



PythonX STRUCTURAL

MORE THAN A MACHINE

In Structural Steel Fabrication, the **Lowest Cost Per Ton Producer** usually wins.

But if you pay about the same as your competitor for steel and labor, how do you get the lowest cost per ton?

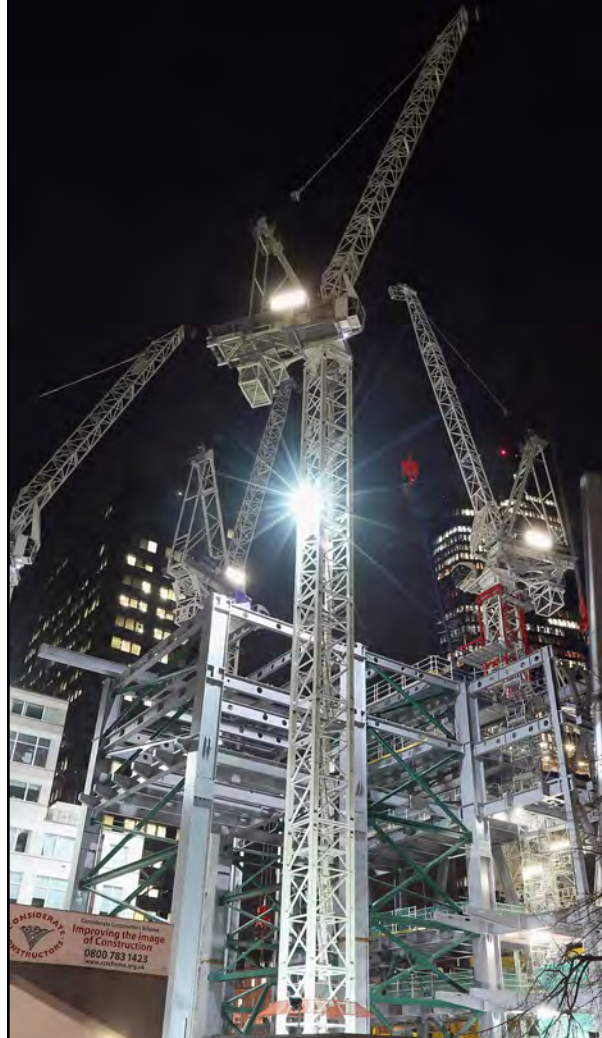
You Get Lean. PythonX® STRUCTURAL is the lean machine that lets you do more with less:

- » Less Time per Piece
- » Less Material Handling
- » Less Inventory
- » Less Waiting
- » Less Waste
- » Less Space
- » Less Overhead
- » Less Programming
- » Less Errors
- » Less Scrap



"We've been able to pass along to our customers the savings of reduced time in the shop, so we're getting more jobs because we've been able to reduce our operating costs."

- Bob Reiman, **Anderson Steel**
Great Falls, MT, USA



15 YEARS OF EXPERIENCE & OVER 380 MACHINES IN SERVICE WORLDWIDE

PythonX STRUCTURAL is the robotic CNC plasma cutting system that has revolutionized structural steel fabrication. More than a machine, **PythonX STRUCTURAL** has created a **NEW STANDARD** in the way you think about running a fabrication shop.

Compared to traditional machines, **PythonX STRUCTURAL**:

- » Uses just a fraction of the floorspace
- » Needs only a fraction of processing time
- » Requires only One Operator and No Programming
- » Offers complete fabricating capability for a fraction of the price



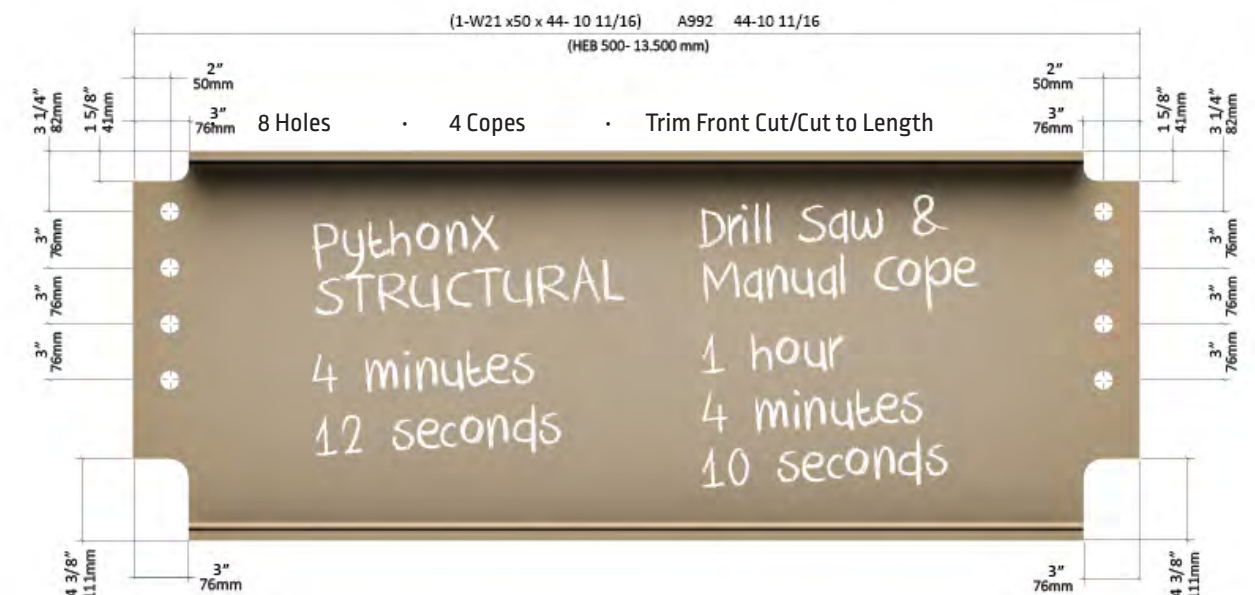
PythonX STRUCTURAL users are processing steel at the lowest cost per ton in the following industries:

- » Buildings
- » Oil and Gas
- » Industrial
- » Mining
- » Off Shore Rigs
- » Pipe Racks
- » Transmission Towers
- » Stadiums
- » Elevators
- » Trailers
- » Shipbuilding
- » Bridges
- » Equipment Manufacturers

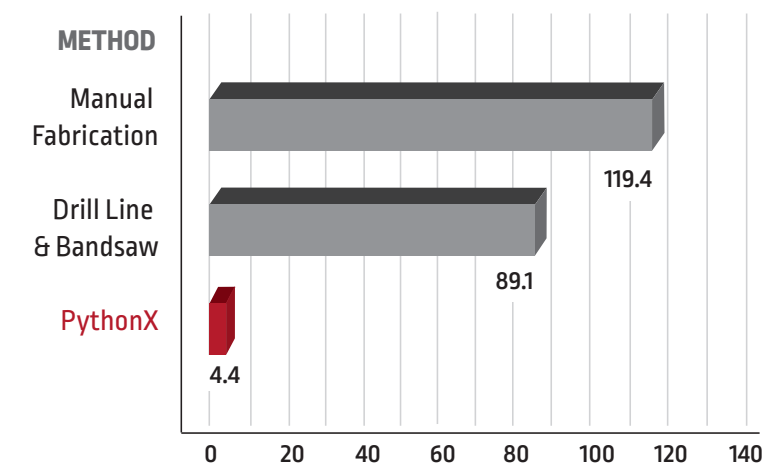
LEAN MANUFACTURING

THINK YOU ARE AUTOMATED WITH A DRILL & SAW?

Let's analyze a common beam in structural fabrication.



HOW LONG TO FABRICATE THIS BEAM IN YOUR SHOP?



4 MINUTES 26 SECONDS

Total time it took **PythonX STRUCTURAL** to make all these features, start to finish, with unmatched location accuracy.

How does traditional fabrication compare?

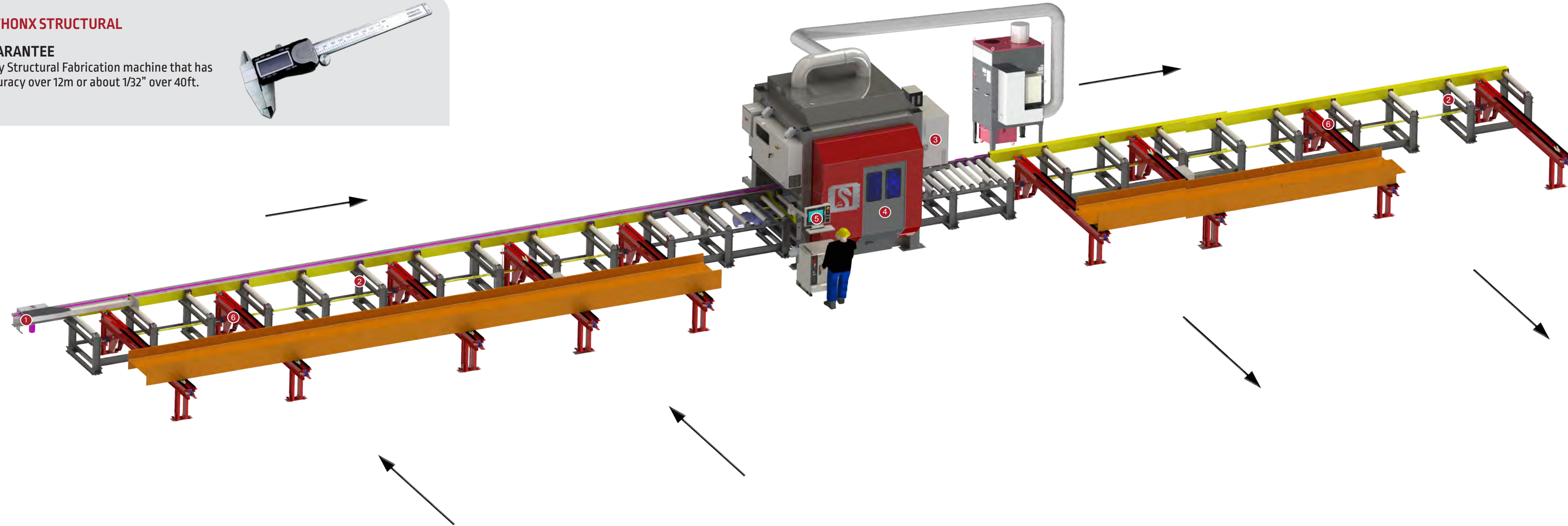
Not too well. Considering time needed for reading the drawing, measuring/marketing the piece, and actually making the cuts, this same beam took 89 minutes in a shop using a combination CNC drill line/bandsaw unit and manual coping/torching. It took two hours in an all-manual shop. And in those cases, time to move the beam between operations wasn't counted in the total.

The chart on the left shows where time was consumed. Or, with **PythonX STRUCTURAL**, where it was saved.

ONLY AVAILABLE WITH PYTHONX STRUCTURAL

1mm ≈ 1/32" - ACCURACY GUARANTEE

PythonX STRUCTURAL is the only Structural Fabrication machine that has a written guarantee of 1mm accuracy over 12m or about 1/32" over 40ft.



A single PythonX STRUCTURAL machine replaces all traditional equipment:

- » Beam Drill Line
- » Bandsaw
- » Coping Machine/Torch
- » Angle Line
- » Plate/Bar Line
- » Marking Machine

1. MEASURING CART



The measuring cart relays the exact position of the work piece to the robot.

- Superior accuracy and measurement compared to pinch roll systems, which can slip
- Initially measures and displays the full length of the beam, which is not possible on pinch roll systems

2. INFEEED/OUTFEED CONVEYORS



Precision machined rollers with no flat spots for ultimate accuracy.

- 4" [101mm] diameter on heavy duty welded frames
- Built to last with oversized 7.5 hp motors, compared to most others using 2.0 hp

3. HIGH DEFINITION TORCH



High Definition Plasma technology aligns and focuses the plasma arc, improving arc stability and energy for more powerful precision cutting.

- Completely automatic gas and kerf control
- **PATENTED** hole taper compensation and advanced bevel tuning

4. MULTI-AXIS ROBOTIC ARM



Tuned twice for absolute best in class accuracy and least cut-path following error.

- Complete with collision detection
- Stronger with a higher payload, further reducing vibration and sway

5. NEW! OPERATOR CONTROL SYSTEM



New features and capabilities let you get more done, more quickly and easily.

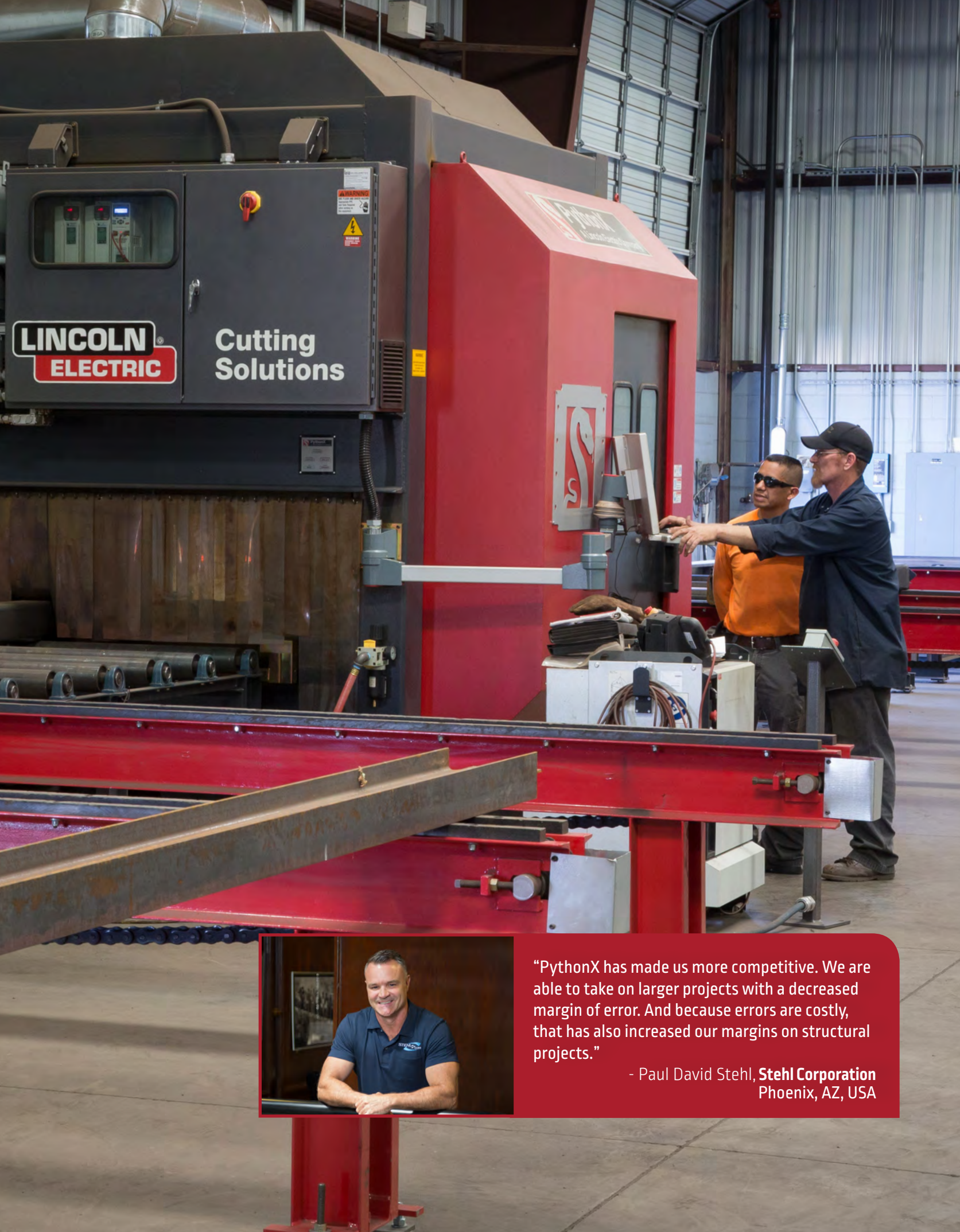
- 24" [61cm] HMI with ergonomic/industrial designed handles that allow ease of movement into optimum positions for any Operator.
- Intuitive touch screen

6. CROSS TRANSFERS



Accumulate and transfer material for Infeed and Outfeed conveyors (optional feature).

- Reduces material handling, increases output
- Heavy duty motor and gear reducer controlled by a variable frequency drive
- Separate Operator Station



"PythonX has made us more competitive. We are able to take on larger projects with a decreased margin of error. And because errors are costly, that has also increased our margins on structural projects."

- Paul David Stehl, **Stehl Corporation**
Phoenix, AZ, USA

MATERIAL CAPACITY

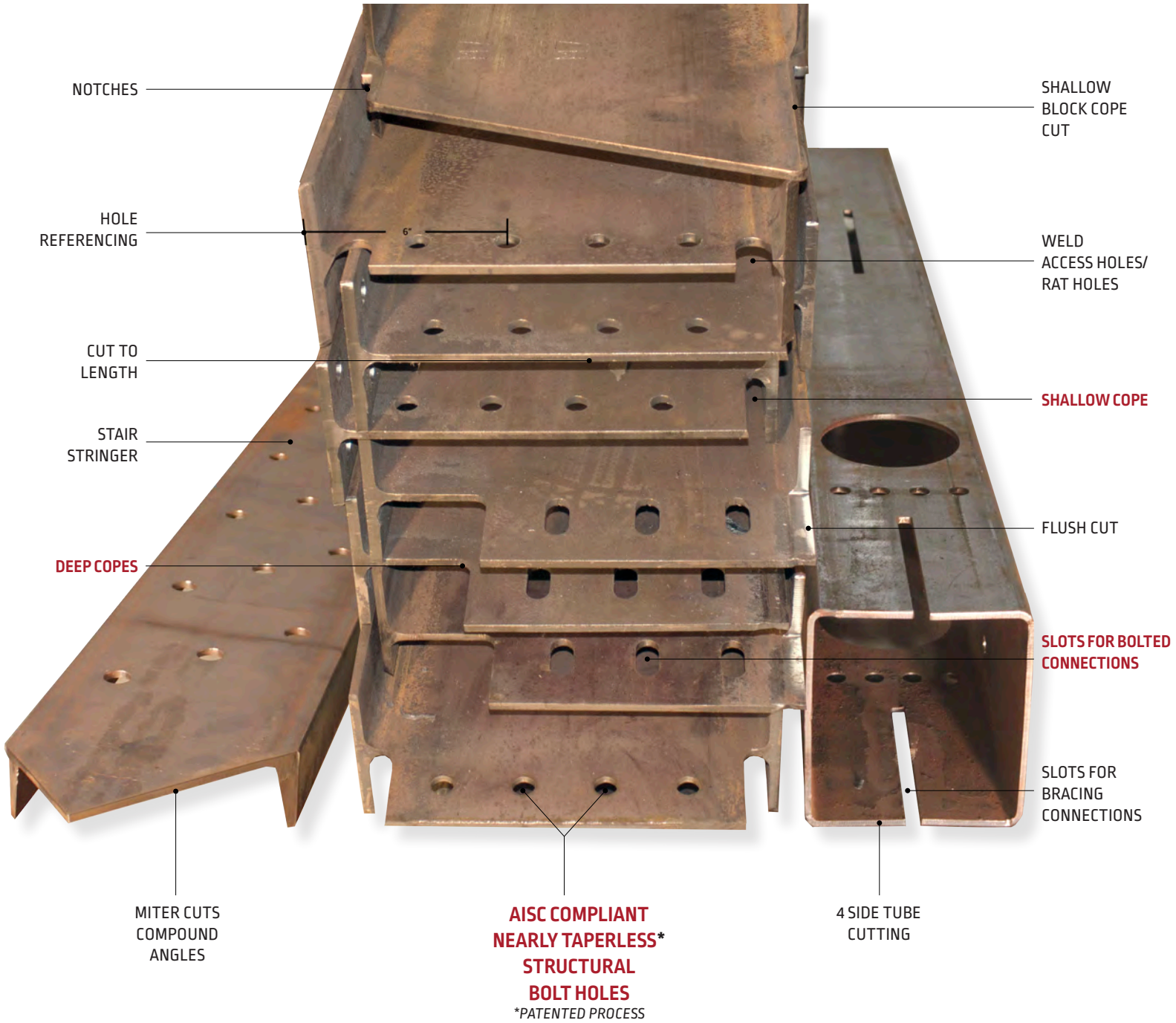


PART LENGTH:
A standard system accommodates 40ft (12m) lengths. Can increase up to 80ft (24m) by increments of 4ft (1.2m) at a time.

MATERIAL THICKNESS:
Max pierce thickness is 1.5" (38mm);
Edge start max thickness is 2" (51mm),
Upgrade Available: 2" (50mm) pierce, 3" (75mm) edge

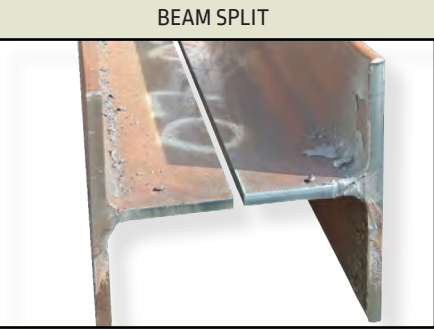
OTHER MATERIALS:
Bulb, Flatbar, Strip Plate, Aluminum, Stainless

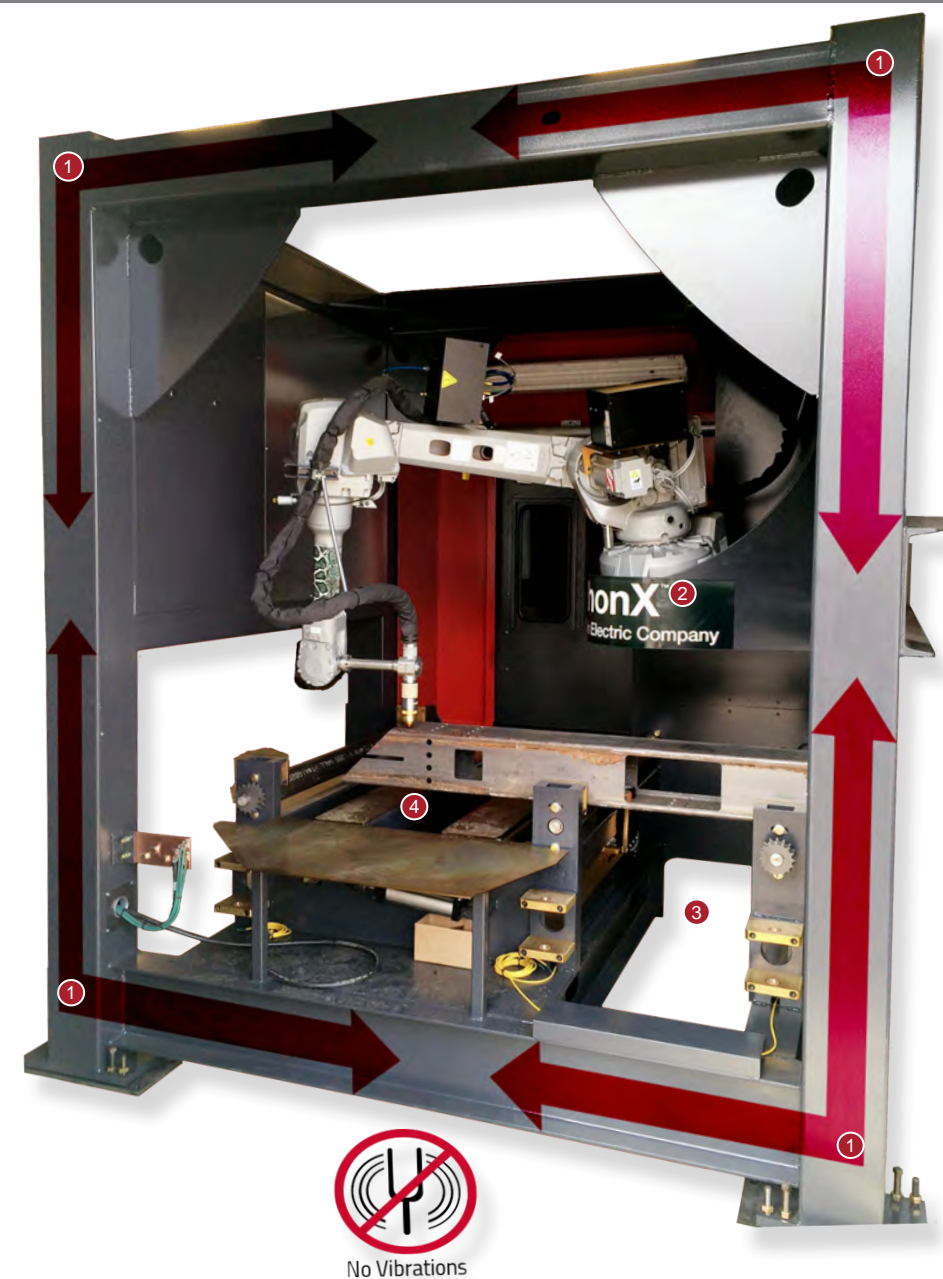
CUTTING CAPABILITIES



	Minimum Capacity		Maximum Capacity	
	Width in (mm)	Height in (mm)	Width in (mm)	Height in (mm)
BEAM	4 (101)	4 (101)	48 (1219)	18 (457)
CHANNEL	3 (76)	1 (25)	36 (914)	4 (101)
HSS TUBE	2 (51)	1 (25)	12 (308)	18 (457)
ANGLE	2 (51)	2 (51)	10 (254)	10 (254)







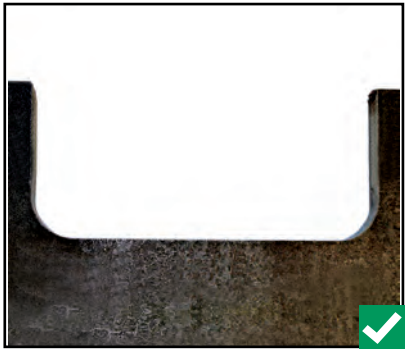

*36" (914mm) is standard and most popular size. 48" (1219mm) is an upgrade





- 1. ONE PIECE WELDED BOX FRAME**
Heavy, strong and designed to be extremely rigid. The uni-body welded frame provides the most stable vibration free foundation for the cutting system.
- 2. FIXED STATIONARY ROBOT BASE**
A fixed non-moving base welded to the box frame lets the PythonX STRUCTURAL use only the robot motion to perform cutting. There are no additional axes of motion which add vibration, backlash and sway leading to poor cut quality.
- 3. UNDERSIDE CUTTING**
The underside cuts are performed in a separate zone where no scrap pieces fall and no crash can occur.
- 4. CUTS AND SEVER**
All sever operations occur in this zone, which allows ample room for endcuts and scrap to accumulate without having to worry about crashes since no underside cutting is performed here.

Poor hole quality and cut finish can lead to failed inspections, lost jobs and a damaged reputation. Due to its stable, stationary base the PythonX STRUCTURAL pioneered robotic plasma hole technology and has been producing the undisputed best bolt holes and cuts in the industry for many years. The bolt holes have been lab tested and AISC compliant.

	PythonX STRUCTURAL	Competitors
BEST BOLT HOLES PythonX STRUCTURAL automatically tilts the cutting torch using a patented process resulting in a perfectly straight through hole that is NEARLY TAPERLESS.		
SLOTS PythonX STRUCTURAL cuts slots and other shapes to the exact specified dimensions allowing for perfect fitup.		
COPES Copes are produced with a mirror like finish and a smooth corner radius on the PythonX STRUCTURAL. No touch-up is required.		
NOTCHES Notches, cutouts and flush cuts are smooth and do not require additional grinding or shaping. A perfect fitup also results in less welding.		

"The PythonX Structural Fabrication System has helped us increase production by 300% since it was installed. I have no idea how we would be able to get this work out without this machine."
- Justin Airhart, **Southern Sales & Equipment**
St. Bernard, LA, USA

"We are saving about \$500,000 a year in labor costs. We have had zero rework from fab work. We can put 10x more volume through our shop than before. We have increased our capacity 10 fold since purchasing the PythonX."
- Jeff Holley, **LMC Industrial Contractors**
Avon, NY, USA

REFINED FEATURES

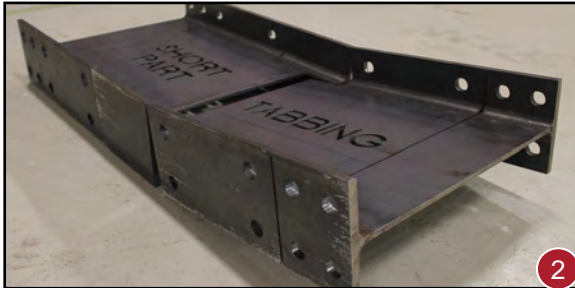
After years of field testing, the **PythonX STRUCTURAL** is faster, more accurate and more reliable, further strengthening it as the #1 choice with structural steel fabricators.

1. 4-SIDE TUBE CUTTING WITH BEVEL/MITER

With one stationary robotic arm the machine cuts the underside of square or rectangular tubes and processes all 4 sides in 1 error free pass. The first and only robotic plasma to achieve 4-side cutting without mounting the robot on a moving or rotational base, which greatly sacrifices cut quality.

2. PART TABBING

Part tabbing allows for shorter structural steel parts to remain attached to the main beam for easier handling and storage. The type of tab and tab length is programmable by the operator.



3. SHORTER PIECE TRANSFER

Advanced software combined with closer roller spacing allows for short parts to be transferred from the cutting area after a cut to length operation.

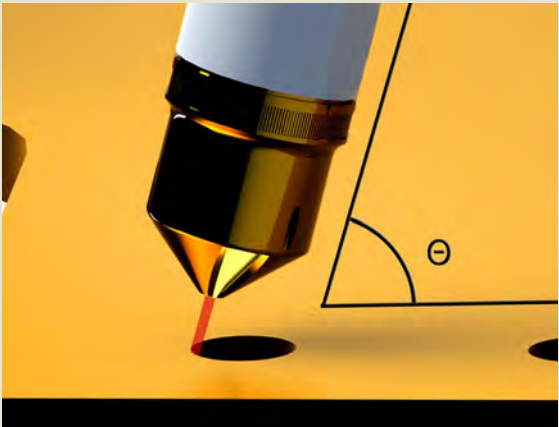


4. LARGER WORK ENVELOPE

Expanded robot cutting area allows for more features to be cut at once, reducing material indexing, leading to even lower total time per piece.

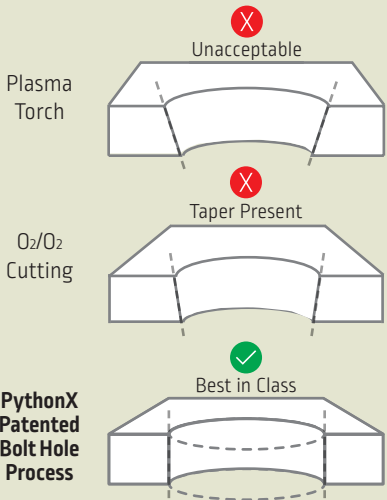


ONLY AVAILABLE WITH PYTHONX STRUCTURAL



PATENTED BOLT HOLE PROCESS

PythonX STRUCTURAL tilts the torch, instantaneously changes speeds and uses sophisticated software to produce straight through holes that are **NEARLY TAPERLESS**.

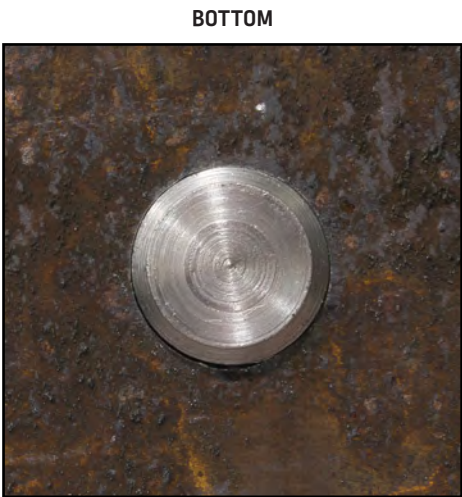


PythonX STRUCTURAL produces unmatched bolt hole quality eliminating the need for operator intervention and consistently outperforms competitive systems. Engineers around the globe can design with confidence knowing that plasma cut holes cut by PythonX STRUCTURAL can be used in a broad range of load applications* such as:

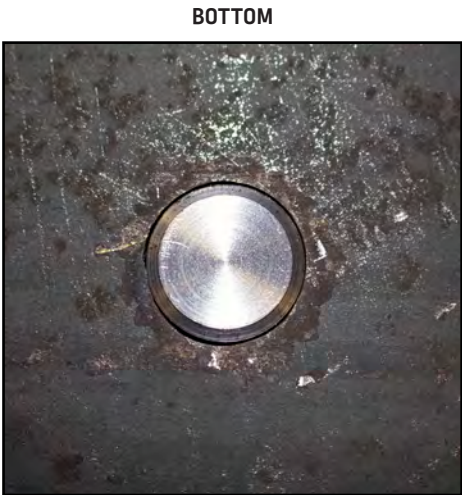
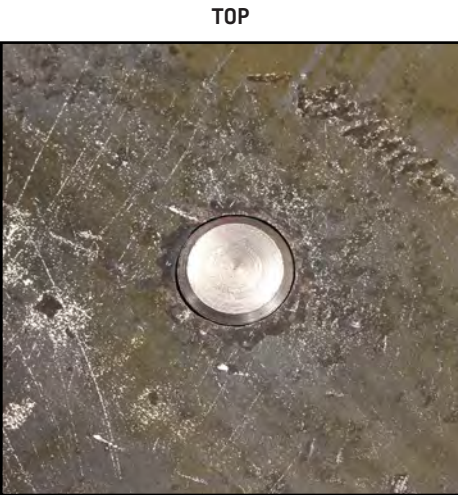
- » Static
- » Cyclic
- » Seismic

PYTHONX STRUCTURAL PLASMA CUT BOLT HOLES

Machined Die Diameter: 13/16" (21mm)
Mild Steel Thickness: 3/8" (10mm)



Machined Die Diameter: 13/16" (21mm)
Mild Steel Thickness: 1/2" (12mm)



*For complete details, refer to The PythonX® Guide to Plasma Cutting in Codes and Standards available from your local Sales Representative.

EASY AS 1, 2, 3 WITH PYTHONX STRUCTURAL

Advanced CNC robotics and high-definition plasma cutting, equipped with software so sophisticated it programs all the cuts by itself.

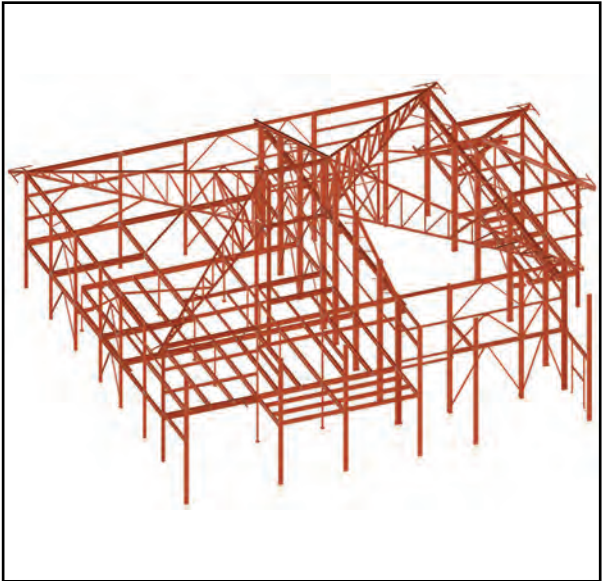
1 LOAD THE WORKPIECE

Load piece on the infeed conveyor. The measuring cart shuttles the work piece into the work envelope, measures and displays the length of the piece on the operator screen.



2 OPEN A PART FILE

The PythonX STRUCTURAL is capable of reading DSTV files from 3D detailing software such as TEKLA, SDS/2, AceCAD, ProSTEEL and others. 2D DXF AutoCAD files can also be read by the PythonX STRUCTURAL.



3 PRESS START

The PythonX STRUCTURAL takes it from here by identifying all the features and dimensions required and generates the cut sequence. The pieces are probed to determine exact position and the robot automatically adjusts to the exact dimensions. After completion, the part is shuttled out on the outfeed conveyor for transfer to fitup, welding and painting.



“I went and looked at other machines but the PythonX was the only machine that was going to make us better at what we already do. It brought us into the modern world. We have realized an increase in throughput of at least 40%.”
- Bray Bourne, **Universal Steel Inc.**
Lithonia, GA, USA



MACHINE CAPABILITY COMPARISONS

Machine Capability	Single Spindle Beam Drill Line	Three Spindle Beam Drill Line with Band Saw	PythonX STRUCTURAL
Produces Quality Bolt Holes <small>(Approved for Structural Joints)</small>	YES	YES	YES
Maximum Hole Diameter	2" (50mm)	2" (50mm)	24" (609mm)
Produce Layout Marks for Clips & Stiffeners	LIMITED	LIMITED	YES
Downloads from Design / Detailing Software <small>(TEKLA, SDS/2, StruCAD, ProSTEEL, AUTOCAD)</small>	YES	YES	ANY SHAPE
Time to Cut-to-Length one W24 x100	INCAPABLE	5 MINUTI	1 MIN 15 SEC
Automatic Part Handling <small>(set it and forget it)</small>	FLIP MANUALLY	YES	YES
Cut Copes with CNC Accuracy	INCAPABLE	INCAPABLE	YES
Make Cutouts for Bracing & Knife Connections	INCAPABLE	INCAPABLE	YES
Text Scribing <small>(any size)</small>	INCAPABLE	INCAPABLE	YES
Fabricate Complete Stair Stringers <small>(including Tread Layout)</small>	INCAPABLE	INCAPABLE	YES
Miter Cut	INCAPABLE	COSTLY OPTION	YES
Cut Slots & Any Other Shapes	INCAPABLE	INCAPABLE	YES
Weld Prep Bevel Cut	INCAPABLE	INCAPABLE	YES
Rip I-Beams into T-Beams	INCAPABLE	INCAPABLE	YES
Tool Change Required	YES	YES	NEVER
Overall Production Output	SLOW	AVERAGE	FASTEST
Price	LOWEST	HIGHEST	MID RANGE

“Since introducing the PythonX to our shop 11 years ago, we’ve substantially increased our production. This is our first and only beamline and it has greatly benefited our shop, increasing quality and output. Despite our machine being over 10 years old, we’re currently running the latest software. Their support team is quick and efficient; they helped us tremendously with initial training and setup.”
- Tony Weitzenbaur, **M&G Steel Ltd.**
Oakville, ON, Canada

“We installed the PythonX system in the summer of 2015 and it immediately began opening new doors for us. Traditionally, we have, and continue to fabricate parts for bridges and heavy infrastructure projects. The PythonX helped us to be more competitive within our niche, and allowed us to bid and get jobs that we never would have gone after in the past. Now with the addition of 4-sided processing we will be going after an even wider array or projects!”
- Jesse Johnson, **C&K Johnson Industries**
Arcata, CA, USA

4 WEEKS DELIVERY

Machine starts paying for itself 4 to 6 months sooner than others; Results in the fastest return on investment (ROI).

PythonX STRUCTURAL	4 WEEKS	1 WEEK	Machine Build Installation Training					
Other #1	16 WEEKS	4 WEEKS	1 WEEK					
Other #2	25 WEEKS						4 WEEKS	1 WEEK
Start of Your ROI (MONTHS)	1	2	3	4	5	6	7	8

SERVICE COMMITMENT

Our expert trained technicians are committed to helping you by providing:

- » A single focus and dedication to the only system that we build, the PythonX STRUCTURAL
- » 24/7 access to support specialists
- » Remote access control with online diagnostics
- » Advanced troubleshooting capabilities and procedures
- » Sophisticated Service Tracking system and logging



CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

#1

ROBOTIC STRUCTURAL FABRICATION SYSTEM IN THE WORLD



380+ PYTHONX STRUCTURAL MACHINES IN OPERATION

PYTHONX STRUCTURAL WARRANTY

Have peace of mind with the industry leading and most comprehensive warranty: **PythonX STRUCTURAL** offers 3 years. No other provider in our technology space has more machines cutting more tonnes globally than the **PythonX STRUCTURAL**.

Burlington Automation, a Lincoln Electric Company, is focused on applying LEAN Manufacturing and Automation Principles to structural steel industries through the implementation of the **PythonX STRUCTURAL**. The drive to improve the capabilities of our clients, to ensure they are better than their competitors, is a passion our employees embrace every day. We are dedicated to making our clients be as good as they can be, better tomorrow than today, by committing to continued Research and Development, providing value added industry leading upgrades as well as real-time and interactive remote support on the **PythonX STRUCTURAL** system.



Burlington Automation
63 Innovation Drive
Hamilton, ON
Canada L9H 7L8
Toll Free: 1-833-PYTHONX
Tel: +1 905 689 7771
Fax: +1 905 689 7773
info@pythonx.com
www.PythonX.com

Connect with PythonX:



The Lincoln Electric Company
22801 Saint Claire Avenue
Cleveland, OH 44117-1199 USA