

# Working With Your Hands and Mind

*Precision metal working is a growing field in Minnesota, with plenty of job openings expected in the coming years. Three professionals in the industry talk about their work.*

Precision metal working offers excellent opportunities for employment, with 46 percent of program graduates in Minnesota in 2011 working full time two years after finishing school, according to DEED's Graduate Employment Outcomes tool. That makes precision metal working one of the top programs in the state for job placement. The median salary in the field is \$40,352.

This story looks at the rewards and challenges of careers in precision metal manufacturing, focusing on three people who have worked in the industry — a punch press operator, a welder and a sheet metal worker.

## Punch Press Operator

Altheha DrePaul was laid off from her job as a home health aide after coming to the United States from Guyana, South America. She had no transferable skills and her certificates were not applicable in the United States. "I had to make the decision to start from the ground

up—to start all over again," DrePaul said.

DrePaul's niece introduced her to M-Powered — a FastTRAC training program offered through Hennepin Technical College — and to HIRED, a workforce development organization. M-Powered prepared her for the manufacturing industry by teaching her basic skills such as blueprint reading, English and math. The program takes two to three months to complete.

One assignment from this program stood out to DrePaul. She had to pick three companies to research and decide which one she really loved and thought would fit her best. E.J. Ajax & Sons Inc., a metal-stamping manufacturer in Fridley, caught her attention.

"E.J. Ajax stood out to me because of their safety culture. I really wanted to work there," DrePaul said. "So, when I had the opportunity to interview Erick Ajax at a reverse job fair, that was my moment to prove



PHOTO: JUDY PARKER

Altheha DrePaul

myself and shine and to show that I'm an individual who really wants this. I started off on the floor as a machine operator. I had to start from scratch — how to operate the machines and even how to read the travelers."

DrePaul said the team at E.J. Ajax was helpful, and her

**How Much Do Cutting, Punching and Press Machine Setters, Operators and Tenders Earn?**

Geographic Area	25th Percentile	50th percentile	75th Percentile
	25% of Wages Fall Below	Median Wage	75% of Wages Fall Below
U.S.	\$11.68	\$14.64	\$18.25
Minnesota	\$11.65	\$16.12	\$20.26
Seven-County Twin Cities	\$11.12	\$16.20	\$20.79
Central Minnesota	\$11.77	\$14.84	\$18.46
Northwest Minnesota	\$11.80	\$14.66	\$17.50
Southeast Minnesota	\$15.69	\$18.51	\$21.22
Southwest Minnesota	\$15.70	\$18.39	\$20.87
Northeast Minnesota	\$11.18	\$13.92	\$18.81

Source: DEED, Occupational Employment Statistics Program (first quarter 2014 wages)

colleagues were never afraid to share their knowledge, which helped her during the transition process. During this time, she went back to school for the second and third level of the M-Powered program and even got some NIMS credentials (certifications from the National Institute for Metalworking Skills). Following this, DrePaul enrolled in the four-year machine operator apprenticeship program.

When asked what makes her job rewarding, DrePaul replied, “I have a voice. My colleagues listen. You can come to work and work with your hands and your mind. If you come up with an idea and share that idea, your colleagues are willing to listen and try it out. It plays an important role to know that you are welcomed and of value to the company you work for.”

Still, DrePaul said, society doesn’t always value manufacturing as a career. “Growing up, even our parents were instilling us with ‘be a doctor, be a lawyer, or be a teacher.’ We can be professional manufacturers. It’s a career. We just need to share it and let our experiences be known.”

In order to succeed as a machine operator, DrePaul said it is important to have a good attitude about safety and to show up on time. People should also be willing to adapt to change by

**Machine Operators**

Responsibilities of cutting, punching and press machine operators and tenders include:

- Starts machine, adjusts blade and controls using wrenches, rule, gauge or template, and monitors operation.
- Reads work order for specifications, such as materials to be used, location of cutting lines, and dimensions and tolerances.
- Turns controls to set cutting speed, feed rate and table angle for specified operation.
- Installs, aligns and locks specified punches, dies and cutting blades in ram or bed of machine using gauges and hand tools.
- Measures work piece with rule or tape, or traces from template and marks location with scribe, soapstone or centerpunch.

Source: Occupational Employment Statistics Program, DEED

furthering their education and training. “Things are constantly changing and we need to keep up with that change.”

DrePaul, who now works in the office as a key account manager, has been with E.J. Ajax for eight years.

### Welder

Jordan Hall is a welder at Jones Metal Products Inc., a custom metal fabricator in Mankato. In 2009, Hall enrolled in a welding program at St. Cloud Technical College. A year later, he left school and went on to work for about a year for CDI Custom Curb Adapters in Elk River, where he discovered his dislike for welding galvanized steel.

“I had also applied at Jones Metal Products when I got out of school, but they weren’t hiring at the time. A year into working for CDI Custom Curb Adapters, Jones Metal Products was finally hiring, so I moved back home to Mankato. I’ve been working here for three years.”

When asked what a typical day is like, Hall replied, “I come in at 4:30 p.m. and talk to the lead manager in order to figure out what jobs he has for me to do. After I get this list, I complete them, and then I go home. Every day, each job is different. Sometimes if you leave a project

at night, you’ll come in the next day and continue that project.”

“I come to work every day to be better and grow,” he added. “I don’t want to weld for the rest of my life, but I do always want to be involved with it in some way. I would like to get into quality control and possibly nondestructive testing. I would be x-raying all the welds, testing them for tensile strength.”

Hall believes welding is a good industry to go into because it offers a lot of job opportunities and good pay. Welders also are in high demand. “Welding is a good skill to have if America is trying to get back into manufacturing,” he said.

He said people interested in becoming a welder should

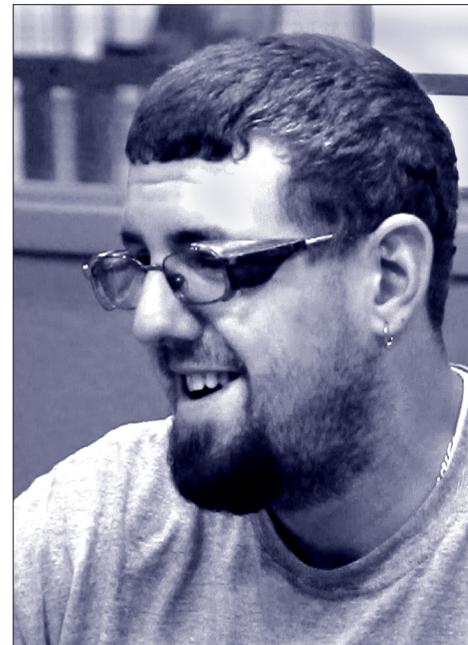


PHOTO: JUDY PARKER

Jordan Hall

obtain an associate degree in welding, which will increase their chances of being hired. Hall also feels people should know that

How Much Do Welders, Cutters, Solderers and Brazers Earn?			
Geographic Area	25th Percentile	50th percentile	75th Percentile
	25% of Wages Fall Below	Median Wage	75% of Wages Fall Below
U.S.	\$14.75	\$17.95	\$22.30
Minnesota	\$15.84	\$18.95	\$22.63
Seven-County Twin Cities	\$17.80	\$21.21	\$24.74
Central Minnesota	\$15.83	\$18.41	\$22.12
Northwest Minnesota	\$14.49	\$16.70	\$18.63
Southeast Minnesota	\$15.60	\$18.51	\$21.09
Southwest Minnesota	\$15.06	\$17.54	\$20.80
Northeast Minnesota	\$14.71	\$18.51	\$24.32

Source: DEED, Occupational Employment Statistics Program (first quarter 2014 wages)

## Welders, Cutters, Solderers and Brazers

Responsibilities typically include the following:

- Welds or tack welds metal parts together using spot welding gun or hand, electric or gas welding equipment.
- Ignites torch and regulates flow of gas and air to obtain desired temperature, size and color of flame.
- Preheats work pieces preparatory to welding or bending, using torch.
- Fills cavities or corrects malformation in lead parts and hammers out bulges and bends in metal work pieces.
- Positions and secures work piece, using hoist, crane, wire and banding machine, or hand tools.
- Climbs ladders or works on scaffolds to disassemble structures.
- Examines work piece for defects and measures work piece with straightedge or template to ensure conformance with specifications.

Source: Occupational Employment Statistics Program, DEED



PHOTO: JUDY PARKER

*Jose Chavarria*

“welding can be challenging at first, but stick to it. It’s just like anything else — a lot of repetition and muscle memory. Over time, it becomes easier.”

## Sheet Metal Worker

Jose Chavarria is a sheet metal worker at E.J. Ajax. He spent 24 years in the U.S. Marine Corps. During that time, Chavarria was trained as a helicopter mechanic and later became a quality assurance representative. In October 2010, Chavarria retired from the Marine Corps and moved back to the Twin Cities, where his wife was originally from.

A few years ago he took a basic sheet metal class at Anoka Technical College, where he was introduced to the turret, brake press and laser. After completing the sheet metal class at Anoka Tech, Chavarria met Erick Ajax, co-owner of E.J. Ajax, at a reverse job fair. Not long after, Chavarria had another interview with E.J. Ajax and was given a tour of the facility. Chavarria liked what he saw and was given the opportunity to try out the job to see if he liked it. He has been working at E.J. Ajax ever since.

“I begin at 7 a.m. and start up the machines. Next, I grab our job traveler — basically a job notice of what is due and

when it is due — and read the instructions. This tells me what we have to do as far as brake press, turret or laser, after which I cut, punch or form the material” Chavarria said.

Math is one of the most challenging obstacles that Chavarria has faced in his sheet metal career.

“With 24 years in the military, the last time I had a math class was in high school, which was a really long time ago,” he said. “All that stuff high school and grade school teachers tell you about ‘you needing to learn this, you’ll use it later in life’ is true. We use it. So, the difficult part for me was to get my math knowledge back, wake it up, dust out the cobwebs in my head and relearn it.”

When asked about the three most important skills or qualities that are necessary to succeed in this career, Chavarria replied, “Skill will come to you later, but as far as quality, I think dependability — getting to work on time and doing what you have to do on time. Integrity would be another one. If you see something wrong or if you feel something is wrong, let someone know. Don’t hide it hoping someone else will get it or that it’ll go away. If you see something wrong, bring it up to someone’s attention. A third important quality to have is a safe attitude.”

### **Demand for Cutting, Punching and Press Machine Setters, Operators and Tenders, Metal and Plastic**

In 2012, Minnesota had an estimated 6,262 cutting, punching and press machine setters, operators and tenders. An additional 530 openings are expected between 2012 and 2022 in order to replace workers who have retired or left the field.

Source: Long-Term Projections Unit 2012-2022, DEED

### **Demand for Welders, Cutters, Solderers and Brazers**

An estimated 7,814 workers were employed as welders, cutters, solderers and brazers in Minnesota in 2012. Demand is expected to grow by 18 percent, with the need for an additional 1,410 jobs between 2012 and 2022. Another 2,080 openings are expected between 2012 and 2022 in order to replace workers who have retired or left the field.

Source: Long-Term Projections Unit 2012-2022, DEED

### **Demand for Sheet Metal Workers**

Minnesota had an estimated 2,580 sheet metal workers in 2012. The demand for sheet metal workers is expected to grow by 32.3 percent, with the addition of about 831 sheet metal worker jobs in Minnesota between 2012 and 2022. An additional 400 openings are expected between 2012 and 2022 to replace sheet metal workers who have either retired or left the field.

Source: Long-Term Projections Unit 2012-2022, DEED

Chavarria feels having a safe attitude “has become second nature to him.” He and his colleagues are encouraged at E.J. Ajax to share their ideas on how to make the workplace an even safer environment. “All the machines have safety features on them. However, if you’re not paying attention, these machines will hurt you, which is something I think a lot of people forget after a while.”

When asked if it is hard for women to enter this profession, Chavarria replied, “I’ve told quite a few women who had interviews here that I’m one of the biggest guys here at E.J. Ajax, and I don’t think I’m that big. We have some women who work here that are half my size who have done real well. We have a weight limit restriction here. If it’s more than 50 pounds, get a forklift or someone else to help you. I personally would rather see more females here.”

Chavarria feels women sometimes turn away from opportunities in manufacturing

How Much Do Sheet Metal Workers Earn?			
Geographic Area	25th Percentile	50th percentile	75th Percentile
	25% of Wages Fall Below	Median Wage	75% of Wages Fall Below
U.S.	\$15.72	\$21.35	\$28.63
Minnesota	\$23.30	\$33.20	\$40.06
Seven-County Twin Cities	\$34.76	\$39.59	\$42.91
Central Minnesota	\$17.39	\$22.56	\$28.18
Northwest Minnesota	\$14.69	\$26.10	\$32.12
Southeast Minnesota	\$16.88	\$24.08	\$30.37
Southwest Minnesota	\$12.35	\$16.42	\$21.06
Northeast Minnesota	\$30.38	\$32.54	\$34.72

Source: DEED, Occupational Employment Statistics Program (first quarter 2014 wages)

because they have been taught by society that manufacturing is just for men.

“We’ve been to a couple of job fairs, and women will ask what we do and I’ll tell them, ‘We work with sheet metal — sheet metal fabrication,’ and they’ll grab their stuff and walk away. It’s like hold on — at least let us explain what we actually do. Once you learn what we do and

how we do it, it’s not hard as long as you do it correctly.”

Chavarria is a little over halfway through his apprenticeship to become a sheet metal journeyman.

“I see myself staying in this profession. I see this easily being my second career. I enjoy where I work, who I work with, and who I work for. I find it fun,” he said. 

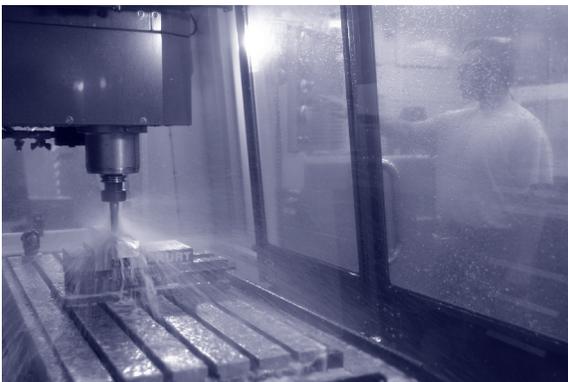


PHOTO: KATIE GIERATZ