

# X MARK

HIGH DEFINITION PLASMA FULL SUITE SOLUTION  
FOR TRUE HOLE TECHNOLOGY



## High definition cut, one step in place.

The heavy duty plasma cutting table - X Mark, available exclusively from Arcbro, challenges the concept of the traditional plasma cutting industry: high productivity, high cutting quality, precise cuts at fast speeds reduce secondary operations and streamline your manufacturing processes, which in turn reduces costs and increases production, built-in integrated cutting process, perfect round hole for one-button cutting, and reliance on worker skills.

The new process is called high definition plasma cut, which is a leap in every aspect in plasma.

# HIGH DEFINITION

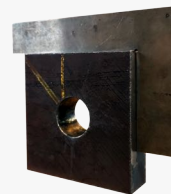


High definition plasma cutting is a new technology that has been around for less than a year. It is completely different from traditional plasma cutting.

Experts in the cutting industry know that plasma cutting quality is affected by six factors: current, gas, Pierce technology, lead in/out technology, cutting speed, timing. These six factors are independent of each other in traditional cutting. Only experienced and skilled workers can combine them and complete a high-quality cutting.

**The high definition cutting completely eliminates the requirements of the craftsmanship of the workers. It classifies and integrates all the factors affecting cutting.**

And it is controlled by the system to match the world's cutting-edge equipment, so that anyone can cut the best quality work-pieces at the lowest cost in the shortest time.

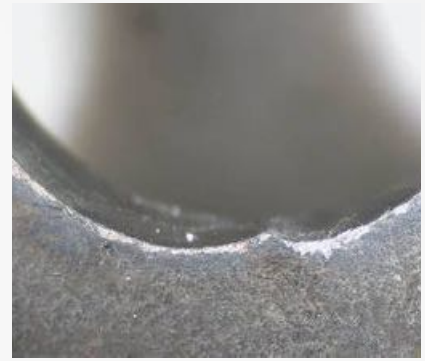


# TRUE HOLE TECHNOLOGY



**The most troublesome problem for traditional plasma cutting technology is that it cannot cut a satisfactory small hole.**

No matter how skilled the craftsman of a craftsman is, due to the shape of the plasma flame itself, there is always a taper in the small hole. The upper and lower edges of the metal have different apertures, which necessitates that the holes must be cut to fit into the bolts. Small holes and bolts are the most widely used plasma cutting applications.

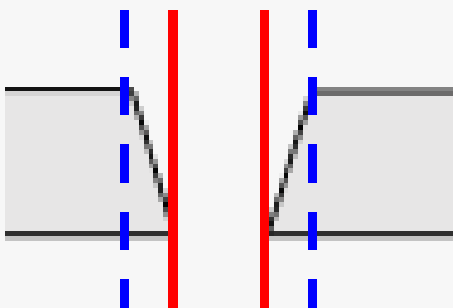


**The birth of the small hole technology finally solved this big problem.**

Nesting software or CNC software automatically applies True Hole fine bolt hole technology when perforating sheets up to 25 mm thick. The perforated hole to sheet thickness ratio can be as low as 2:1 to 1:1.

**The advantage of the small hole technology is obvious:**

it does not require manual intervention by the operator and automatically ensures the quality of the bolt holes. It narrows the gap with the quality of laser perforations, allowing the plasma cutting process to be used in many previous jobs that require laser cutting systems.



**Provides true "bolt hole" quality.**

# FULL SUITE SOLUTION

Compared to other brands, X Mark has a integrated motion control systems from the technical level, automatic height adjustment, automatic gas and current settings, and plasma power generators (Hypertherm XPR), from motion control to seamless communication with plasma power supplies.

**The simplified components made into a unified integrated system control.**



Through the integrated package, it is required to integrate 6 parts into 4 parts, which reduces failure rate, optimizes communication efficiency.

All processes affecting cutting quality are controlled by the system, Buide in X Mark process expertise makes it easy to ,Train new operators to cut like a pro within minutes.

# PRODUCTIVITY

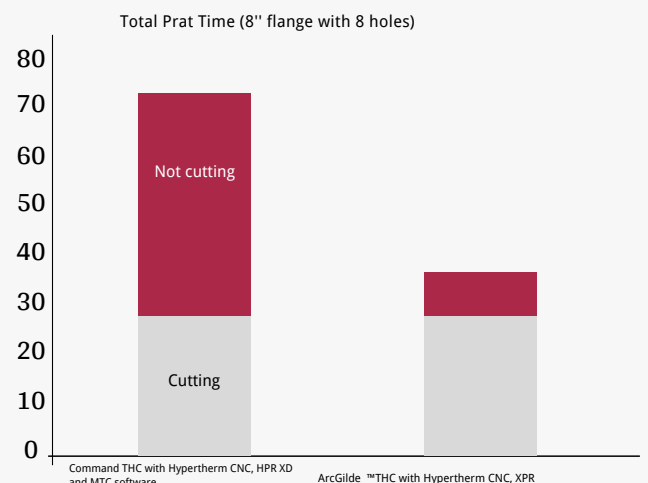
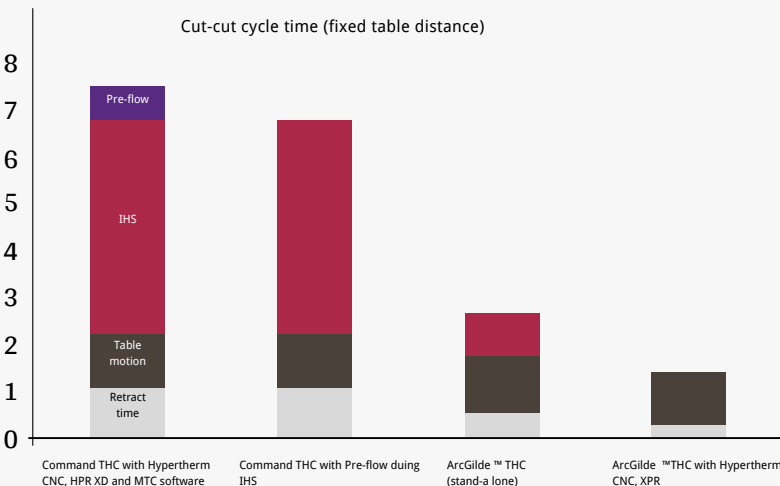
**By reducing cut-to-cut cycle, ARCBRO's full suite can improve the number of parts cut per day by up to 100%.**

Cut-to-cut cycle time is reduced by up to 80%, resulting in increased productivity, without operator input.

XPR300 plasma cutting system is the most efficient power system at present. With unparalleled X-Definition™ cutting quality on mild steel, stainless steel and aluminum, the new XPR300 increases cutting speed, increasing productivity and reducing operating costs.

It match the ArcGlide™ THC, which could reduce cut-to-cut cycle time. That time is the sum of all necessary movements including Retracting the torch, Table motion, Initial height sense, Pre-flow. However, through the ArcGlide™ THC, this process can be reduced by 6 to 7 seconds. It can automatically calibrates this fast-to-slow speed crossover during the initial height sense on the plate by sensing the plates actual location, making sure that it does not slow down until 0.5" above the plate, no matter what the plate thickness may be.

**Such technology can greatly reduce the idle time of the machine and improve production efficiency.**



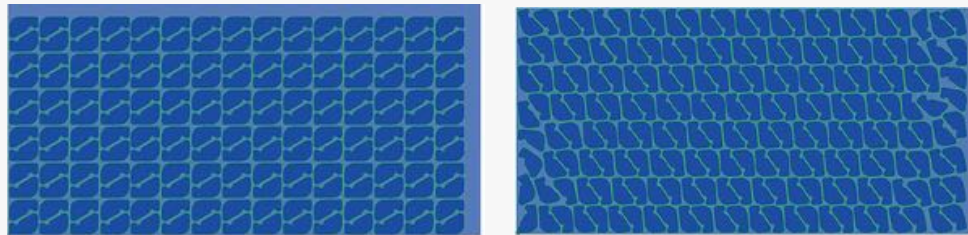
# COST REDUCTION

The rapid cooling nozzle can be directly connected to the cooling nozzle hole through the coolant.

System control and feedback, (detecting burnout protection) torch arc stop technology, automatic torch protection, automatic drifting error protection system, fire extinguishing technology, greatly reducing the loss of wearing parts.

Nesting software SigmanestSupernest super algorithm sheet utilization increased by 4%-6%, multiple sheets of steel automatically edited together, automatic classification of parts according to different sheet thickness.

Human-computer interaction marker Supports automatic and manual nesting. The co-edge function ensures the cutting size and precision and achieves the coverage of regular parts.



# CONVENIENT OPERATION

- Automated optimal parameter settings

Amperage, Gas type, Pre-flow, Cut flow, Torch pierce height and delay, Torch cut height Arc voltage, Part specific feed rates, Kerf compensation.

Everything upside is built-in and performed automatically for you, which represents a huge savings in time and labor, and an increase in output and productivity.

- Most convenient mode of operation

Train new operators to cut like a pro within minutes. Maintain more consistent performance from operator-to-operator, shift-to-shift, and site-to-site.

- Faster set up time

The assembly torch can be placed in one step without any extra work. It's simpler and more convenient.



# CUTTING QUALITY

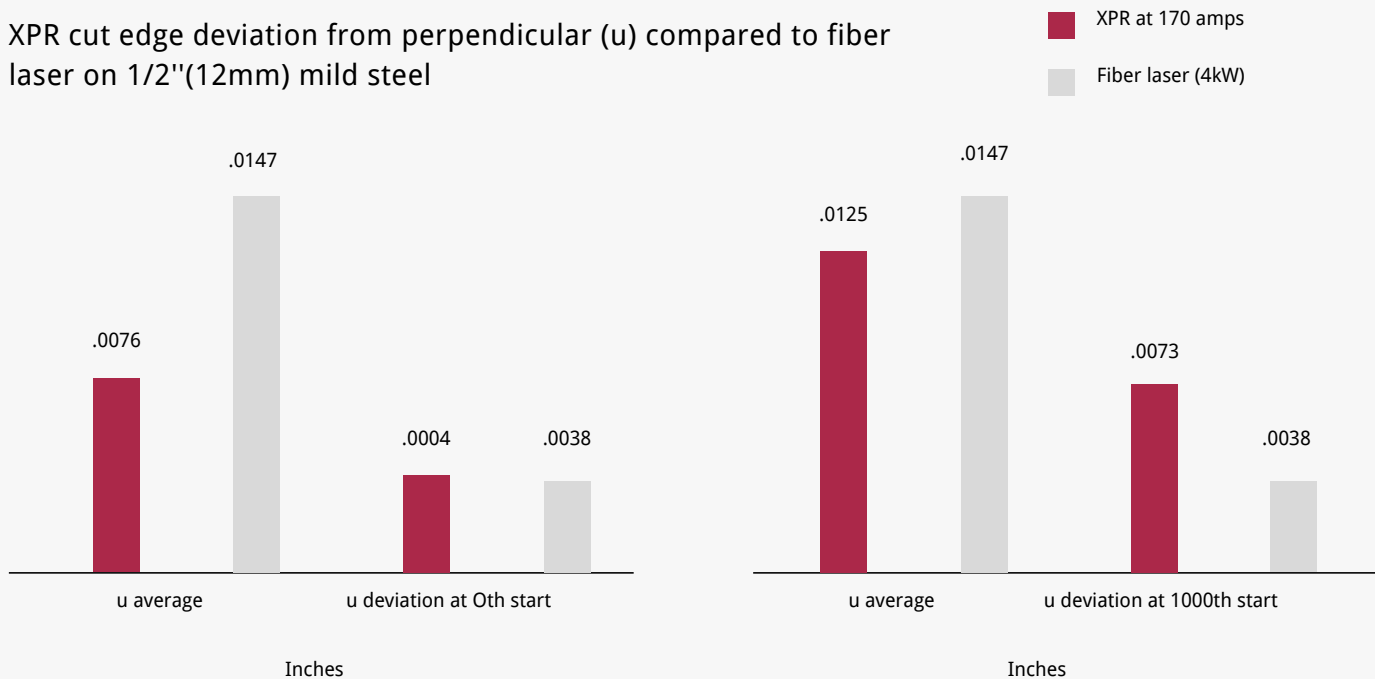
X-Mark's plasma power supply will always use the most advanced of the world. Currently it is Hypertherm's XPR. This plasma power supply really brings the plasma cutting quality to the same level as the laser cutting quality.

**The cost of the two is different, which is the overwhelming victory of plasma cutting.**

In comparison tests with fiber laser cutting, XPR plasma cutting is as good as laser cutting at many thicknesses.

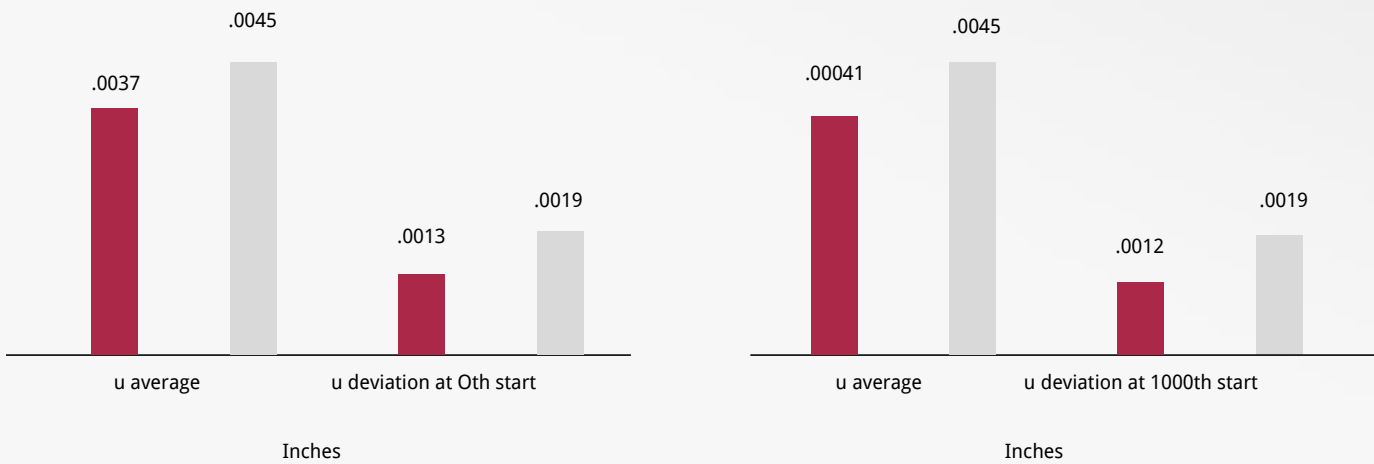
**Below are two examples of cutting 6 mm and 12 mm thick materials.**

XPR cut edge deviation from perpendicular ( $\mu$ ) compared to fiber laser on 1/2"(12mm) mild steel



XPR cut edge deviation from perpendicular ( $\mu$ ) compared to fiber laser on 1/4"(6mm) mild steel

■ XPR at 80 amps  
 ■ Fiber laser (4kW)



**When choosing the operating speed of the XPR process, our principle is to balance quality and productivity (rather than just cutting quality).**

When cutting 6 mm sheets, the average angular deviation of the X-Definition cutting edges is smaller, and the deviation fluctuations are smaller after 1000 arc starts. The effect of cutting a 12 mm low carbon steel is similar.

**Whether thin or thick, low-carbon steel cutting, X-Definition plasma cutting can achieve a "creamy" smooth cutting surface,** sharp cutting edges and good verticality and small hole quality. The X-Definition's thin sheet cutting ability is particularly good when cutting thin, low carbon steel sheets.



# SPECIFICATIONS

Cutting mode	high definition plasma cutting for true hole technology
Machine input voltage	220V single phase
Effective cutting area	1.5 X 3.0 M /2.0 X 3.0 M (length can be extended)
Number of torches	Automatic plasma set, automatic flame set
Drive mode	Longitudinal – 1000Wx2 large inertia; horizontal – 750Wx1 large inertia; lifting 400 W; Japan Panasonic servo system, dual drive
Reducer	1:25 APEX
Vertical orbit	Silver 35 linear rail on longitudinal rail; silver (silver) 20 linear rail in lateral direction;
Rack and pinion specifications	2–mode helical tooth
Height control	Auto Hypertherm PHC (plasma); magnet anti–collision device; high–speed capacitor high–definition HDY (flame)
Cutting thickness	0 – 45 mm perforation cutting (plasma); flame cutting thickness 0–150mm
Plasma generator – plasma power supply	Hypertherm XPR300, US Hypertherm
Small hole technology nesting software	Sigma nesting / lantek / pronest
Running speed	0–28000mm/min
Positioning speed	10000mm/min
Cutting speed	0–12000mm/min (base on material thickness and plasma power source)
positioning accuracy	±0.08 mm
Tolerance	±0.5mm
CNC controller	Hypertherm EDGE Connect TC / Feimat ICNC (optional)



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