

2014



Finalist

Middle Coast Custom
Jordan Hill
Wisconsin



1.) My story... where do I begin? For as far back as I can remember I have always been intrigued with how things work. Initially, in my early years, this led to me taking a lot of things apart. My father recognized this skill and promptly supplied me with “Legos” and “Erector sets” to teach me that there is another side to mechanical things... the act of putting things back together. Since my early years this has been a staple in my career and hobbies alike. Every job I have ever had has been related to creating, repairing, manufacturing, and modifying various items. Actually, I worked on my grandpa’s mink ranch for a summer when I was 11 and there wasn’t a lot of creating going on, more so a lot of shoveling manure and dragging endless feet of hose around for watering. However, I learned early on the good feeling after a hard day’s work.

My first “real job” was working for my uncle’s tree moving / landscaping business. It was for a few summers when I was in high school. It mainly consisted of manual labor, planting trees, and prepping yards for seed; until we had a series of rain days. There was a surplus of work to do in the shop. It was then that my uncle and I discovered that I was good at, and enjoyed wrenching, cutting, grinding, welding, fixing flat tires, etc. Through the rest of my employment there I prayed for days it would rain and he’d asked me: “Want to work in the shop today?”

I attended Muskego High School from 1996- 2000. I struggled in English, history, grammar, music, and the like. Meanwhile I quickly excelled in math, auto shop, metal shop, and drafting. I had metal shop for two periods per day senior year and I finished all my projects in the first two months of school, leaving the rest of the year for extra credit and to work on my own ideas and projects. I remember those days like yesterday. Our teacher would have alumni come and visit periodically and tell us youngsters about all those cool things they worked on, and how much money they earned, and all the toys they were able to buy. My career path had been set in motion at that point and I didn’t need a guidance counselor to help me decide it.

Senior year was a very fun time, full of excitement and new beginnings. After a few tours of tech schools and colleges here and there throughout the year and summer, I was on a tour for Waukesha County Technical College and I decided to look no further. I was originally enrolled in the auto body and paint tech program, which I am thankful I changed to tool and die making at the last minute. The two year program I completed at WCTC was very inclusive and ended up going much like my HS shop days did. This type of work seemed to come easy to me. I was always the first one done and got the best grades, leaving me plenty of time to work on “government work.” To this day the moldmaking instructor, Bob Novak, has stated that the mold I built in his class was the fastest one completed and of the best quality. He reminded me of this when he interviewed me to replace him as moldmaking instructor last fall. I didn’t get selected for the job, but it was actually for the better, as they are fairly strict about non-competition agreements. The mention of me starting my own business in the future was not welcomed with enthusiasm, and would have proved to be a deal breaker.

During summer after high school and into the next year I worked full, then part time at a shop in New Berlin, WI called Milwaukee Tool and Machine. Their end product was paper converting equipment for making six-pack bottle holders. I gained a good amount of manual machining experience there. I also would occasionally run production on their CNC verticals as a “button pusher,” and gained valuable knowledge of how things were setup and cutting tools used. I also learned how boring and monotonous production work can be. At some point my school schedule changed and they didn’t have a night shift so I pursued other employment.

This led me to a very short stint at a shop I simply cannot remember the name of. It was a CNC round house shop whose sole function was turning gear blanks. I ran two small turning centers back to back that had a thirty second cycle time. I was working six or so hours a night and it felt like an eternity. I think I lasted just shy of two weeks. I sat down with the foreman and explained to him how I didn’t think that type of work was for me. He responded by saying that he understood completely and that the work was grueling and not for everyone. Now, while I know the world needs gear blanks and someone to make them, I knew it wasn’t for me. I did learn a valuable lesson there though, that high production work wasn’t my forte and never would be. Rather, I’d be the guy to figure out how to automate the process or lean it out. I again found myself pursuing other employment.

After a short search I found a shop called Scot Industries. They had a plant right by the WCTC campus and had a night shift. It turns out that shop happened to be the R+D division of the company. They were a captive shop that built specialty machining and honing equipment for their production plants. While there, I was exposed to a lot of reverse engineering, prototyping, and developing new and better ways to manufacture. I found out in a short time that this type of work was most definitely right up my alley. I would work for 8-10 hours and not even realize it. The time just flew by, and I actually for the first time had fun working. I worked my way up from running a Bridgeport and manual lathe to running, doing setup, and doing light programming on a Mori-Seki MH 630 horizontal, their flagship machine at the time. The last six months or so I was there I ran a 3+2 HAAS vertical. The work I did in that machine proved to be the most interesting and challenging to date. I built trepanning, boring, and honing heads, all with multiple setups, angled and radial work, and for the first time I was fitting components to each other and establishing running clearances. It was my first taste of not just machining a component per print, but making it work with other components as an assembly. Another school schedule change dictated that I reluctantly pursue other opportunities.

It was late 2001 at this point when I was introduced to an “intern” program at Moldmakers Inc in Germantown, WI. They called it the POS (person of service) program. It was essentially setup to provide guys in school with a part time job while getting exposure to moldmaking related tasks more associated with the project management side of the trade. I cleaned a lot of bathrooms, break rooms, offices, and lunch rooms, filed emails, and created job binders. I did this between the very occasional shop projects I had the privilege of doing to get exposure with toolmakers. Those infrequent odds and ends jobs were my only opportunity to impress them, and I took each one seriously and completed it in a timely manner. At the time I remember thinking of real toolmakers as gods. A group of good old boys who were straight shooters and weren’t afraid to tell you how it is. In late 2002 a fellow POS and I were

chosen to partake in a fairly large (at the time) shop machining project to take place over Christmas break. The project was to create a process and provide an estimate of hours and tooling required to produce 100 pieces of a new style of electrode holder. We laid out every detail, process, and tool we would need to complete the job and eagerly presented it for approval to the lead EDM. He read over it for a bit and replied simply by saying, “Well if you guys do it as fast as you are saying you can, than I think we will all be looking for new jobs.” I am fairly certain that was his way of telling us we under quoted the job. Then he helped us apply some realistic numbers to our quote and showed us where we may have underestimated. We completed the job on time with low scrap rate, and even did a little better on hours than he had thought. I look back now and realize they were not concerned with how quickly we did the job, more so that we were able to think it through on our own, develop a plan and see it through. It was Moldmakers philosophy at the time to “hire three to get one”. Meaning that of the 18 or so POS’s there were at the time, that only six would end up getting signed as apprentices. I turned out to be even less, as only five of us made it. I got signed after a short full time shop evaluation period, and never looked back. I worked hard, learned quickly, and excelled, all the while letting my work speak for its self. As a first year apprentice, I was building and running my own jobs with limited oversight. As a second year apprentice, I was building multiple jobs concurrently and two shot molds. Late in my apprenticeship, I was exposed to Hurco machining centers and really took off utilizing them. Your company has come a long way from the trackball BMC 4020 days of old, but at the time they were some pretty sweet machines. I finished a 10400 hour Wisconsin state indentured moldmaking apprenticeship in just over 3.5 years.

Within a year of finishing my apprenticeship, the moldmaking industry started to suffer. This was mainly due to overseas competition. The elder toolmakers were warning us about where the trade may be headed and that we were young enough to still learn a new trade or go back to school. This started happening just before I bought my land and was planning on building a new home. I didn’t let the rumors hold back my plans and went through with the land purchase and constructed a pole barn near where my house was to be built. It was during this time I was exposed to my (other) uncle’s construction business more and more. He eventually realized my work ethics and talents and offered me a job. At the time I was getting bored in tool making and with all the nay saying going on in the industry I thought it may be a good time for a career change. I started at Kurk Concrete in June of 2006 and remained there through December of 2010. I was a mechanic, equipment operator, surveyor, estimator, and project manager. Sometimes, I would assume all of these roles in one week’s time. Needless to say it was always new, exciting, and full of learning. The initial fun eventually wore off and working for family proved to become more and more challenging. I left there with good graces and once again found myself looking for the next challenge.

I came across In Place Machining Co years prior and it was always in the back of my mind. It seemed like a really intriguing place to work. I started there in December of 2010 and remained there through October 2012. It definitely lived up to my expectations and proved to be the most challenging work I have done in my life, yet some of the most rewarding. Two weeks after starting I was asked to be part of a crew doing machining for a modernization of the largest counter blow forging hammer in the US located right in SE Wisconsin at Ladish Inc. I worked on ships at sea doing machining inside of main

propulsion engines the size of a house. I worked inside the Hoover Dam for two months re-machining one of the Nevada side turbines back into spec. I did an R+R for collector rings on one of four backup diesel generators at a nuclear power plant in North Carolina. Backup diesels are considered safety related equipment while the plant is running. It takes three diesels to bring the plant down in an outage, the other three were guarded by security personnel with automatic weapons. Talk about pressure to perform. One of the last jobs I did was a cylinder boring job on another backup diesel for a remote oil field on the North Slope of Alaska. I knew the job was going to be an interesting one when the planning guy told us we had to be up there a couple days early for “bear safety training”, apparently there has been an increase in polar bear attacks up there and they have no fear of humans whatsoever. When on the road, we worked 12 hour days, 7 days per week until the job was completed. Most jobs were run around the clock coverage, so half the time you ended up working 12 hour night shifts one week and days the next week. Needless to say it was tough work, especially for the pay. I eventually came to the conclusion that while it was at time very challenging and interesting work, it just didn’t seem to be worth it.

I stayed in contact with some friends at Moldmakers (now MGS MFG Group) where I served my apprenticeship, and dropped the hint that I’d entertain the idea of coming back. Turns out they jumped at the chance and gave me an excellent package to come back to. I was hired back as a CNC specialist and started out primarily doing pre and post heat treat machining of various mold components and filling in with general toolmaker duties including grinding, fitting, assembly, and fixture building. At this time there are four VM 1, two VMX 30 ultimax, and five VMX 42 winmax (2 cts) machines in the company. I hate to use the term mastered, as I know there is always someone better out there. Although, if you asked any of my co workers who the best Hurco guy in the company is, the honest ones would tell you it was me. From utilizing 2.5 D features for cutting lock angles and barrel features, to thread milling and dxf’ing and everything in between. The more creative and forward thinking you can be, the more you can get done in a Hurco simply put. We have a number of g-code machines which are offline programmed and there is simply no comparison to a Hurco machine. In the time it takes a programmer to pull up a model in Mastercam, I will be starting to five side a block, mounting up tools for future operations, and studying prints.... That covers my gainful employment date in a nutshell.

2.) Somewhere deep inside I always dreamed and knew that eventually I would be my own boss. For the last two years I have been gradually getting more and more serious about it with only the fear of failure holding me back. I took a number of small business classes last winter with a co-worker I may partner with. After many discussions with him I can’t help but feel we are on different pages about moving forward. I am in more of an “all in” “110%” mode while he is nearing retirement and in a different frame of mind, which is okay. Very recently I came across the chipmaker competition and became ecstatic. The thought of having a brand new machine to utilize for my small business is nothing short of a dream come true. While not winning this machine will not stop me from buying a used Hurco to continue along the path I have set in place; it sure would give me an amazing amount of breathing room to turn my dream into reality.

While I cannot describe in detail the work I do, I can describe the type of work I am skilled at and intend to pursue. My focus will be on prototyping and short run production of tight tolerance components. I will provide repair and fabrication services to local farmers and industries. I also plan to market my unique skill set to motorsports enthusiasts specializing in custom one off components and retrofitting new technologies to classic cars.

3.) My unique selling proposition is the abundant amount of experience and skill I bring to the table. Simply put. While this may sound a bit arrogant, I most definitely will deliver. I will be providing a niche service of toolmaker quality and efficiency, with excellent customer service and impeccable attention to detail.

4.) In my 10+ years in industry, running close to ten different brands of machine tools, employing five different brands of control, Hurco's winmax control is the most powerful and user friendly one of the bunch. The DXF option is one I feel most integral in my day to day. The ability to pull in a drawing, modify it, and program directly off of it is nothing short of priceless. The NC merge feature meshes 2D conversational with 3D offline programs seamlessly and effortlessly, allowing the user to bounce back and forth between the two modes within the same program. The 2.5 D features (3D mold) allow the user to program seemingly 3D shapes and contours with ease. Swept surface allows users to wrap a 2.5 D profile along a 2D defined contour. While I sometimes find the need to wrap a 2.5 D radius along a XZ or YZ move. I have yet to figure that out if it is even possible with current technology. Another feature I think should be in the pipeline and can't wait for is, the ability to program off a 3D para-solid or .prt file like a dxf. Another cool feature I thought of was a "peck depth override" knob, allowing the user to adjust peck depth as a % of programmed depth deeper or shallower on the fly depending on how well the cut feels, part rigidity, tool length, etc. I won't charge Hurco Companies for that one. As you can see I not only have intimate knowledge of the machine's features and control, I think ahead as to how they can become better.

5.) There are many manufacturing challenges faced in the custom machining field. A few key ones would be; offshore competition, keeping up with and investing in technology/training, and finding good skilled people.

6.) The greatest business challenge I see myself facing is my lack of enthusiasm for doing paperwork. Luckily, this particular challenge is can be readily outsourced to professionals in the field.

7.) I plan to become a member of the Small Business Administration of Wisconsin, accredited to the BBB, and become a member of the Racine County Chamber of Commerce.

8.) While I can't say I have received any awards or accolades, I can say that I am a card carrying journeyman tool and die maker, and a class A CDL holder with hazmat, tanker, and school bus endorsements.

9.) I have forged out a few key business relationships over the year that I would like to elaborate on now. I am still in contact with two ex- coworkers now employed at Milwaukee School of Engineering's rapid prototyping department. They will be an excellent contact to source work though, being mainly one off machined prototypes from "billet" as a key element of product development. Another means of getting work will be from overflow of a few local shops where other ex-coworkers are employed. There are also a number of subsidiaries of the company I currently work for that send out millions per year in machining, and I don't believe it would be difficult to tap into. Other key relationships would include my insurance agent which is a close friend and knowledgeable professional, and my accountant for financial guidance. I even have a close friend that works for MSC Industrial Supply as a metalworking specialist that can supply me with the latest cutting tool technology.

10.) In two years I plan to be able to go full time on my own and ramp up sales and workload by investing in a HMX 500 or 630 or a five axis depending on the work I see coming in. In five years time I plan to have my business doubled and at that point be in the market for at least one employee, and pushing around \$250k annual sales. While it is difficult to foresee ten years into the future, I plan to have my business up to five employees and pulling in upwards of \$1 million in sales. All of this of course would come with complete brand loyalty so long as Hurco keeps updating, improving and staying on the cutting edge of machining technologies.

After all I am a Hurco guy in every sense of the word.

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