

MODULAR SOLUTIONS GUIDE



MODULAR FIXTURING SOLUTIONS FOR
WELDING | MACHINING | ROBOTICS | POSITIONING



WE MAKE IT BETTER BECAUSE OF WHO WE ARE

HUMANS SOLVING PROBLEMS NOT A CATALOG

Why don't we have a parts catalog? The answer is simple. Catalogs don't solve problems. People do. Our engineers listen to understand your challenge, and then propose one-of-a-kind solutions. They handle installation, provide training, and ongoing support for seamless implementation. No catalog can do all that.

APPLICATION ENGINEERS NOT SALESPeOPLE

Honestly, we don't like salespeople either. That's why we hire application engineers instead. Our team has been where you are. Every one of them has real-world machining, welding, engineering and/or manufacturing experience. They know how to solve your problems because they've lived them.

A DEDICATED TEAM NOT A DISTRIBUTOR

We know modular fixturing. We understand our customers. We believe in our team. Relying on them instead of distributors gives you a single point of contact for even the most complex solutions, and the personalized support you need to overcome any fixturing challenge.

NOT A FIXTURE

A BLUCO MODULAR FIXTURING SOLUTION

A fixture just holds parts. But a Bluco® Modular Fixturing Solution does more. It eliminates obstacles.

We imagine, design and deliver modular fixturing solutions for welding or machining applications. We help manufacturers clear a path toward greater efficiency, accuracy, and final part quality. Bringing a solution like this from concept to reality requires a unique approach. A better way to work. A different kind of team. This is what happens when it all comes together...

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TURNKEY SOLUTIONS ENGINEERED TO MAKE IT BETTER.

For over 30 years, Bluco has set the industry standard for excellence in modular fixturing solutions. And while world-class quality is part of our identity, our passion for problem-solving is what sets us apart. There's no challenge too big, no set of circumstances too complex.

WELDING

Setting the standards for excellence in modular welding fixturing for over three decades, we engineer custom systems and turnkey solutions that unlock new levels of efficiency, productivity and precision.



POSITIONING

A quality weld starts with a properly positioned part, and a welder that doesn't have to reach, lift or bend. Bluco modularity can be seamlessly integrated into manipulators, and manual or powered positioners.



ROBOTICS

Unlock the full potential of your new or existing robotic welding cell with a Bluco Modular Solution that works with your automation to boost efficiency at every stage of the manufacturing process.



MACHINING

The first and only modular fixturing system for machining extra-large parts recently joined our other machining lines, eliminating unnecessary indicating and locating for even the largest parts — without sacrificing precision.



We Solve Manufacturing Challenges

How you hold parts has a major impact on your entire manufacturing process. Get it right, and parts move continuously from station to station. Changeover happens in a flash. Part quality remains consistent across shifts.

Get it wrong, and you feel the pain every day.

Bluco's unique collaborative process is designed to identify your challenges. Then, we'll solve them using our singular combination of experience, innovation, and support to deliver your customized modular fixturing solution.



ADD EFFICIENCY

Put time back on the clock with a solution that streamlines manufacturing processes, on-site training that lets you hit the ground running, and modular versatility that gives you a competitive edge.

- **Change over faster**
- **Implement faster**
- **Go to market faster**



ELIMINATE OBSTACLES

Pinpoint the areas that are costing you time, money and resources and we'll work with you to customize a modular fixturing solution that gets you over those hurdles.

- **Resolve bottlenecks**
- **Speed up automation**
- **Bring projects in-house**



ENABLE GROWTH

Stay nimble with modular solutions designed to grow with you to handle new parts, new processes and new employees. Start big and go bigger, or start small and grow at your own pace.

- **Expand your solution**
- **Add new components**
- **Easily train new staff**

We Believe Customer Satisfaction Isn't Optional.

For as long as we've been innovating our products, we've been innovating our process.

The approach we've developed eliminates uncertainty by allowing you to fully test solutions before making any decisions. Along the way, we'll make sure you're also getting the quickest ROI, the most flexibility and the highest quality end product. It's a system that guarantees you get exactly what you need, as quickly as you can get it.



PHASE ONE Getting Started

Our application engineers start any new project by listening. Because the part you want to fixture is only half the story. We want to learn what you're trying to do, how you want to get there, and what's standing in your way.



SHARE YOUR CHALLENGE

Upload a description of your workholding application and a CAD model of your part to our secure online portal. Submitting your info doesn't mean you've made up your mind, it just starts a conversation.



TALK WITH US

Within 1-2 days, an application engineer will call to set up a design consultation. We never contract out, so you'll deal directly with Bluco and communications will be kept strictly confidential.



REVIEW YOUR PROPOSAL

Once we understand your challenges and goals, we'll develop custom modular solutions. Then, we'll meet virtually to review designs and explore your purchase and rental options.



ON-SITE ENGINEERS

Never out-sourced.
Always innovating.



CUSTOM DESIGN

Every challenge is
different. Every
solution is unique.



PERSONAL ATTENTION

Live collaboration with
a dedicated team that
knows your project.



PROVEN EXPERIENCE

We've been there.
Behind the chips
and in the sparks.



HOW TO MEET WITH US



At Bluco

Arrange to visit our showroom to explore modular solutions, or our Validation Center to prove out your custom solution.



PHASE TWO

Proving & Planning

This is where ideas become reality. It's an opportunity to test your solution first in a virtual setting, and then to do hands-on testing in our Validation Center. You'll work side-by-side with our engineers, who will help ensure the success of your project so you can decide confidently.



PREVIEW VIRTUALLY

Before physically testing your solution, you'll get to see it virtually. Whether that's by viewing 3D CAD models on their own, or inside of a digital twin of your space, or in an immersive VR experience, you'll know how your solution works well before you've worked with your solution.



PROVE OUT IN PERSON

Our Validation Center lets you test your fixture off-line, without affecting live production. Use our state-of-the-art equipment to build your part from start to finish, with help and insight from our application engineers.



SCHEDULE DELIVERY

We'll ship your solution directly from our facility. Each component will be carefully hand-packed to ensure everything arrives safely.



At Your Facility

If you can't make it to Bluco, we may be able to come to you. We can ship direct or visit with our demo trailer so you can try before you buy.



Post-purchase Visits

Our engineers can make additional site visits for installation of your solution, and/or training of your staff.



PHASE THREE

Implementation & Support

We understand the importance of getting your solution up and running quickly, and keeping it running consistently. From the moment you order and for the life of your solution, we're here to help.



GET YOUR SOLUTION UP AND RUNNING

If your solution requires installation, we can be on hand to either handle or assist with the process. Our application engineers come equipped with the tools & skills needed to take care of everything.



SCHEDULE TRAINING

After delivery or installation, our engineers will train your team. All shifts, all experience levels, all our best tips and tricks. We'll leave you with the knowledge you need to replicate success with every part.



RELY ON OUR COMMITMENT

If something's not right, we'll do our best to make it right. With warranty programs and exchange programs designed to keep you up and running and up to date with the latest in modular tech.



Two -Year Exchange Program

You can send back any component you aren't using (new or used condition) and exchange it for something of equal value.

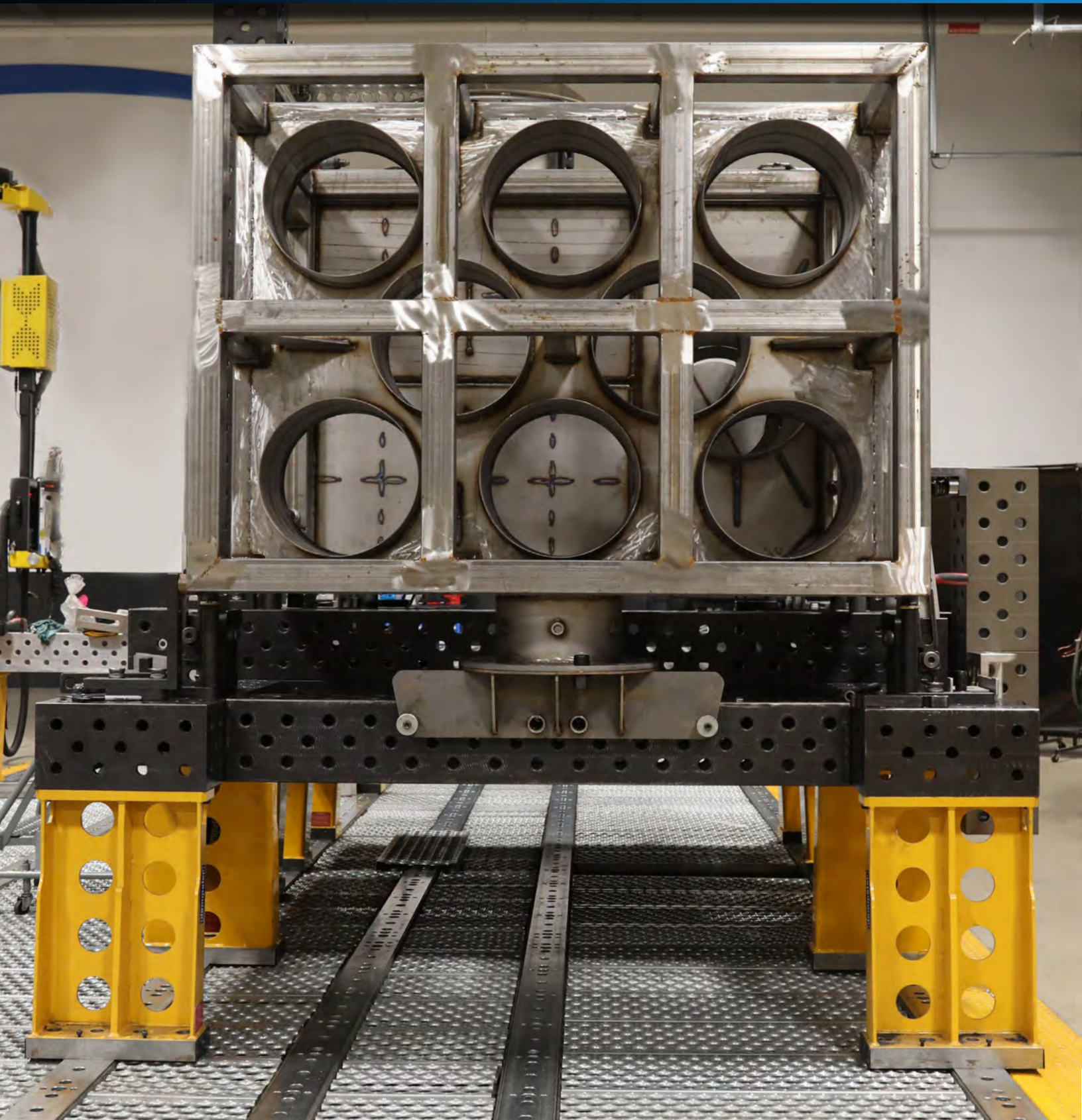


Limited Lifetime Manufacturing Warranty

We will repair or replace, at no charge, any component that fails due to a manufacturing defect for as long as you own your system.

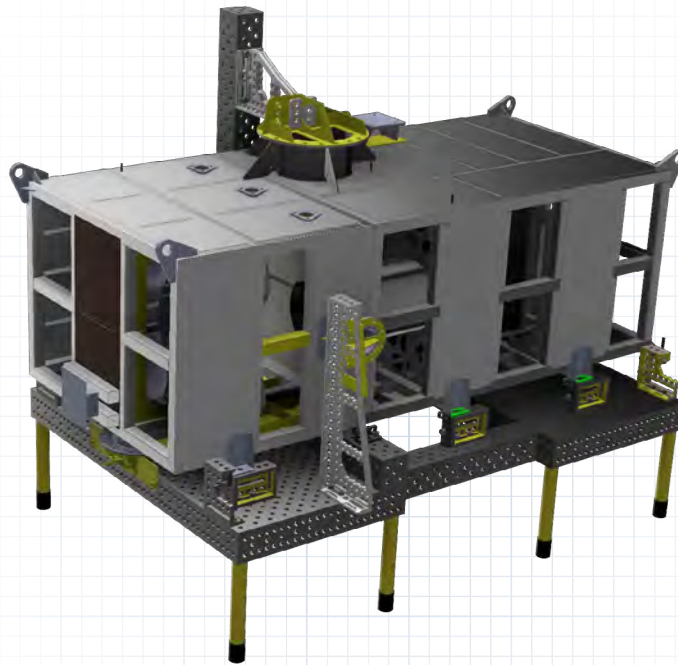


WELDING SOLUTIONS



What's your biggest welding challenge?

Maybe variations in sub-assemblies are throwing off the accuracy of your final product. Maybe your welding sequence is leading to shrinkage, or your mitered corners aren't coming together. No matter the challenge, Bluco's modular welding solutions can help you overcome it. Whether it's a modular floor rail solution that allows welding tables to slide into position to handle multiple part sizes, or a custom table fitted with a laser projection system for error-proof assembly, our engineers design solutions for every welding application, including R&D, low volume/high mix manufacturing, production, assembly or inspection.



28 Days Faster

"We had an 18-foot-long oil pan that used to take over a month from start to finish. Now it takes two days. That's astronomical for us."

– Steve Hill, Robotics Engineer

A Modular Playground

"Our guys feel like they're working with a big Lego set when they build a Bluco fixture. It's like the biggest playground in the world."

– Eric McAllister, Fabrication Manager

Outstanding Service

"There's nobody that does what Bluco does to the level they do it, including their service."

– Matt Miller, Plant Manager

APPLICATIONS





TURNING IT INSIDE OUT

The old process for building this railroad sleeper car was to erect the outside walls first so they could be used to square the inside. But assembly was slow and cumbersome. This modular fixture turns the process inside out. The fixture itself keeps everything square and opens up access so the car can be built from the inside, in less than half the time and with outstanding precision. The project was finished in under a week, and the completed frame left our Validation Center ready for final assembly.



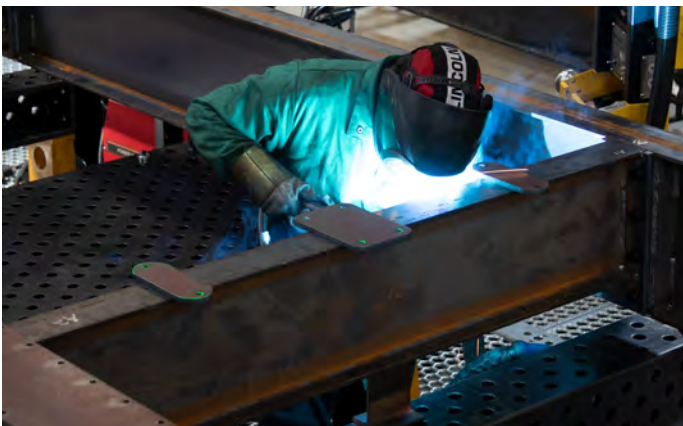
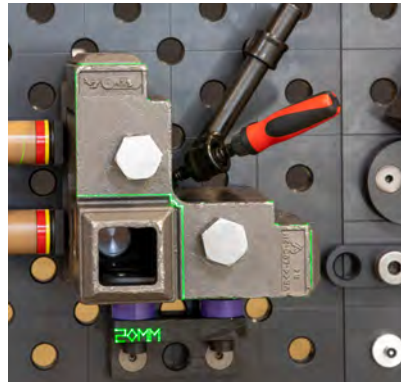
APPLICATIONS

APPLICATIONS

MODULAR + LASER PROJECTION FOR MISTAKE-PROOF ASSEMBLY

CAD models of Bluco modular fixture designs are compatible with laser projection systems. The outline of components, holes or even a visual weld sequence can be projected directly onto the part. In this case, the part is a drop frame on a custom modular positioner, with legs that slide to adjust to any length part.

Below, laser projection helps guide assembly by outlining parts and components. This allows another instant quality checkpoint — it's easy to see whether or not everything is located properly before work begins.

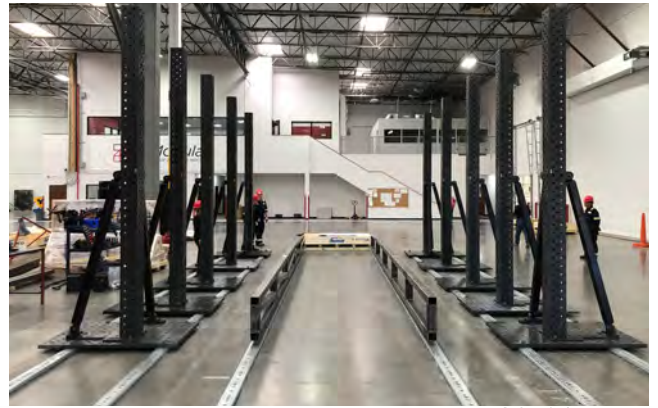




APPLICATIONS

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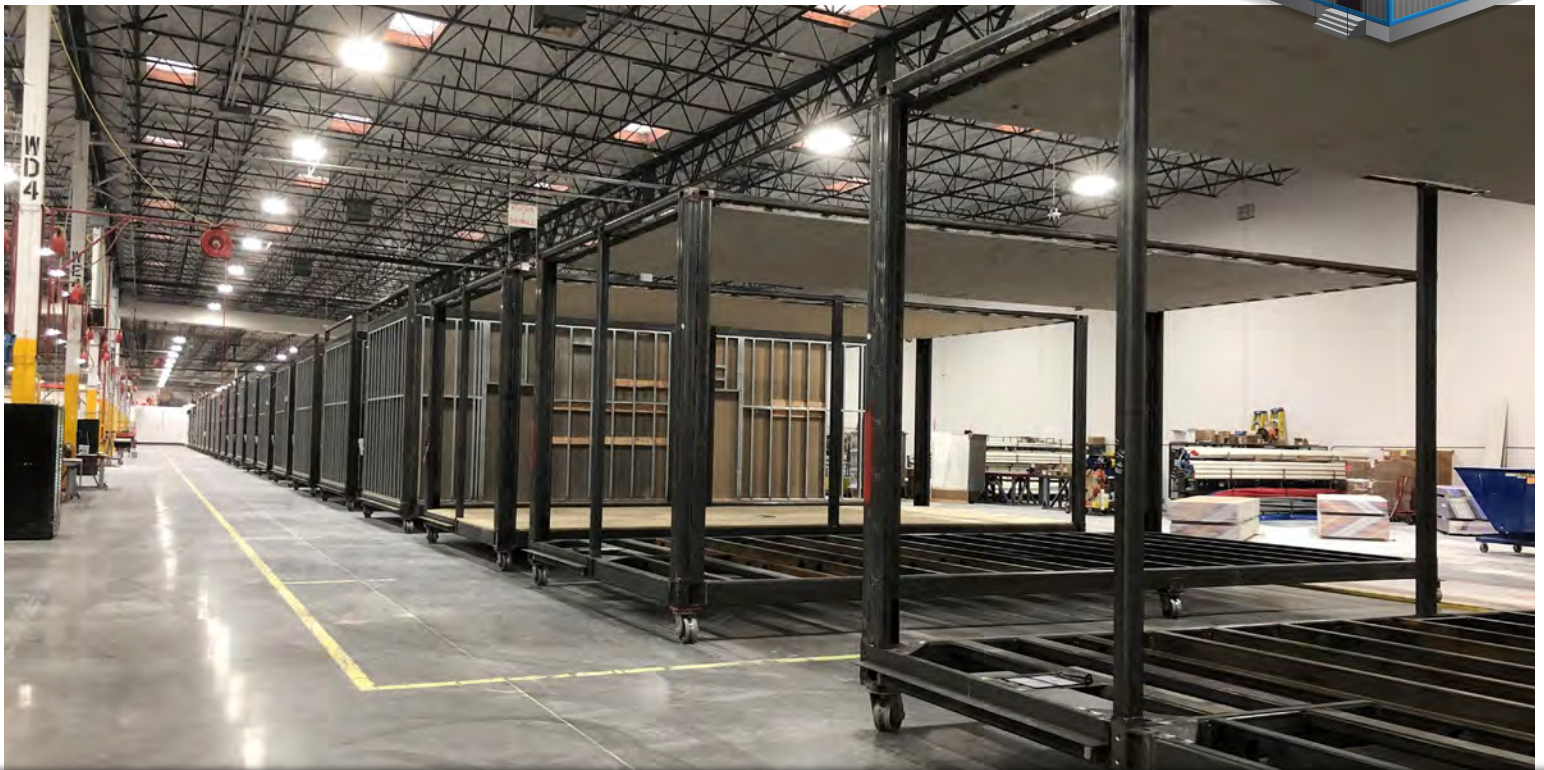




PRODUCTION DOUBLED, TIGHT TOLERANCE MAINTAINED

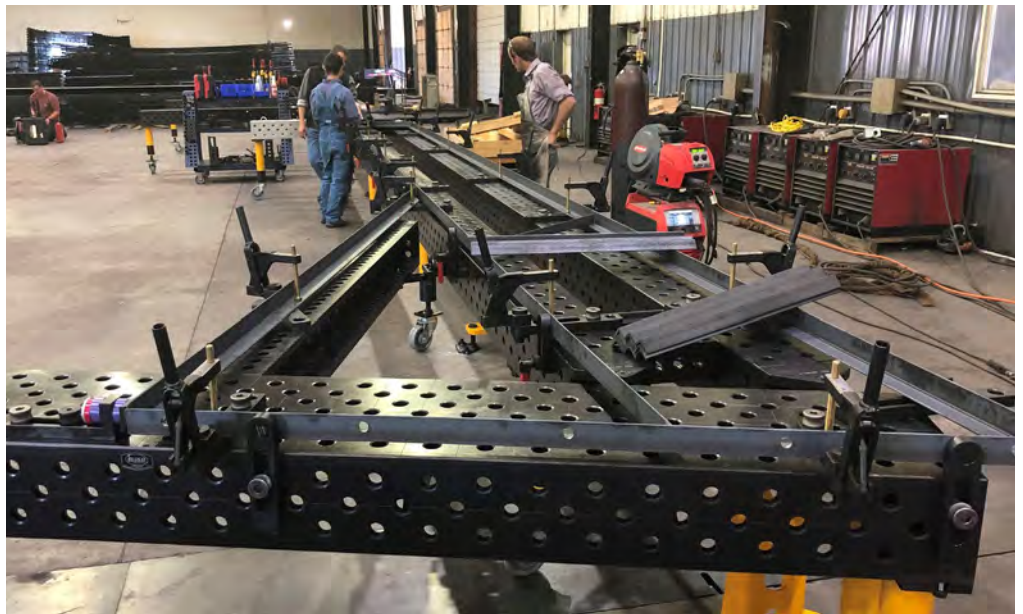
A modular construction company challenged us to design a modular solution that would do the work of two traditional fixtures (one for roof assemblies, and another for floors).

In addition, they needed to deliver finished modular building units 50% faster and within 1/16" tolerance. The solution was this 60' long floor rail system with 13 1/2" vertical modular u-forms. Designed, installed and in production in just 45 days, it successfully increased throughput and maintained repeatable accuracy.



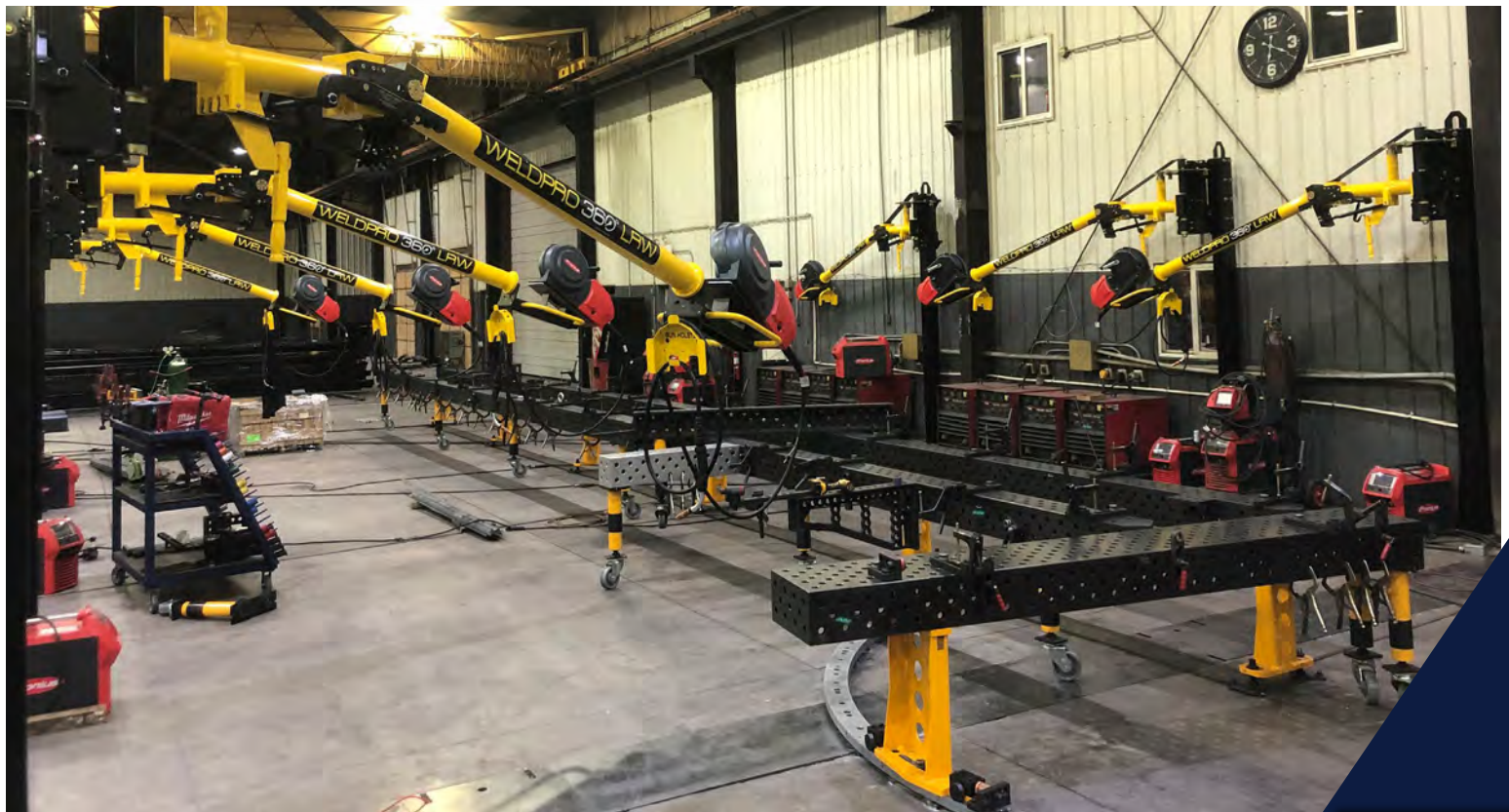
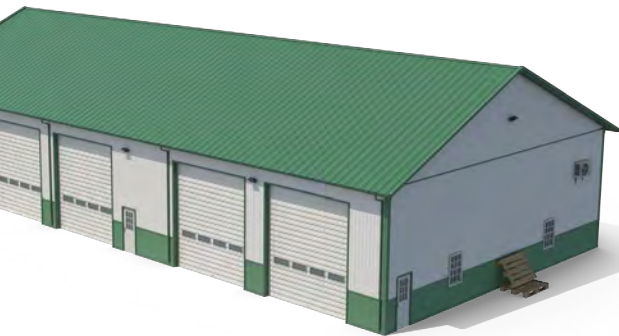
APPLICATIONS

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CUSTOM RAIL ADDS FLEXIBILITY, BOOSTS PRODUCTION

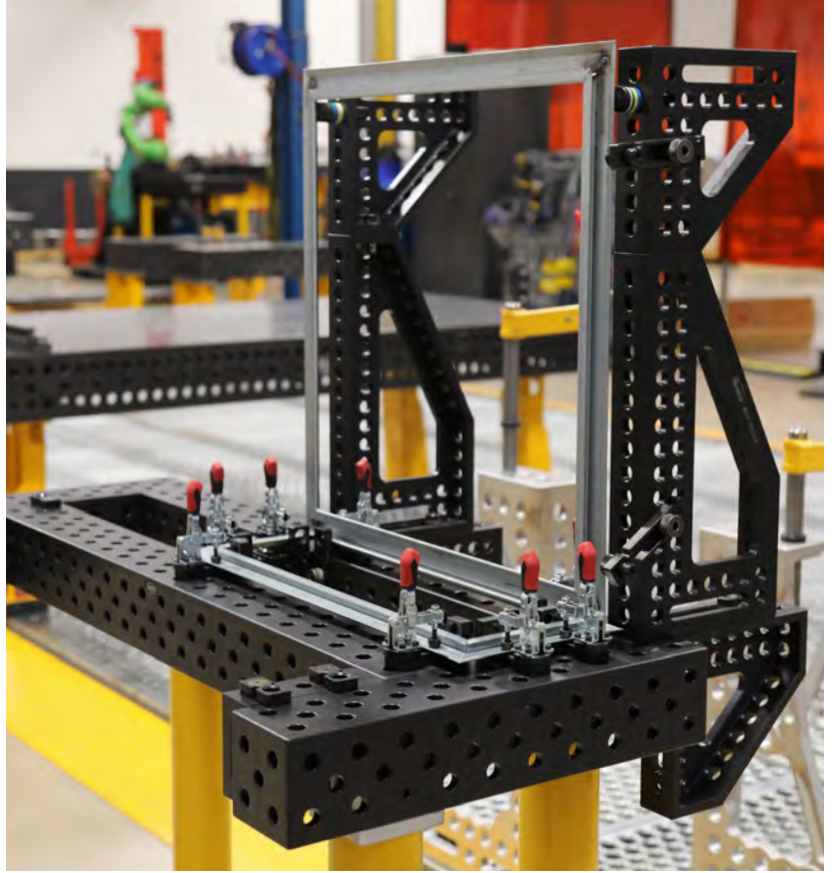
Made-to-order metal trusses for agricultural and industrial buildings can be made in any length on this modular solution with a curved rail. The rail — custom manufactured on-site at Bluco — allows the table arm to be slid and locked into any position needed. The system reduced production time, improved final part quality and reduced training time significantly.





APPLICATIONS

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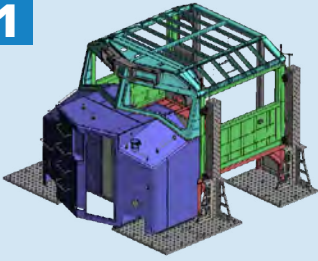
APPLICATIONS

CASE STUDY



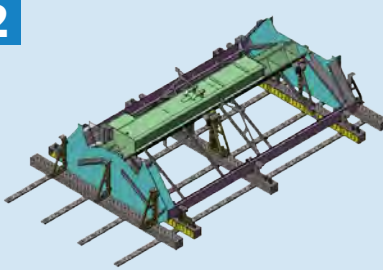
From Engine to Caboose

1



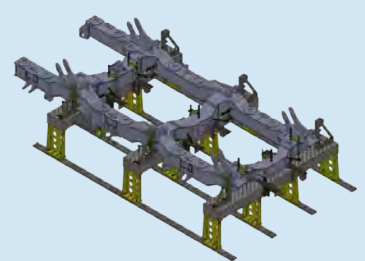
The main cab is fixtured on floor plates after the roof subassembly is welded on a 3D modular table.

2



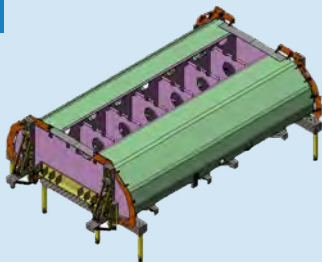
Radiator cabinets are fixtured on a modular floor rail system that allows open access to all weldments.

3



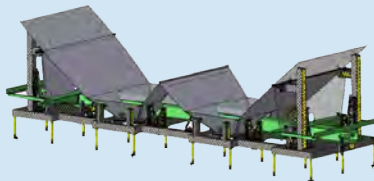
Truck frames are also fixtured on floor rails so custom tables can slide to adapt to multiple frame sizes.

4



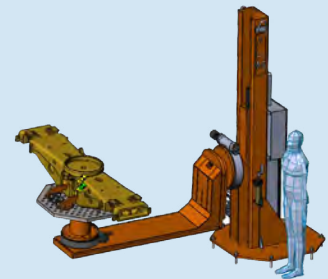
Fuel tanks are welded on a modular fixture that doubles productivity by utilizing two sides of the table at once.

5



A grain hopper is fixtured on a custom modular solution that allows access to the underside of the weldment.

6



Heavy truck bolsters are lifted and rotated on a modular base to eliminate lifting and reaching.

Challenge:

Every part of a locomotive is different, but each one must be fixtured with precision so that final assembly is flawless. There is no room for error, and no time for delay of any part of the assembly.

Solution:

A series of compatible modular solutions, as shown above, work together to allow every part to come together perfectly, regardless of size, weight, or complexity.

Result:

Locomotives, cabooses and every car in between have been fixtured successfully in Bluco modular solutions that eliminate rework, boost productivity and improve final part quality.

Every part of a complex train build can (and has) been fixtured in a Bluco modular solution. The system's versatility allows endless workholding combinations. And because every part of the system is compatible, it's also scalable, so you can start small and end big, or start big and go bigger. You're in control with Bluco modular solutions.



CASE STUDY

POSITIONING SOLUTIONS



Keep your boots on the ground

Half the battle in laying down a quality weld is positioning your part safely so you can reach it comfortably. Bluco modular positioning solutions offer a full range of manual, powered, vertical and multi-axis positioning options that keep your boots on the ground. Each fully customizable solution integrates seamlessly with our 450+ precision modular components to hold parts of any size, weight, or shape. Positioners can also be built into larger modular solutions that involve multiple cells, floor rails, robotics and more. The result is a more efficient workflow, and a safer work environment without the hassle and risk of lifting, bending and reaching.



Bottom Line Benefits

"It saved a tremendous amount of money. I really don't even know if this project would have been financially possible without Bluco."

– Todd Stoughton, Director of Welding Engineering

25% Increase in Productivity

"So far, we've seen an increase in productivity of 25% and fully expect that to grow the longer we use the installation."

– Jim Jurgens, VPO

Increased Comfort

"There's less strain on our backs, less lifting equipment, no getting down on our knees... it's awesome."

– Phil Goick, Welder

APPLICATIONS



NEW TOOLING, NEW PROCESS SHORTENS THE SUPPLY CHAIN



Our customer needed to shorten the supply chain by bringing the manufacturing of their extensive line of fire truck cabs in-house, but hard tooling for each cab would have been several million dollars. The solution was a modular rail system of 14 welding cells that easily adjusted to hold different cab sizes. They maintained the strict GD&T tolerancing needed to create sub-assemblies accurate enough to be married flawlessly, and the project ultimately cost much less than the comparable amount of dedicated tooling.





APPLICATIONS

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POSITIONING MEETS PNEUMATIC CLAMPING

This brush cutter attachment for large agricultural equipment is fixtured for versatility. The robot-ready solution was designed for use either on a manual positioner, as shown, or in a robotic cell.

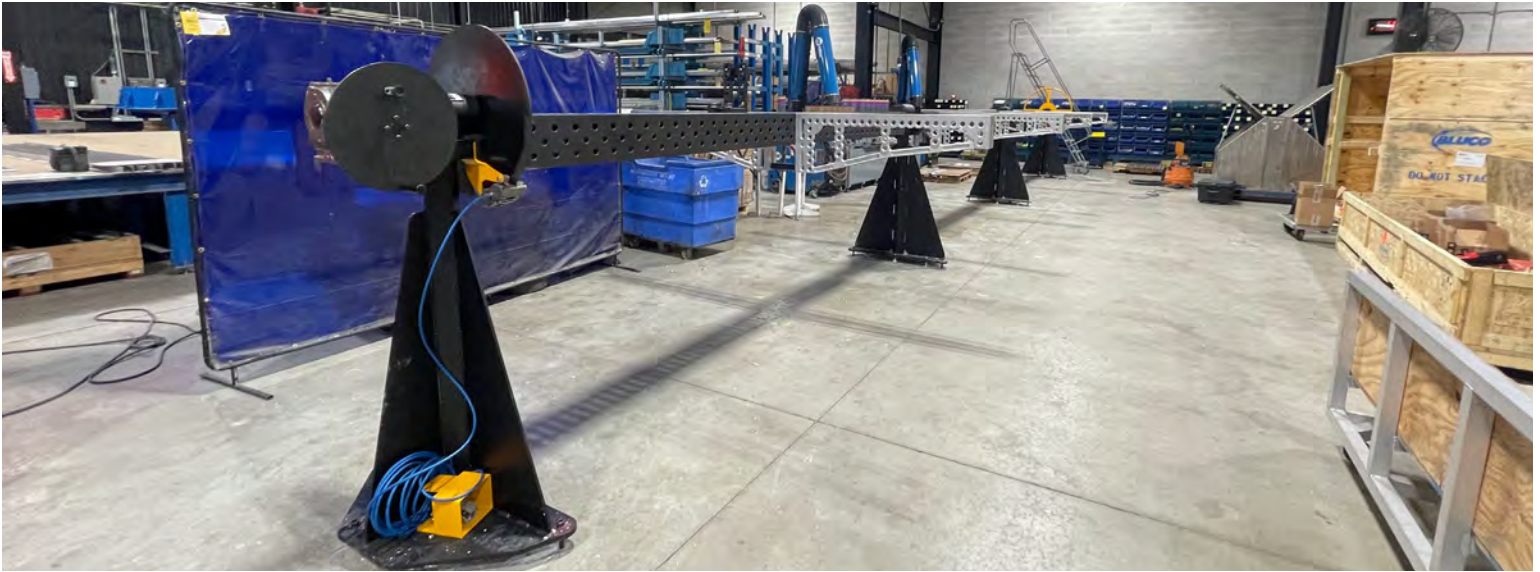
Modular fixturing can be easily adjusted to handle three different part sizes, and positioner eliminates awkward reaching while welding.

Customized air clamps allow robotic access to the back of the part, while single-button operation allows all four clamps to be operated at once for faster part loading and unloading.



APPLICATIONS

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NEVER TOO BIG FOR PROPER POSITIONING



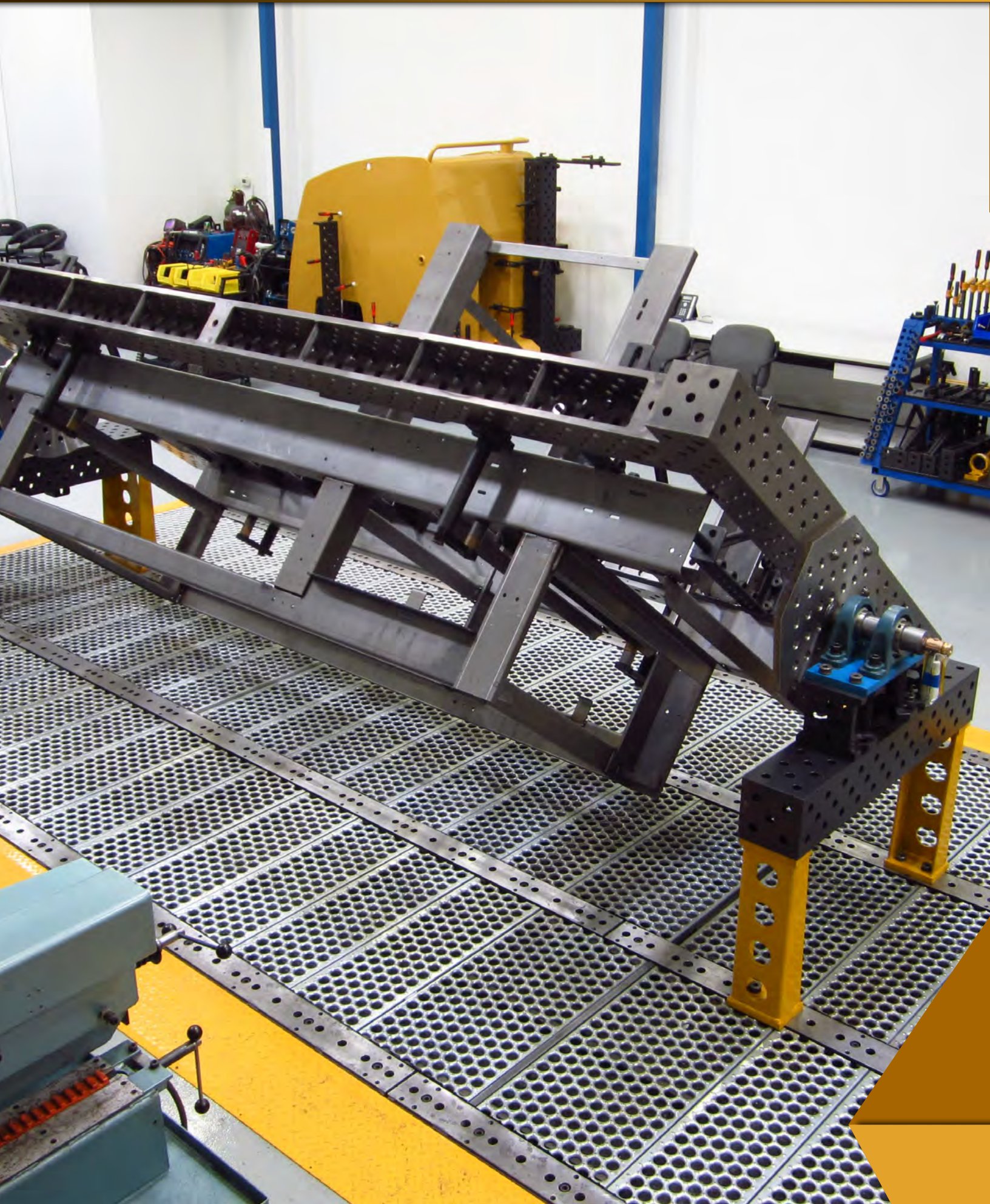
Just because the work pieces are long doesn't mean they aren't a fit for a positioning solution. Case in point: this manual positioner customized to accommodate a wide variety of very long wall panels. The 13-meter-long positioner has a drive at both ends, allowing two operators to rotate at the same time to prevent any twisting of the part during positioning. Sections can be removed for shorter parts, which opens up floor space. The solution eliminates the risk of moving parts by hand. Because one solution does the job of many, overall fixturing cost is reduced, and time-consuming changeovers between fixtures are eliminated.

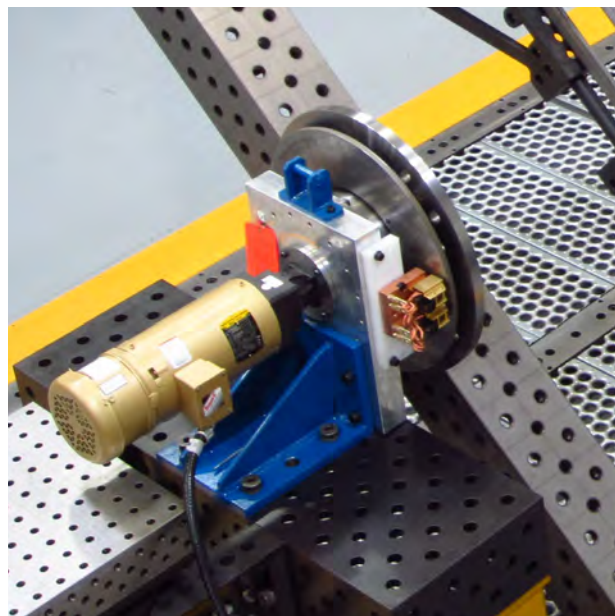




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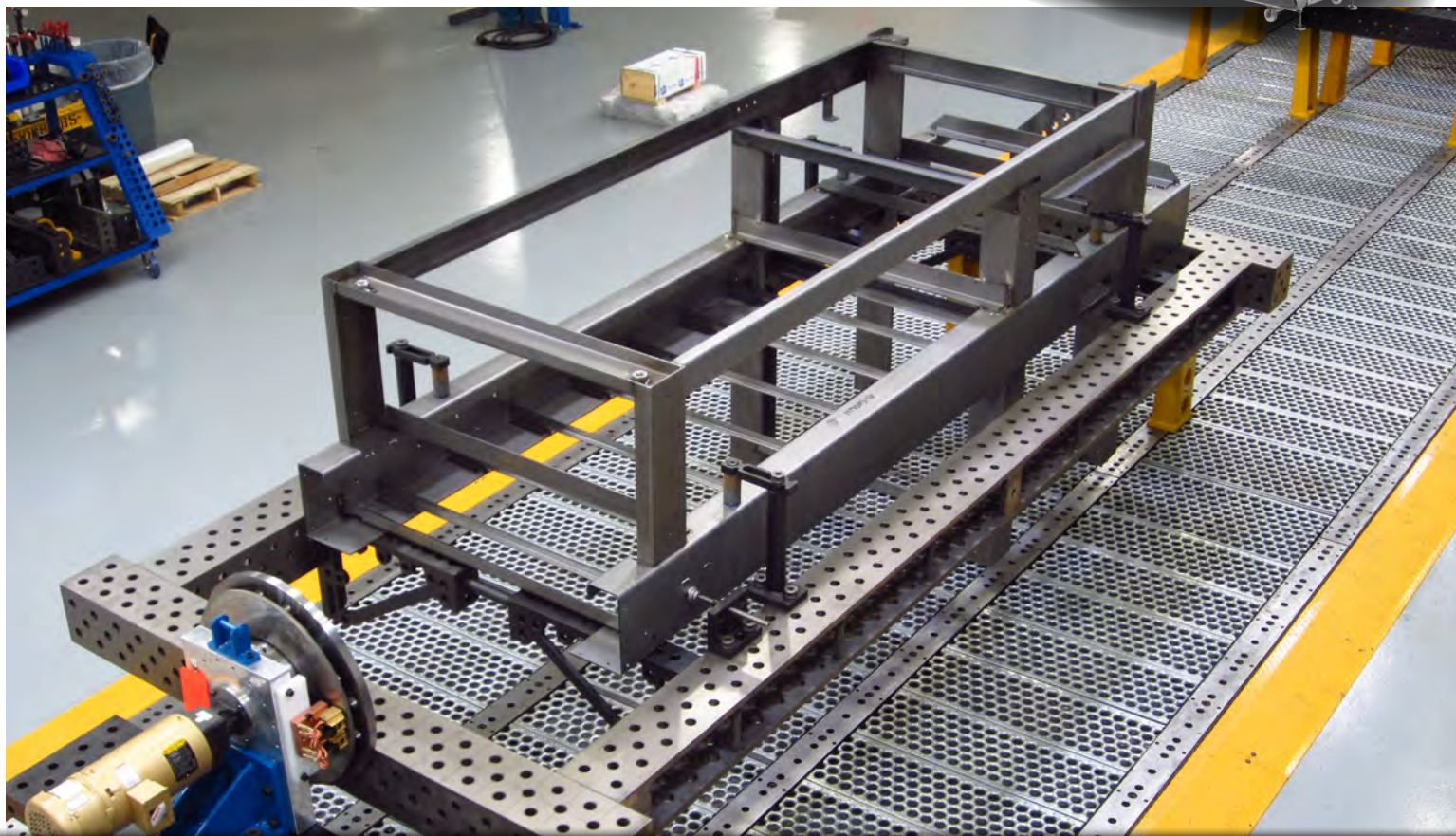
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PRODUCTIVITY EVEN BEFORE PRODUCTION BEGINS

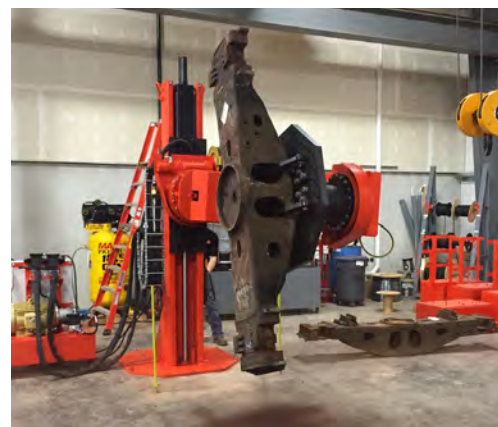
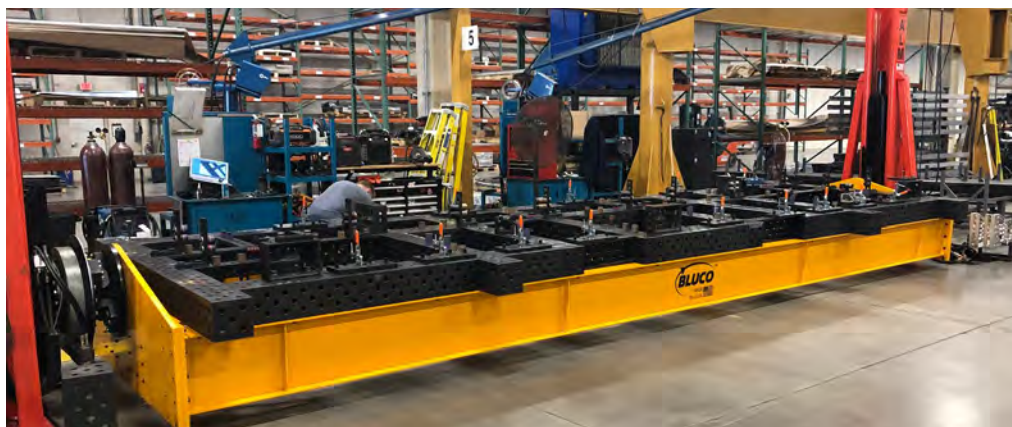
Robots can take months to be delivered, but productivity doesn't have to be put on hold. This manufacturer of industrial packaging equipment chose to use our Validation Center to prove out a modular positioning solution using tooling to simulate the robotic headstock/tailstock. The robot-ready gear boxes can also be used in manual operation, so parts can be welded manually while waiting for automation to come online. Productivity gets an immediate boost from the new solution, implementation is immediate once the robot arrives.



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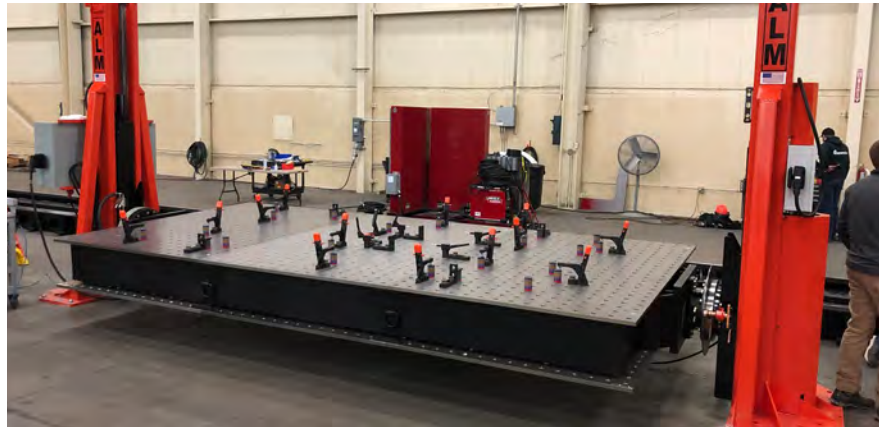
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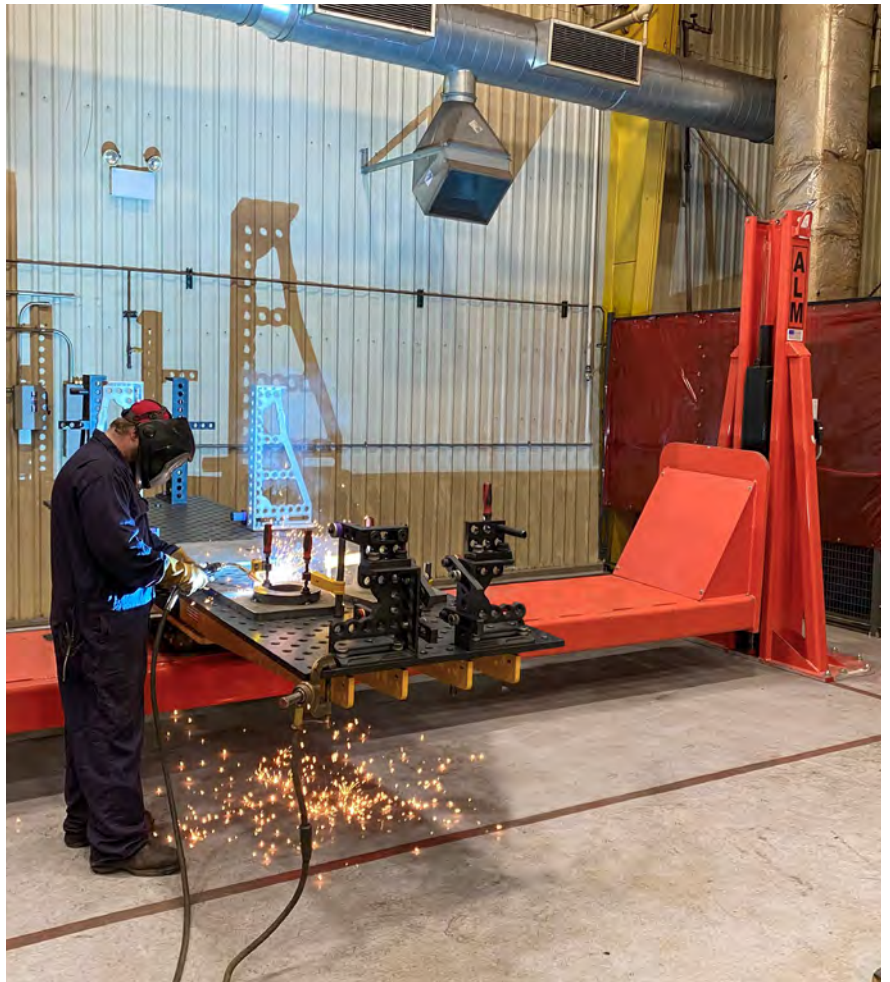




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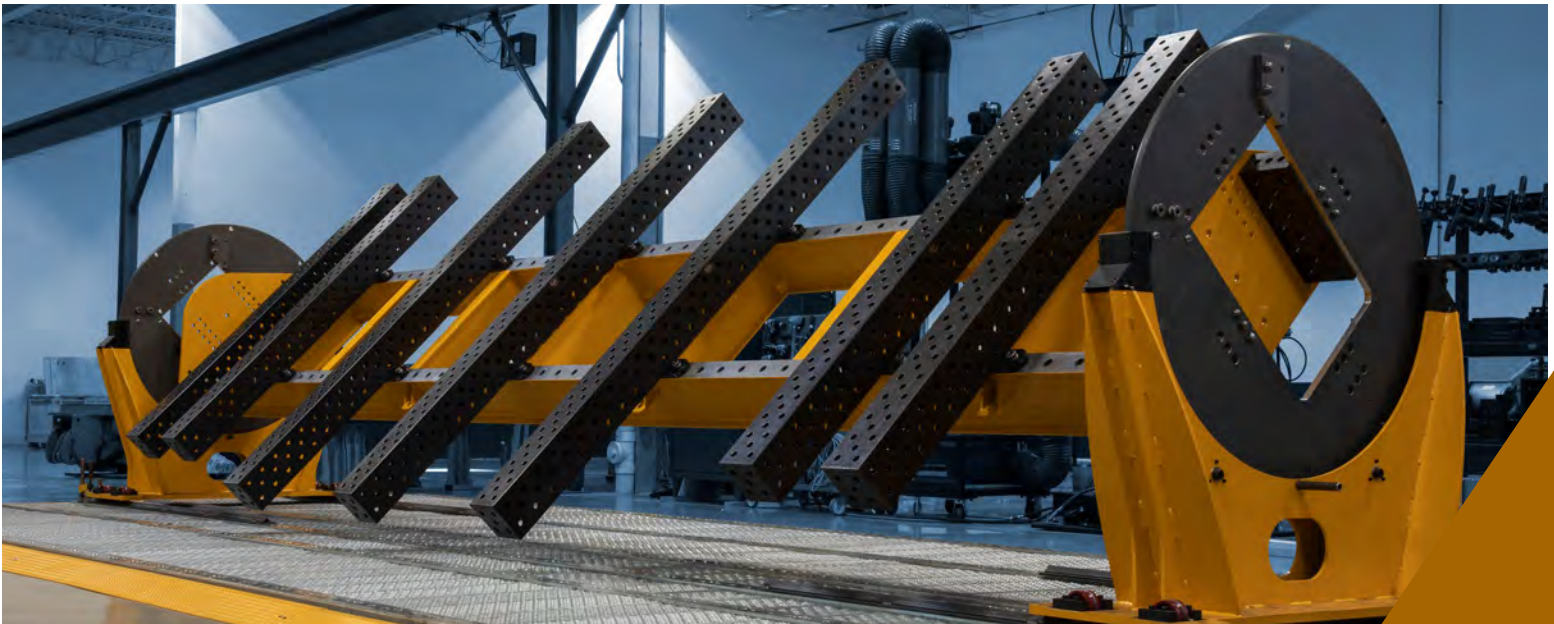
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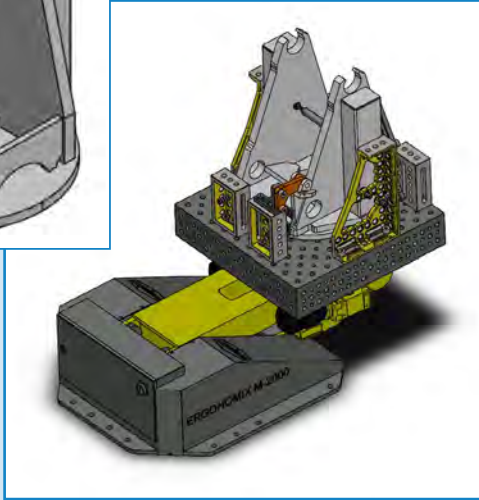
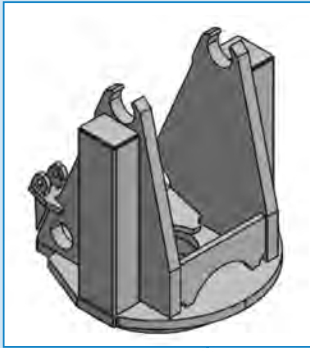


APPLICATIONS

CASE STUDY



How many welders does it take?



ABOVE LEFT: CAD model of the nose of a mining vehicle. The shape and weight present fixturing challenges. **ABOVE RIGHT:** Fixture design includes a powered manipulator with a modular base to allow easy positioning and weld access.



ABOVE: Welder is now able to reach hidden welds comfortably and safely. A teach controller allows him to position parts at the same angle each time.

Challenge:

A part with an irregular shape, enormous weight, a lack of any good hook points, and rounded areas that make it hard to hold without rolling. Plus hidden welds that are difficult to reach.

Solution:

A powered manipulator lifts, tilts, and rotates the part in its fixturing. Adding a teach controller allows positions to be saved for efficient, repeatable moves. Part can be tacked together in the positioner, freeing up a tack cell and fitter for other work.

Result:

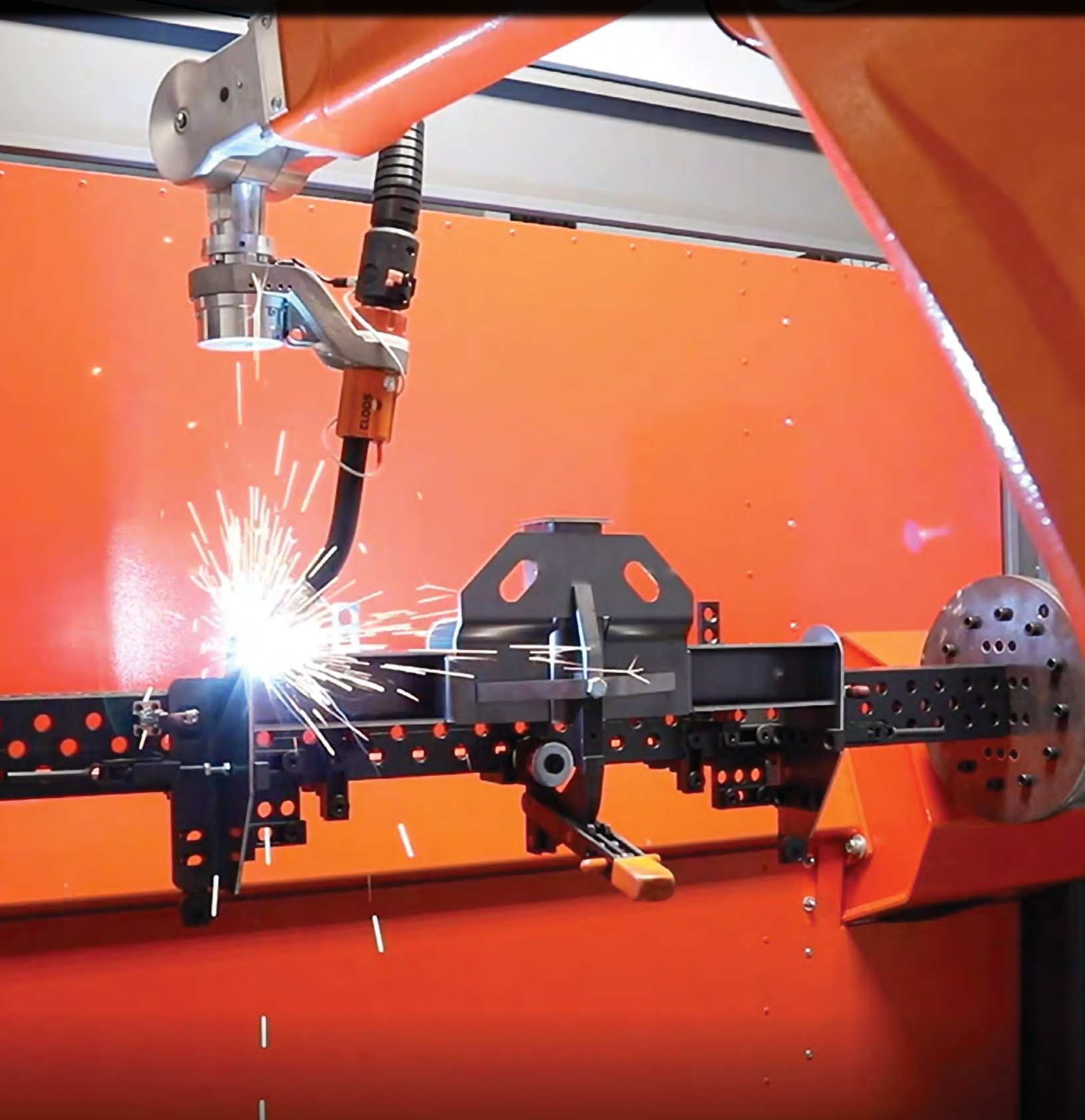
Safety and welder comfort are improved. Modular fixturing enables a progressive build of the part while it's still in the fixture, allowing higher quality welds and faster throughput.

Designing a fixture is about much more than choosing components to fit a part. That's why our application engineers start with your manufacturing challenge instead of your part. Sometimes that means figuring out how to move the part at the same time as we solve for how to hold it. Our manufacturing experience allows us to create more than just fixtures — we create modular solutions.



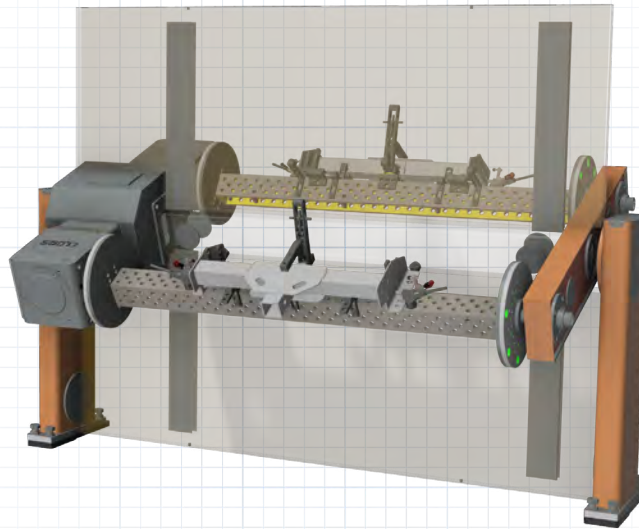
CASE STUDY

ROBOTICS SOLUTIONS



Optimize robotic efficiency

A robotic cell that's waiting for sub-assemblies to be tacked up, or for final assemblies to be fixtured, is a robotic cell that's not earning profit. Integrate a modular fixturing system into your robotic weld cells, and it'll never be starved for work. Bluco modular solutions can be changed over in half the time (or less) than a traditional fixture, so even in low volume/high mix situations, you'll finally get the throughput you were expecting from your automation. Our engineers have worked with countless robotic applications, from new installations to retro-fitting, to turn under-performing cells into powerhouses of productivity.



Repeatability

"We purchased a large automation system with a high expectation of increased throughput. But we didn't have repeatability to lead up to the automation. The Bluco solution provided that."

– Steve Hill, Robotics Engineer

Faster Changeover

"Efficiency doesn't begin and end with a robot. When you add modular fixturing to the mix, you get the quick changeover and repeatability that robots need to produce results."

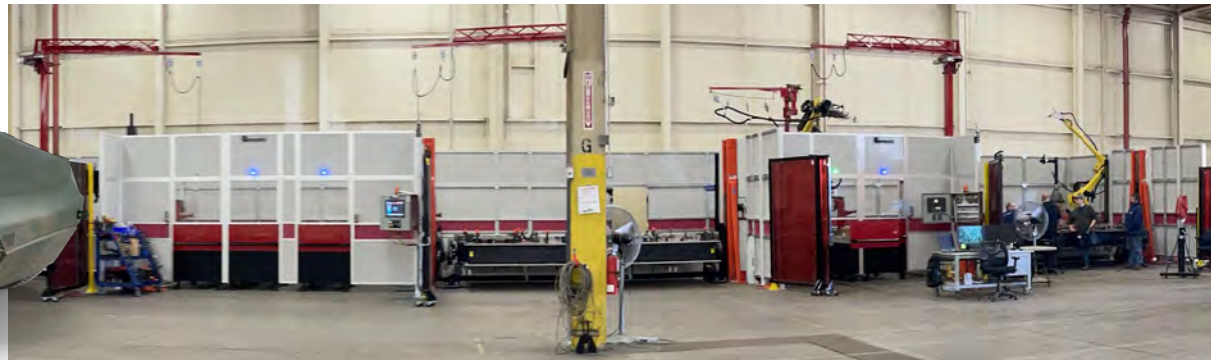
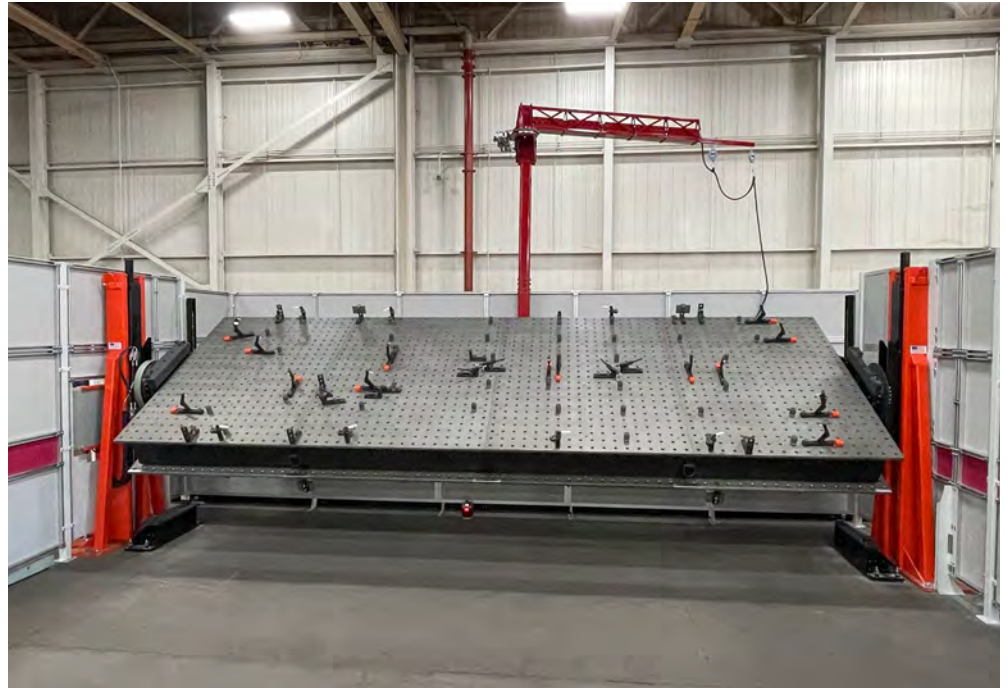
– Todd Bennett, Application Engineer

Precision

"That's what Bluco does for us, because you're working with spacers that are down to a ½ mm. So the part automatically comes out perfectly built and square."

– Walter Quaschnick, Welding Instructor

APPLICATIONS



THREE CELLS, TWO SIDES, SEAMLESS PRODUCTIVITY

This multi-cell integrated solution for building large military vehicles includes custom modular chassis with 2D aluminum plates arranged in a dual-sided configuration. Headstock/tailstock positioners rotate the plates while two robotic arms place and weld parts in a light production application. Modularity provides the versatility to accommodate design changes, and the repeatable accuracy to shorten changeover time.

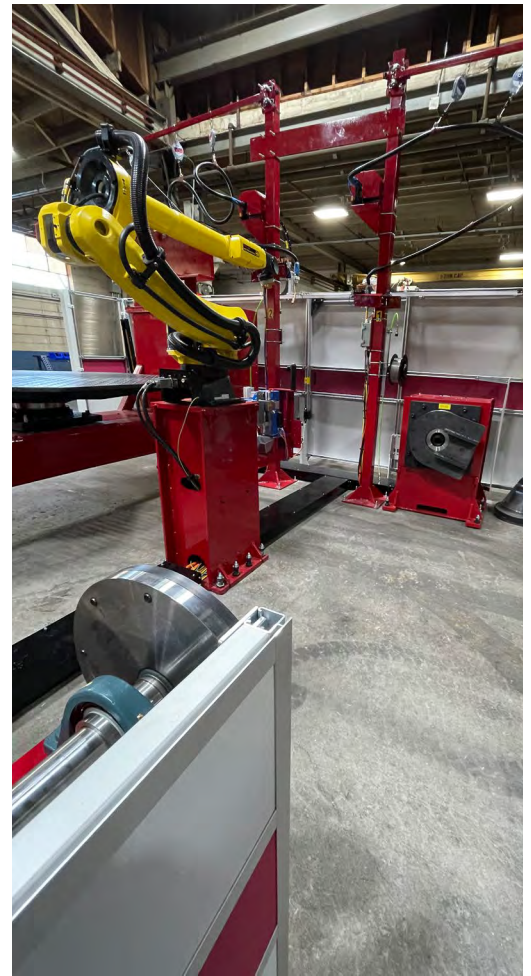




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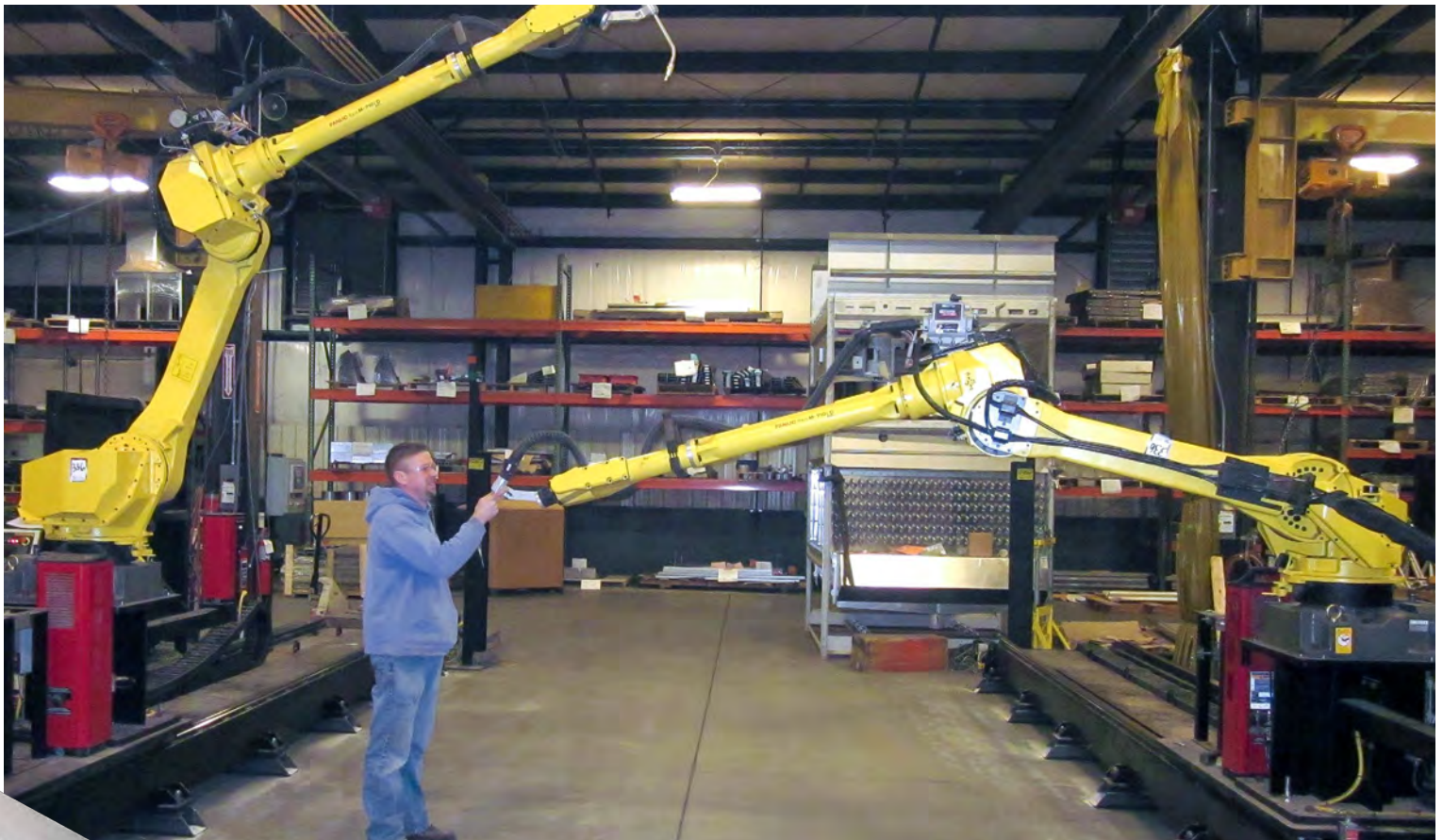
MULTIPLE MOUNTING OPTIONS = FLEXIBLE ROBOT CELL

We collaborated with both the customer and an integrator to develop a modular system for the A-side and B-side of a robotic cell for fabricating metal parts. Side A features an octagonal plate has both D28 and D16 system bores to fixture multiple part sizes on a single plate. Side B is a U-form beam between headstock/tailstock. The different mounting options and modular configurations allow the robot cell to tackle many different projects.



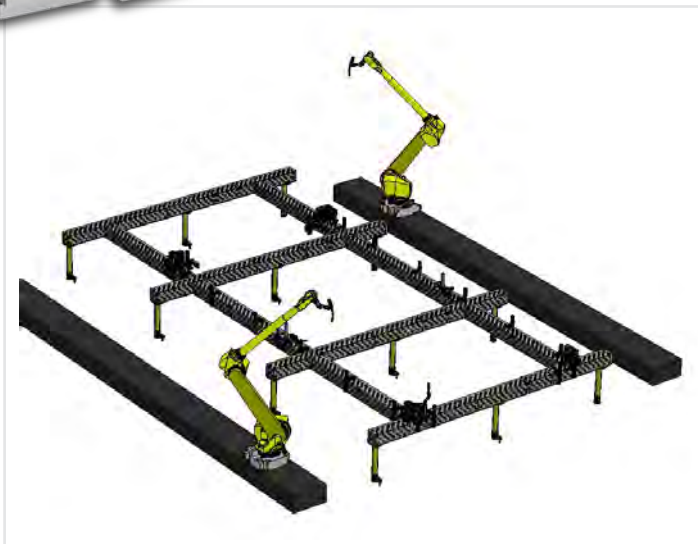
APPLICATIONS

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APPLICATION ENGINEERS DELIVER INNOVATIVE SOLUTIONS

Our customer came to us with an empty space, robotic automation and a question: "What can you put down the middle?" We worked alongside robotic integrators to develop a solution that would help them fixture more efficiently in the high mix/low volume industry of metal fabrication. We designed both an inside and outside robotic track that boosted throughput. Productivity got another bump from modular versatility, which eliminated the time-consuming process of designing and building custom fixtures for every project. The combination allowed our customer to bid more competitively and to win more jobs.





APPLICATIONS

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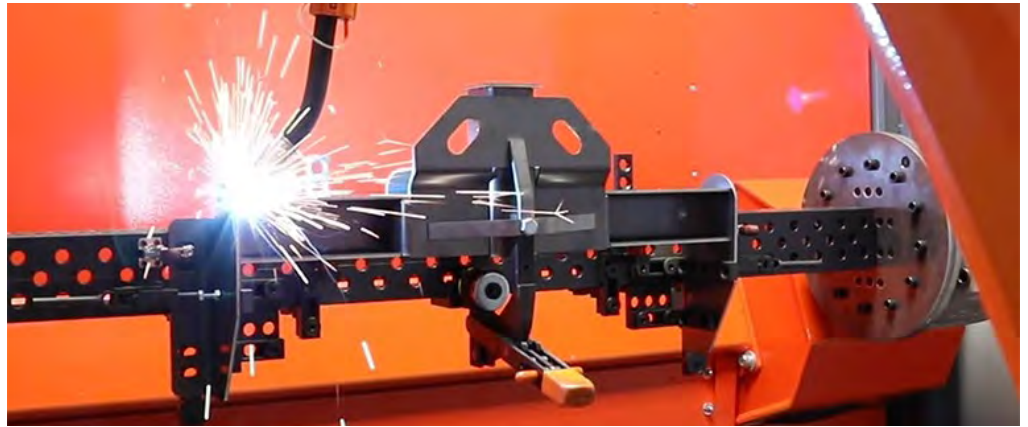
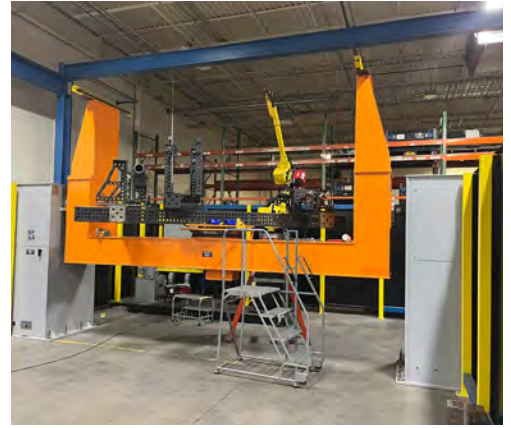
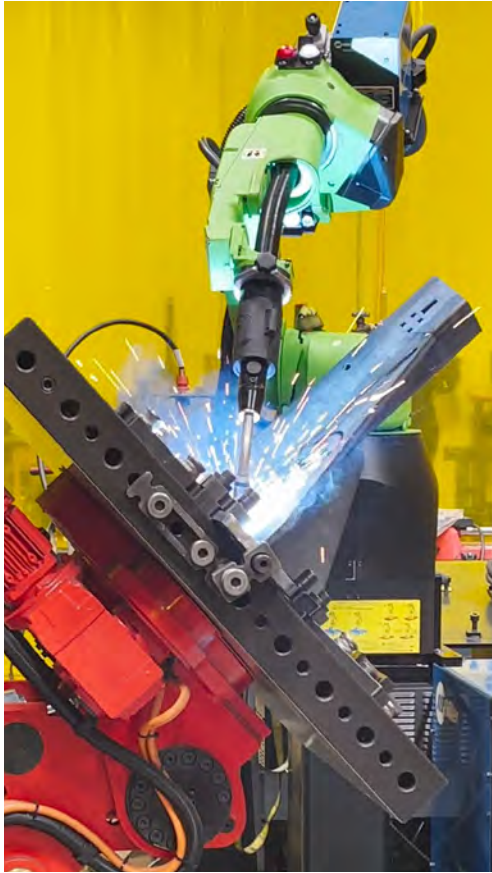
SIMPLICITY MEETS VERSATILITY

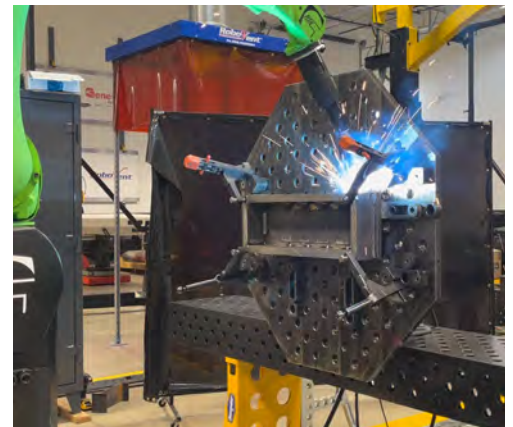
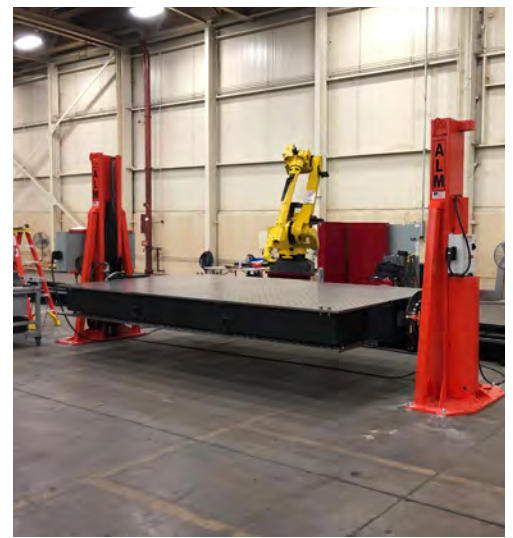
This solution for the robotic fabricating of pipe fusion machinery was part modular, part engineering know-how. Instead of putting individual piece parts into a complex fixture, the process was changed to include pre-tacking. As a result, the robotic fixture is de-cluttered. Spine and outriggers provide six points of contact and clamping so that all welds are easily accessible. Versatile modular tooling can be adjusted to fit twenty different parts across the spine with minimal changeover.



APPLICATIONS

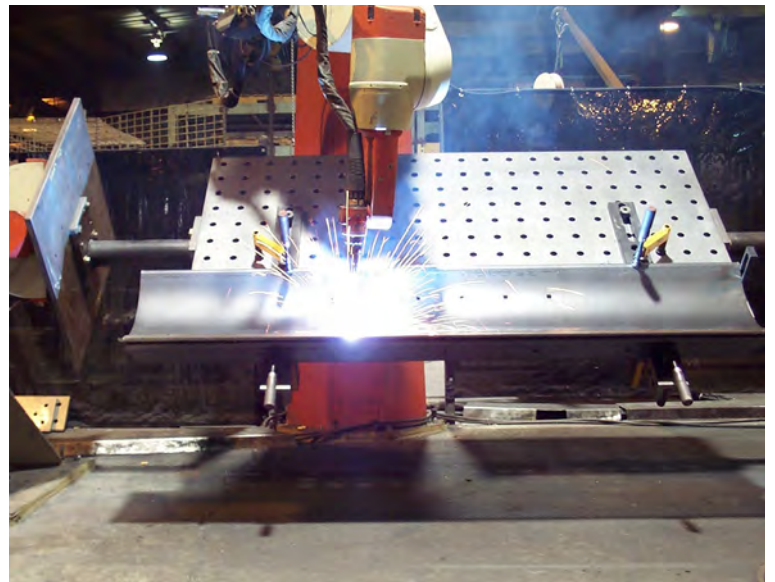
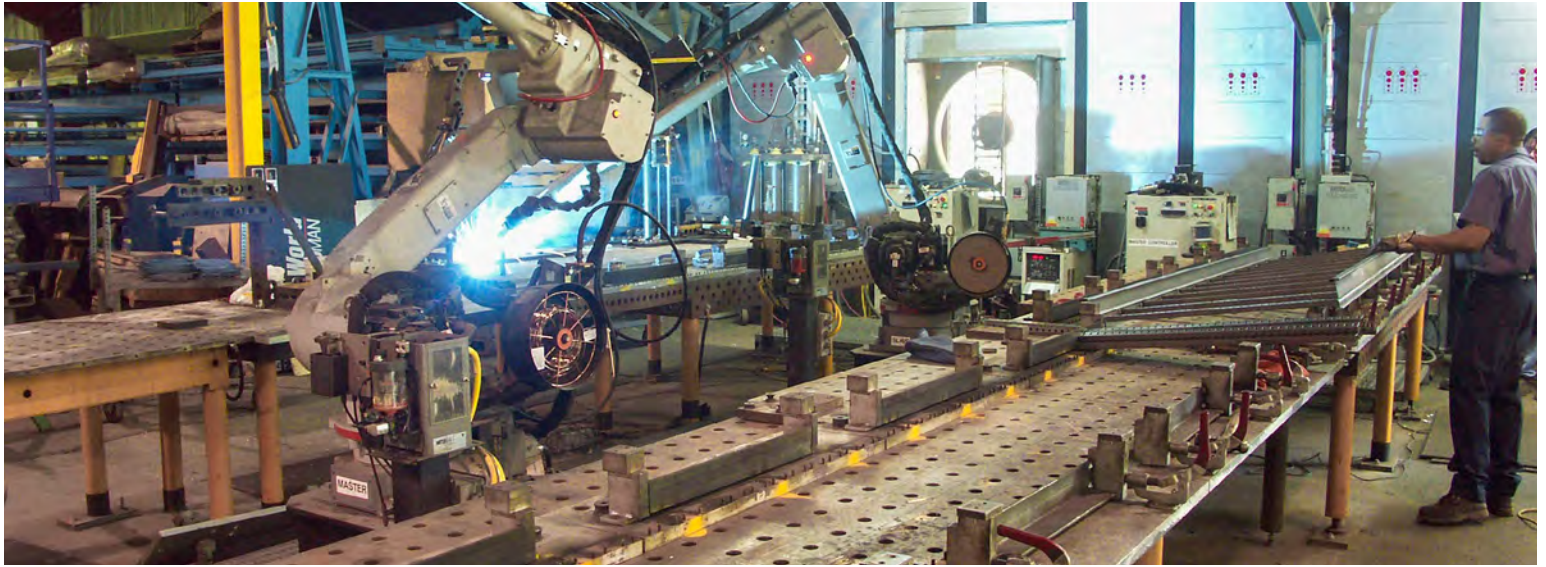
APPLICATIONS

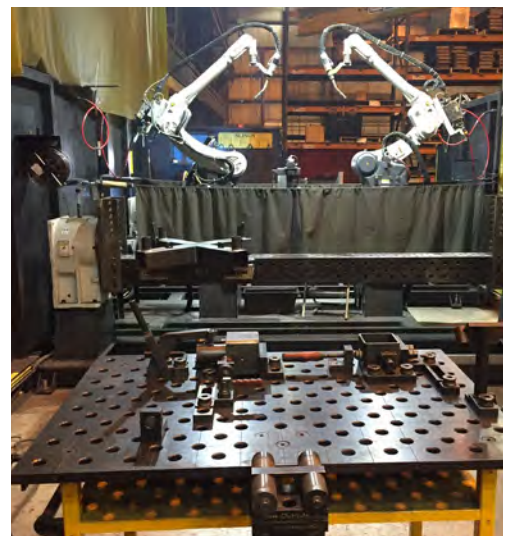




APPLICATIONS

APPLICATIONS

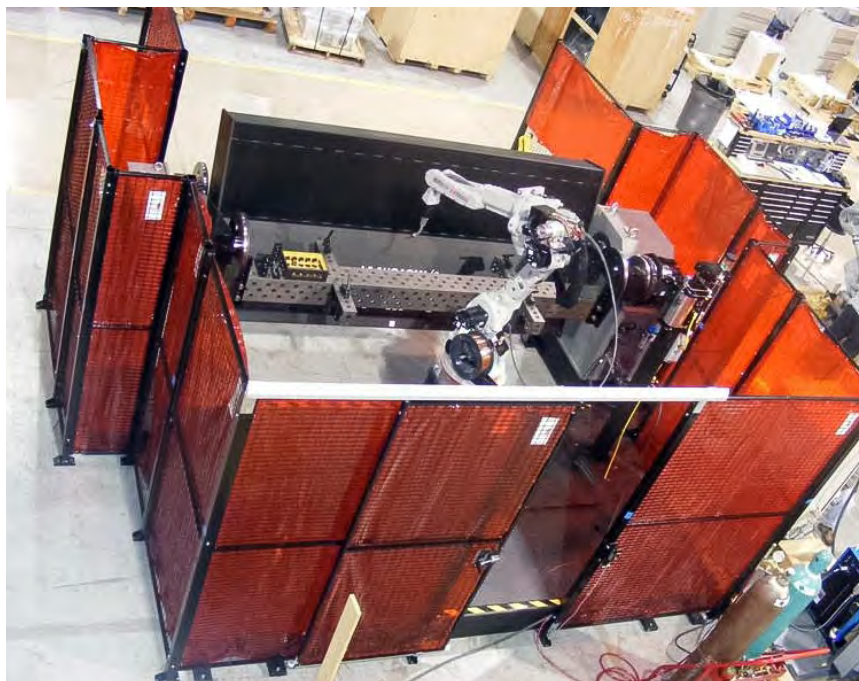




APPLICATIONS

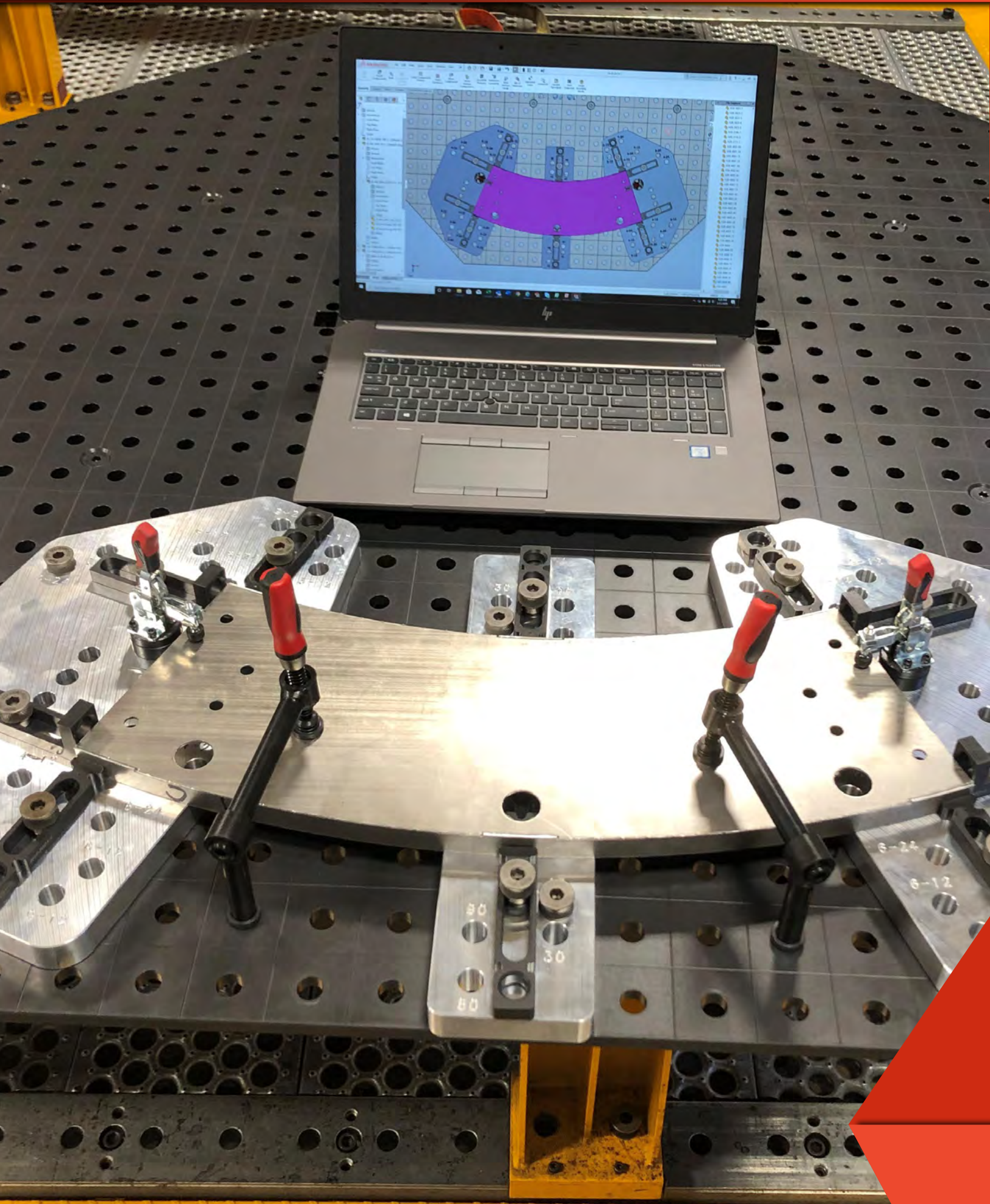
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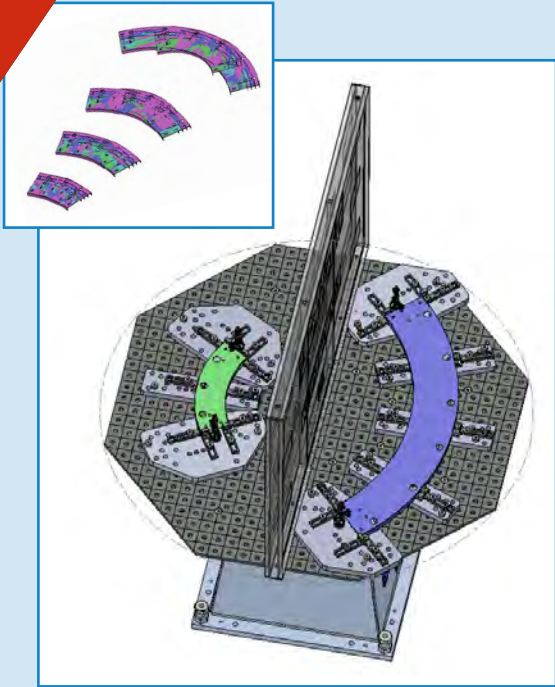


APPLICATIONS

CASE STUDY



Get Ahead of the Curve



TOP: Parts in 4 radius families in sizes that total 64 variations. **BOTTOM:** Fixture design includes 8 custom sub-plates that adjust to hold all 64 parts.



ABOVE: Cable trays, like the ones being made in this application, come in a wide variety of curves, lengths and widths to accommodate electrical cabling in industrial or residential applications.

Challenge:

Fixture parts within 4 different radius families. Each family has 4 widths, 2 chord lengths, and an inner and outer differential. That means (in addition a massive challenge) 64 individual parts to fixture.

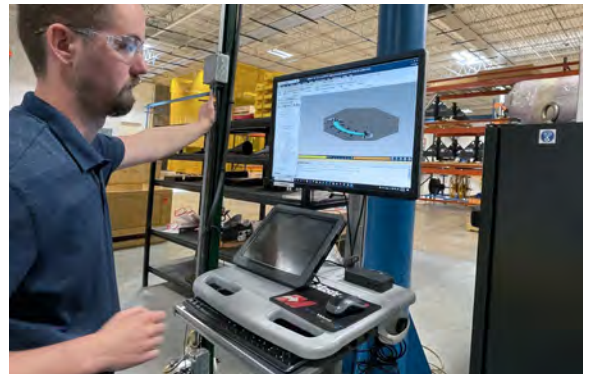
Solution:

A modular plate mounted to a robot. On top, 8 custom-made base plates. Each variation of width is incorporated into the plates and can be set with one kit of modular components.

Result:

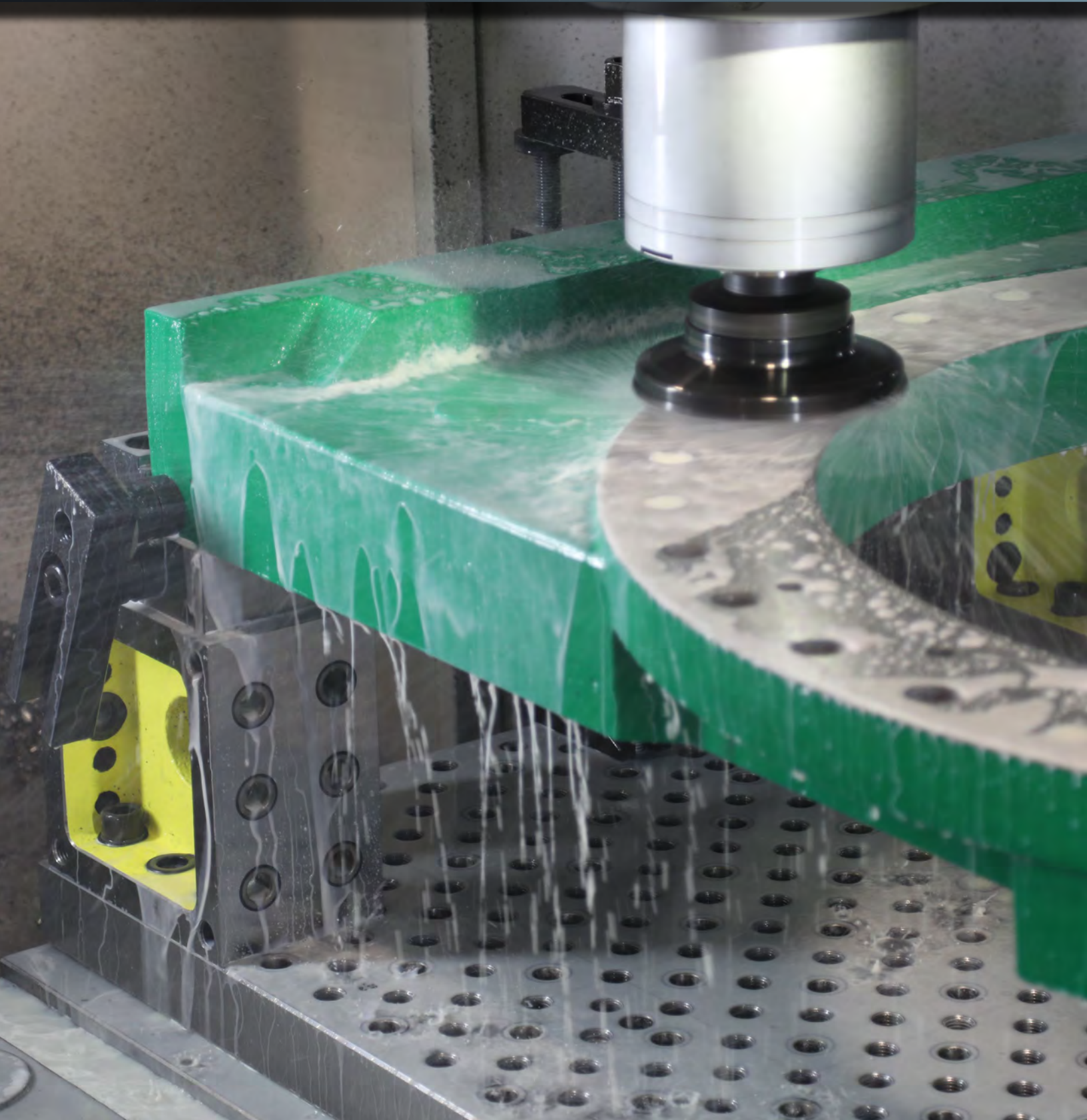
A total of 32 setups handle all 64 parts. Fixture are digitized for quick shop-floor reference. All 4 part families can be fixtured with minimal components, no loss of precision, and no hassle.

Bluco engineers create solutions based on your needs, not what's on the shelf. In this case, a set of custom base plates were machined in-house to make an unusual range of part sizes and radiuses as easy to handle as the most run-of-the-mill part. You won't find an ordinary fixture that comes with this extraordinary level of customization and support.



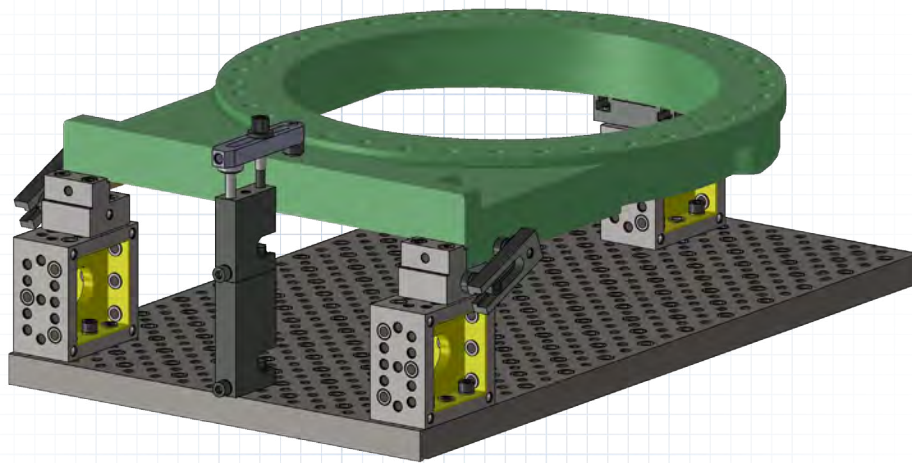
CASE STUDY

MACHINING SOLUTIONS



Reduce CNC machine downtime

Every minute the doors on your CNC machine are open is another minute of lost productivity. Bluco modular solutions for CNC machining can get your machines back up and running in less than half the time it takes an operator to manually set up a job. With over 350 precision modular components and modular bases, our solutions can be custom designed, engineered and manufactured to fit your part, your machine bed and your process. Our application engineers have intimate knowledge of manufacturing and machining developed from decades of designing modular machining fixtures for customers and for Bluco – we machine your modular fixturing components on-site, using Bluco modular fixturing.



Versatility

"A perfect fixture for every past, present, or future part, is on the shelf ready to be assembled."

– Wade Hartenstein,
Tool Design Supervisor

Accuracy

"We needed a custom baseplate. If we'd made it in-house, we wouldn't have gotten the level of accuracy we're getting from the plate that Bluco made for us."

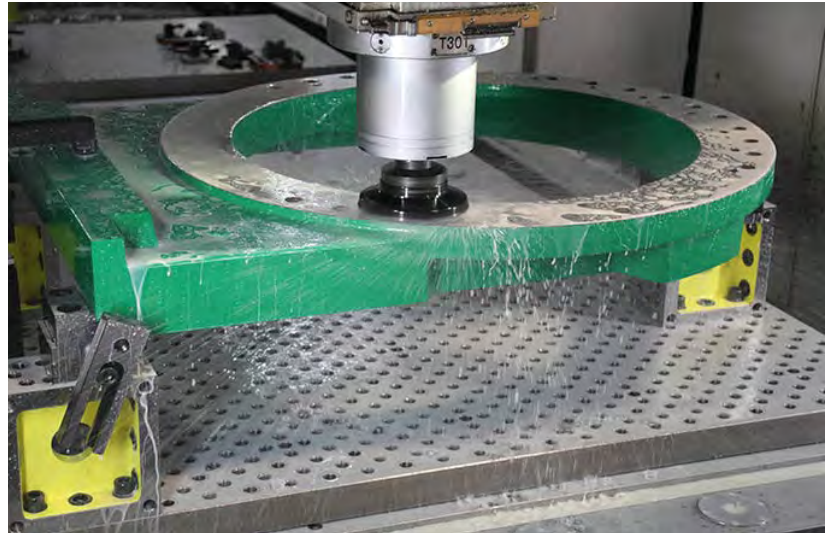
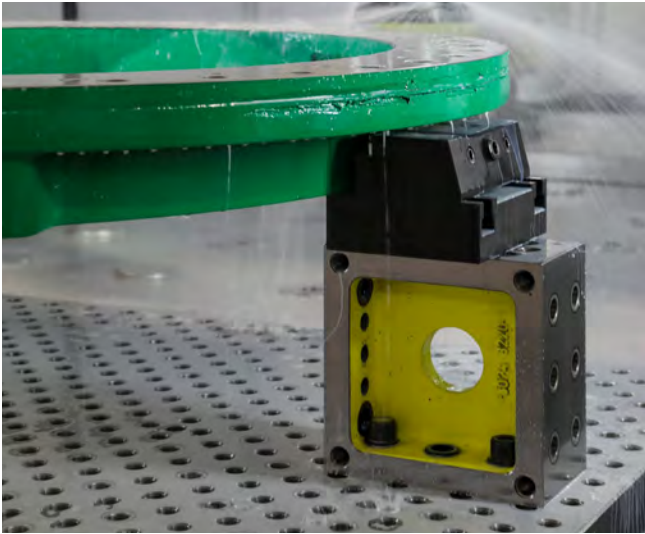
– Josh McMahon,
Manufacturing Engineer Manager

Productivity

"One thing I really like is the repeatability of the switch-overs. Going back to a previously run saved fixture location is spot-on each time."

– David Rempt, Senior Tool Maker &
Senior Mechanic Technician

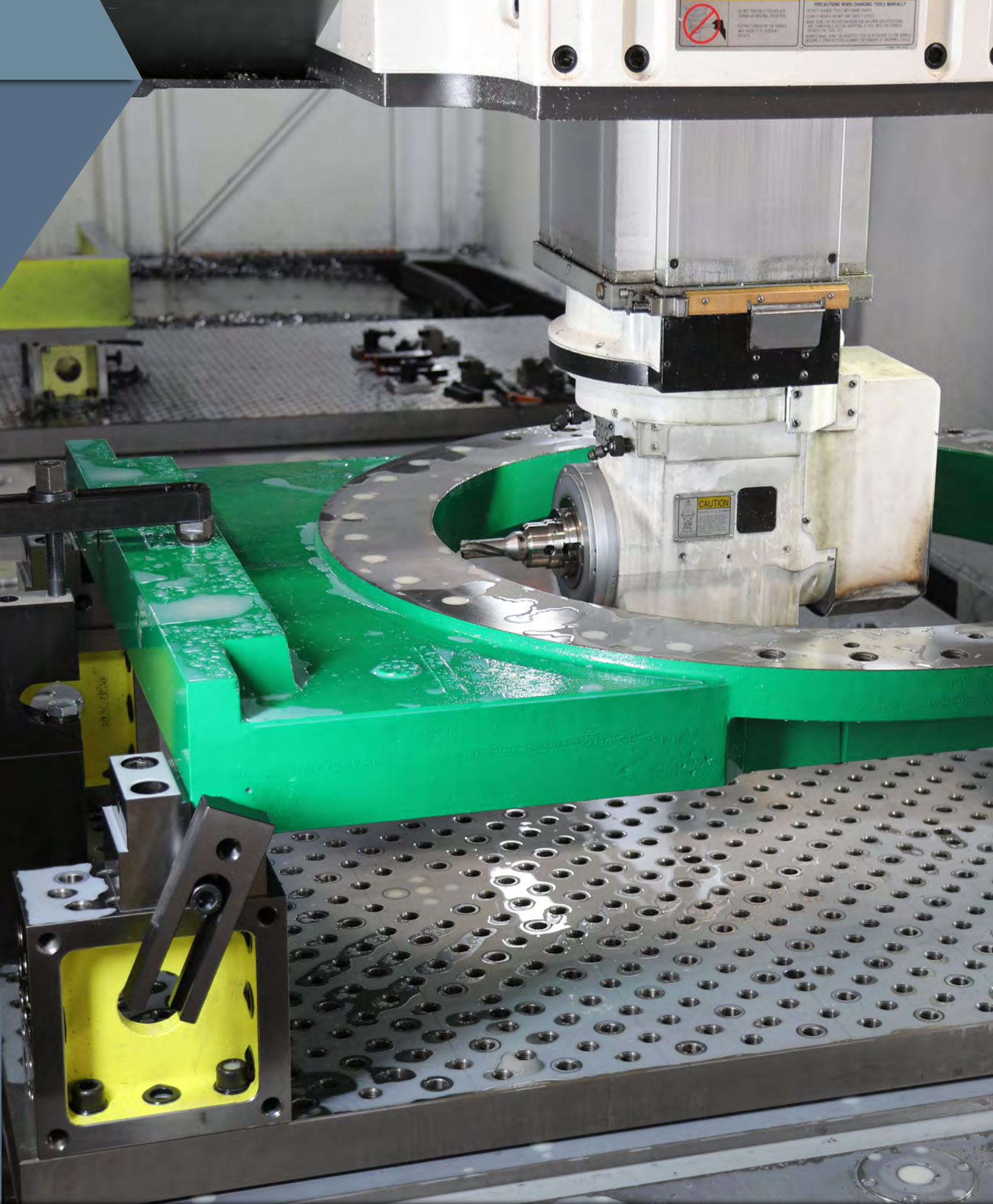
APPLICATIONS



VERSATILITY PLUS LOAD & GO PRECISION

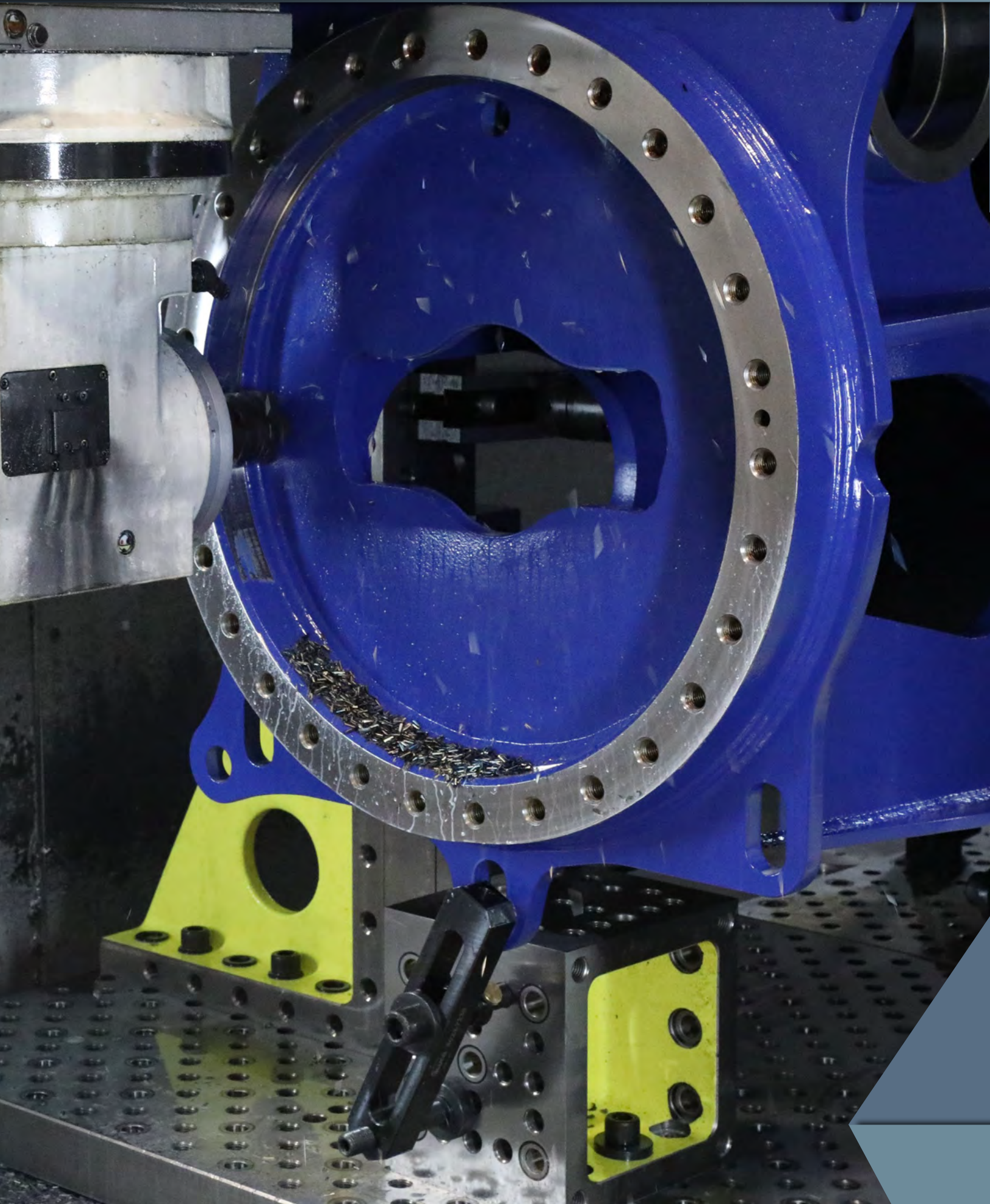
This 2,000 pound knife-gate valve is a perfect fit for Bluco's newest machining system, specifically engineered for extra-large parts. The 8024 line (named for its 80mm grid spacing and 24mm nominal bore size) provides a right-sized, precision modular solution that allows this valve to be located within $\pm .0006$ " every time without additional tramming or locating, making changeover faster and downtime shorter. Modular versatility allows the valve to be fixtured both horizontally and vertically to accommodate multiple operations on different machines.





APPLICATIONS

APPLICATIONS





FEWER OPERATIONS, BETTER RESULTS

At 6,000 pounds, moving this part through the original production process was time-consuming and difficult. The part, an excavator attachment used for concrete and steel demolition, was being machined in two separate pieces and then welded together.

This fixturing solution allows the part to go into the horizontal boring mill after welding, for machining as a single piece. One piece means one operation instead of two, which allows for less chance of variance and better final part quality.



APPLICATIONS

APPLICATIONS



EXPAND YOUR MACHINE'S LIMITS

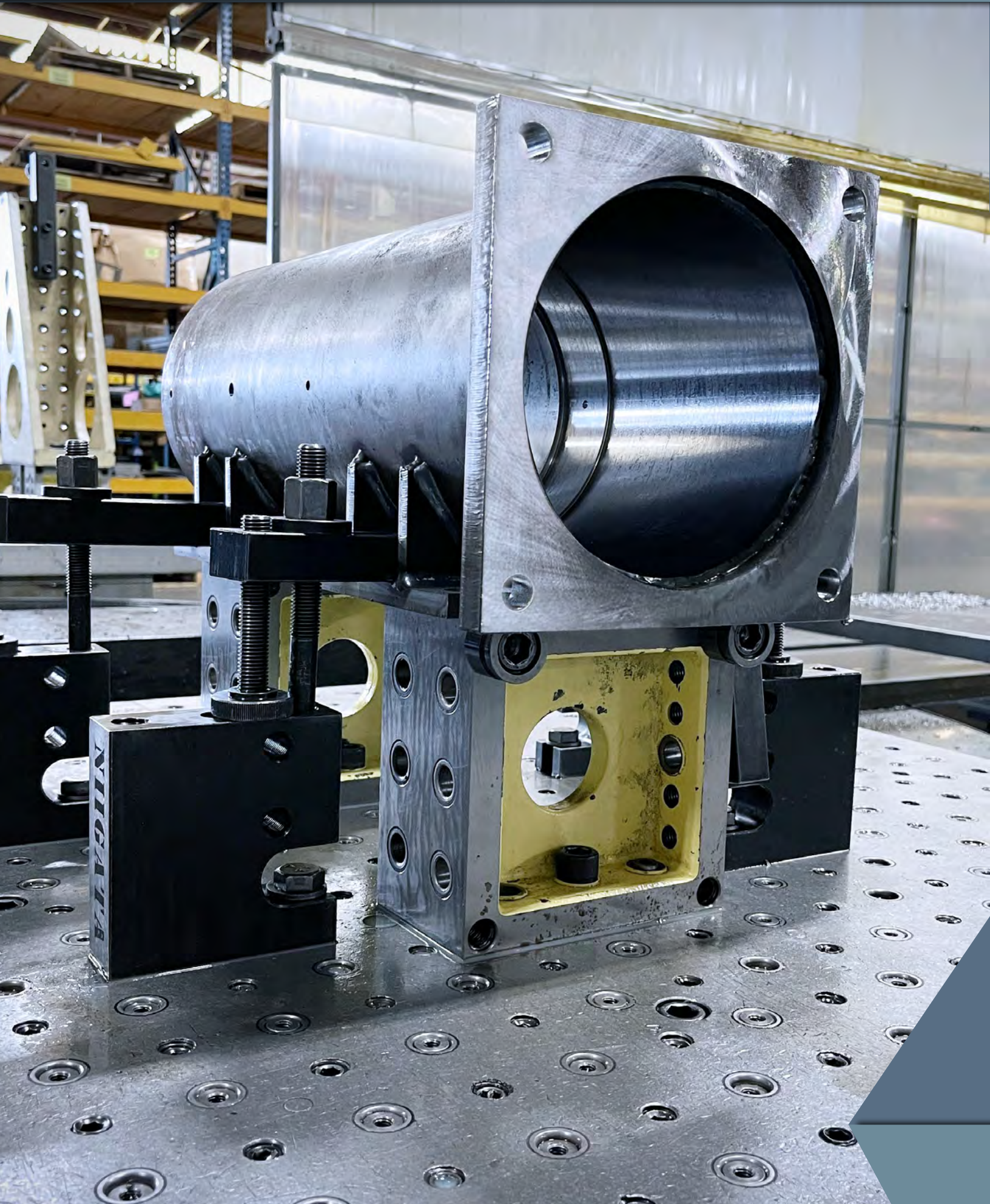
When your part is longer than the travel of your machine, a modular solution like this one eliminates the manual indicating and trial & error that would normally be required each time the part is moved down the machine bed. The position of the part on the baseplate is maintained by the modular fixture, and the part is moved along using previously machined features for locating without the guesswork. The result is significant time savings and spot-on accuracy across the length of the part.





APPLICATIONS

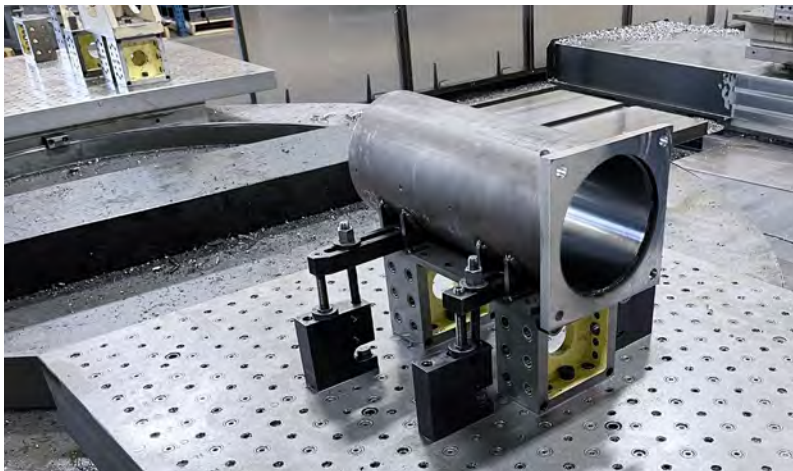
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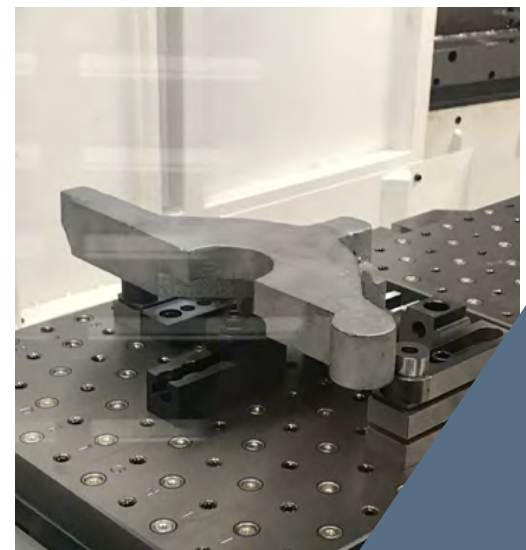
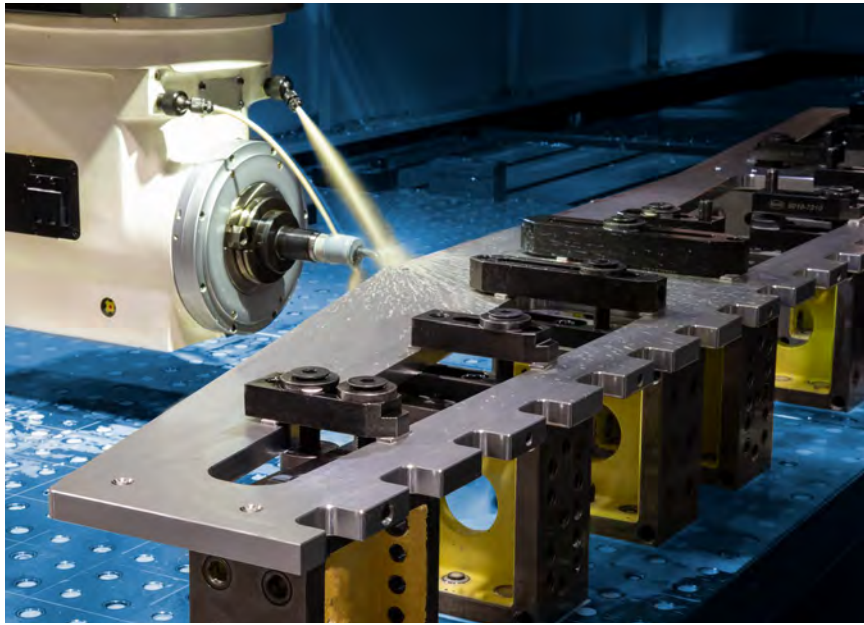
DESIGNED WITH DATUMS IN MIND

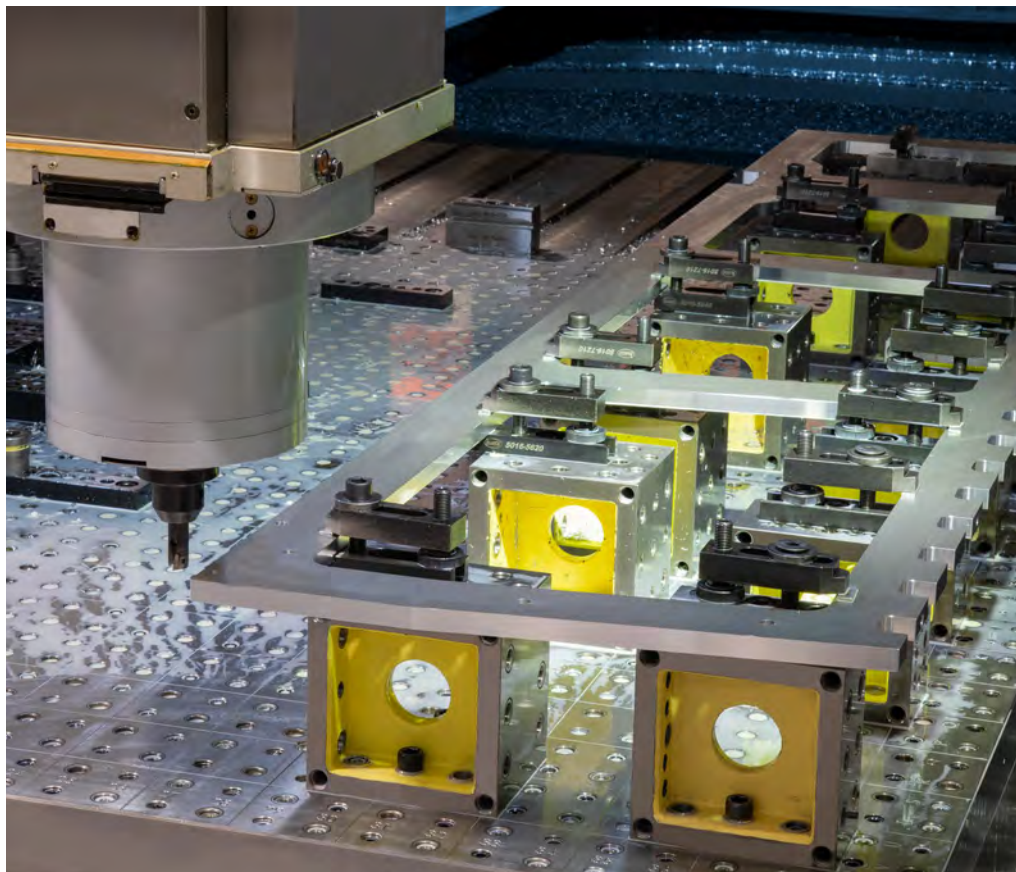
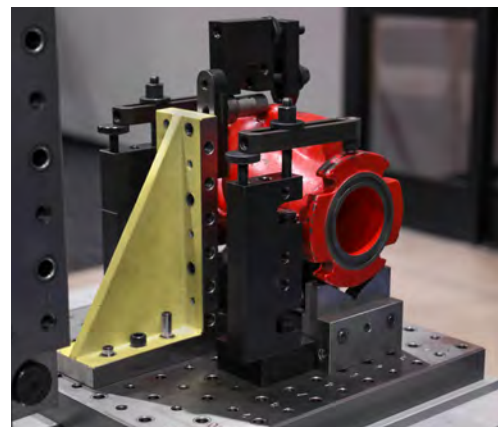
Pallet pool systems, like the one used by this manufacturer of paving heads, are supposed to boost efficiency. But that boost was canceled out by the time-consuming process of locating parts to adhere to strict tolerances. Our solution eliminates the bottleneck thanks to precision baseplates that enable repeatable load & go accuracy. Even better, Bluco engineers designed the machining fixture to match the datums used for welding. The result: better final part quality and less scrap. The system's versatility also makes changeover up to 50% faster than traditional fixturing — a match for this customer's high mix/low volume schedule.



APPLICATIONS

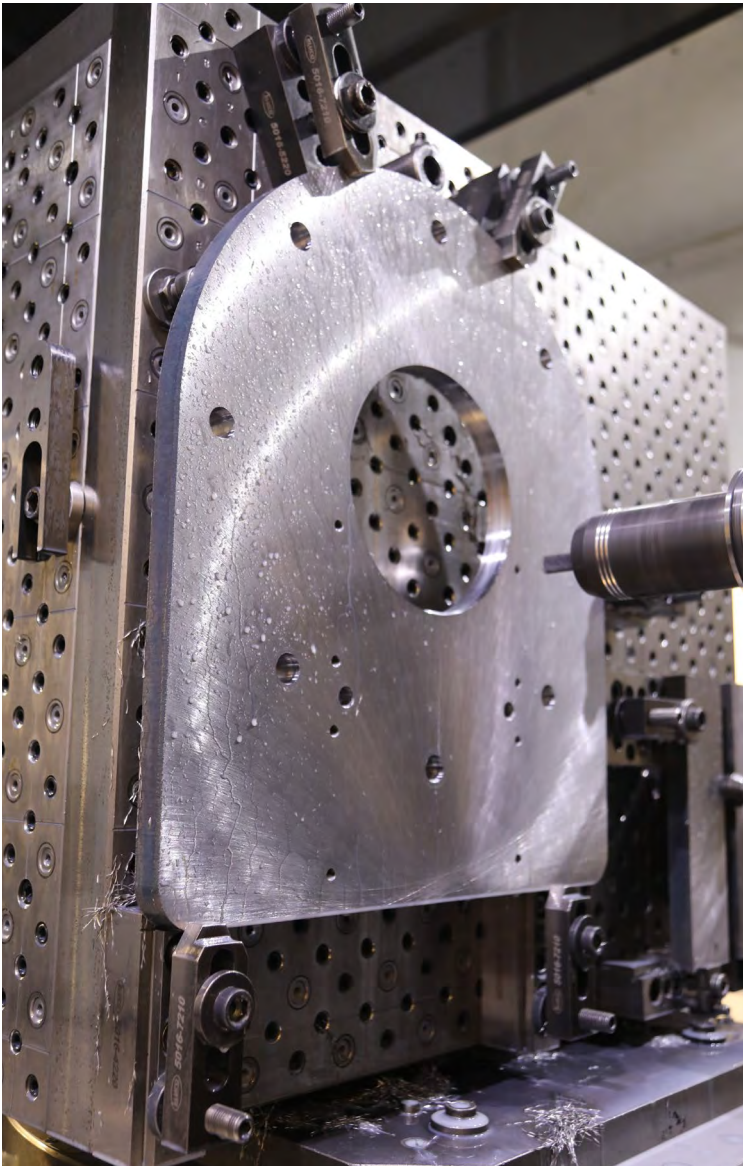
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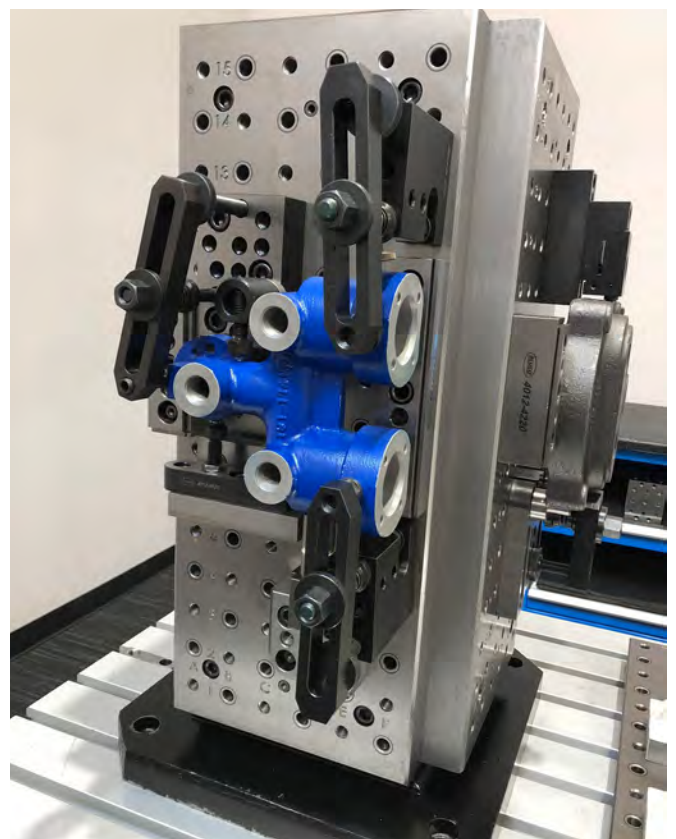
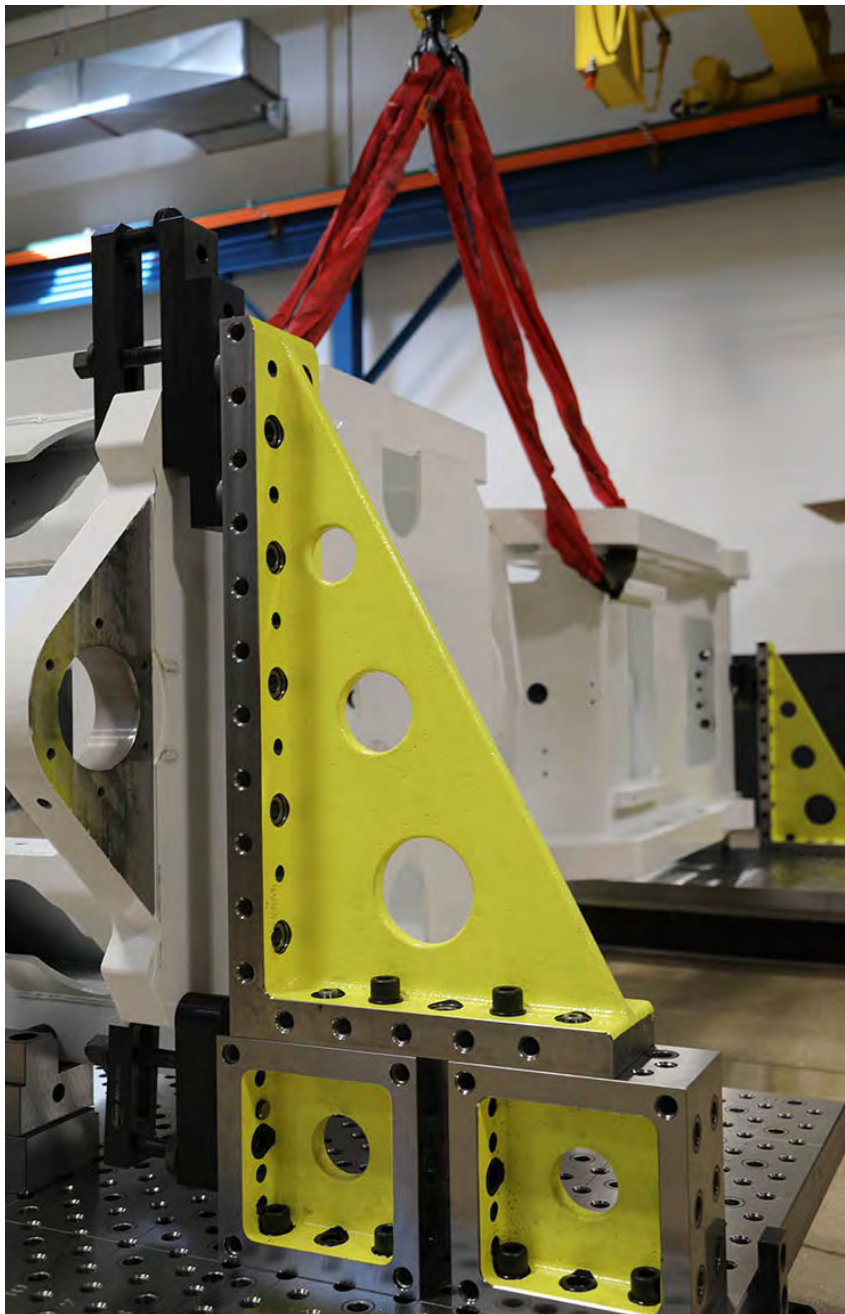
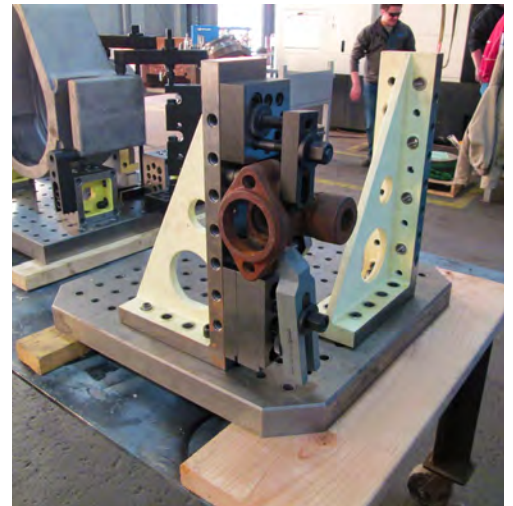




APPLICATIONS

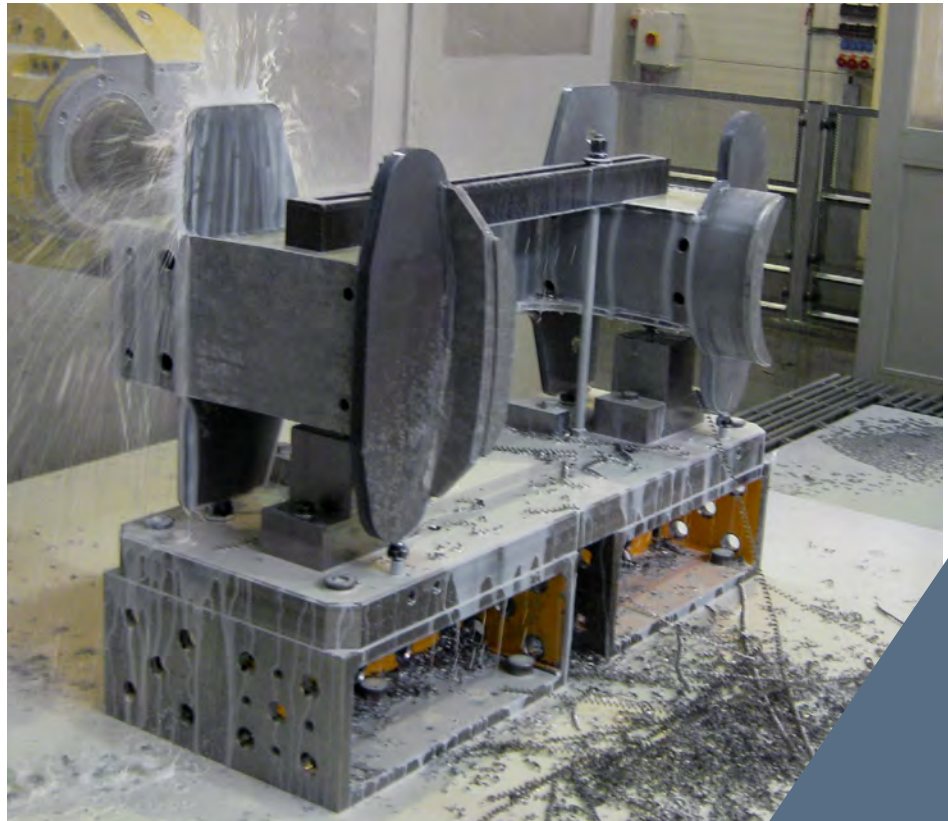
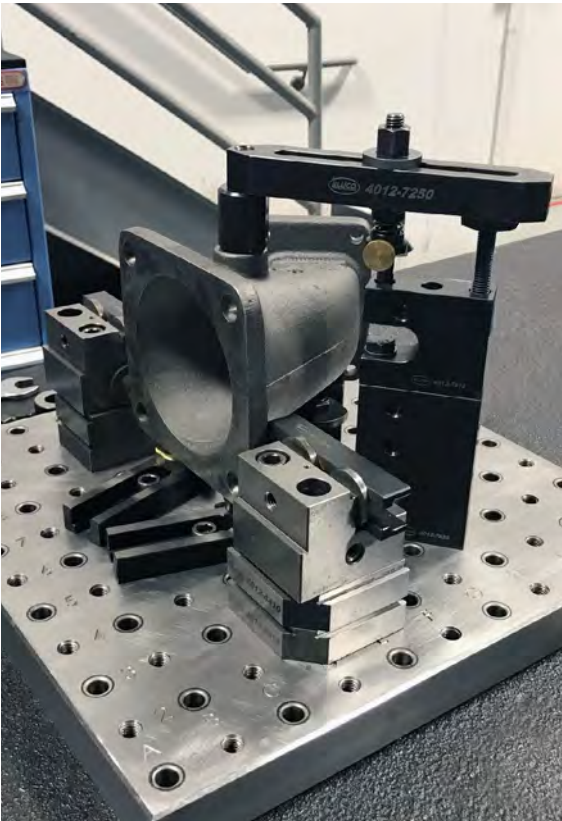
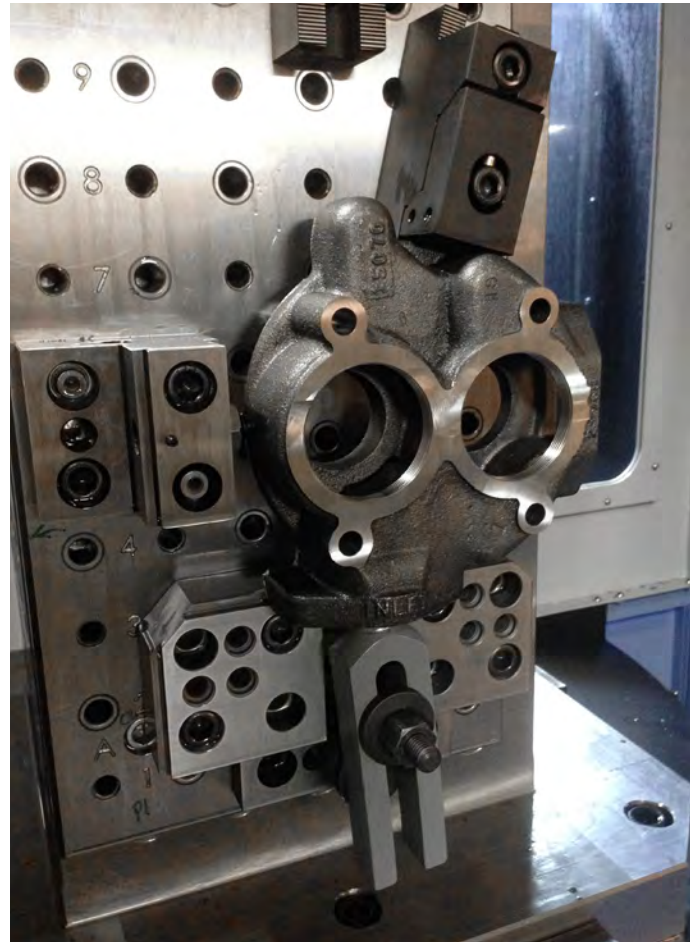
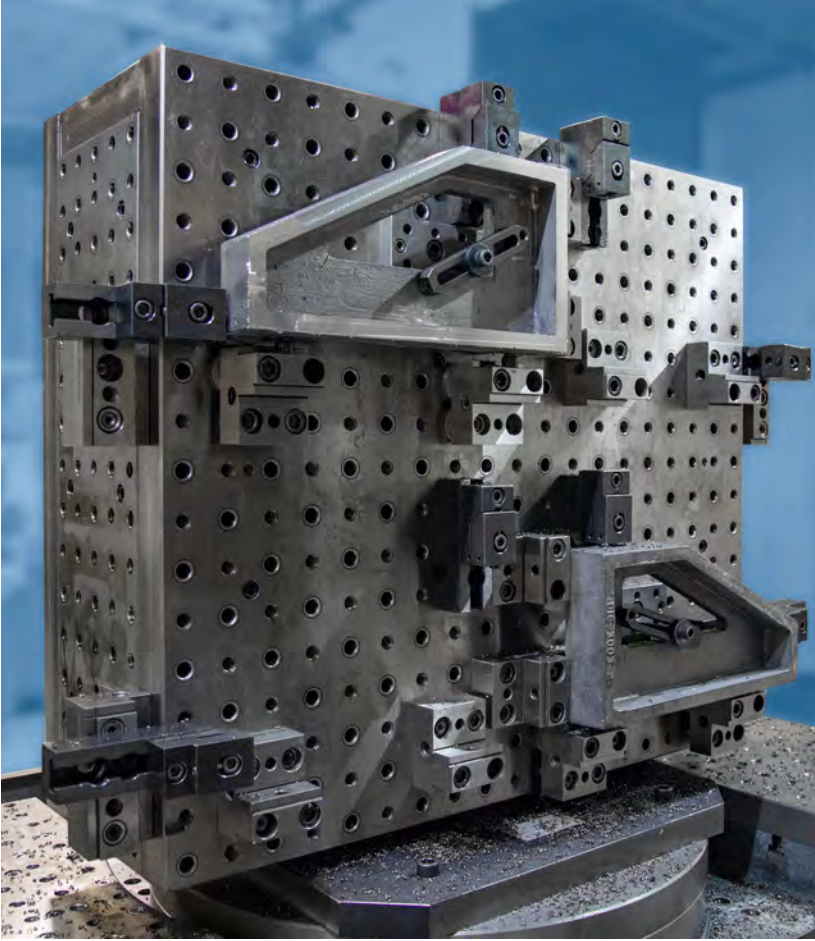
APPLICATIONS

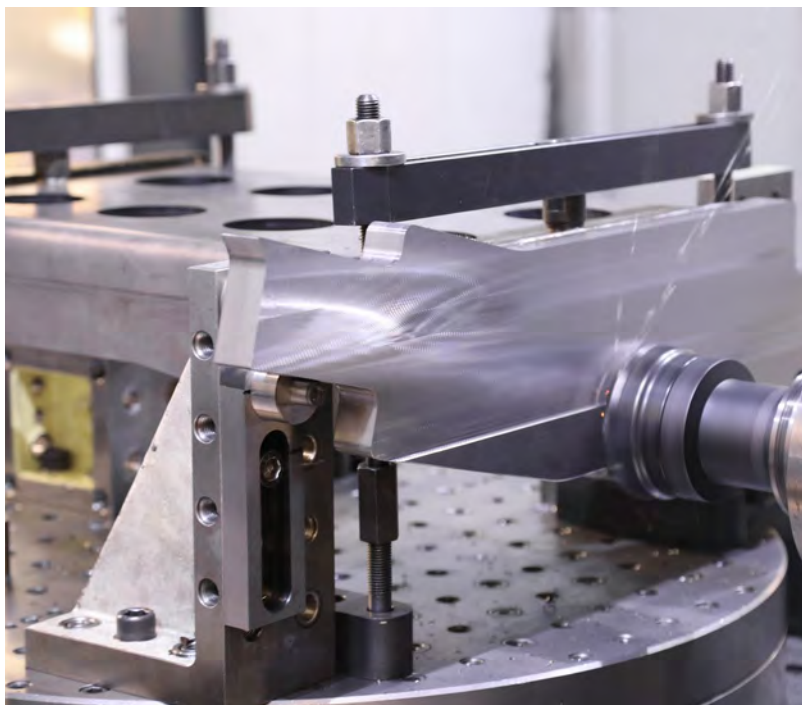
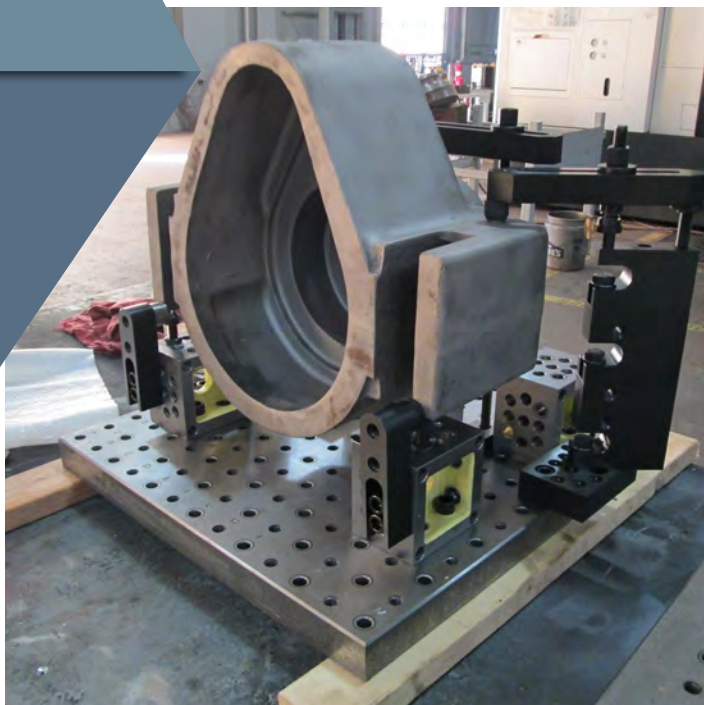




APPLICATIONS

APPLICATIONS



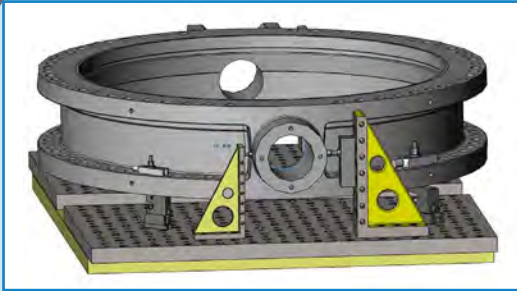


APPLICATIONS

CASE STUDY



Half the time, half the work



TOP LEFT: The original CAD model of this fixture shows the parts that will be placed to hold this large valve in position for multiple machining operations.

LEFT & ABOVE: The final solution included a custom configured arrangement of two baseplates with four u-forms between them. This extends the utility of the baseplates, increasing capacity without losing accuracy.

Challenge:

This large valve was taking twice the resources it needed to. First it was being fixtured to a valve plate so the inside features could be turned. Then it was being moved to another machine to drill the holes in the rim. The entire production process required two dedicated fixtures, two machines and two machinists. It was gradually eating up profit and bogging down the schedule.

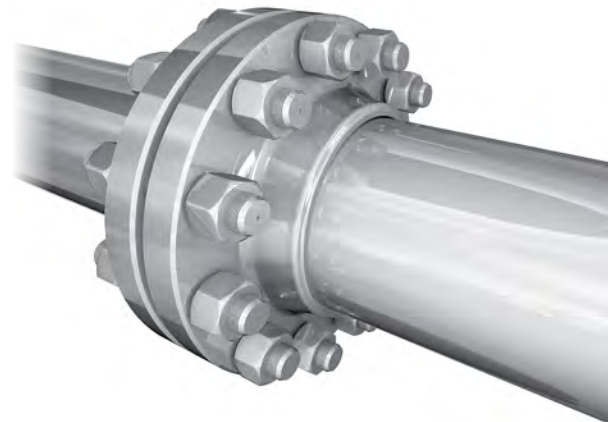
Solution:

The solution is a modular fixture that puts the valve exactly where it needs to be while allowing the machine head access to all sides of the part so that the part doesn't need to be re-fixtured for drilling.

Result:

The modular solution reduced the resources needed to produce the valve by half. One machine, one machinist and one fixture are all that are now needed to accomplish the same amount of work as two of each. In addition, the machining accuracy increased and dedicated fixtures that were sitting idle part of the time have been replaced with a system versatile enough to handle multiple part sizes.

No matter what you make, Bluco engineers can help you make it better. Often, our solutions not only address fixturing, but machining process as well. These are changes that go far beyond hardware to positively impact machine and staff scheduling, use of resources, and more.



CASE STUDY

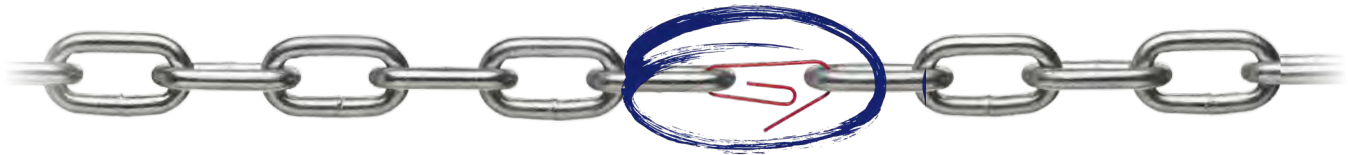


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