From the Field to the Fab Shop






In 1994, **Dave Havart** started 3D Mechanical with a stick ticket and a set of field tools. More than three decades later, the Brantford, Ontario, company is a CWB-certified custom fabrication shop focused on getting better, not bigger.

Dave has spent more than 40 years in the metal trades, including 32 years running 3D Mechanical. The company began as a field operation doing machine installation and plant maintenance. Today, it is a 20-person job shop specializing in custom fabrication and certified welding, and it has held CWB certification since 2000. The team at WELD spoke with Dave about how the business has changed, what the shop can take on, and why he isn't chasing growth.

How has 3D Mechanical changed since 1994?

We started out as a construction company: machine installation, repair and removal, and plant maintenance. About 90 per cent of our work was on site, working out of job boxes and doing portable welding. I held an all-position stick ticket, a Red Seal Industrial Maintenance Mechanic ticket, and a Construction Millwright ticket.

Now we do very little fieldwork. We are a job shop that concentrates on custom fabrication and certified welding.

What did the shop look like in the early days?

We welded everything with stick. We were fabricating in a small 2,500-square-foot shop with two stick machines, torches, grinders, drills, and no cranes. It was much slower and very labour-intensive.

Then we invested in a MIG machine, and it tripled the amount of weld we could put down. We also started using plasma, laser, and waterjet cutting to make our parts, which saved us a lot of time and was far more accurate.

With every new process and material, we had to train our people. Early on, some of the older staff didn't like the change. But we really had no choice if we wanted to keep up with other fab shops, so we evolved.

We want our employees to make a home here and stay for years. I'm proud of what we've accomplised and of everyone who contributed to 3D along the way.

Where do you see the company going from here?

After 32 years, I don't see us growing in size so much as in capability and volume. We have been bigger in the past. At 20 employees and a 15,000-square-foot facility, we've found a size that is manageable and right for us.

Our welding capability is what has grown the most. We went from one all-position stick ticket in carbon steel to TIG, MIG, stick, flux-cored, and metal-cored in all positions, in carbon steel, stainless, and aluminum. We'll keep adding certifications as our customers' projects require them.

What can your facility take on?

We have 15,000 square feet of flexible floor space, and we can fabricate structures over 50 feet long, 30 feet wide, and 20 feet high. A 10-ton and a 5-ton overhead crane can service the whole shop, and we have two forklifts: a 10-ton for outside and an 8-ton for indoors. Lifting, flipping, handling, and loading aren't an issue for us.

For cutting, we have an automatic saw that handles stock up to 24 inches square, plus a smaller manual saw, so we can cut most shapes and angles. We also run an 80-ton ironworker for cutting and shaping steel, milling machines, drill presses, a plasma cutter, mag drills, 15 welding machines, and 10 fume extractors. Outside, there's a large paved and fenced yard for loading, fabrication, and storage.

We want to be a one-stop fabrication shop for our clients. We offer on-site welding and, through trusted subcontractors, provide painting, galvanizing, heat treating, rubber lining, and passivation. We also do pickup and delivery.

How does work move through the shop?

We provide 20,000 to 30,000 hours of fabrication and certified welding a year. Incoming material arrives in different ways: some we process ourselves, some comes cut to size from the supplier, and some we send out to be rolled or bent.

Certain employees handle dimensional checks and weld inspection, and we retain a third-party welding engineer. A lot of it depends on what the customer requires.














We have two flat-deck trailers that each carry around 14,000 pounds, and two trucks to pull them, so we can deliver to most of Southern Ontario. We no longer do installations.

Which welding processes and standards do you work with?

We use shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), and metal-cored arc welding (MCAW). We're certified to CSA W47.1 and CSA W47.2, follow CWB procedures, and work to AWS D1.1. We also hold an EcoVadis Bronze rating.

Tell us about your team.

We have five Red Seal fitters, Red Seal welders, and 10 certified welders. Every employee holds some type of CWB certification, from a tacker ticket up to aluminum and stainless TIG tickets.

Our workforce is changing too. A new generation of men and women is coming up through the shop, and we're training and apprenticing a number of our own people alongside our experienced workers.

What do you look for when you hire?

We love to hire people who have apprenticed, not just people who have been doing it for years. It shows commitment and achievement.

As for mindset, we want our employees to make a home here and stay for years. We want them to be part of something worth spending a career on, with training and a future.

What would you tell someone thinking about the metal trades?

The metal trades can be challenging and very rewarding. If you become a Red Seal journeyperson, you can go anywhere in the world and make a good living. You'll be in control of your own future.

Looking back on more than 40 years in the trades, what stands out?

It all started for me when I learned to weld as a kid in high school. I'm proud of what we've accomplished and of everyone who contributed to 3D along the way. Our staff brings a wide range of experience, some of it gained around the world, fabricating and welding to improve people's lives in other countries.

We would like to thank 3D Mechanical for sharing their story with the WELD team. We are excited to see what comes next for the company. W

Rhea Gill, Communications Lead, CWB Group

For more information about 3D Mechanical, visit:
www.3dmechanical.ca