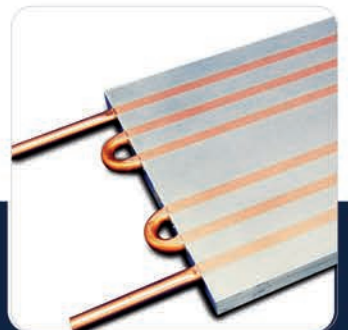
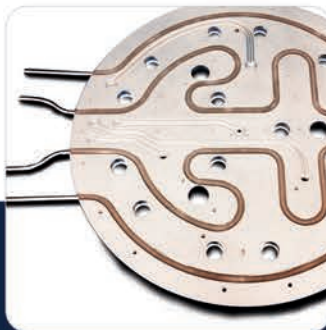
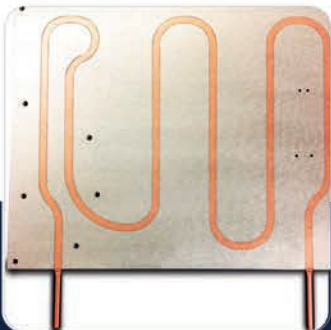
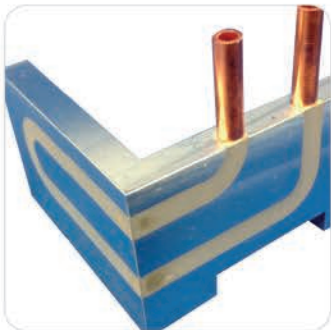




D6 Industries

**High performance thermal
solutions for the power
electronics industry**



About D6 Industries

Our Statement

D6 is a TEAM. A TEAM of entrepreneurs, engineers, assemblers, and machinists with like goals.

As a TEAM we strive to build the highest quality products. We work hard to maintain the highest level of honor while doing so.

We partner with our customers to show them they gain a TEAM when they choose us. We push to earn trust from our customer. While it is always our primary goal to achieve 100% quality, delivery, and communication, we know it is not always possible.

As a TEAM, we will not be satisfied until we understand where we missed and how to correct it so we are a better TEAM for you.

TEAMWORK:

Coming together is beginning, keeping together is progress, working together is success.

-Henry Ford

Our History

D6 Industries was founded in February of 1996, with a goal to become one of the premier high performance custom heatsink and liquid cold plate manufacturers in the world.

While D6 has a wide array of standard bonded fin heatsinks and liquid cold plates, we offer complete thermal design assistance on custom liquid cold plates.

Our founder, Elmer Jones, has been involved in thermal design and engineering for power electronics for many years.

We continually invest resources into technology and manufacturing advancements for liquid cooling of high power devices. Our product lines are used for cooling high power RF amplifiers, high power resistors, IGBT, rectifiers, diodes, FETS, LEDs, etc..

Through great communication with our customers, we have maintained a good pulse on the power density requirements, helping us release newer and higher performance products that are helping customers with today's higher power density demands.



What D6 can do for you

D6 Industries designs and manufactures high performance thermal products for the power electronics industry. We offer a complete line of liquid Cold Plates, high performance bonded fin heatsinks and cooling assemblies.

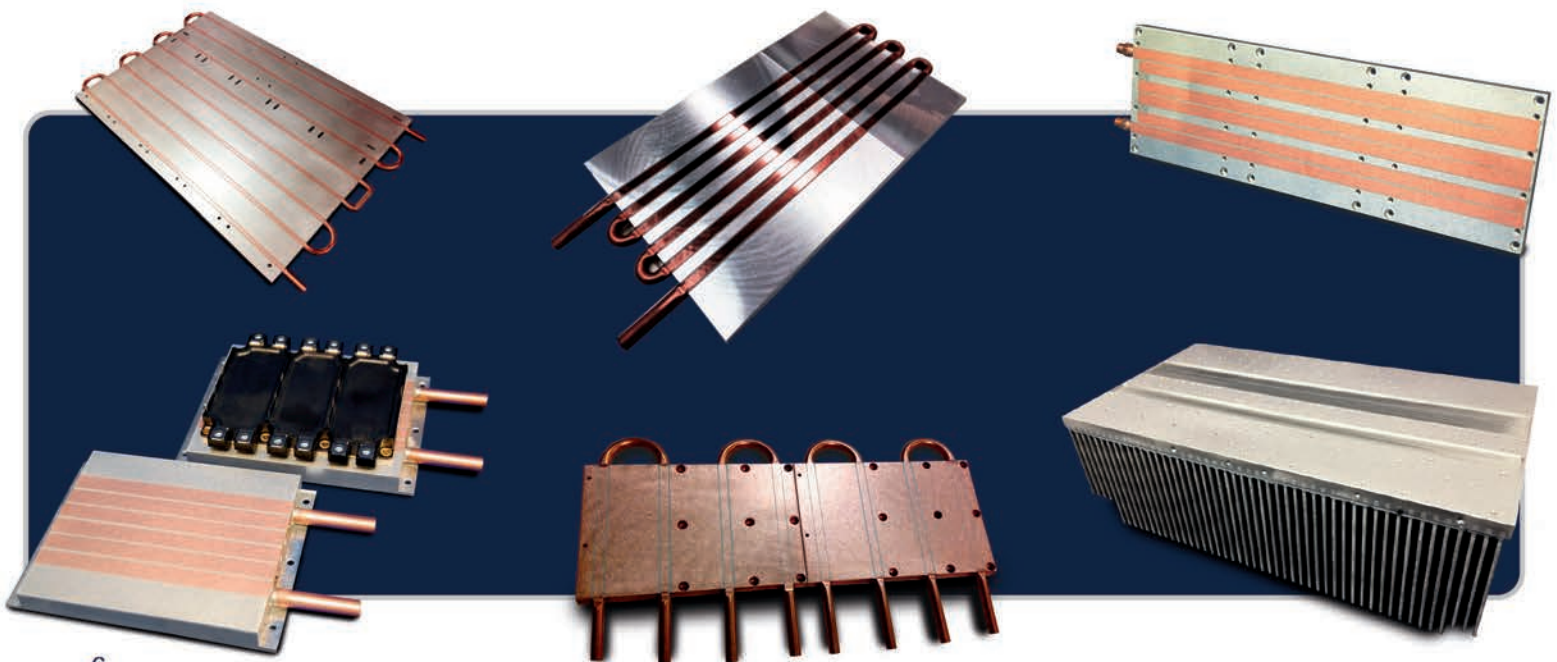
Our extensive knowledge and experience in high performance thermal design has enabled us to maintain an edge in liquid cold plate designs. In today's power electronics industry, the power density levels keep increasing and so is the need for efficient, high performance cooling methods. D6 continually works to offer new technologies that accomplish the cooling capacity required and the affordability that is needed.

We work with our customers to help solve the cooling needs for their application.

Many customers looking for a high performance air cooled heatsink or a high performance liquid cold plate are drawn to the D6 product lines because of the ease of customizing to fit the specific design parameters that the customers have.

A complete line of standard liquid cold plates can easily be tailored for our customers. The HydroBlok and HydroTrak series offer a wide range of flexibility for your layout needs. D6 has thermal and mechanical design engineers ready to help customize our technology to fit your design.

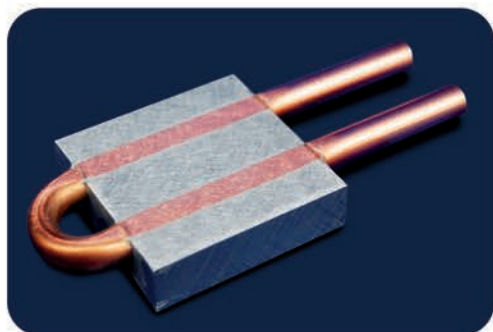
D6 specializes in high performance liquid and air cooled heatsinks for the power electronics industry. With decades of design and manufacturing experience in the high power density area, D6 is positioned to give customers a full service thermal design and manufacturing solution.



HydroBlok Liquid Cooled - Standard

The D6 HydroBlok series of liquid cold plates are constructed using embedded tubing, pressed into the base plate using high ton force with a channel profile designed to lock the tubing into place after the pressing. This HydroBlok cold plates are precision fly cut on the pressed tube side to give precise flatness for maximum performance. Below are examples of typically stocked HydroBlok standard cold plates.

2 Pass



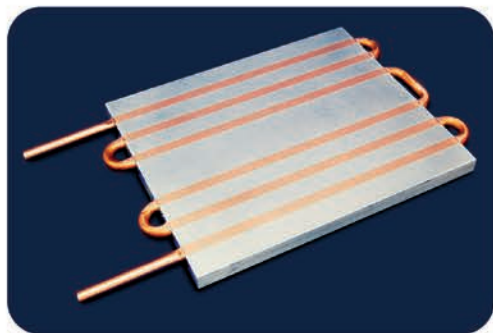
Part #	# of passes	Width	Length	Thick	Tube o.d.
HB-2P-0225-CU-C	2.00	2.25	2.25	0.60	0.375
HB-2P-0450-CU-C	2.00	2.25	4.50	0.60	0.375
HB-2P-0600-CU-C	2.00	2.25	6.00	0.60	0.375
HB-2P-1200-CU-C	2.00	2.25	12.00	0.60	0.375

4 Pass

Part #	# of passes	Width	Length	Thick	Tube o.d.
HB-4P-0600-CU-C	4.00	5.00	6.00	0.60	0.375
HB-4P-1200-CU-C	4.00	5.00	12.00	0.60	0.375
HB-4P-1600-CU-C	4.00	5.00	16.00	0.60	0.375
HB-4P-2400-CU-C	4.00	5.00	24.00	0.60	0.375



6 Pass

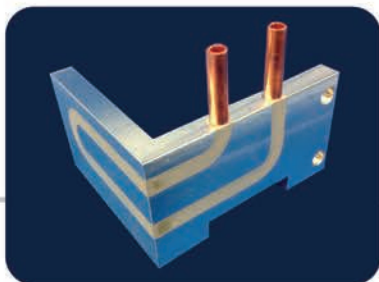


Part #	# of passes	Width	Length	Thick	Tube o.d.
HB-6P-0600-CU-C	6.00	10.00	6.00	0.75	0.50
HB-6P-1200-CU-C	6.00	10.00	12.00	0.75	0.50
HB-6P-1600-CU-C	6.00	10.00	16.00	0.75	0.50
HB-6P-2400-CU-C	6.00	10.00	24.00	0.75	0.50



HydroBlok Liquid Cooled - Custom

Material Options: Copper, Aluminum and Stainless Steel



Pressed Tube below surface with high thermally conductive bonding epoxy back filled and fly cut. Great for opposite side cooling. A right angle transition is possible.

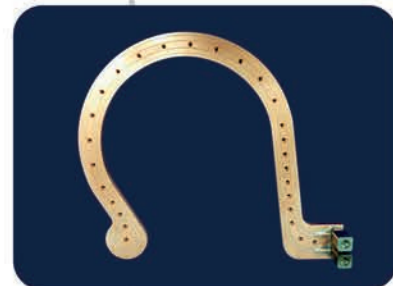


Copper Base Plate with Copper Tube. Pressed flush or pressed below. Also have the option of Silver solder or braze tubing in place.

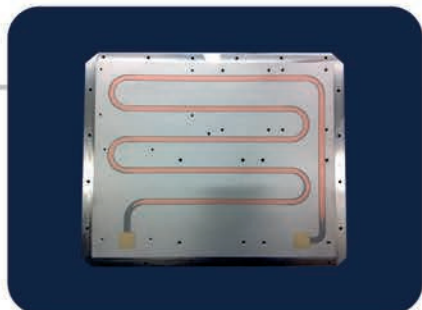
Transition the cooling path for double sided cooling Great for high power devices on both sides of the cold plate.



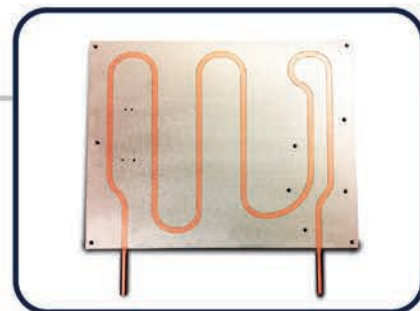
Embed custom fittings or manifolds into the cold plate to add strength to the manifold and guarantee a more precise fitting location.



Embed custom fittings and manifolds that can transition through the plate to be accessed from the opposite side of the device mounting

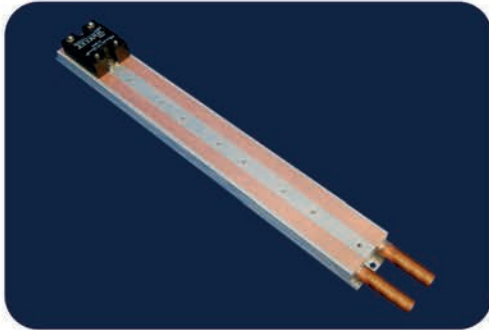


Create non traditional serpentine cooling paths that allow you to cool where you need on the base plate.



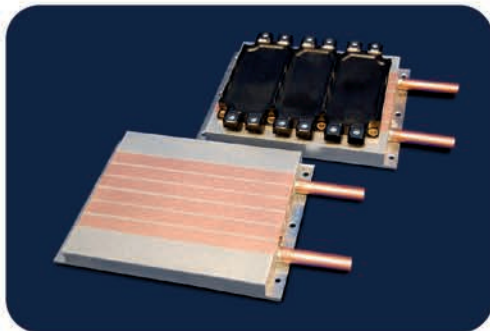
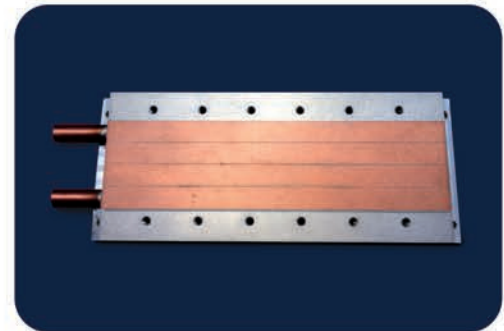
HydroTrak Liquid Cooled - Standard

The D6 HydroTrak series of liquid cold plates use a patented design and manufacturing technique making it a high performance liquid cold plate. The HydroTrak is embedded square tube designed with cooling paths and features that give Ultra high performance specifically for extreme power densities. Standard products are available for the HydroTrak series.



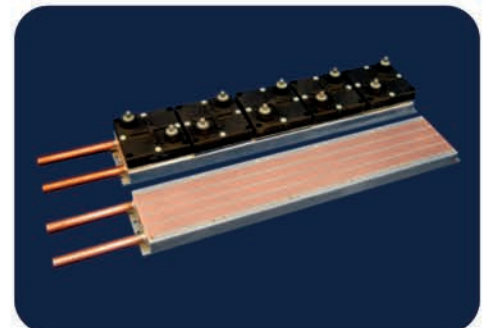
Part #	# of passes	Width	Length	Thick	Tube O.D.
HT-2P-0225	2.00	3.00	2.25	0.75	0.50
HT-2P-0450	2.00	3.00	4.50	0.75	0.50
HT-2P-0600	2.00	3.00	6.00	0.75	0.50
HT-2P-1200	2.00	3.00	12.00	0.75	0.50

Part #	# of passes	Width	Length	Thick	Tube O.D.
HT-4P-0600	4.00	4.00	6.00	0.75	0.50
HT-4P-1200	4.00	4.00	12.00	0.75	0.50
HT-4P-1600	4.00	4.00	16.00	0.75	0.50
HT-4P-2400	4.00	4.00	24.00	0.75	0.50



Part #	# of passes	Width	Length	Thick	Tube O.D.
HT-6P-0600	6.00	6.00	6.00	0.75	0.50
HT-6P-1200	6.00	6.00	12.00	0.75	0.50
HT-6P-1600	6.00	6.00	16.00	0.75	0.50
HT-6P-2400	6.00	6.00	24.00	0.75	0.50

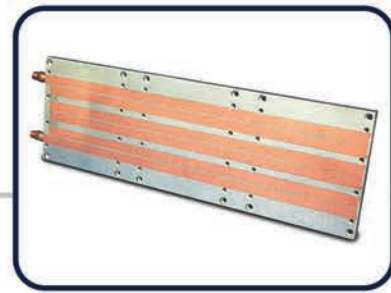
Part #	Device Compatible	Width	# of positions	Thick	Tube O.D.
HT-TAP600-X	Ohmite, EBG	3.00	1 thru 5	0.75	0.50
HT-TAP800-X	Ohmite, EBG	3.00	1 thru 5	0.75	0.50
HT-TAP1000-X	Ohmite, EBG	3.00	1 thru 5	0.75	0.50
HT-TAP2000-X	Ohmite, EBG	3.00	1 thru 5	0.75	0.50



HydroTrak Liquid Cooled - Custom



The flexibility of the HydroTraks allows a customer to easily alter the cooling path to better fit the concentrated heat areas of the cold plates. Example is a thermal platform for LED burn-in.

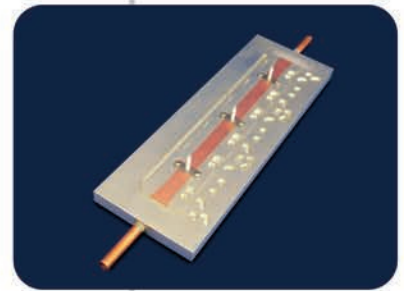


HydroTrak customized to 6-passes that is broken to two sets of passes allowing mounting holes for (3) 6kW IGBT modules.

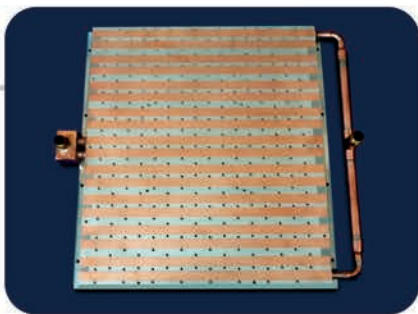
HydroTraks allow for easy manifold systems on inlet and outlet for parallel or series traks.



One of the great advantages of the HydroTrak technology is double sided cooling with the same cooling paths.



HydroTraks allow a design to run parallel cooling paths in a single plate to maintain the high thermal performance while keeping pressure drops low.

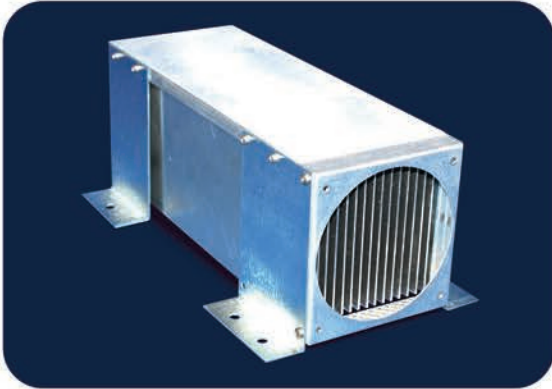


Any length, any pattern. Flow adapters allow you to alter flow pattern as you need.



Bonded Fin - Standard

The D6 Bonded fin heatsinks are manufactured in series of single, dual, and triple fan profiles and assemblies. For both natural convection and forced air cooling. The Bonded fin series can help with thermal designs using air cooling.



SW Fan Assy #	Plate Width	Plate Length	Base Height	Thermal Resistance °C/W
SW5-0400-xxxx	4.78	4.00	5.00	0.150
SW5-0500-xxxx	4.78	5.00	5.00	0.129
SW5-0600-xxxx	4.78	6.00	5.00	0.114
SW5-0700-xxxx	4.78	7.00	5.00	0.103

Dual Wide Fan Assembly

DW Fan Assy #	Plate Width	Plate Length	Base Height	Thermal Resistance °C/W
DW5-0600-xxxx	10.78	6	5	0.044
DW5-0700-xxxx	10.78	7	5	0.039
DW5-0800-xxxx	10.78	8	5	0.037
DW5-0900-xxxx	10.78	9	5	0.033



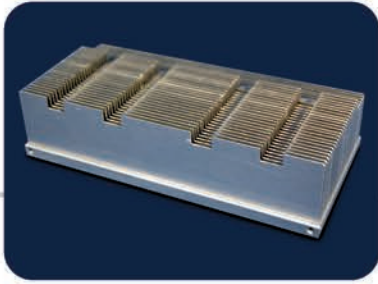
Triple Wide Fan Assy #	Plate Width	Plate Length	Base Height	Thermal Resistance °C/W
TW7-1275-flsx	18.00	12.75	6.00	0.01

Part Legend

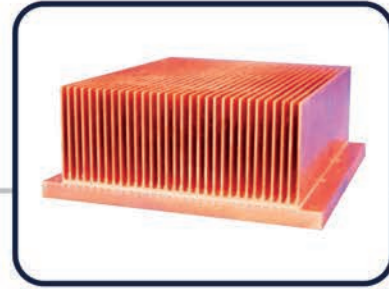
DW5	####	X	X	X	X
(5" height)	Base length X 100	plating	Mounting legs	Fan shroud	fans
		I = Clear Irradiate/Chromate	X = No Legs	X = No Fan Shroud	X = No Fan
		C = Yellow/Gold Irradiate/Chromate	L = Legs	S = Fan Shroud	F = Fan
		A = Anodize			
		S = Special Plating			



Bonded Fin - Custom

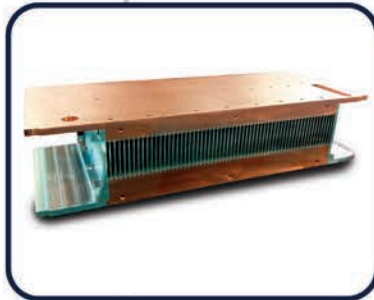


With a portfolio of dozens of standard fin ratio base plates, you can design many different bonded fin solutions

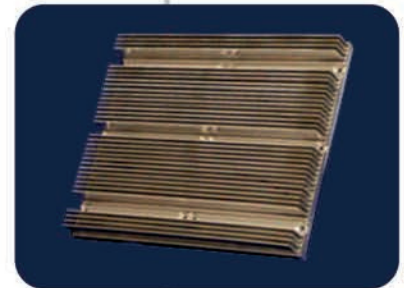


D6 can manufacture bonded fin heatsinks using both aluminum or copper materials.

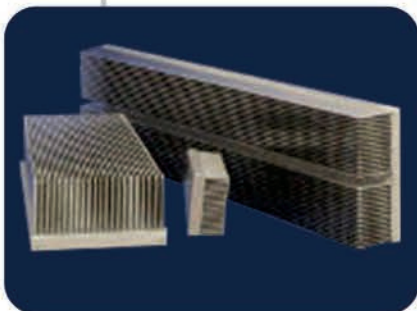
Bonded fin Hybrid assemblies are also within the design portfolio that D6 can manufacture.



Staggering fins, interrupted fin population, isolated fin relief, etc. All within our design offerings.



Dozens of standard fin ratio heatsinks as narrow as 2" and as wide as 18"

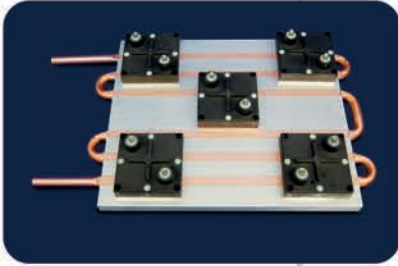


Folded fin versions of bonded fin are available as well.



Assemblies Capabilities

Compounds Options



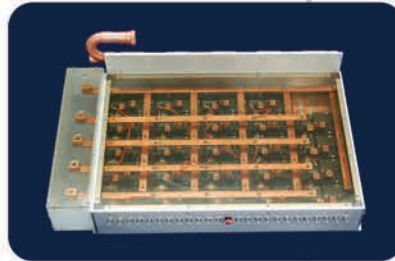
D6 can assemble the custom heatsink or cold plate with the power devices pre-mounted in position for you.



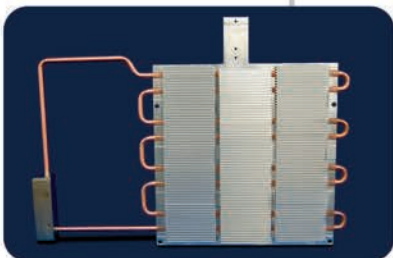
D6 can manufacture and install embedded or in series fin-tube heat exchangers to the cold plate or heatsink.



D6 Carries both Non-Silicone and Silicone thermal grease for the interface between the device and the heatsink.



D6 specializes in complete resistive load assemblies for high power testing.



Folded fin versions of the bonded fin plates are available as well.

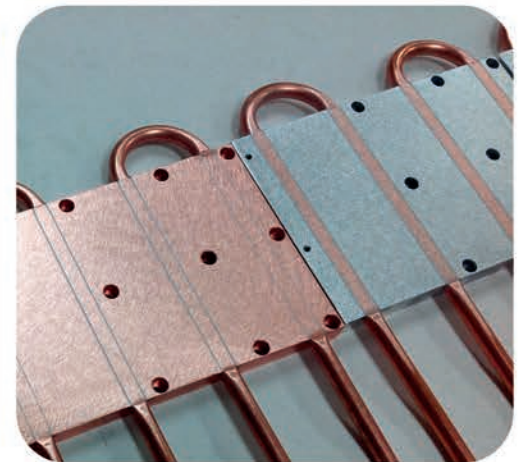
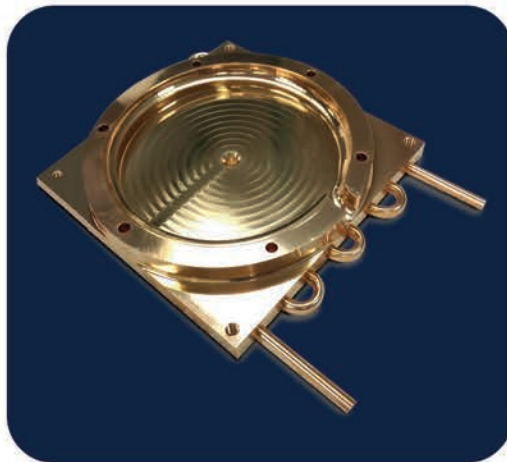
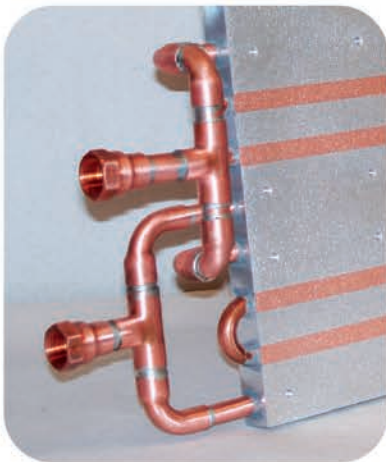
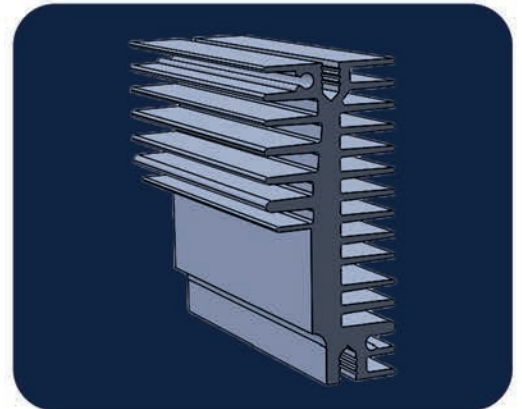
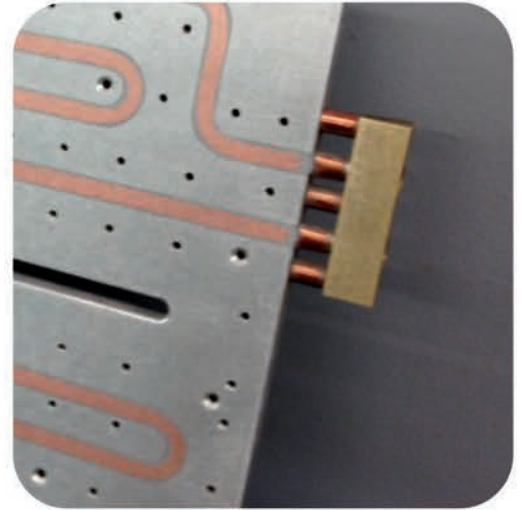


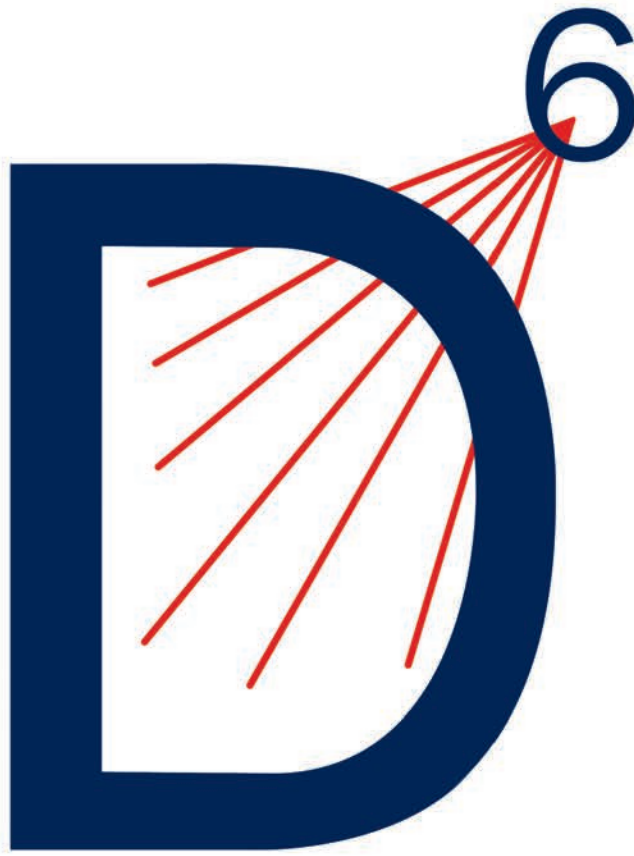
Standard or custom fitting, mounting and pressure testing.

Value Added Capabilities

D6 Industries offers additional production services on all standard or custom D6 products. These services include:

- Full Machining
- Plating
- Hardware Assembly
- Fittings
- Manifold Assembly
- Leak Test
- Pressure Test
- Flow Test
- Extrusion Processing
- Thermal Interface material





***Thermal Solutions
For
High Power Electronics***

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