FIRST DRAFT

Cutting the Hard Stuff at Burns Machinery

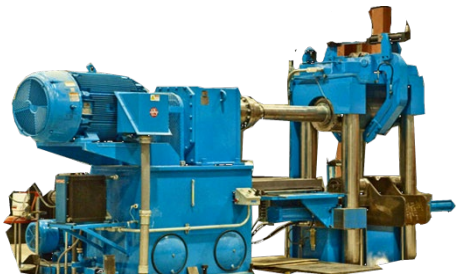
A SolidCAM Case Study

I sat down with Greg Burns, president and founder of Burns Machinery in Minden Nevada, to learn about him, his business and why and how Burns uses SolidCAM. My mission was to shoot a short and simple video interview with Greg. But Greg Burns' ambushed me with his bigger than life personality, his commitment to a school in Africa, and how he grew his company.

But. . . . Greg Burns lives to do BIG things! He spent years working as a mechanical engineer in the aerospace forging industry; started Burns Machinery back in 1981; has consistently gown his company; founded, funds and administers a girls school in Africa and, in his spare time, he invented and built a self contained high volume hydrogen generation plant to supply his company's needs. Greg uses his passion to transform his ideas into tangible working creations, and he does all this with a twinkle in his eye and an impish grin on his face.

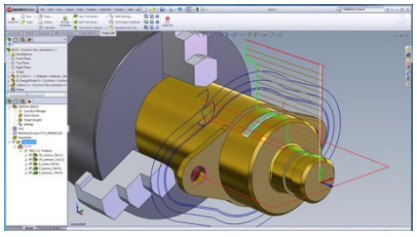
For his 'full-time job' as president Greg's company specializes in precision machining and making the machines that make *seamless rolled rings*.

These forged metal rings become the internal workings of jet engines produced by companies such as, Pratt &Whitney, GE and Rolls-Royce, and tight manufacturing tolerances are critical. 'Big' is an understatement that fills you with an intimidating force when standing next to one of these precision behemoths - each machine towers six to eight feet above a standard sized human.



Ring Rolling Mill

Burns uses row upon row of CNC machines to build parts for these humongous manufacturing machines, and now uses these CNC mills to take on outside machining challenges that only a handful of companies in the world can tackle. But it wasn't always this way.



SolidCAM/SolidWorks Integration

In 2007 Greg took a major step towards expanding his company's horizons when he transitioned from AutoCAD™ to SolidWorks™, and as he tells it "In 2007 we made the transition to solid modeling, and that was probably the most revolutionary thing that's impacted our company with regards to machine design. Now we're able to visualize what we design in the three dimensional world."

Soon after getting comfortable with SolidWorks Greg started looking for an integrated CAM solution to complement his new 3D modeling capability. He talked with other local machine manufacturers who

were also using SolidWorks and took a recommendation from a good friend who wouldn't stop praising SolidCAM and its integrated SolidWorks solution. "His recommendation got me excited enough that I looked at a SolidCAM demo."

Greg was so impressed with the demo that he purchased licenses and got down to work. "I like to be able to design a part, open it up in SolidCAM inside SolidWorks, pick the machine that I'm going to do the process on, and in very short order have code generated and sent to the machine where we cut the parts quickly."

iMachining™ - The Secret is Out!

During my interview Greg uncovered his secret weapon. Here's what he had to say about *iMachining*.

"My hope, at least for Northern Nevada, is that not too many people learn about *iMachining* because it is my biggest competitive edge over local competitors. If you don't have *iMachining* you cannot compete against me because I will cut the part in a fraction of the time and not destroy tooling."

Milling Difficult Material

To see *iMachining* in action I shot some footage of *iMachining* controlling the milling of a block of Inconel 625 and quietly turning it into a sophisticated component in a matter of minutes. Machining hardened materials has now become one of Burns Machinery's niches and they stand with just a few other companies on this planet who have the wherewithal to get these jobs done.

As Greg told me, "One of the biggest eye openers about *iMachining*, the biggest impact that I saw, was in cutting difficult material like stainless and Inconel and many difficult materials that are just known for chewing up very expensive cutters. *iMachining* extended our tool life upwards of ten times. When you use conventional programming methods you tend to overload the cutter, and when it reaches the inside of an internal corner it chirps, and that chirping noise is just dollars going out your door because you're tearing up an end mill every time you chirp on the inside of a rectangular pocket.

Inconel 625 Machined Using *iMachining*

IMachining eliminates that. *iMachining* controls the radial engagement of the tool at all times. We cut with the full tool length most of the time – I cut an inch deep in Inconel with a half-inch end mill. That's unheard of; people don't normally attempt to do that in Inconel. We do it with *iMachining* because of its controlled radial engagement, and we are doing parts that no one else can do because of the way we approach it with *iMachining*."

ROI in Weeks

Greg does do big things, turning his passion into reality, and doing it as a businessman.

“SolidCAM was an investment for us, and as a business owner I’m always-+ looking for a return on my investment. I have many things to invest in, in my shop. SolidCAM, I would say, had the quickest return on investment of anything I’ve put significant money into in the past ten years. Return on investment was a matter of weeks, not months or years, it was weeks, and that was paid for primarily in tool life. What we saved in the first month on tool life alone paid for the software.”