



CUTTING

# MasterGraph EX2™

HIGH-DEFINITION CNC PLASMA & OXY-FUEL CUTTING MACHINE



SIMPLY BETTER BUILT.





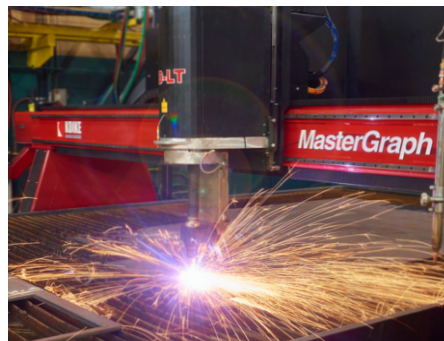
## MASTERGRAPH EX2: THE ULTIMATE GANTRY-STYLE CUTTING SOLUTION

The Mastergraph EX2 is built to deliver industrial-grade power, accuracy, and dependability. This gantry-style plasma/oxy-fuel cutting machine provides high cutting speeds, smooth motion control, and rugged construction built for continuous operation. With options for multiple plasma or oxy-fuel torches, marking systems, and full-contour plasma beveling, the MasterGraph EX2 is engineered for Steel Service Centers, Heavy Fabricators, Equipment Manufacturers, and Shipbuilders that offers consistent, high-quality performance at a competitive value.



### Fabricated Main Beam Construction with Integrated Back Shelf:

Our in-house fabricated solid steel gantry with an integrated back shelf, centralizes all critical components, enhancing stability and simplifying maintenance.



### Versatile Oxy-Fuel and Plasma Cutting Configurations:

Supports multi-torch Koike oxy-fuel stations, various plasma configurations, and the 3D-LT Plasma Bevel Head for precise cutting across all processes.



### High-Precision Components for Smooth and Accurate Movement:

High-precision linear rails, helical rack and pinion drive, and large-diameter drive pinions ensure smooth, accurate motion with minimal vibration.

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# HYPERTHERM™ EDGE® CONNECT CNC SYSTEM



## Hypertherm™ EDGE® Connect CNC Platform:

The EDGE® Connect CNC by Hypertherm offers unmatched reliability, powerful performance, and flexible customization. Built on the industry-leading Phoenix® platform, it features ProNest® CNC automatic nesting with SureCut™ technology and enhanced hardware. Designed for easy setup and upgrades, it can be configured in the field to match specific cutting applications.

## FEATURES AND SPECIFICATIONS

- **19-Inch Glass Touchscreen (1366 x 768 Resolution)**  
With **IntelliTouch Pro PCAP (Projected Capacitive Touch)** for precise, responsive control.

- **Windows® 10 Embedded**

### HARDWARE SPECIFICATIONS:

- **Intel® J1900 Quad-Core Processor (Or Equivalent)**
- **120GB SSD Hard Drive**
- **4GB DDR3 RAM (Or Better)**
- **USB 2.0 Ports (x2)**

### ADDITIONAL FEATURES:

- **Built-in Wireless Communication**  
Enables **remote diagnostics, troubleshooting, and monitoring** for quick error response.
- **Built-in Emergency Stop Button and Hard-Wired Switches**
- **Built-in Handles and Swivel Axis**

### SOFTWARE FEATURES:

- **ProNest® CNC Automatic Nesting**
- **SureCut™ Technology**  
True hole, True Bevel, Rapid Part, and Consumable Life Optimization (when applicable).
- **Intuitive Graphical Interface**
- **Auto-Gas Support**
- **DXF Input & Simple Shape Nesting**
- **CutPro® Wizard**
- **Forward & Backup on Path Function**
- **Skip to Pierce/Skip Part Function**
- **Configurable Software and Seamless Upgrades**  
Configurable upgrades make **additional equipment integration** for specific job requirements simple.

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## DESIGNED TO LAST: THE ROBUST BUILD OF THE MASTERGRAPH EX2

We've invested heavily to guarantee that the parts used in our machine meet the highest global quality standards. Our rigorous engineering and manufacturing process ensures consistent, reliable performance, even in the most demanding environments.

### ▪ Large Diameter Drive Pinions

Large Diameter Pinions offer smooth and accurate motion, designed to achieve **1400 IPM rapid traverse speeds**.

### ▪ Precision Linear Way & CP-10 Rack and Pinion System

**Heavy duty Dual Side Drive helical rack and pinion system** ensures smooth and accurate motion for cutting operations with minimal wear and tear.

### ▪ Robust 8" Diameter Main Roller

Heavy-duty main saddle rollers provide stability for heavy loads while achieving smooth motion.

### ▪ Floor-Mounted Heavy Duty Rail System

A fixed-base plate floor-mounted system provides a **rigid foundation for the 37kg, triple machined rail**. Rails also allow for easy expansion to accommodate two or more machines on a common rail.

### ▪ Powerful AC Servo Motors & Ultra Low Backlash Planetary Gearboxes

Robust **6HP AC Brushless Servo Motors** boast **3-Axis movement** to deliver precise, smooth, and accurate motion ensuring superior cut quality.

### ▪ Fabricated Steel Beam Construction with Heat Shields

Unique design **combines a solid-steel, shielded beam with an integrated back shelf**, creating a single, highly-durable weldment.

### ▪ Rear Mounted Main Electrical Enclosure

Electrical enclosure is **housed on the integrated back shelf to provide ample protection** against harsh sparks and heat. Additionally, all electrical components offer non-proprietary, "off-the-shelf" parts for quick, accessible service.

### ▪ Flexible Configuration of Rail Axis Cable Carrier

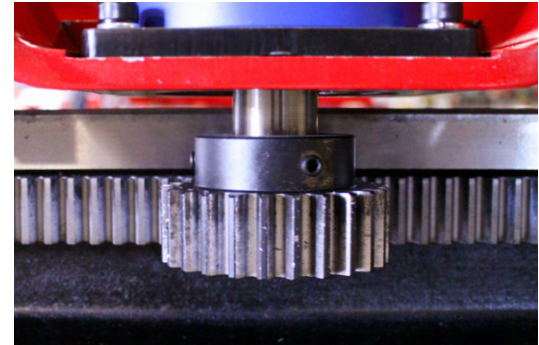
Rail Axis Cable Carrier can be **mounted on the floor or overhead** to accommodate for all spacing constraints.

### ▪ Large Brass Rail-Scraper System

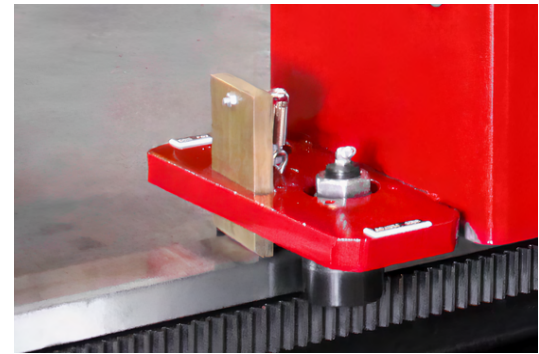
Built-in rail scraping system aids in keeping the rail free of any debris, maintaining fluid motion and extending hardware life.

### ▪ Slave Carriage Endless Loop Steel Band Clamp

Robust steel band clamp allows for **easy, accurate placement and spacing of up to 9 carriages**.



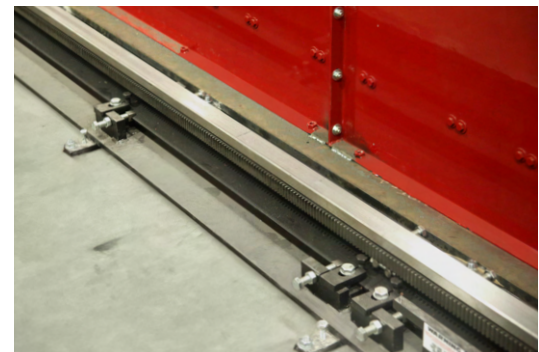
Large Diameter Drive Pinions



Large Brass Rail Scraper



AC Servo Motor



Heavy Duty Rail System

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## ▪ Automatic Rail Air-Blower System

Automatic on/off air-blower combines with our standard brass scraper system to enhance debris removal on the rails.

## ▪ Non-Cycling Refrigerated Air Dryer

Smooth bore, copper tube-on-tube heat exchangers deliver fully automatic, low pressure dew point performance. Centrifugal separator efficiently captures liquid condensate at varying inlet loads to ensure maximum moisture removal.

## ▪ Two-Stage 7.5 HP Air Compressor

Used in conjunction with the optional air dryer, this durable cast iron pump features a cylindrical head with deep-grooved directional cooling fins, designed to provide 15,000 hours of continuous-duty operation.

## ▪ Laser Pointer

Provides a visual indicator for plate alignment and torch positioning.

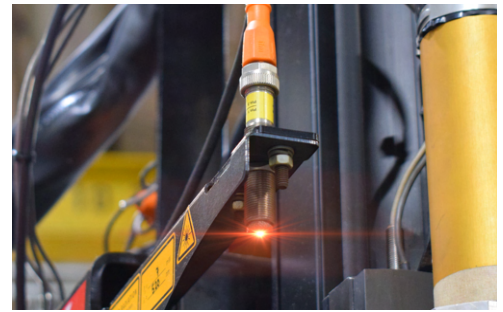
## ▪ Adjustable Overhead Extension Arm

For operators who desire an overhead mounted cable carrier, an adjustable extension arm is required for installation.\*

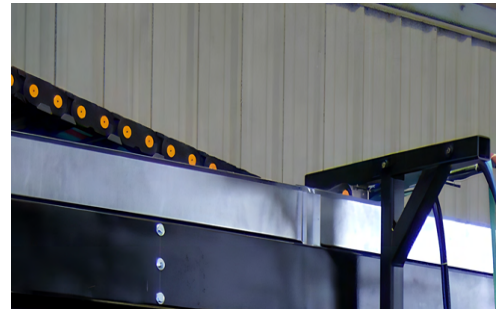
\*Customer must supply a shelf for the Nylatrac guide trays.

## ▪ Machine Collision Protection

For operators with two or more machines on a common rail, a machine collision sensor may be equipped to detect individual machine proximity and prevent contact.



*Laser Pointer*



*Extension Arm and Overhead Cable Carrier*

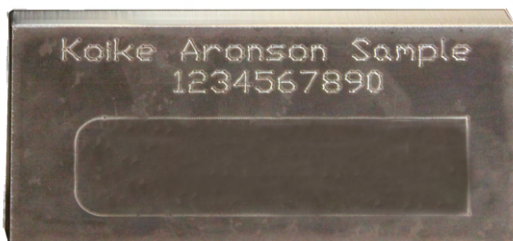


*Machine Collision Sensor*

## MARKING OPTIONS:

### ▪ Pneumatic Dot-Peen Pin Stamp Marker:

Carbide-tipped variable-speed punch for marking bend lines, layout lines, drill locations, and alphanumeric text as small as 1/4" high.



*Dot-Peen Marker Sample*



*Pneumatic Dot-Peen Stamp Marker*

### ▪ High-Definition Plasma Plate Marking:

Low-amperage plasma marking capability with adjustable marking depth via CNC parameters.

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## HYPERTHERM

**XPR™** revolutionizes cutting technology, elevating **HyDefinition®** cut quality across mild steel, stainless steel, and aluminum. Its compatibility with the same consumables enables quick changeovers, boosting productivity and slashing operating costs. With enhanced ease of use and optimized performance, **XPR™** ensures reliable operation with minimal intervention, setting new standards for precision cutting.

### Features **Hypertherm® True Hole®** Technology

Bolt hole quality is delivered automatically without operator intervention allowing for a more-precise cut.

### Hypertherm® XPR170® and XPR300®



### **NEW!** Hypertherm® XPR460®



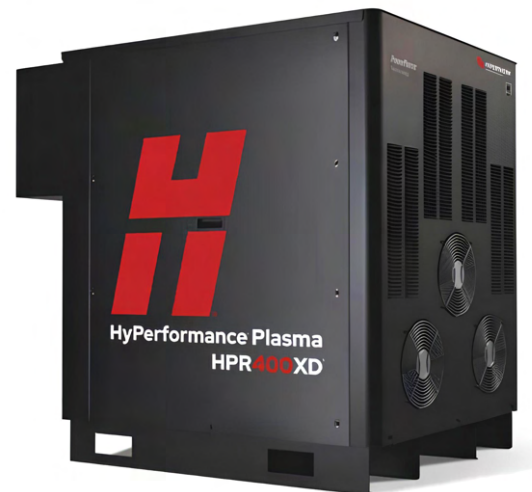
The **Hypertherm® XPR460®**, the newest addition to the **Hypertherm® XPR™** plasma systems family, offers the most consistent cut quality, thicker cutting capabilities, and faster cutting speeds in its class, all while maintaining the same consoles (Torch Connect and Gas Connect including Core, CorePlus, VWI, and OptiMix), hardware (torch and receptacle, standard leads, sleeves), and accessories (rotational sleeve, nozzle retaining cap, and shield retaining cap).

The **XPR460®** delivers over 28% more output power (kW) than the **HPR400XD®**, allowing for mild steel piercing up to 2 1/2" and boasts significant reduction in operating costs by extending the life of consumables through **Ramp Down Error Protection** which prevents excessive arc stretch, shutting down system operations when consumable blowout is detected.

The **Hypertherm® HyPerformance® (HPR)**, plasma systems deliver superior productivity in X-Y, bevel and robotic cutting and marking applications on metal ranging up to 80mm (3.2") with the **HPR400XD®** and 60 mm (6-1/4") thick with the **HPR800XD®**. The combination of faster cutting speeds, rapid process cycling, quick changeovers and high reliability boosts throughput while dramatically lowering operating costs.

Incorporating Hypertherm's proven **HyDefinition®**, **LongLife®**, **patented PowerPierce®**, **True Hole®**, and **True Bevel™** technologies, **HyPerformance®** products offer the ultimate in mild steel cutting performance, as well as excellent stainless steel and aluminum capabilities.

### Hypertherm® HPR400XD®



**Only Hypertherm® XPR® and HPR® plasma systems can be used for Full Contour Beveling.**

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## HYPERTHERM (CONT.)

### Hypertherm® MAXPRO 200®



Dubbed the industry workhorse because of its power and 100% duty cycle, the **MAXPRO200® LongLife®** plasma cutting system is designed for your heavy-duty, high-capacity automated and handheld cutting and gouging applications.

The easy-to-use system operates with either air, oxygen, or nitrogen plasma gas, and combines fast cutting speeds and quick process changes to maximize productivity. Optimized cutting parameters are set and controlled in a single step for consistent, automated results, while advanced diagnostics simplify troubleshooting and maintenance. Optional serial communications can be added to enable full system control directly from the CNC controller.

Advanced Hypertherm consumable designs – including **LongLife®** technology – improve cut consistency and significantly increase consumable life to lower your cost per part.

## HYPERTHERM® True Hole® Technology

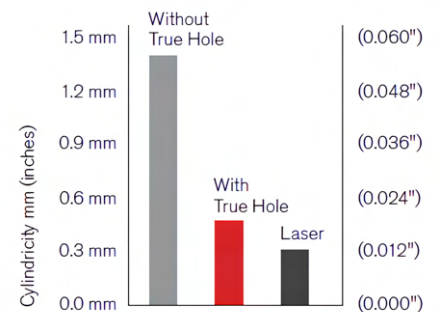
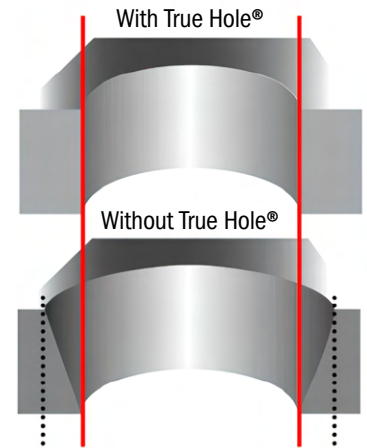
### The MasterGraph EX2: True Hole® Ready

**KOIKE is True Hole® certified**, offering you the ability to implement True Hole® technology to your MasterGraph EX2, a patented process for mild steel that virtually eliminates hole taper and improves roundness, producing bolt-hole ready holes directly off the cutting table, with little to no need for drilling, reaming, or secondary finishing.

This system automatically applies optimized parameters for gas flow, amperage, pierce timing, cut speed, lead-in and lead-out motion, and arc termination. By tightly controlling these variables, True Hole® produces noticeably cleaner, more cylindrical holes even in challenging diameter-to-plate-thickness ratios.

This technology is exclusive to Hypertherm's SureCut™ enabled plasma systems, such as the XPR and HPRXD families, and functions seamlessly when paired with compatible controls and CAM/nesting software. When a hole falls within the recommended thickness-to-diameter range, the system identifies it automatically and applies the True Hole® process without requiring operator adjustments.

The result is a level of precision that allows plasma cutting to compete with laser quality in hole-intensive applications, while maintaining the speed and cost-efficiency of plasma.



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## ▪ 3D-LT Automatic Full Contour Bevel Head

The 3D-LT package brings advanced beveling capability to the MasterGraph platform by combining a full CNC and drive upgrade, HD Sensor THC height control, and our laser-touch sensing system into one integrated solution.

This setup delivers continuous 360° rotation at up to 60 rpm, a bevel range of +50° to -50°, and a 20 rpm tilt speed for smooth, accurate contour transitions. Rated to cut mild steel from 1/4 inch to 2 inches thick, it provides the flexibility needed for demanding bevel applications.

Supporting X, Y, A/V, and K bevel types, the 3D-LT package is ideal for weld prep, heavy plate work, and multi-pass beveling. Its common focal-point design maintains precise geometry and consistent cut quality without the complex 5-axis mechanisms and high-maintenance slip rings found on other bevel heads. The result is a rugged, reliable beveling system that delivers accurate, repeatable performance with lower upkeep and long-term durability.



*3D-LT Bevel Unit*

## ▪ Koike Integrated Sensor THC (Torch Height Control)

With a 12" (340.8 mm) lifter travel and a programmable lifter speed of 1,000 IPM, the Koike THC ensures swift and accurate adjustments during the cutting process.

Its adjustable stroke retract between cuts enhances operational efficiency, while dynamic positioning capabilities further optimize performance, enabling seamless adaptation to varying cutting conditions for consistent results.



*Integrated Sensor THC  
(Torch Height Control)*

## ▪ Manual Plasma Bevel Station

Allows for plasma beveling in the rail axis with non-contour mechanical adjustment from +/- 0 to 45°.



*Manual Plasma  
Bevel Station*

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500L Oxy-Fuel Torch with Manual Bevel



IHT Intelligent Oxy-Fuel Cutting Torch

## IHT Torch Station:

Designed for precision and efficiency, the IHT Intelligent Oxy-Fuel Cutting Torch features many best-in-its-class features such as an **auto capacitive height sensing system**, **automatic flame ignition**, **a tool-free nozzle & sensor exchange** to minimize downtime, and **a flashback detection system** to enhance safety and extend torch lifespan.

**Integrated control valves** ensure faster installation, while a **built-in pressure gauge** optimizes oxygen pressure for superior cut quality.

## Oxy-Fuel Torch Station (Holds Up to 8 Torches):

Model "G" motorized lifter, 6" (150 mm) stroke at 40 IPM. All stations are controlled from the Operator console and includes three cutting tips and standard **500L Koike Torch**, offering plate cutting from 1/8" to 12" (3mm to 300mm) thick.

## Manual Oxy-Fuel Bevel Attachment for Koike 500L Torch:

Used for bevel cutting operations, including top and bottom level bevel cuts.

## Koike Auto-Gas Control System For Oxy-Fuel:

This built-in CNC controlled system automates the setting and regulation of cutting oxygen, preheat oxygen, and the fuel gas pressures for oxy-fuel cutting while continuously monitoring and maintaining precise gas flow and pressure.

## HI-LO Oxy-Fuel Gas System with Auto Ease-On:

HI-LO system initiates faster preheating of plate, delivering superior cutting quality and precise piercing on thicker plate. Features auto ease-on pierce control for cut oxygen.



Built-In Koike Auto-Gas Control System

## Koike Twin Tip Holder:

Converts single oxy-fuel cutting torch into dual cutting torches. Allows strip cutting and a closer distance between small parts.

## Triple Oxy-Fuel Bevel Torch Station:

A simple, X- or Y-direction straight-line bevel system. Features manual bevel-angle adjustment with manual rotation, a motorized Model "G" lifter with 6" stroke, and mechanical wheel stand-off for consistent height.

## Quad Oxy-Fuel Bevel Torch Station:

A straight-line X, K, or Y bevel tool with full manual angle and rotation control. A mechanical wheel stand-off maintains torch height, while station gas-control solenoids manage preheat and cutting oxygen with full on/off control from the panel.



Hi-Lo Oxy-Fuel Gas System

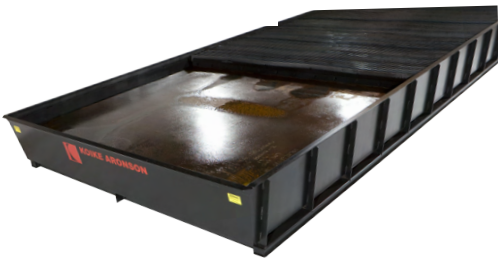
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## Water Cutting Table:

An economic solution to reducing smoke, sparks, and dust into the environment.

### FEATURES:

- Can be used for both oxy-fuel and plasma cutting.
- Constructed out of 1/4" thick steel.
- Steel tank air bladder allows raising and lowering the water level with air.
- Designed for leveling plates up to 6" thick.
- 1/8" thick slats spaced 3" apart prevent small parts from falling into the table and reduce slag.
- Easy lift lugs for quick access to collector pans.



## Klean Sweep Self Cleaning Downdraft Table:

Automatic self-cleaning table for high-performance dust and slag collection.

### FEATURES:

- No need to stop production; removes slag and scrap while you cut on demand or on programmed intervals. Slag disposal method can be dumped into embedded floor containers or conveyed into portable collection unit.
- Engineered for optimal fume extraction based on your cutting processes. Exhaust channel ducts can be internal or external based on the application.
- Standard table design allows materials up to 6" in thickness.



## Koike Zoned Downdraft Cutting Table:

A modular design featuring optional expansion capabilities to extend the cutting area.

### FEATURES:

- No electronic components.
- Slat frames and slag pans remove easily for cleaning.
- Multiple zones for optimal fume extraction.



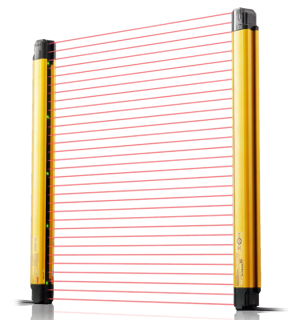
## SAFETY OPTIONS:

### Safety Light Curtain:

Safeguards personnel from the potential dangers of moving machinery. Seamless integration allows the system to shut-off machine if anything comes within the path of the light curtain while in motion.

Built-in status indicators can be illuminated in three colors – green, red, and orange – by activating an external input, making it possible to use them as work instruction lights.

Additionally, the indicators are visible at a wide viewing angle, allowing for easy recognition of the curtain's status.



### Pull Rope E-Stop:

Lifeline™ 3 cable switch delivers constant access to immediate emergency stop functionality, ceasing all cutting operations with a simple pull.

Meets the stringent requirements of ISO-13850 safety standards (safety of machinery-emergency stop equipment).



**SIMPLY BETTER BUILT.**

Effective Cutting Width:

Effective Cutting Length:

Material Types:

## MATERIAL THICKNESS RANGE

Plasma Thickness:

Oxy-Fuel Thickness:

## PLASMA TYPE

Quantity:   Hi-Definition

Voltage:

## RAIL AXIS CABLE CARRIER

Floor Mounted

Overhead Mounted

## PLASMA SYSTEM

Hypertherm®

## CNC CONTROLLER

Hypertherm® EDGE® Connect

## PLASMA BEVEL

Manual Bevel Station

3D-LT Automatic Full Contour

## OFFLINE SOFTWARE

Hypertherm® CAM Solutions

SigmaNEST

## PLASMA HEIGHT CONTROL

Koike Sensor - THC

## OXY-FUEL

Quantity:  Fuel-Gas Type:

Auto Ignition

Capacitive Height Control

Manual Bevel Attachment

IHT Torch

## PLATE MARKING

Pneumatic Dot Peen Pin Stamp

Low-Amperage Plasma Marking

## SCAN TO FILL ELECTRONIC FORM

(Select Click to Request Quote):



## CUTTING TABLES

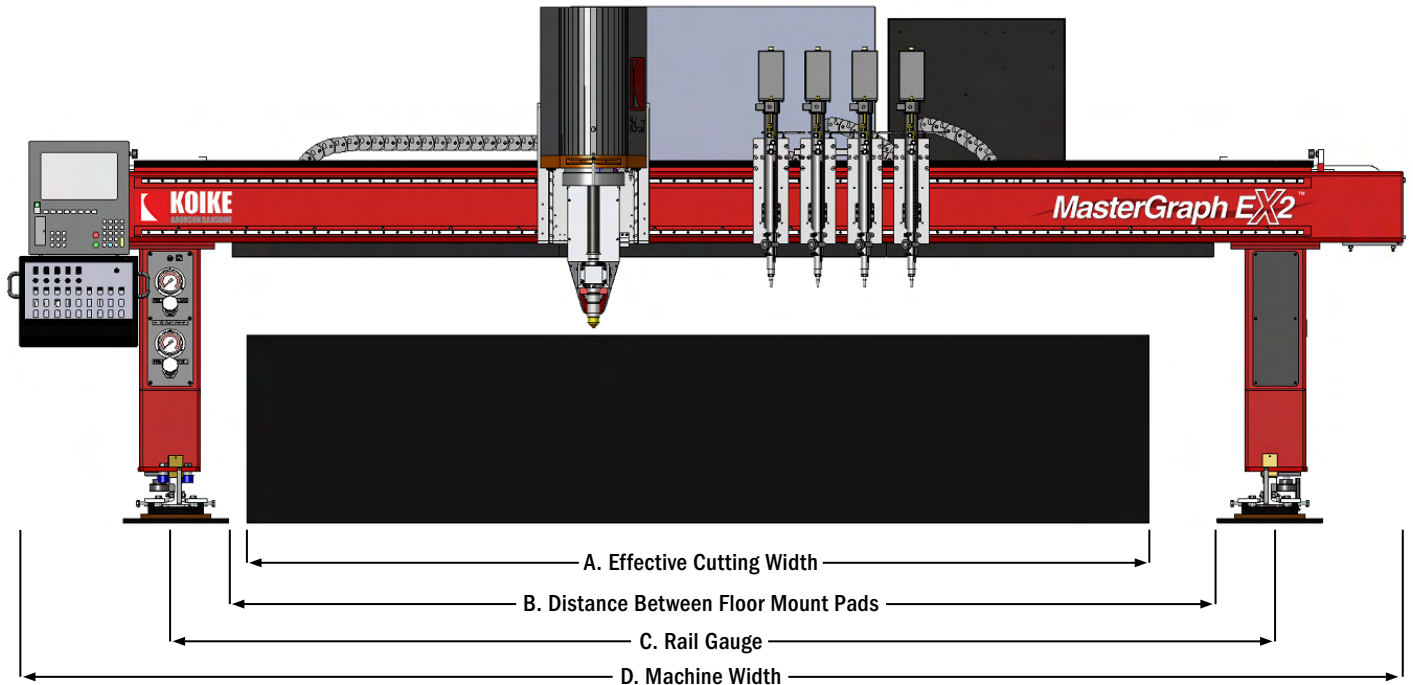
Pneumatic Water

Dry

Downdraft

Klean Sweep Self-Cleaning Downdraft

Fume Collector



MasterGraph EX2	MG-EX2 1500	MG-EX2 2500	MG-EX2 3100	MG-EX2 3700
A. Effective Cutting Width (5 Slave Stations)	60 in	96 in	120 in	144 in
Effective Cutting Width (2 Slave Stations)	84 in	120 in	144 in	168 in
B. Distance Between Floor Mount Pads	108 $\frac{3}{4}$ in	144 $\frac{3}{4}$ in	168 $\frac{3}{4}$ in	192 $\frac{3}{4}$ in
C. Machine Rail Gauge	126 $\frac{3}{4}$ in	162 $\frac{3}{4}$ in	186 $\frac{3}{4}$ in	210 $\frac{3}{4}$ in
D. Machine Width	177 in	213 in	237 in	261 in
Effective Cutting Length (Expandable)	250 in	250 in	250 in	250 in
Rapid Traverse Speed	1400 IPM	1400 IPM	1400 IPM	1400 IPM
Contour Speed (Maximum)	600 IPM	600 IPM	600 IPM	600 IPM
Machine CNC	Hypertherm® EDGE® Connect	Hypertherm® EDGE® Connect	Hypertherm® EDGE® Connect	Hypertherm® EDGE® Connect
Machine Drive System	AC Servo	AC Servo	AC Servo	AC Servo
Maximum Number of Tools	9	9	9	9
Maximum Number of Slave Stations	7	7	7	7
Maximum Plasma or Marker Stations	2	2	2	2
Maximum Oxy-Fuel Stations	8	8	8	8
Oxy-Fuel Gas System (10 in. Max Thickness)	Hi-Lo	Hi-Lo	Hi-Lo	Hi-Lo
Machine Voltage	480 VAC 3-phase/30 AMP	480 VAC 3-phase/30 AMP	480 VAC 3-phase/30 AMP	480 VAC 3-phase/30 AMP

\*Specifications are subject to change without notice. For exact dimensions, see final assembly drawing.

## SIMPLY BETTER BUILT - FOR OVER 100 YEARS.

OUR STRICTLY CONTROLLED MANUFACTURING AND PRODUCTION PROCESSES ENSURE WE HAVE THE HIGHEST-QUALITY MACHINES WITH THE MOST RELIABLE PERFORMANCE. WE COLLABORATE WITH OUR CUSTOMERS TO PRODUCE THE RIGHT MACHINE FOR THEIR NEEDS WITHIN A RANGE OF BUDGETS.



WELDING &  
POSITIONING



CUTTING



PORTABLES &  
GAS APPARATUS



635 West Main Street  
Arcade, NY, 14009-0307



U.S. & Canada: (585) 492-2400  
Toll Free: (800) 252-5332



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