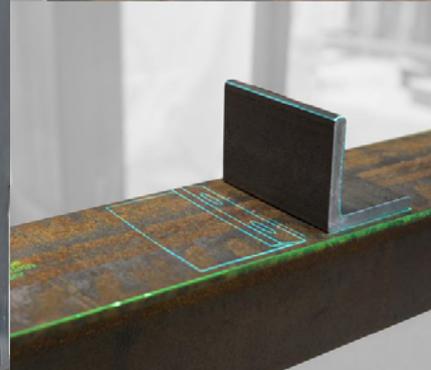


LAYOUTMASTER BEAMMASTER



FITTING + WELDING AUTOMATION FOR STRUCTURAL STEEL



WELD FASTER | FIT SMARTER | KEEP IT SIMPLE



WELD



1 LOAD ROBOT SEQUENCE



2 LOAD BEAM



3 RUN SEQUENCE



RELIABLE WELDING ROBOT
Robots were designed to work in harsh conditions for years with minimal maintenance.



EFFICIENT ROTATING UNITS
Automatic beam rotator ensure maximum productivity.



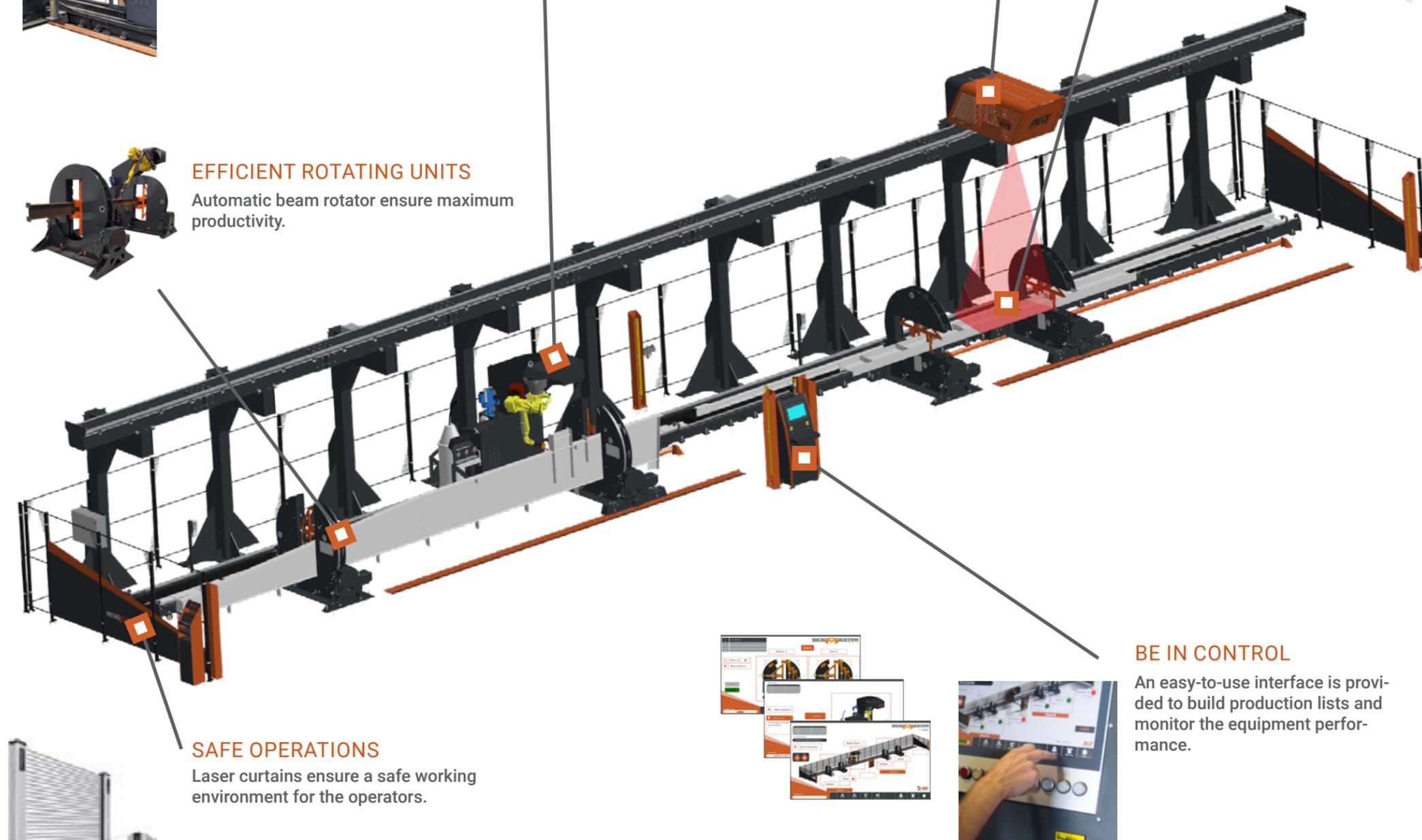
SAFE OPERATIONS
Laser curtains ensure a safe working environment for the operators.

FITTING & WELDING

The projected information helps reduce the time for fitting your production

PRODUCTIVITY X2

While the robot is busy welding in one zone, an operator can safely fit, tack and rotate in the other zone.



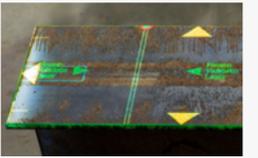
BE IN CONTROL

An easy-to-use interface is provided to build production lists and monitor the equipment performance.

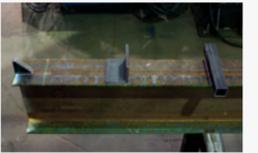
FIT



1 ALIGN PROJECTION



2 PROJECT CONNECTIONS



3 TACK WELD



KEEP IT SIMPLE

100% FIT + WELD WITH A SINGLE OPERATOR

WHILE ROBOT WELD IN ZONE A, OPERATOR CAN SAFELY MOVE TO ZONE B AND UNLOAD WELDED BEAM, LOAD NEW BEAM AND TACK WELD ACCESSORIES ASSISTED BY THE LAYOUTMASTER'S PROJECTIONS.

WHAT IS THE BEAMMASTER ?

THE COMMON-SENSE, ALL-INCLUSIVE ROBOTIC WELDING SOLUTION FOR STRUCTURAL STEEL



THE BEAMMASTER IS THE #1 SELLING ROBOTIC WELDING SOLUTION FOR STRUCTURAL STEEL IN THE WORLD.



Simply send a pre-fit beam to the BEAMMASTER and watch it robotically complete the required welds in a fraction of the time it would take a manual welder. When equipped with the optional beam rotators, the entire sequence is completely autonomous as the robot automatically positions the welds into the horizontal position every time.

Robotic welding has historically required a large volume of identical parts in order to be profitable. The BEAMMASTER's award-winning CORTEX SOFTWARE makes robotic welding possible and profitable with lot quantities of one. By batch processing an entire 3D building (using TEKLA, SDS2, ADVANCED STEEL, BOCAD and more) CORTEX creates hundreds of unique, tailor-made

robotic programs that are ready-to-use on the shop floor - eliminating the need to program each beam individually. CORTEX will automatically generate weld locations and weld sizes based on your specific welding standards if your model doesn't already contain that information.

Structural steel shapes aren't known for being very precise which often results in final assemblies that are not identical to the CAD model. To account for these dimensional differences every BEAMMASTER is equipped with a 3D vision system to automatically measure the beam and fit components and then offset the robot program - making a great quality weld in exactly the right place. Want to know more? Visit our website at agtrobotics.com/beammaster



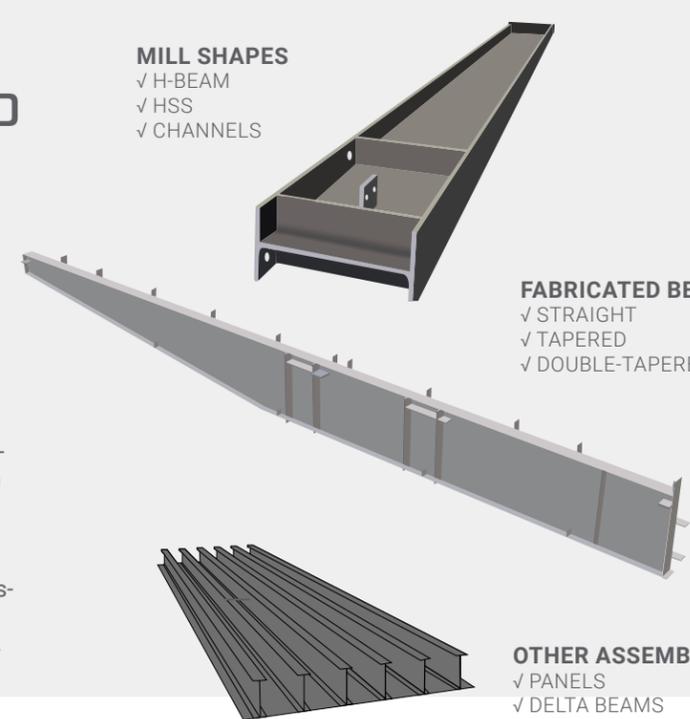
VERSATILE = WELD MORE STUFF !

THE BEAMMASTER CAN ALSO BE USED TO WELD MISCELLANEOUS ASSEMBLIES.

When investing in a robotic system one of the key features to look for is versatility. Some jobs might require greater flexibility from the robot than the fully-automated, CORTEX-powered, beam and column welding.

The BEAMMASTER can be used like a standard robotic welding system to weld panels, short sub-assemblies, small skids or other miscellaneous assemblies - anything that fits in it's work envelope.

MILL SHAPES
✓ H-BEAM
✓ HSS
✓ CHANNELS



FABRICATED BEAMS
✓ STRAIGHT
✓ TAPERED
✓ DOUBLE-TAPERED

OTHER ASSEMBLIES
✓ PANELS
✓ DELTA BEAMS
✓ OTHER

BEAMS

H
W-BEAM

U
CHANNEL

O
HSS CLOSED
RECTANGULAR
COLUMN

ELIMINATE UNNECESSARY HANDLING

BEAM ROTATORS & DUAL-ZONE CONCEPT STREAMLINES OPERATIONS

Spend your time adding value, not moving steel around! Once you load your beam inside AGT's beam rotators, you won't need the crane again until it's completely fit and welded, ready for paint. The beam rotation is handled automatically throughout the entire fitting and welding process. The robot and the operator switch zones to optimize efficiency

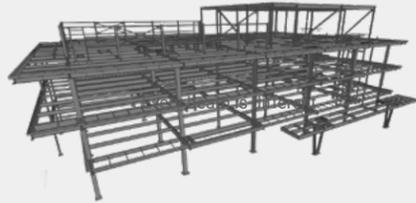


AUTO-PROGRAMMING



1 EXPORT MODEL

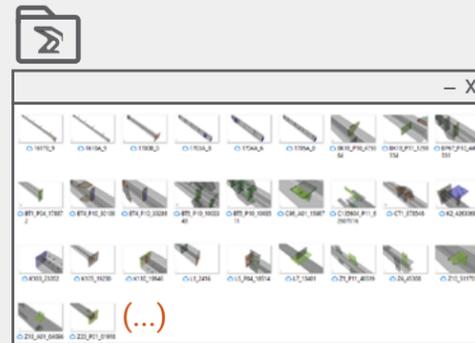
COMPLETE BUILDING



2 AUTOMATICALLY GENERATE PROGRAMS

cortex
structural

Let Cortex automatically create custom-tailored robotic welding programs for every unique beam.



NO PROGRAMMING = NO HUMAN INTERVENTION

THE ONLY TRUE NO-PROGRAMMING SOLUTION FOR ROBOTIC WELDING!

This is WHY the BEAMMASTER has quickly become the number one selling robotic welding system for structural steel. In a typical building there are many similar beams but only a few are ever exactly the same making it impractical to automate using conventional robotic programming methods (teach pendant, offline programming, etc.). AGT'S CORTEX SOFTWARE was specifically developed for the structural steel industry to automatically batch process an entire building to create completely tailor-made robot programs for each unique beam. It will:

AUTOMATICALLY :

- ✓ Position the beams in the rotators;
- ✓ Read the weld information from CAD or auto-generate welds as per your specifications
- ✓ Generate welding paths
- ✓ Associate welds with the correct weld schedule
- ✓ Generate the joint laser finding paths
- ✓ Generate weld to weld movements
- ✓ Generate the torch maintenance routines
- ✓ Sequence welds to prevent heat distortion
- ✓ Rotate beams to access all faces
- ✓ Convert lengthy, longitudinal welds into stitches and more !



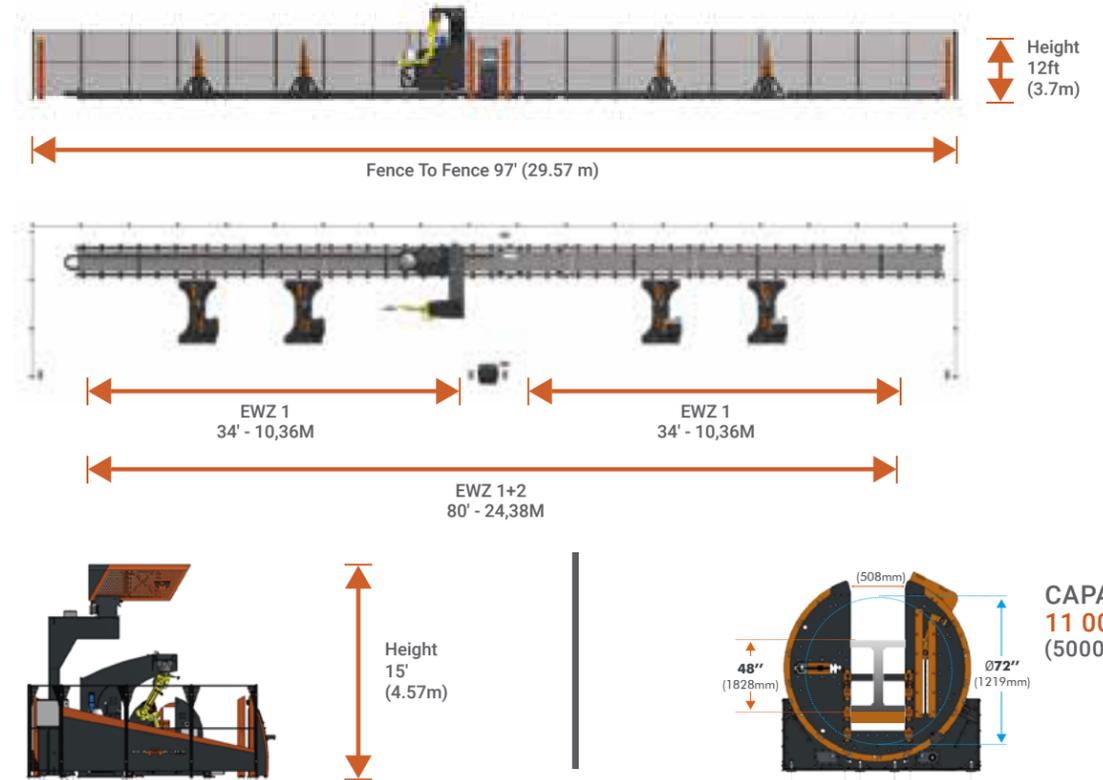
NO PROGRAMMING = NO PROGRAMMER



Don't be fooled by other manufacturers' claims that their solutions require no-programming. If the software user needs to indicate to the robot what welds to perform by clicking on the joint and specifying the weld leg size, or position the beam inside the robotic system... THAT IS PROGRAMMING! It may be a simpler more graphical method than generating lines of code but it still requires a skilled user (programmer) and adds time and cost to your process!

ONLY CORTEX is a true no-programming solution. With CORTEX, only a few mouse clicks are necessary to start the program creation process for an ENTIRE BUILDING. The result is hundreds of unique robot programs created totally automatically.

DIMENSIONS



WELDING SPECIFICATIONS

Typical welding speed - Fillet welds (2f)	20.0 in/min for 3/16" weld 15.5 in/min for 1/4" weld 10.0 in/min for 5/16" weld	8.4mm/s for 4.8 fillet weld 6.5mm/s for 6.4mm fillet weld 4.6mm/s for 8mm fillet weld
Gap detection	No gap detection	
Joint detection	Lase Touch Sensing	
Process and position	MCAW - Spray and pulse transfer - Horizontal (2F) or GMAW - Spray and pulse transfer - Horizontal (2F)	
Wire	MCAW: Hobart Fabcor Edge 0.045" Diameter (1.2mm) or GMAW: Lincoln Electric Super Arc L-59 0.045" (1.2mm)	
Wire classification	MCAW: A5. 18, A5. 18M: E70C-6M H4 / CSA W48-06: E491C-6MJ-H4 GMAW: A5. 18, A5. 18M: ER70S-6 / CSA W48-06: ER49S-6	
Shielding gas	85%At-15%CO ₂ mix	
Surface finish	All parts and beams must be clean with no excessive mill scale. Database includes procedures for both Sandblasted surfaces and mill scale. Highest quality is obtained on Sandblasted surfaces. Slower welding speeds are used for Mill scale surfaces.	

WHAT IS THE LAYOUTMASTER ?

AUGMENTED REALITY FITTING ASSISTANT FOR STRUCTURAL STEEL



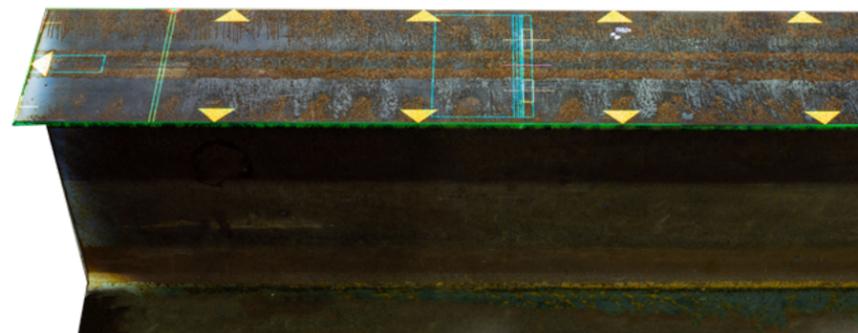
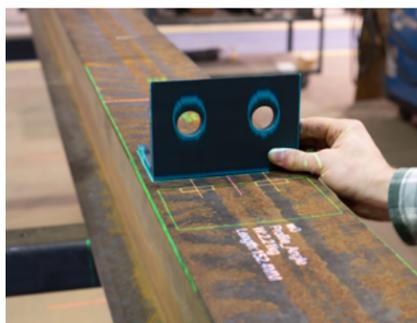
THE LAYOUTMASTER IS THE ULTIMATE, COMMON-SENSE TOOL TO TRANSFORM ANY OPERATOR INTO YOUR BEST FITTER IN A MATTER OF MINUTES!

The LAYOUTMASTER combines your 3D CAD details with color laser technology and AGT's award-winning CORTEX software to project all the information needed to assemble parts on a beam quickly and precisely.

With the LAYOUTMASTER, you'll never need a measuring tape or a drawing again. Simply select the right beam assembly from the menu, align the projector with your beam origin and start fitting. All the information required to fit error-free is available to your operator: part contours (2D and 3D),

part descriptions, welding information and more. The projected information is user configurable - allowing you to personalize each layer by color and line thickness to facilitate visualization or group features and layers to work best for your application.

When used in conjunction with our TWO-ZONE BEAMMASTER, a single operator can safely perform the fitting operation while the robot is welding in the other zone. THIS SETUP CAN MAKE ONE OPERATOR AS PRODUCTIVE AS 6 TO 8 FITTER/WELDERS !



SAY GOODBYE TO THE MEASURING TAPE

REDUCE YOUR RELIANCE ON SKILLED LABOR

Many companies struggle to find and retain reliable employees with the right skill sets. The LAYOUTMASTER system is easy to learn and can be operated by anyone with the skills to use a smartphone. No blueprint reading, no measuring, no problem!



VIRTUALLY NO ADDITIONAL FLOORSPACE !

THE HIGH-DEFINITION PROJECTOR TRAVELS ON AN OVERHEAD RAIL

Freeing up floor space for the operator to work unimpeded the LAYOUTMASTER also saves floor space by producing as much fit product in one station as 2-3 manual fitting stations. When combined with the BEAMMASTER, the LAYOUTMASTER fits within the same footprint providing fast, effective fitting assistance in the same floorspace as your robotic welding system.

FAST

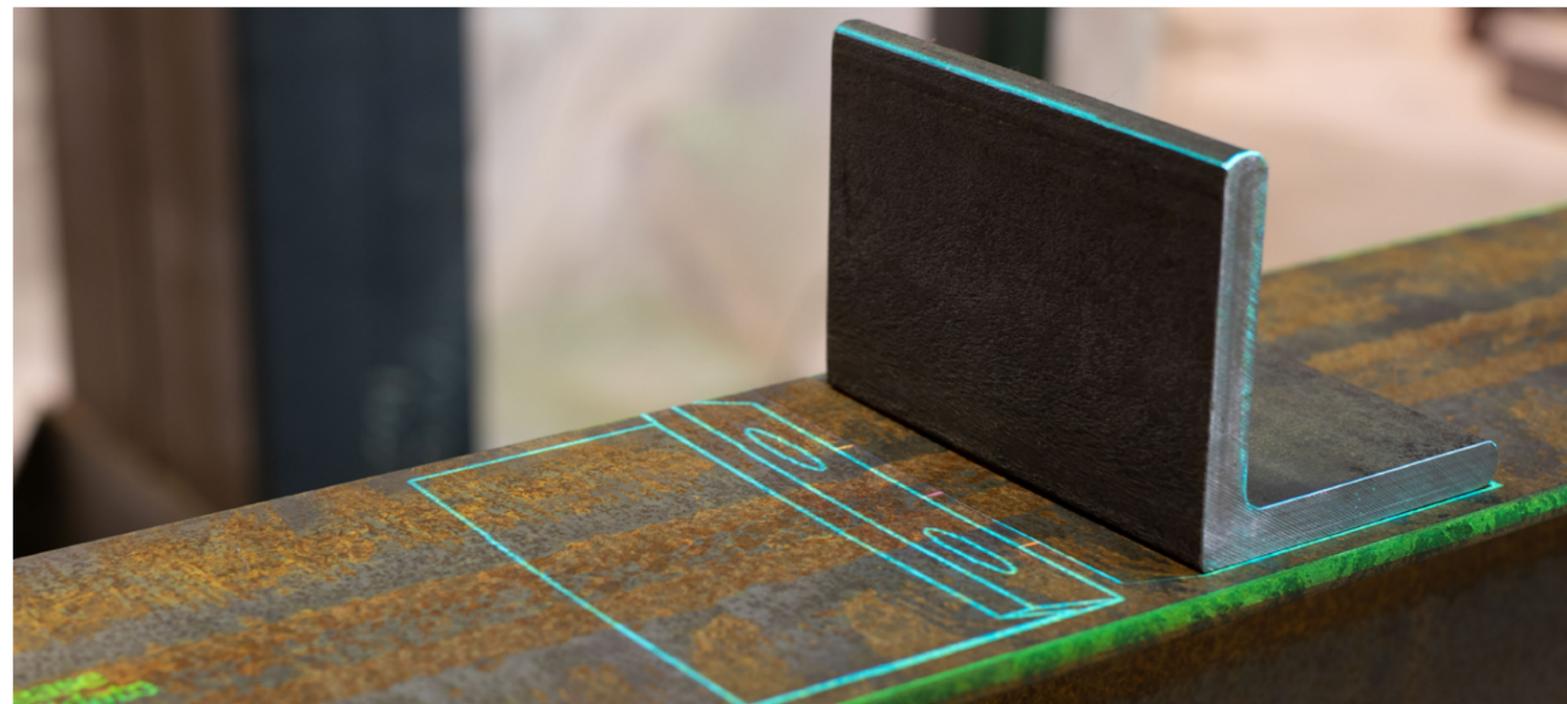
ELIMINATE THE FITTING PRODUCTION BOTTLENECK

With the ability to instantaneously project the required details directly on the workpiece the LAYOUTMASTER saves time associated with reading and interpreting drawings, measuring, marking and verification. Needing only a few seconds to establish the orientation of the beam and re-verifying over the beam length, the LAYOUTMASTER turns a tedious fitting operation into a simple and fast pick-place-tack operation.

PRECISE & ERROR-FREE

ELIMINATE COSTLY ERRORS AT THE SOURCE

Assembly information is projected directly from CAD details - eliminating the need to interpret drawings and the associated errors. Detailed part information is immediately and conveniently available to the operator to ensure that the right parts end up exactly in the right place.



FIT + WELD

EASY TO USE

REDUCE YOUR RELIANCE ON SKILLED LABOR



The skilled labor shortage is with us and getting more critical every day. The BeamMaster and LayoutMaster help you to reduce your reliance on skilled labor.

Quality welded assemblies and accurately fit parts can be produced without the need for highly skilled personnel. With some basic instruction your handler/tacker can now accurately fit parts in a fraction of the time of your best fitter - error free!

The BeamMaster will produce quality welded assemblies at 3-4 x the speed of your manual operations – without the need for a skilled welder to operate it.

Cortex software generates all of the welding programs and robot paths eliminating the need for a Skilled Robotics Programmer.

BEST COST PER TON. PERIOD.

THE COMMON SENSE SOLUTION

Combining a LayoutMaster and a BeamMaster is the most cost-effective way of fitting and welding beam assemblies. Compared to manual fitting and welding, the BeamMaster/LayoutMaster combination can be as productive as 6 to 8 fitter/welders.

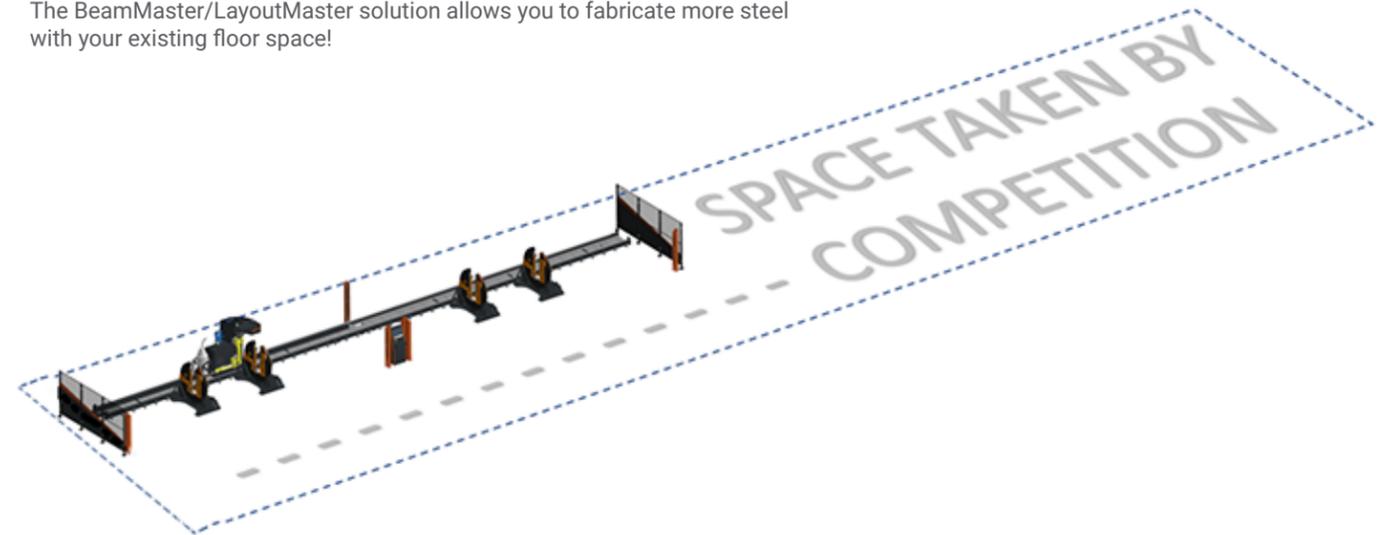
Moreover, the quality and productivity is the same at any hour of the day. Employees will appreciate our easy-to-use, easy to maintain solution. Managers will like the reliability and performance. Owners will love the bottom line!



COMPACT FOOTPRINT = MORE PROFIT PER FT²

OPTIMIZE YOUR FLOORSPACE!

When you combine a BeamMaster and a LayoutMaster into a single machine you get a powerful fitting and welding solution that occupies only about 1/3 of the space required for the same volume of manual welding. 20% less floor space than other robotic fit & weld solutions. The BeamMaster/LayoutMaster solution allows you to fabricate more steel with your existing floor space!



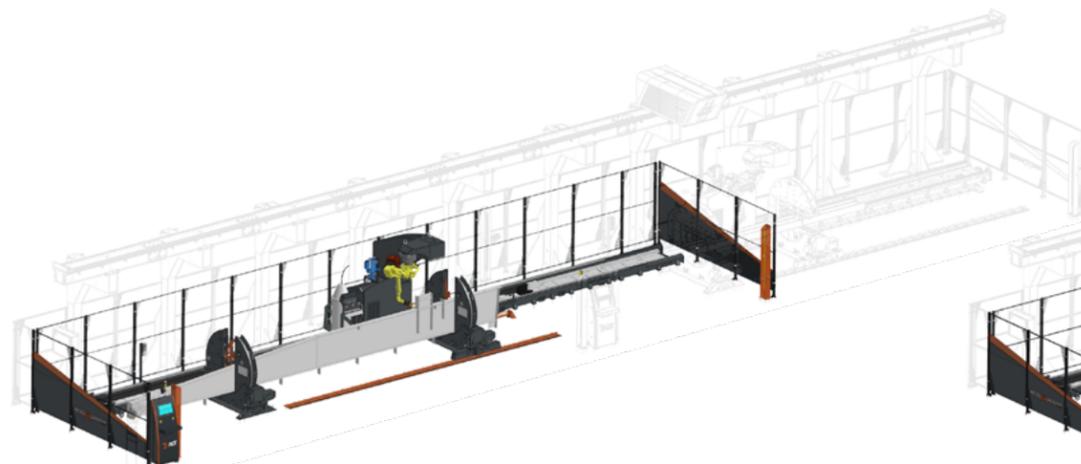
MODULAR DESIGN MEETS CHANGING NEEDS

THE BEAMMASTER AND LAYOUTMASTER ARE HIGHLY CONFIGURABLE SOLUTIONS.

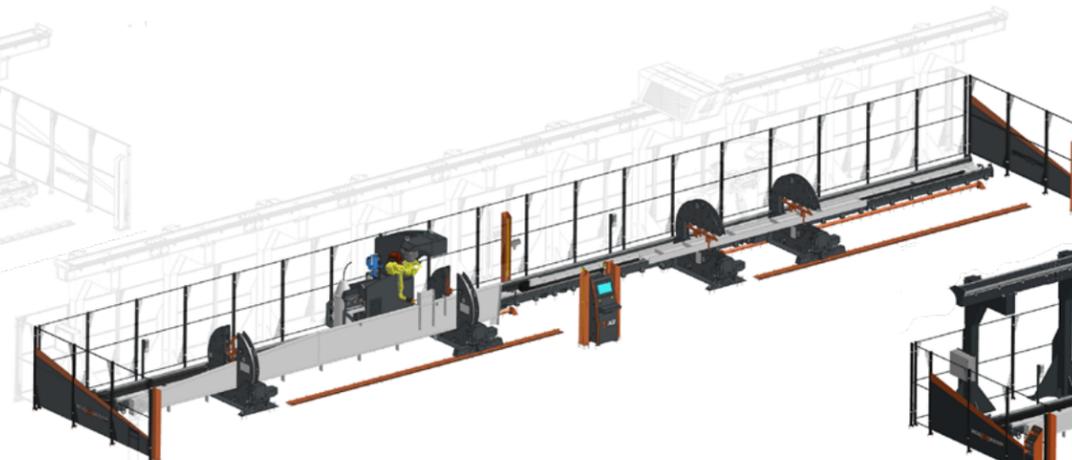
Investing in robots and automation can increase productivity, ease the pain of labor shortages and increase profits. In today's highly competitive environment, not every fabricator is ready or able to go «all-in» right at the start.

one robot, trestle setup, enjoying the benefits of robotic welding immediately. A logical upgrade path would include adding beam rotators, a second-zone, and finally a LAYOUTMASTER to cover two zones. There are many ways to configure and grow your automated fitting and welding capabilities. Ask how we can help!

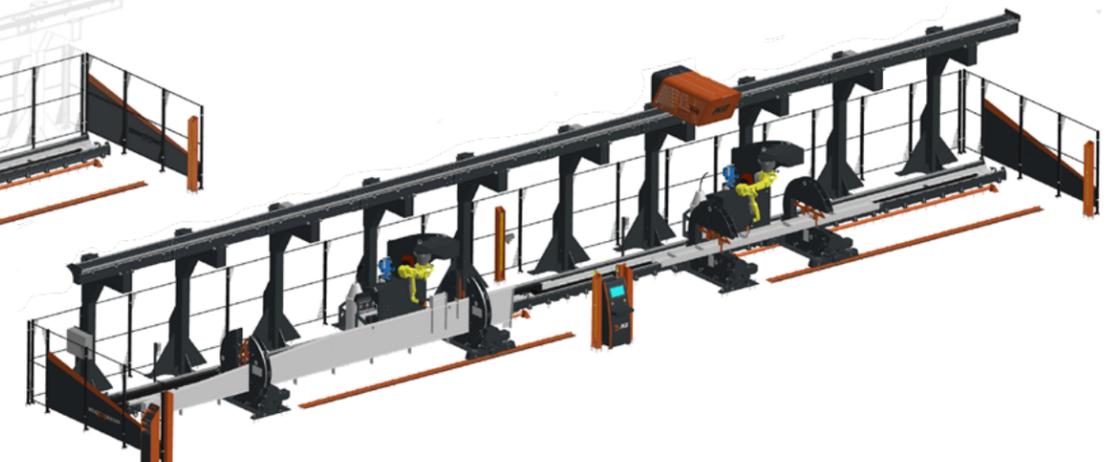
Both the BEAMMASTER/LAYOUTMASTER are designed to be fully modular, allowing a fabricator to start with a one-zone,



BEAMMASTER 1 ZONE



BEAMMASTER 2 ZONES



BEAMMASTER 2 ZONES WITH LAYOUTMASTER



T: 819-693-9682
E: INFO@AGT-GROUP.COM
W: AGTROBOTICS.COM

WELD FASTER | FIT SMARTER | KEEP IT SIMPLE

WORLDWIDE SUPPORT



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