

# DRIVEN TO PERFORM ODENTHAL MANUFACTURING

Article & Photos by Sean Buur



Left to right- David Odenthal, Alex Odenthal, Carl Shabler, Gabe Nelson, Mark Pasquali, Tim Gisel

Coeur d'Alene, Idaho is not really on anyone's radar as being a hotbed of manufacturing, but it should be. This lakeside resort community is a jewel in the Idaho panhandle with skiing and boating the main attractions. In a city of 60,000 people Forbes lists it inside their top twenty places for small business and careers. It's also where David Odenthal grew up, started racing, and built his machining business.

Odenthal Manufacturing came about through David's love of racing go karts and his dad's automotive machining background. "Growing up my brother and I raced karts," explains David. "Dad had an automotive machining business in the local area and spent every penny he made putting my brother and I through racing. He wasn't married so it was what we did together. We traveled all over the country on what was considered to be a small racing budget." After graduating high school in 1986 David attended Northern Idaho College's two year vocational machine tech program. After graduating in 1988 he got a job with MSM Design making various types of film equipment including IMAX cameras. That is where he got his first shot at designing. "Marty Mueller was my mentor and gave me a shot at designing a brand new film magazine" said David. He had a skill and love for both racing and making things, so in 1992 Keith Odenthal sold his automotive machine shop, teamed up with David, and Odenthal Manufacturing was born. Their first product was the Odenthal Racing Products engine mount for go karts.

Karting motor mounts at that time were unfinished cast piles of junk. At best they were an afterthought from the makers of the different chassis. Odenthal came in with a new level of precision and quality not seen before in the karting market. "Our mounts are precision milled from 6061 billet aluminum and then anodized," describes David. "They are custom tailored to a specific chassis and engine combination. Our mounts have an adjustable 3rd bearing mounting system and give you the ability to fine tune chain alignment; something not offered on the factory units." Other products were added to the Odenthal Racing Products catalog like a universal mount for karting exhaust systems and a spring puller. Like the motor mounts that preceded them, all Odenthal's products are CAD designed using Solidworks and CNC machined to standards more fitting of Formula One than a go kart. "I really wanted to deliver new and innovative products to the sport," describes David. "Our Exac-Toe 2 alignment system was more advanced than what they were using on race cars at the time. You use it to check dynamic camber and toe on the front end of the kart."

For those not familiar with 100mph racing karts there is no suspension. The chassis flex controls handling. Before the Exac-Toe 2 system racers used a primitive plate system with a ruler to check the alignment. Being able to have the driver in the kart on the ground puts sag in the chassis and you can adjust off how the kart sits under racing conditions. "The Exac-Toe 2 and the mounts were big sellers for us, but we always knew that kart



**With a full time team of six running 5 machines it is packed in tight at Odenthal Manufacturing. A pair of Kitamura HX300 Mycenters lead the way with their full 4th axis capabilities. They also have a Fanuc Robodrill T14A, Boston Digital BD 22, and OKK PCV-40 to keep the two shifts always cutting.**

racing products alone wouldn't be enough," comments David. "We considered racing to be our primary focus, but we took on "side-work" to keep the lights on." Their first break came when they landed a job making molds for a local customer who did elastomer compression keypad devices. This boom in business allowed Odenthal to move from being a garage shop to their current 5000sq.ft. machining facility. David also purchased his second machine, a Boston Digital BD 22 to up the machining capabilities of the company. "We started taking on over flow work from local shops and designing and manufacturing for a couple of other karting businesses," describes David. "Again things took off for us and we purchased our second Kitamura in 2007, an HX300, which was our first Horizontal, and a year later a second Kitamura HX300. Like everyone else we hit a downturn after September 11th, and again in 2008, but since 2008 we have been back on the rise adding people and machines."

Odenthal Manufacturing is staffed currently with 6 full time people running two shifts on five machines. The shop is packed in tight with a Fanuc Robodrill T14A, Boston Digital BD 22, OKK PCV-40, and a pair of Kitamura Mycenter HX300s with full 4th axis. "Ever since the first Kitamura I have loved those machines," tells David. "They are a box way machine with high rigidity and a 20,000 RPM spindle. Speed and rigidity are key factors in removing metal quickly and accurately and the Kitamuras deliver."

In racing the Odenthal family are known to go against the status quo and the same could be said for machining. "No shop in the area that is my size have our capabilities," explains David. "Most of the small shops have the same Haas vertical as everyone else. I like to do things differently in racing and machining. If everyone else has a Haas, I show up with a Kitamura. No offense to Haas, they are a great company and I like them even more now that they have a F1 team to cheer for, but our Kitamuras offer an advantage over a standard vertical. Take a billet aluminum box with machining on six sides as an example. On a vertical machine you would have six setups, we only have two." David purchased his last two Kitamuras from Jerrett Clark and Gail Hogue of Hogue Machine and sealed the deal with a tour of the factory and dinner with Aki Kitamura himself. For twenty plus years the Kitamura brand has been the workhorse of his manufacturing operations and will continue to be well into the future.

Odenthal Manufacturing works primarily in aluminum on parts requiring a lot of metal removal and a clean finish. Customers range from rugged computer housings, to AR-15 parts, but recent years have seen a spike in archery components. "We work with a few different archery companies like Ben Pearson and Obsession Bows," touts David. "Obsession is out of Georgia and our largest archery customer." Odenthal manufactures various bow parts including cam systems, limb pockets and suppressor rods for Obsession. They also machine sights, and



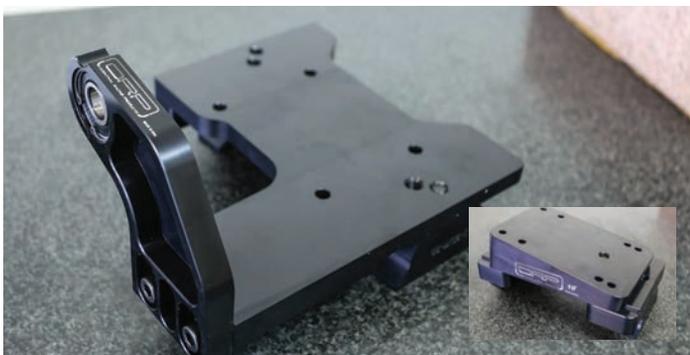
Archery and ruggedized computer products are a large portion of Odenthal Manufacturing's business. All the parts require outside processing so finish is important. They use the "Viper" endmill from Destiny Tool to achieve the desired results. As a bow hunter, David understands and appreciates quality manufacturing can mean the difference between hit or miss.

a Quiver system for another top named archery company. "Archery is all about the bow being quiet and launching an arrow down range as quickly as possible," explains David who is an avid bow hunter himself. "The suppressor rods for example help quiet the sound of the bowstrings after loosing an arrow. Sound travels faster than the arrow so minimizing it gives you a better chance of not spooking the animal and getting in a clean shot."

All of the archery products require outside processing so a quality finish is imperative. David believes a good finish starts with a good machine and ends with quality tooling. "We are good with aluminum," details David. "We get a great finish right off the machines thanks in part to our tooling. Better quality endmills make a difference" David can't say enough good things about Viper endmills by Destiny Tool out of California. He praises their strong corners and how their unique geometry helps to curve the chip out of the gullet. "The Viper cost more than a cheap endmill, but the lifespan is better and the finish is really nice compared to the cheaper tools. Their variable He-

lix design helps reduce chatter so we can keep the speeds up higher."

In karting, the Odenthals were often overlooked as contenders because they didn't come to the track with the biggest trailer and the most karts. They came to the races with a skill and determination that earned the brothers 5 national championships in IKF (International Kart Federation) and David a trip to the Super Bowl of karting. "The 2006 Rotax Grand Finals in Portugal was the highlight of my karting career," concludes David. "Having the chance to represent my country on the world stage against the best on the planet was amazing. I feel the same about our work here in the shop. We are proud to be part of a manufacturing brotherhood that is still getting it done for American companies." Odenthal Manufacturing is not the biggest shop in Coeur d'Alene, but like in racing they fight well above their weight class. They get the job done with finesse and purpose that has left many scrapping it out for 2nd place.



David and Joel Odenthal in 1993-94

The Odenthal Racing motor mount was the flagship product in 1992. It is precision made to fit your engine and chassis combination. Together the Odenthal family won 5 IKF national championships in karting. David is a two-time Rotax Masters US national champion and represented the USA in the 2006 Rotax Grand Finals in Portugal.