions
- DC-DC Converters

Technologies

- Heat Exchangers
- Heat Pipe Assemblies
- Vapor Chamber Assemblies
- Extruded Heat Sinks & Enclosures
- Fans & Blowers
- Bonded & Brazed Heat Sinks
- Liquid Cold Plates
- Thermosiphons
- Sheet Metal Enclosures
- Sensors and Controls
- Liquid Cooling Systems



Managing Heat in Power Systems

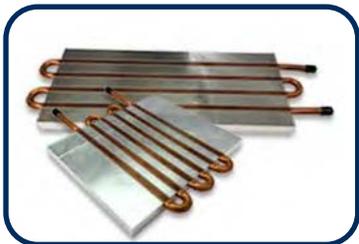
Selecting the proper technology improves performance and enables more efficient power conversion, meet reliability standards, and extend system lifetime.

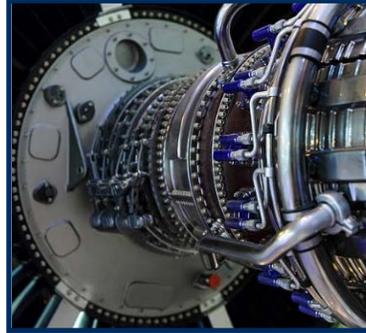
Embedded Heat Pipes & Vapor Chambers

Flexible in design, heat pipe assemblies spread heat throughout the base of a heat sink for heat transfer to cooling systems. Vapor chambers enable more dynamic heat spreading through even construction with heat transferred in more directions than axial heat pipes.

Liquid Cooling & Heat Exchangers

Aavid's innovative liquid cooling systems and highly engineered liquid cold plates enable optimized cooling that is leak-free and reliable for high density heat loads such as battery & energy storage systems. Part of an integrated liquid cooling system, Aavid heat exchangers are manufactured for compact heat transfer and are available in a wide variety of fabrications.





Power Materials & Cooling You Can Count On

Boyd's fully integrated precision converting and thermal management capabilities are from multi-faceted facilities in the US and Asia providing competitive solutions for virtually any Power electronics device. **Boyd offers total solutions** with deep material selection expertise, innovative manufacturing technologies and easy-to-integrate production parts with tight tolerances. Converting and fabrication capabilities include rotary and flatbed precision converting, laser and water jet for quick turn prototyping, laminating, slitting, CNC machining, brazing, welding and other fabrication techniques. Boyd can assist in selecting the most cost-effective material solutions while supporting the design of your solutions within the most comprehensive manufacturing and assembly operations in the industry. The result is reliable, consistent production execution at the highest quality.

Quality & Processing

Boyd's Power production facilities are certified to ISO 9001 quality management and ISO 14001 environmental management specifications with deep knowledge of UL certification requirements - ensuring we exceed specifications and deliver the highest levels of quality products with minimal impact to the environment.

Supply Chain Management

Supply chain and logistics management at Boyd is dynamic and nimble - establishing supply channels and delivery schedules with speed and cost effectiveness to virtually any shipping destination possible. With decades of experience in complex customer value chains, we work seamlessly with your contract manufacturers and tiered supply chain partners helping you optimize your total value chain.

Heat Exchanger Re-Core Solutions

With over 100 different heat exchanger cores, Aavid is able to replace OEM parts for the Power, Aerospace, and Defense industries. These heat exchanger cores are used by maintenance, repair and operating (MRO) supply chain partners to replace damaged or defective parts. By utilizing Aavid's heat exchanger re-cores customers can reduce costs and extend life on existing original equipment systems. Alloys include stainless steel, aluminum, copper, Inconel, cupronickel, and other high temperature alloys.

Boyd Power Solutions Facilities

With over 90 years of customer-focused performance, Boyd Corporation has evolved as a market leader in engineered energy management solutions, electronics cooling, materials converting, and optimized product design.

Aavid, Thermal Division of Boyd Corporation New York

Aavid, Thermal Division of Boyd New York, located in Niagara Falls, NY, has extensive experience in custom heat transfer product engineering and manufacturing. The Niagara facility specializes in heat transfer products including bar-and-plate heat exchangers, vacuum brazed liquid cold plates, and heat transfer fin, as well as other custom heat transfer solutions. Applications of these solutions include, but are not limited to: radiators, intercoolers, oil coolers, electronics cooling, and two-phase cooling with evaporators and condensers. Boyd Niagara offers vacuum brazing with a vast capacity to braze various materials including aluminum, stainless steel, Inconel, etc. This process is an essential part of producing the core matrix of the robust bar-and-plate style heat exchanger and other custom heat transfer solutions.



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Aavid, Thermal Division of Boyd Corporation New Hampshire

Aavid, Thermal Division of Boyd New Hampshire, design and manufactures custom thermal management solutions for power and industrial markets. Fabrication and metal joining technologies include precision CNC machines, punch and progressive presses, sheet metal bending, dip brazing, welding, bonding and solder reflow assembly lines. In addition, in-house anodize is available in Type 1 and Type 2 chromate, compliant to Mil-specs to meet surface finish needs. Boyd New Hampshire has 200K sq/ft of dedicated manufacturing space and is a AS9100 D registered facility.



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Boyd Shenzhen

Boyd Shenzhen operations, located in Shenzhen, China near Hong Kong, provides Asia-Pacific customers as well as Global OEMs' R&D and production facilities, quick-turn prototyping, design assistance, precision converting & customer service. Boyd Shenzhen has 14 years history since setup serving consumer and industrial electronics, mobile computing and medical markets with 10,000 sqm manufacturing space and more than 2,000 sqm class 1000 clean rooms.



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