

# STRUCTURAL

FUEL YOUR BUSINESS

Understanding Drives Solutions

**PYTHONX**

**LINCOLN**  
**ELECTRIC**  
AUTOMATION



# INDUSTRY CHALLENGES

Steel fabricators are facing several challenges globally, including fluctuating steel prices due to trade tensions and changes in demand, labor shortages, stricter environmental regulations, competition from alternative materials, and the need to invest in new equipment and training to keep up with technological advancements.

One of the major challenges that stands out is the shortage of skilled labor. This shortage can lead to delays in project completion and increased costs for steel fabricators. With a limited pool of skilled workers, steel fabricators may struggle to keep up with demand and may need to invest in training programs to develop their workforce. The shortage of skilled labor is a pressing issue that must be addressed in order to continue to meet customer needs and to remain competitive in the market.



LABOUR SHORTAGES



TIME/COST INTENSIVE



QUALITY CONTROL



HEALTH AND SAFETY ISSUES



# THE PYTHONX SOLUTION

The PythonX Structural cutting system was developed to solve challenges faced by structural steel fabricators around the globe. Here are some ways in which the PythonX systems can help:

Material conveyance and automated cutting means projects can be completed faster, saving you time and money. The system uses advanced software and sensors to ensure high precision, reducing the risk of errors and rework. Additionally, only one operator is required to run the machine, reducing the need for manual labor and labor costs. With faster project completion times, customer satisfaction can be improved, and revenue can be increased. Finally, the PythonX Structural system can fabricate a wide range of steel profiles and shapes, expanding the capabilities of steel fabricators and allowing them to take on a greater variety of projects.



SAVE  
VALUABLE TIME



ONE-PERSON JOB



ELIMINATE  
ERRORS



REDUCE LABOR COSTS

# 100%

Meet quality expectations on **every** cut and operate in the most efficient way possible.

**PYTHONX**<sup>®</sup>

# ROBOTIC STEEL FABRICATION

Introducing the PythonX Structural System - the innovative solution to steel fabrication that increases speed, automation, and profitability. Designed to address labor shortages and improve production efficiency. The PythonX Structural system utilizes cutting-edge technology to optimize material usage and help reduce waste. With faster throughput and precision cutting, the PythonX Structural system can help increase production and profits for your business. Whether you're looking to streamline your steel fabrication process or improve your bottom line, the PythonX Structural system is the solution you've been searching for.



**CONTROL**  
CUT QUALITY



**EASY PART**  
FILE IMPORT



**MATERIAL**  
OPTIMIZATION



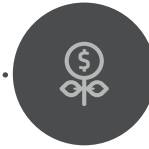
**OPERATOR**  
TRAINING SYSTEM



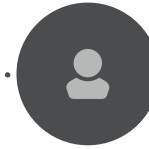
**REDUCE ERRORS**



**INTUITIVE OPERATION**



**ECONOMIC**  
INVESTMENT



**ONLY ONE**  
OPERATOR NEEDED



**INCREASED PRODUCTION**  
CAPABILITIES



**AUTOMATED**  
CUTTING



**INTELLIGENT**  
SOFTWARE



**UPGRADEABLE**  
SOFTWARE



## LEFT-TO-RIGHT SYSTEM

## CAN I HAVE A LOOK AT THE PYTHONX STRUCTURAL SYSTEM IN LIVE ACTION? **YES**

**See for yourself on-site!** Get in touch with our sales team to schedule a live demo near you. Alternatively, take a tour here: [lared.info/Virtual](https://lared.info/Virtual)



15+ YEARS OF EXPERIENCE & OVER  
700+ MACHINES IN SERVICE WORLDWIDE

**PYTHONX**<sup>®</sup>

# OPERATION PROCESS



## FABRICATION SYSTEM

THE ULTIMATE SOLUTION FOR PRECISION AND EFFICIENCY

### 3 MEASURE MATERIAL

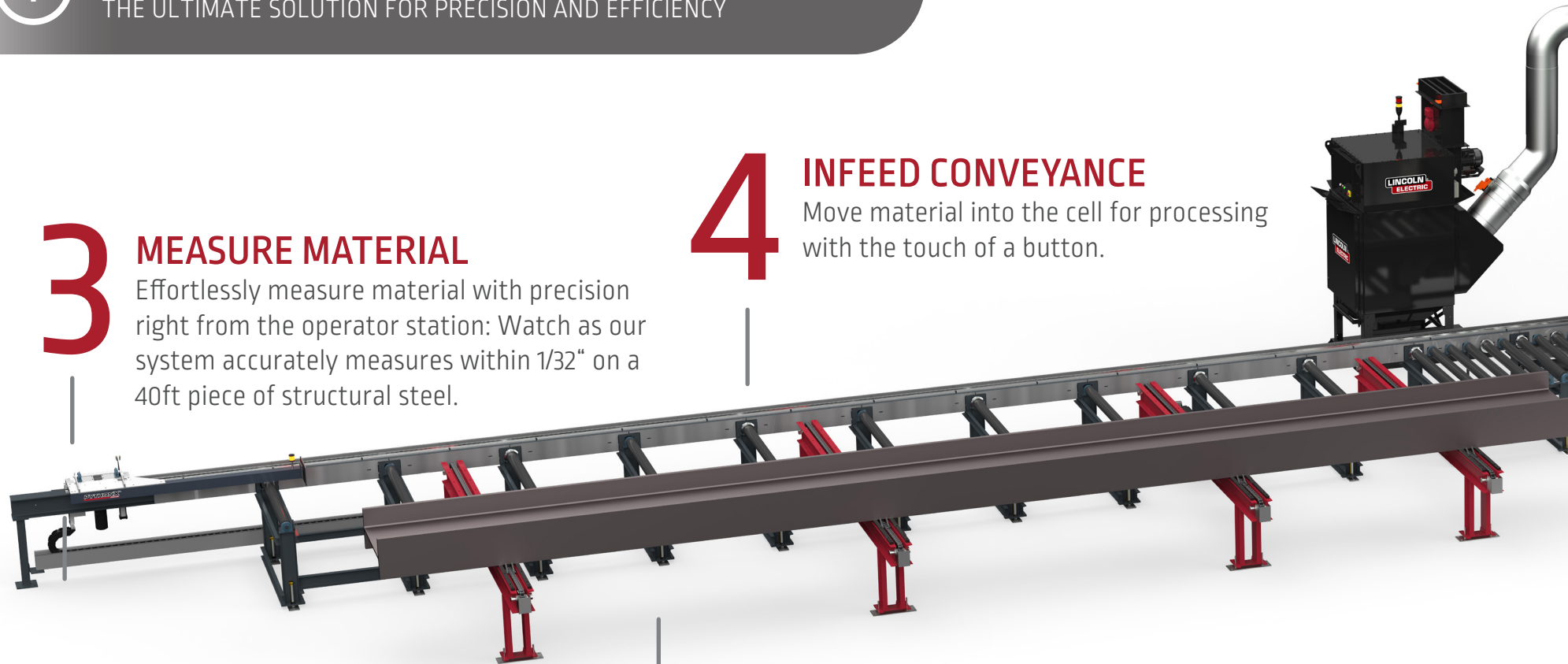
Effortlessly measure material with precision right from the operator station: Watch as our system accurately measures within 1/32" on a 40ft piece of structural steel.

### 4 INFEEED CONVEYANCE

Move material into the cell for processing with the touch of a button.

### 2 LOAD MATERIAL

Line up your production by loading raw materials onto the heavy duty cross transfers.



# 5 ROBOTIC PLASMA CUTTING

The system automatically processes the material using an industry leading plasma and robotic system.



# 1 IMPORT THE JOB

Quickly import part files into the VersaFab™ Studio software and view your parts in 3D.

# 6 OUTFEED CONVEYANCE

Convey processed material out of the cell using conveyors and heavy duty cross transfers.

# INTELLIGENT SOFTWARE



## POWERFUL CONTROLS | ROBUST DESIGN

VersaFab™ studio is the software that gives your operator full control of material handling, job processing, reporting & machine maintenance.

Organize jobs and optimize resources using a detailed operation display.



## DIRECT IMPORT OF FILES

Access multiple file types including:  
.stp/.dxf/.dwg/.DSTV/.DSTV+.

# 1

## FEATURE RICH ABILITIES

Precise & Fast. Software that equips your operator to add holes & hole patterns, cut copes, bevels, pop marks and weld preparation features.

# 2

## CONTINUOUS EVOLUTIUON

Stay up-to-date with software upgrades that give you access to the latest technology and innovation.

# 3

## OPERATOR TRAINING

24/7 access to our on-line training platform - 30 hours of training, 125 videos - unlimited tools and resources to make your team experts in the field.

## 3D PART VIEWING

3D & 2D PART VIEWING

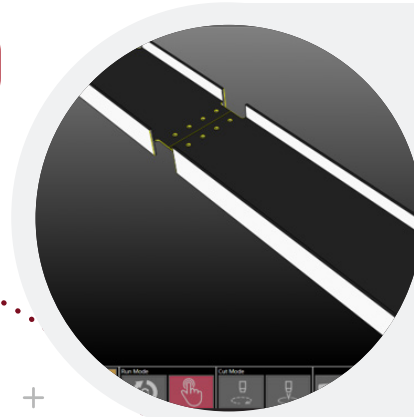
USER INTERACTIVE

CUSTOMIZED MENUS





# VERSAFAB STUDIO



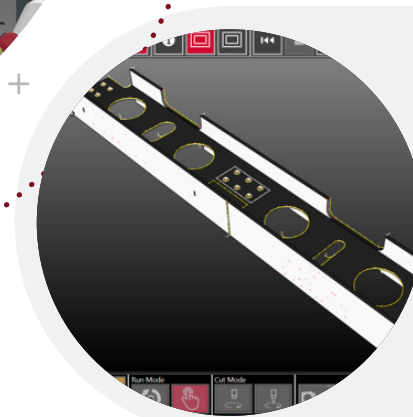
## 3D INTUITIVE INTERFACE

New and improved touch-screen includes wide screen display, 3D viewing and standardized UI across all Lincoln Electric platforms.



## MACHINE CONTROL

Organize jobs and optimize resources using a detailed operation display. Control conveyors, measure & cut.



## PART OPTIMIZATION

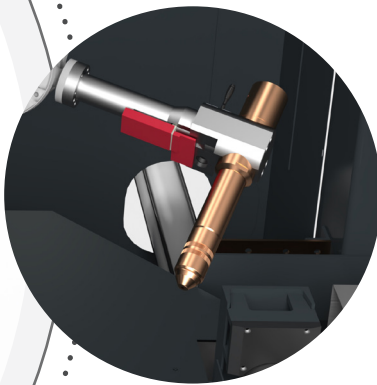
Material optimization through nesting means less scrap material, saving your business' time & money.

# POWERFUL PLASMA CUTTING UNLEASH PRECISION AND POWER



## **FINELINE® 300HD PLASMA POWER SOURCE**

Experience superior cut quality and consistency with exceptional reliability and productivity, thanks to the 2.0 in. piercing capability on mild steel, inverter design, and FlexTec® technology. Enjoy exceptional cut quality in all geometries, backed by an industry-leading warranty, and manufactured in North America by Lincoln Electric.



## **MAGNUM® PRO LC300M TORCH**

High Definition Plasma technology aligns and focuses the plasma arc, improving arc stability and energy for more precise cutting. Completely automatic gas and kerf control patented hole taper compensation and advanced bevel tuning. The smallest diameter 300 amp torch in the industry - 1.5 in. diameter.



## **MULTI-AXIS ROBOTIC ARM**

Advanced robotic arm technology with multiple axes for precision fabrication tuned twice for absolute best-in-class accuracy and least cut-path following error. Stronger, with a higher payload to minimize vibration and sway.

# OPTIMIZING MATERIAL PROCESSING THE POWER OF OUR SOLUTION

| Profile Shape           | Minimum   | Maximum          |
|-------------------------|---|------------------|
| Beam Width              | 4 in (101 mm)   | 48 in. (1219 mm) |
| Beam Height             | 4 in (101 mm)   | 18 in. (457 mm)  |
| HSS Width               | 2 in (51 mm)  | 12 in. (308 mm)  |
| HSS Height              | 1 in (25 mm)  | 16 in. (406 mm)  |
| Channel Width           | 3 in (76 mm)  | 36 in. (914 mm)  |
| Channel Height          | 1 in (25 mm)  | 4 in. (101 mm)   |
| Angle Width             | 2 in (51 mm)  | 10 in. (254 mm)  |
| Angle Height            | 2 in (51 mm)  | 10 in. (254 mm)  |
| Strip / Plate Width     | 4 in (101 mm)   | 36 in. (914 mm)  |
| Strip / Plate Thickness | 0.25 in (6.3mm)   | 1.25 in. (32 mm) |
| Part Length             | Standard System accomodates 40 ft. (12 m) lengths.<br>Increase to 80 ft. (24 m) in increments of 4 ft. (1.2 m).       |                  |
| Material Thickness      | Pierce up to 1.75 in. (38 mm). Edge start up to 2 in. (51 mm).<br>Upgrade to 2 in. (51 mm) pierce 3 in. (75 mm) edge. |                  |

PRECISION STEEL FABRICATION

# PYTHONX CUT QUALITY FOR SUPERIOR RESULTS

## BOLT HOLES

Unmatched bolt hole quality helping to reduce the need for operator intervention. Plasma cut holes can be used in a broad range of load applications such as: Static, Cyclic & Seismic



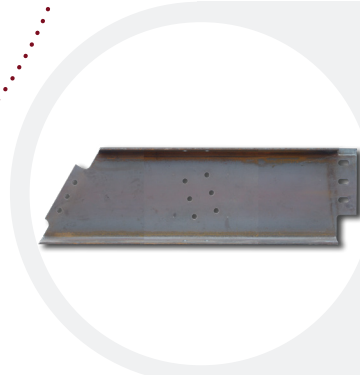
## SLOTS

The PythonX Structural system cuts slots and other shapes to the exact specified dimensions allowing for accurate fit-up.



## COPES

Copes are produced with a smooth corner radius, no touch-up's required.



## NOTCHES

Notches, cutouts, and flush cuts are smooth and do not require additional grinding or shaping. A perfect fit-up also results in less welding.

*For more information on cut quality,  
refer to the Lincoln Electric plasma cutting guide.*

# CUTTING CAPABILITIES

NOTCHES

HOLE  
REFERENCING

CUT TO  
LENGTH

STAIR  
STRINGER

DEEP COPE

MITER CUTS  
COMPOUND  
ANGLES

AISC/EN 1090  
COMPLIANT  
NEARLY TAPERLESS\*  
STRUCTURAL  
BOLT HOLES  
\*PATENTED PROCESS

SHALLOW BLOCK  
COPE CUT

WELD  
ACCESS HOLES/  
RAT HOLES

SHALLOW COPE

FLUSH CUT

SLOTS FOR BOLTED  
CONNECTIONS

SLOTS FOR  
BRACING  
CONNECTIONS

4 SIDE TUBE  
CUTTING

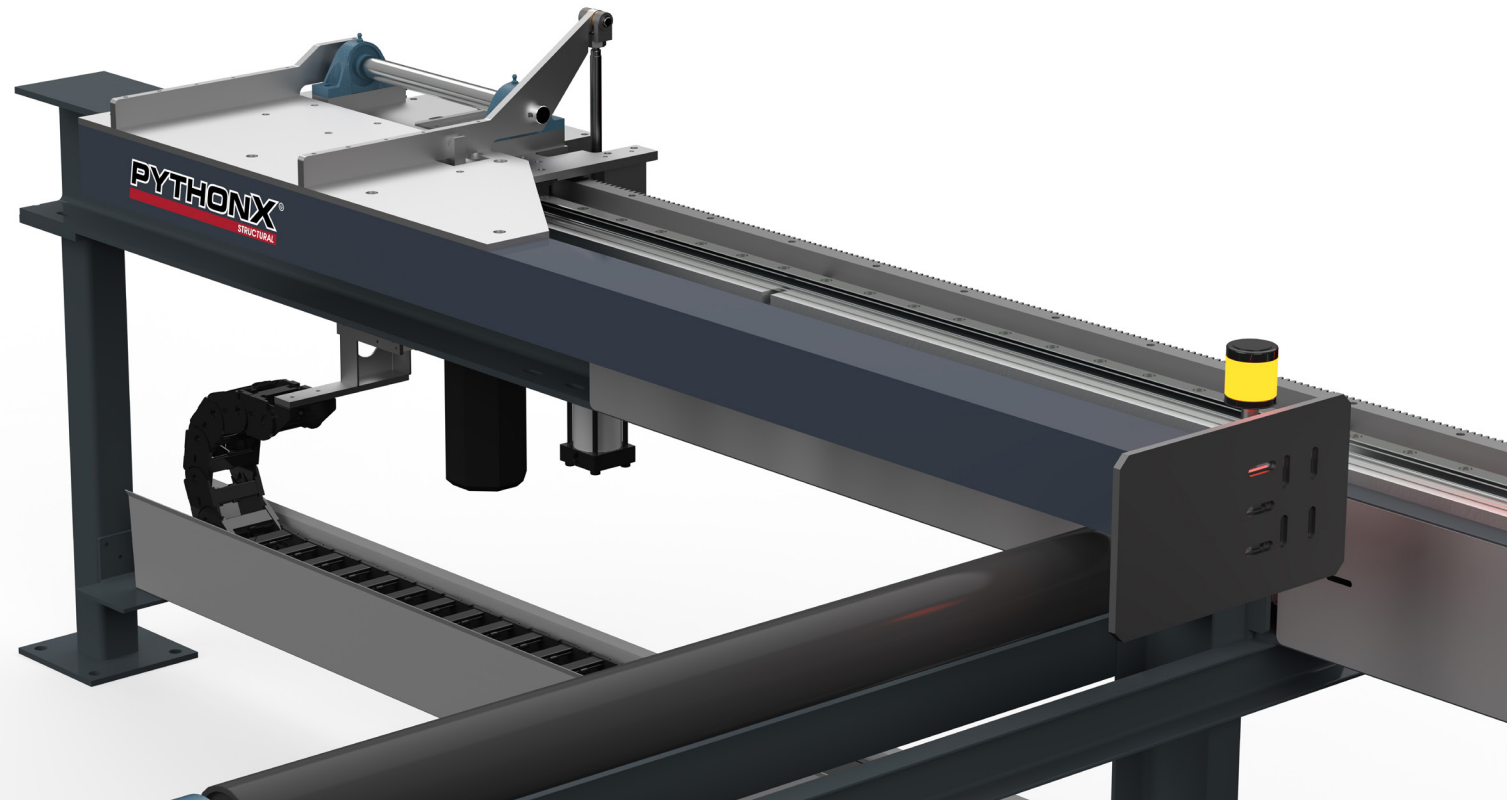


# MATERIAL CONVEYANCE STREAMLINE YOUR WORKFLOW

## MEASURING CART

Measure with precision with a standard measuring cart and remove any human error. Capable of measuring to 1/32 in. over a 40 ft. span of material.

Measuring can be achieved at a press of a button through the HMI and will provide an exact length of the material once system goes through it's process.



## CONVEYORS

Heavy duty frame built with structural steel, and are powered by a 7.5 HP motor which provides conveyance of a wide range of materials.

- Weight Capacity: 600 lb. per ft.
- Rollers: 4 in. (101.6 mm.) diameter
- Width Capacity: 48 in.
- Pass Height: 35 in. *standard*
- Infeed: 40 ft. *standard*
- Outfeed: 40 ft. *standard*
- *Customizable lengths in 4 ft. increments*

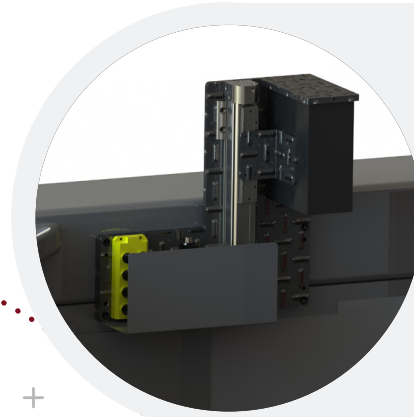
## CROSS TRANSFER

Manage material flow with a heavy duty transfer system. Choose between a *drag* or *lift-and-carry* style. Comes with an operator station on the infeed and outfeed end.

- Weight Capacity: 17,000 lb. per strand
- Conveyance Capacity: 5,200 lb. per strand
- Standard Length: 13 ft. 3 in.
- Optional Lengths: 20 ft., 25 ft., 30 ft.
- Upgrade to double cross transfer for short part conveyance



# KEY FEATURES



## AUTOCAL

Calibrates tool centre point to ensure accuracy and cut quality. Calibration easily performed by operator using the HMI (human machine interface).



## DUST COLLECTOR

The Prism® Compact dust extraction solution helps deliver less noise, lower costs, maximum results and helps improve workplace safety.



## CAMERAS

Multi-camera system allows the operator to view and monitor the cutting and material conveyance process from the operator station.





# PRISM COMPACT AIR FILTRATION SYSTEM

The Prism® Compact welding and cutting fume extraction system from Lincoln Electric uses intelligent fan control technology maximizes fume extraction, conserves energy and extends equipment life.

## QUIET OPERATION

Silencer and sound deadening materials drastically reduce airflow noise. Equipped with a variable speed drive that adjusts extraction airflow to application.

## ADDED SAFETY

Integrated spark arrestor and optional Prism Thermal Suppression System.

## COMPACT SIZE

Can be placed directly next to a cutting table or robotic cell, reduced height for areas with space constraints.

## SIMPLE MAINTENANCE

Automatic cleaning process once pre-set pressure differential is reached. Particulate is collected into the 25-gallon dust bin.

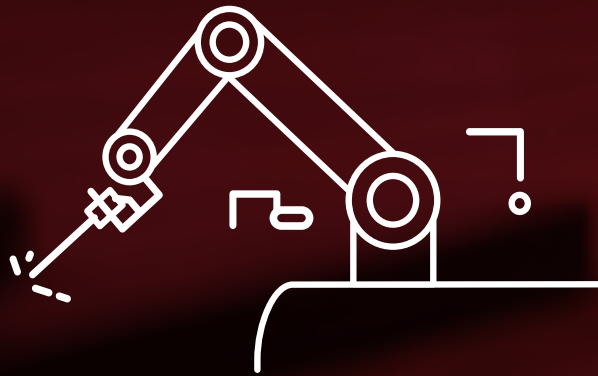
## EASY INSTALLATION

Crane-less assembly, Lincoln Smart Connect™ technology for quick and seamless wire connectivity to the robot. Connect power, compressed air, and duct sensor for fan speed control.



# PYTHONX ACADEMY ONLINE TRAINING SYSTEM

Save your business time and money with PythonX Academy,  
an in-depth training series for operator mastery.  
Less downtime, better performance, better results.



## ONLINE TRAINING SYSTEM **EXPERT OPERATORS**

- ✓ 24/7 access to over 50+ training videos
- ✓ Enhance operator confidence and skill
- ✓ In-depth system training guided by our team of experts
- ✓ Easily assign and track course completion

# PYTHONX SERVICE & SUPPORT

Our team will be there every step of the way from on-site installation, training your operators, to technical support. We're here to ensure your business' successful integration of the PythonX Structural system.

**ALWAYS HERE FOR YOU.**  
24/7 TECH SUPPORT TO KEEP YOUR  
BUSINESS RUNNING SMOOTHLY.

- ✓ 24/7 remote support
- ✓ Fully-trained field service engineers
- ✓ Fast spare parts fulfillment
- ✓ On-site visits



## Warranty

Our standard 3-Year warranty protects your investment with comprehensive coverage



## Shipping & Delivery

Get Your PythonX Sooner: Sign your layout and pay your deposit to start the 4-week countdown to delivery!



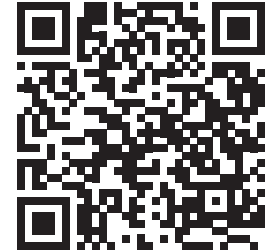
## Installation

Effortless Installation: Our expert team arranges and supervises the process, typically completed in just five days.

# TRUSTED AROUND THE GLOBE 700+ PYTHONX SYSTEMS IN OPERATION



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**PYTHONX**<sup>®</sup>

## About Lincoln Electric

Lincoln Electric is the world leader in the engineering, design, and manufacturing of advanced arc welding solutions, automated joining, assembly and cutting systems, plasma and oxy-fuel cutting equipment, and has a leading global position in brazing and soldering alloys. Lincoln is recognized as the Welding Expert™ for its leading materials science, software development, automation engineering, and application expertise, which advance customers' fabrication capabilities to help them build a better world. Headquartered in Cleveland, Ohio, Lincoln operates 71 manufacturing and automation system integration locations across 21 countries and maintains a worldwide network of distributors and sales offices serving customers in over 160 countries. For more information about Lincoln Electric and its products and services, visit the Company's website at <https://www.lincolnelectric.com>.

## Customer Assistance Policy

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

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