

Welding Automation

For Structural Steel



**BEAM
MASTER**



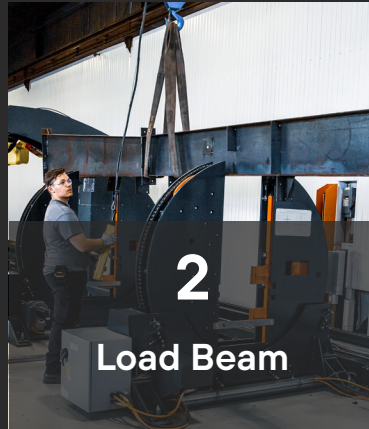
AGT
ROBOTICS

Keep It Simple

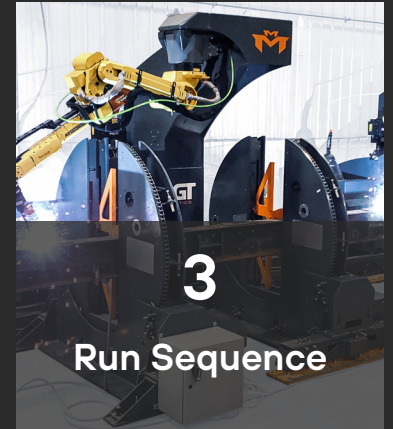
WELD



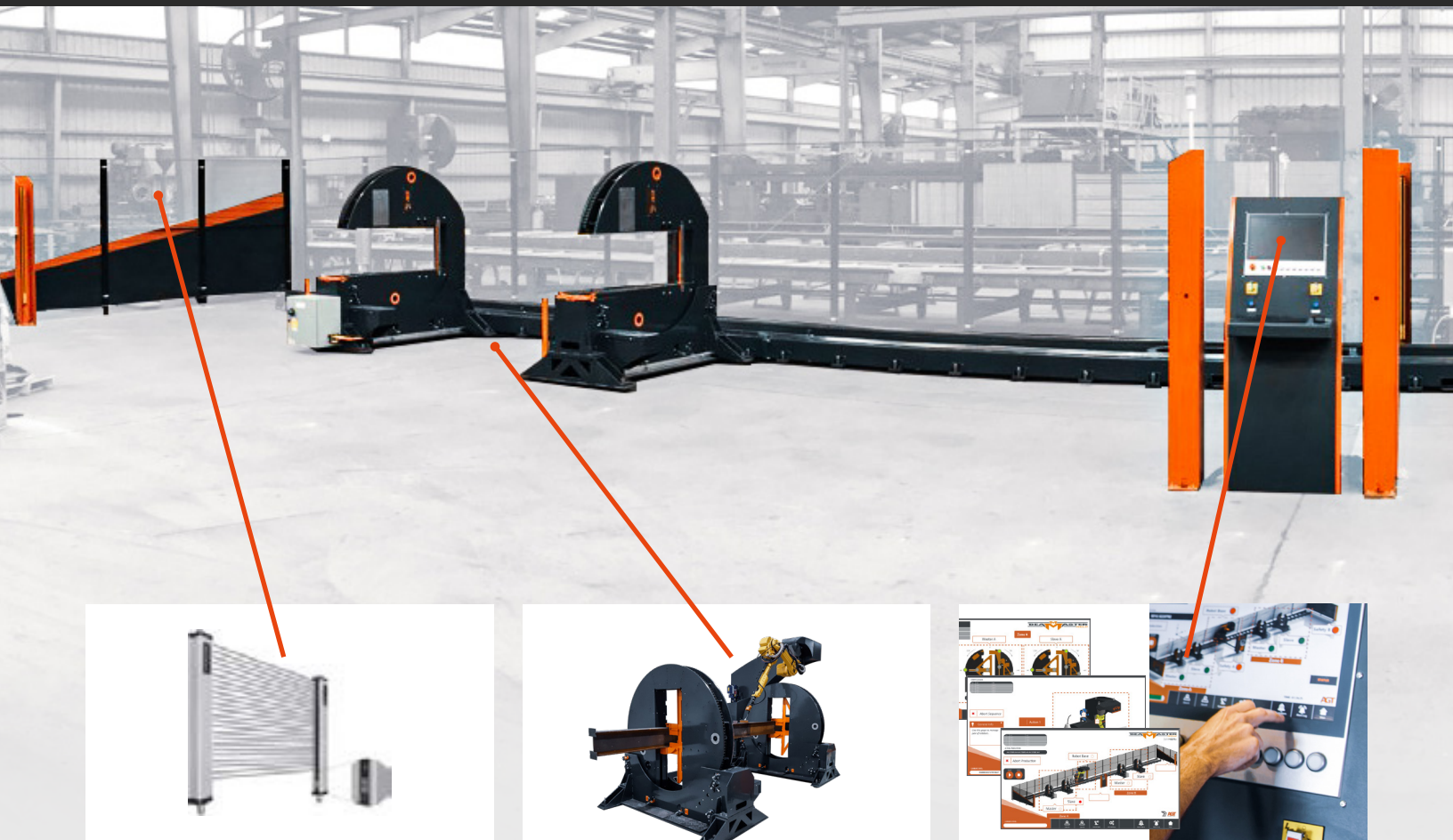
1
Load Robot
Sequence



2
Load Beam



3
Run Sequence



Safe Operations

Laser curtains ensure a safe working environment for the operators.

Efficient Rotating Units

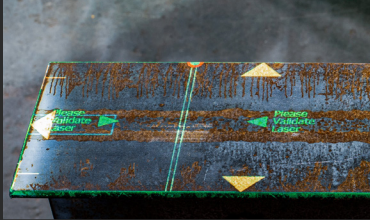
Automatic beam rotator ensures maximum productivity.

Be In Control

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

100% FIT + WELD With A Single Operator

While robot welds in zone A, operator can safely move to zone B and unload welded beam, load new beam and tack weld accessories.



1

Align
Projection



2

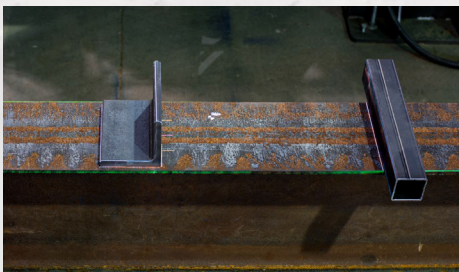
Project
Connections



3

Tack Weld

FIT



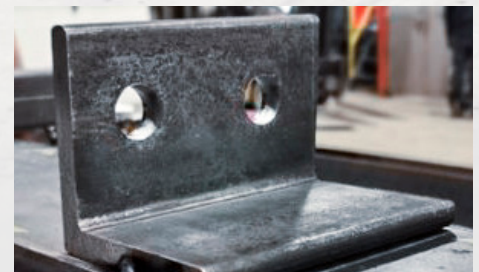
Fitting

The projected information helps reduce the time for fitting your production.



Reliable Welding Robot

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



Productivity X2

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

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 to be profitable. The BeamMaster's award-winning Cortex software makes robotic welding possible and profitable with a lot of 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 does not already contain that information.

Structural steel shapes are not 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 an excellent quality weld in exactly the right place. Want to know more?



Visit our website
at agtrobotics.com



Eliminate Unnecessary Handling

Streamlining Operations With Beam Rotators & Dual-Zone Concept

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 welded and ready for paint. The beam rotation is handled automatically throughout the entire welding process. The robot and the operator switch zones to optimize efficiency.



The BeamMaster Can Also Be Used To Weld Miscellaneous Assemblies.

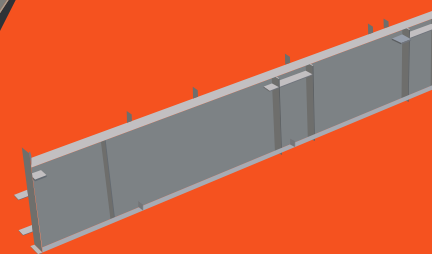
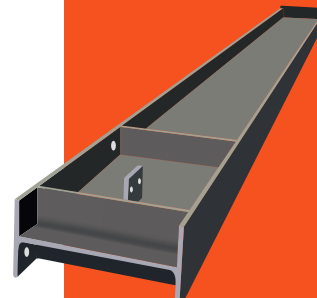
When investing in a robotic system one of the key features to look for is versatility. Some jobs might require greater flexibility from the robot than the fully automated, Cortex-powered, beam and column welding. The BeamMaster can be used like a standard robotic welding system to weld panels, short sub-assemblies, small skids or other miscellaneous assemblies - anything that fits in it's work envelope.

VERSATILE Weld More Stuff!

H
W-BEAM

U
CHANNEL

O
HSS CLOSED
RECTANGULAR
COLUMN



MILL SHAPES

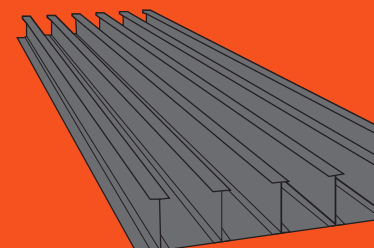
- H-BEAM
- HSS
- CHANNELS

FABRICATED BEAMS

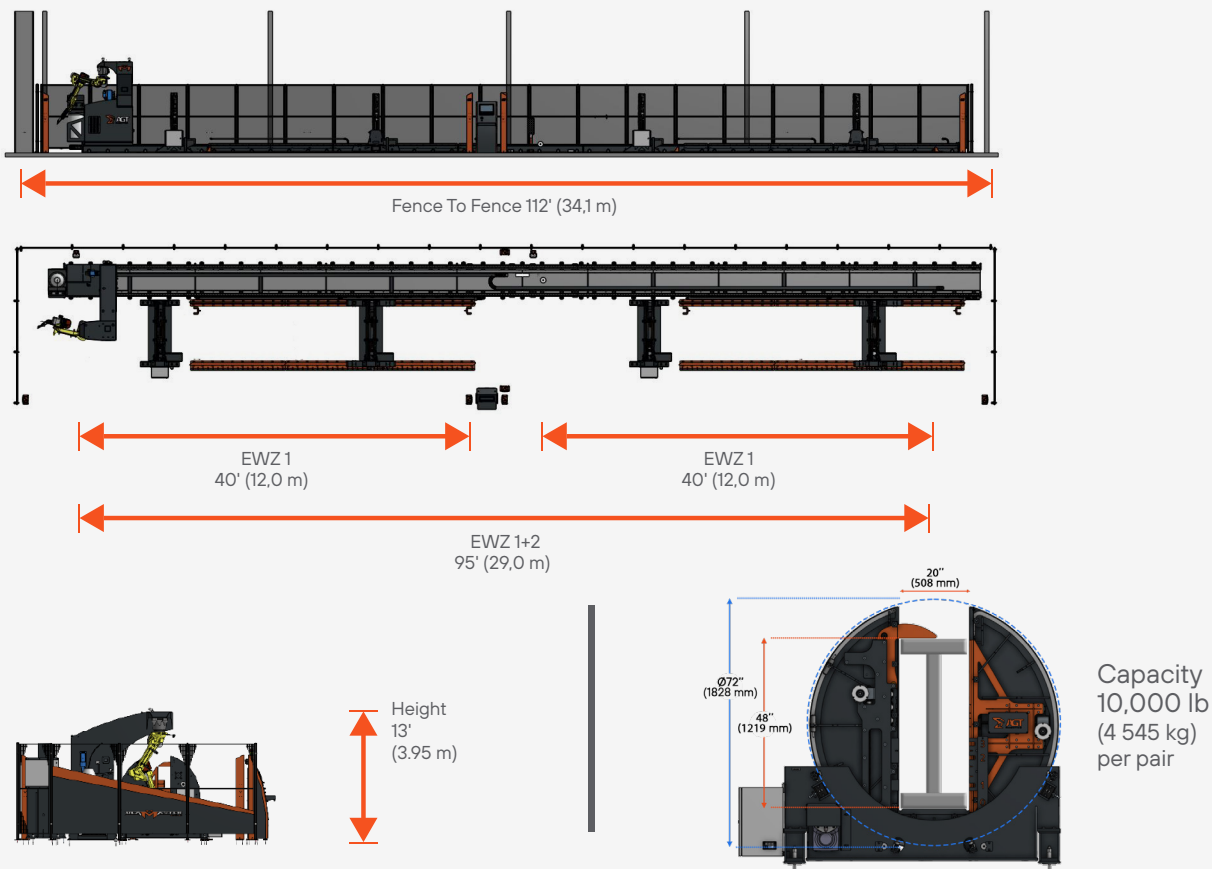
- STRAIGHT
- TAPERED
- DOUBLE-TAPERED

OTHER ASSEMBLIES

- PANELS
- DELTA BEAMS
- OTHER



Standard Dimensions



Welding Specifications

Fillet Welds (2f)	20.0 in/min for 3/16" weld 15.0 in/min for 1/4" weld 10.0 in/min for 5/16" weld Speed may be increased if fit-up allows.	(8.4 mm/s for 4.8 mm fillet weld) (6.4 mm/s for 6.4 mm fillet weld) (4.6 mm/s for 8 mm fillet weld)
Gap Detection	No gap detection	
Joint Detection	3D Camera Point Cloud seam finding (SnapCam)	
Process and Position	MCAW - Spray and pulse transfer modes / BS EN ISO 4063 Process 138 GMAW - Spray and pulse transfer modes / BS EN ISO 4063 Process 135	
Welding Wire	MCAW: A5. 18, A5. 18M: E70C-6M H4 / CSA W48-06: E491C-6MJ-H4 GMAW: A5. 18, A5. 18M: ER70S-6 / CSA W48-06: B-G 49A 3 C1 S6	
Approved Filler Metals	Preferred: MCAW (138): Hobart Fabcor Edge 0.045" diameter (1.2 mm) Alternative: GMAW (135): Lincoln Electric SuperArc L-59 0.045" (1.2 mm)	
Shielding Gas	85%Ar-15%CO₂ mix (M20) 90%Ar-10%CO₂ mix (M20)	
Surface Finish	All parts and beam must be clean with no excessive rust or mill scale. Database includes procedures for both sandblasted surfaces and mill scale. Highest quality is obtained on sandblasted surfaces. Slower welding speed are used for mill scale surfaces.	

What Is Cortex?

Creating A Robot Program Has Never Been That Easy.

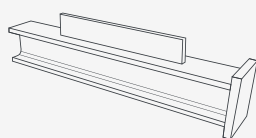
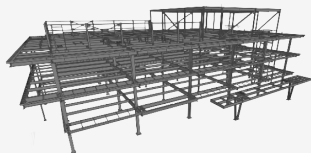
No Programming = No Human Intervention

**The Only True No-Programming
Solution For Robotic Welding!**

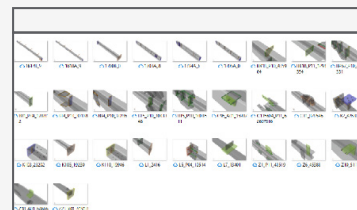
That's why the BeamMaster has become the best-selling robotic welding system for structural steel. In a typical building, many beams are similar but rarely identical, making automation impossible with conventional robotic programming methods.

AGT's Cortex software is specifically designed for the structural steel industry to automatically program all unique beams in a building.

1 Export Model



2 Automatically Generate Programs

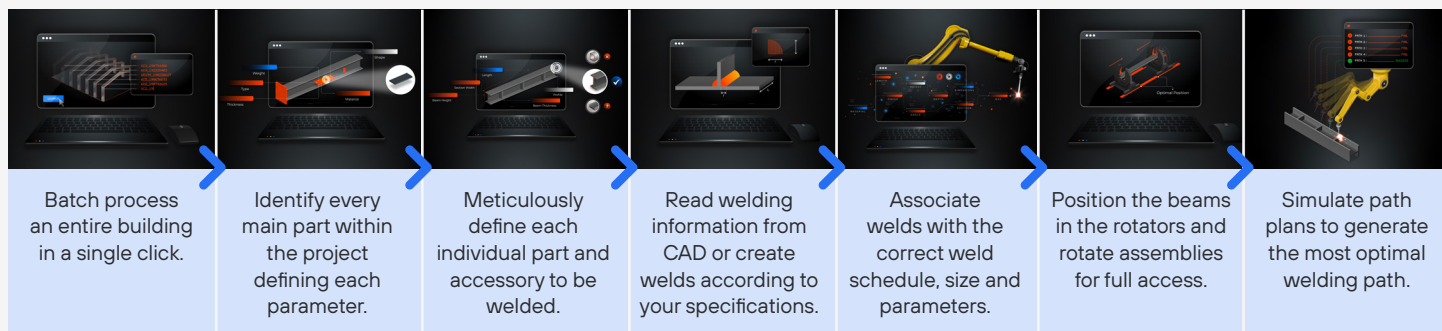


Let Cortex automatically create custom-tailored robotic welding programs for every unique beam.

Compatible With Popular CAD Softwares



Automatically, Cortex Will :



And Also

- Generate joint location paths from SnapCam 3D data.
- Coordinate movements between welding sequences.
- Prepare torch maintenance routines.
- Organize welding to minimize heat-induced deformation.
- Convert long longitudinal welds into stitch welds and much more!

One Click To Weld

Programming Time		
Teach Pendant		8 to 36h
Offline Programming		4 to 24h
CORTEX		0

What Is The SnapCam?

Lightning-Fast Robotic 3D Vision Camera

Unmatched Precision

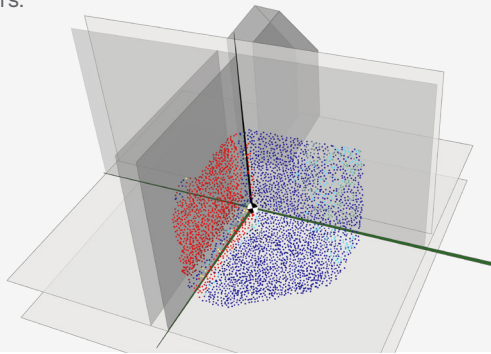
SnapCam revolutionizes seam finding with its advanced 3D point clouds, offering thousands of precise data points. This allows SnapCam to locate welding positions with exceptional accuracy, ensuring welds meet the highest quality standards.

Versatility

SnapCam supports various types of weld joints, such as T-joints and lap joints. This flexibility allows you to handle a wide range of projects and create custom solutions.

Effortless 3D Volume Coverage

SnapCam simplifies your workflow with single-click 3D volume coverage. Fewer steps to locate weld joints mean valuable time savings and reduced errors.



Redefining Robot Vision For Metal Fabrication

SnapCam is more than a typical 3D camera. Optimized to meet your business needs, it evolves with you. With its modular design, SnapCam is highly adaptable. As your business grows, you can integrate SnapCam without losing performance. It's a durable investment, designed to adapt to your changing needs.

SnapCam doesn't just scan efficiently. With instant and detailed reports, remote troubleshooting becomes easy and quick. You can identify and resolve issues swiftly, ensuring continuous production in your workshop.



Just Do More

More Productivity

SnapCam enhances welding efficiency, increasing arc-on time and deposit rates. This boosts your productivity and revenue.

More Welds

SnapCam's advanced features, like extended working distances and single-click 3D volume coverage, let you weld more without constant repositioning.

Auto-Programming Enabled

SnapCam simplifies path planning with real-time corrections, optimizing the path to improve the efficiency of your welding processes.

Made For The Real World

SnapCam delivers reliable and robust performance even in the toughest welding environments, protecting your valuable investment.

Higher Throughput



Your Vision.
Our Technology.



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 fitted 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!

Compared with manual welding, the BeamMaster is typically 3x more efficient.

Cortex software generates all the welding programs and robot paths eliminating the need for a skilled robotics programmer.

Best Cost Per Ton, Period.

The Common Sense Solution

Implementing a LayoutMaster and a BeamMaster is the most cost-effective way of fitting and welding beam assemblies.

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



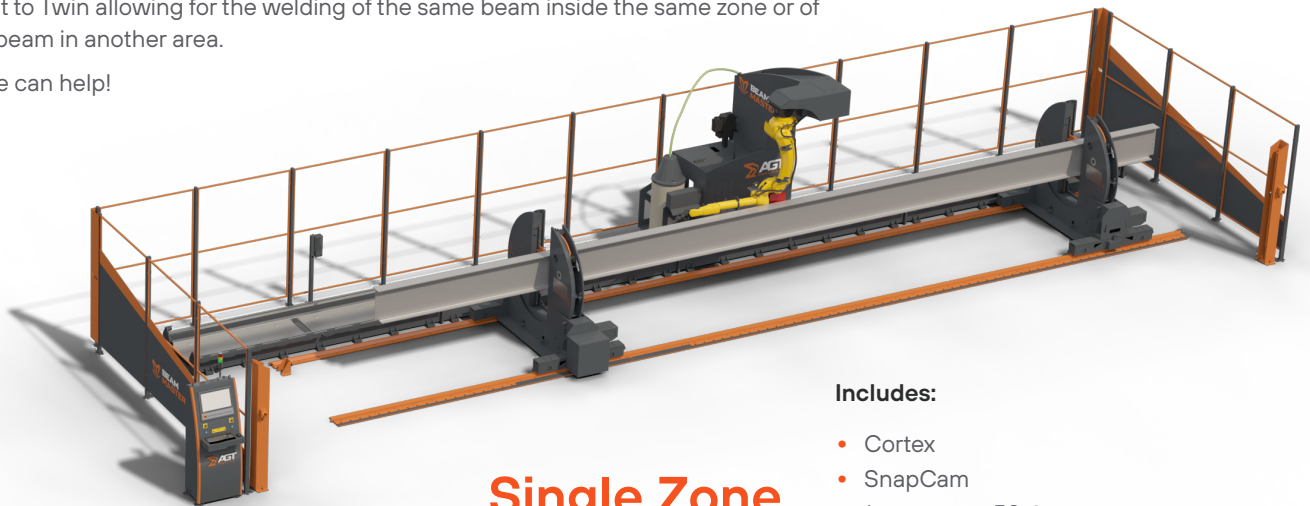
Modular Design Meets Changing Needs

The BeamMaster Is Available In Different Configurations.

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.

The BeamMaster's versatility shines through its three main options: Single Zone, Dual Zone, and Twin. Select your preferred setup from the start and have the flexibility to upgrade later. Begin with the Dual Zone configuration, then add a second welding robot to convert it to Twin allowing for the welding of the same beam inside the same zone or of a different beam in another area.

Ask how we can help!



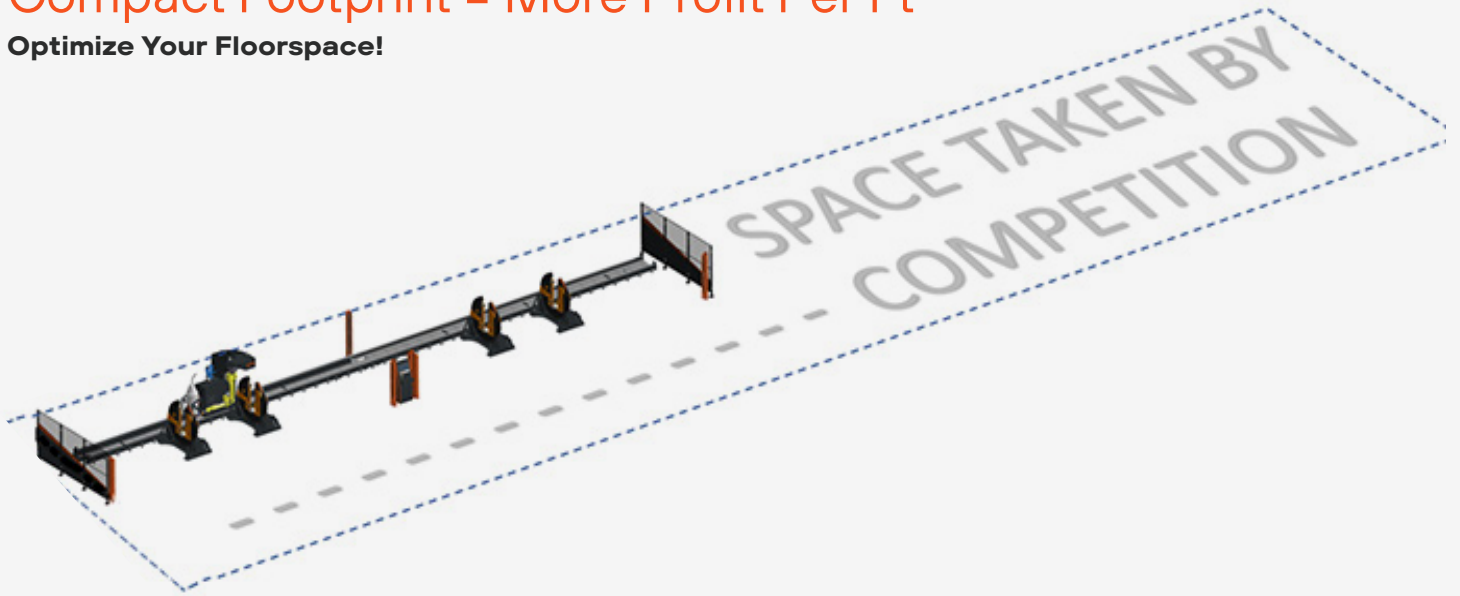
Single Zone, 1 Robot

Includes:

- Cortex
- SnapCam
- 1 zone up to 50-ft
- Fanuc Welding Robot
- Lincoln Electric Welding Source
- 1 pair of rotators
- HMI, Installation, Commissioning, Training

Compact Footprint = More Profit Per Ft²

Optimize Your Floorspace!



Dual-Zone, 1 Robot

Everything included in the BeamMaster Single Zone and:

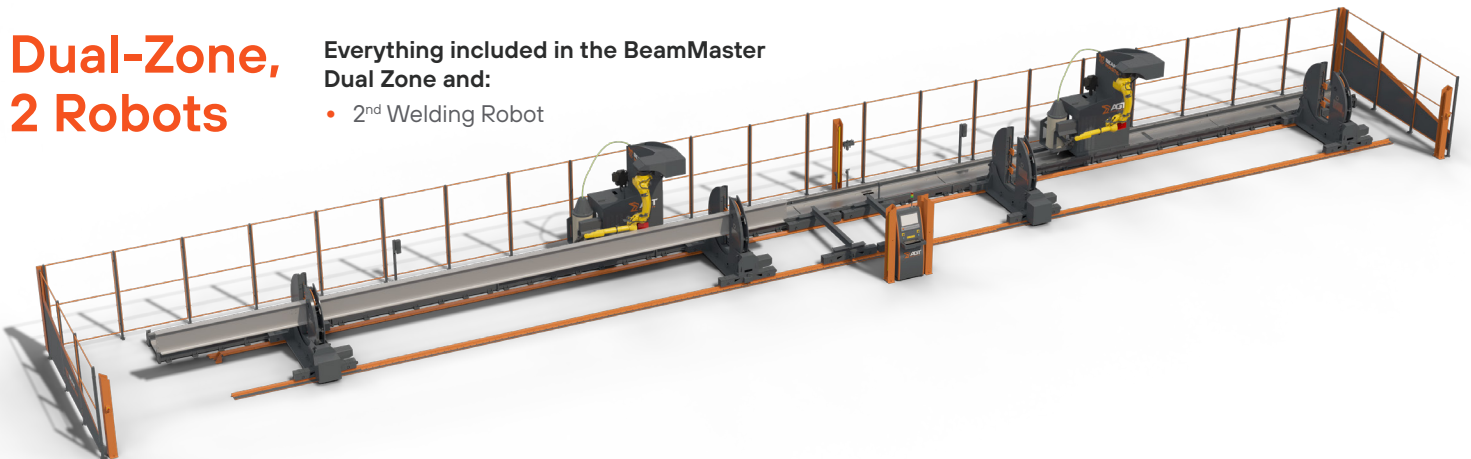
- A Longer Customisable Welding Zone
- Second set of rotators



Dual-Zone, 2 Robots

Everything included in the BeamMaster Dual Zone and:

- 2nd Welding Robot





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Autonomous Robotic Welding For Low Volume/High-Mix Fabrication.

AGT-006200EM/046-032026-RD/EN

Worldwide Support

Authorized Agent

