



## A TRADITION IN EXCELLENCE

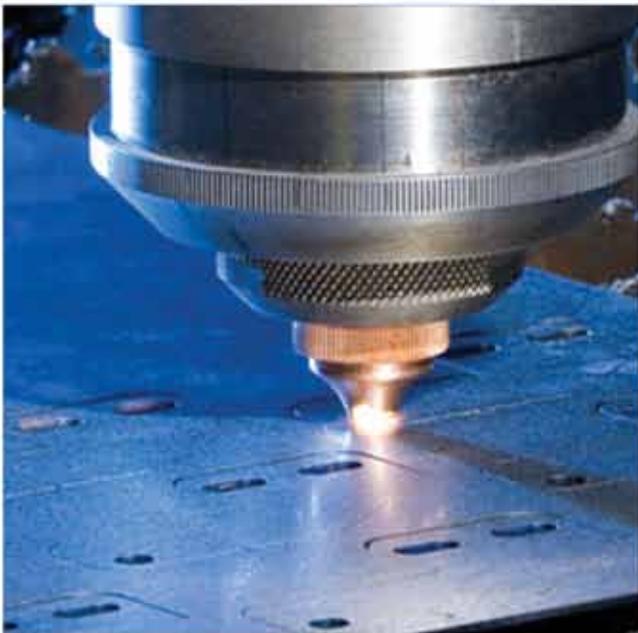


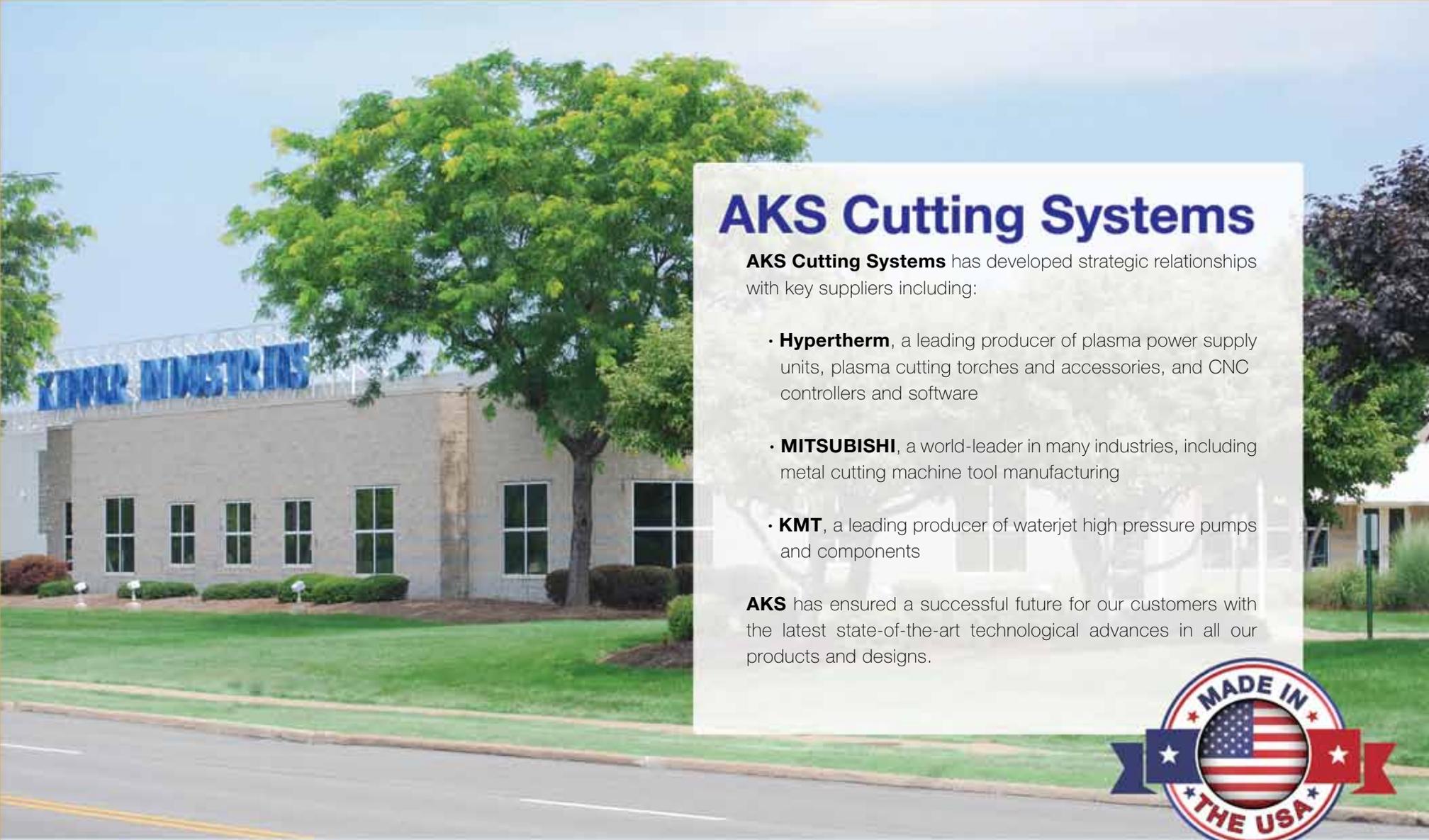
# 100 YEARS OF EXPERTISE

**Advanced Kiffer Systems, Inc. (AKS)**, a subsidiary of Kiffer Industries, is headquartered in Cleveland, OH, and has been at the forefront of manufacturing high-quality machinery for over 100 years since 1912. Our headquarters and manufacturing facility is located next to the Cleveland Hopkins International Airport.

For over 25 years, **AKS Cutting Systems** has manufactured CNC cutting machines including plasma, oxy-fuel, waterjet, and fiber laser for the sheet metal and plate metal industry, and hydraulic **Bentec™** bending machines for tube and pipe bending industry. **AKS** has a strong reputation for durability, accuracy and reliability with thousands of installations worldwide.

**AKS** has partnered with many high-quality machinery sales dealers and has an extensive service and support network.





## AKS Cutting Systems

**AKS Cutting Systems** has developed strategic relationships with key suppliers including:

- **Hypertherm**, a leading producer of plasma power supply units, plasma cutting torches and accessories, and CNC controllers and software
- **MITSUBISHI**, a world-leader in many industries, including metal cutting machine tool manufacturing
- **KMT**, a leading producer of waterjet high pressure pumps and components

**AKS** has ensured a successful future for our customers with the latest state-of-the-art technological advances in all our products and designs.



## Learn More

To learn more about **AKS Cutting Systems**, a subsidiary of Kiffer Industries, please visit our website at [www.akscutting.com](http://www.akscutting.com)

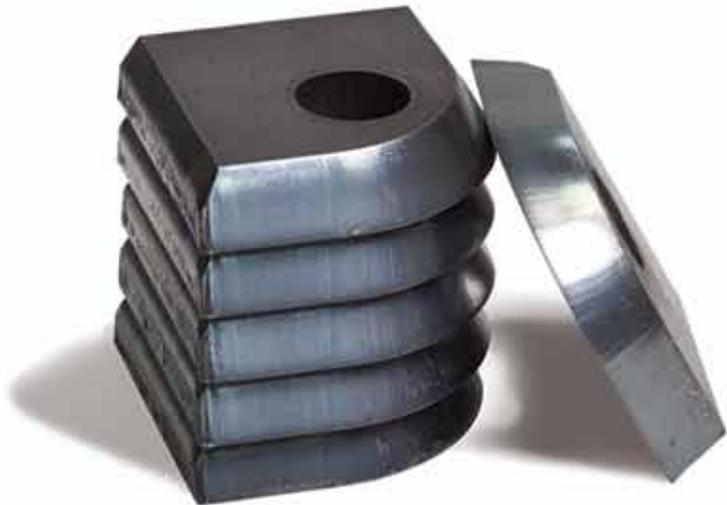


# PLASMA

Plasma cutting has been the premier cutting technology to cut carbon steel for years. Whether in structural, construction, oil & gas, infrastructure, appliances, automotive or aerospace, plasma cutting is a mainstay in metal cutting with thousands of mechanized cutting systems installed each year.

Although optimized for cutting carbon steel, plasma cutting can also cut different metals like aluminum and stainless steel.

**AKS** has developed a full range of sizes, accuracies, and performances for plasma cutting applications, including straight cutting, “**robo-kut**” 5-axis bevel cutting, and even tube & pipe cutting – all integrated with a **Hypertherm** plasma power supply unit - and all equipment designed and built in the USA.



# PLASMA

A plasma cutting system is usually the workhorse cutting machine for most shops. The **AKS** plasma cutting system can cut sheet metal to plate metal and from one big part to thousands of nested parts.

- **AKS “robo-kut”** 5-axis bevel head can process weld prep applications for k, v, x, y, and all required bevel edges.
- **AKS pipe & tube cutting system** can cut round pipe, and square & rectangular tube.
- **AKS** plasma cutting tables can integrate with an air pollution control unit with a down draft table, or on a water table.



## AKS offers

*a full range of plasma cutting machines  
for most applications and customers including:*

### “tru-kut”

entry-level and value machine with basic plasma cutting machine features

### “accu-kut”

high accuracy and production machine specifically designed for premium cutting applications

### “dura-kut”

heavy-duty machine for larger and thicker plate cutting for large part manufacturing



# WATERJET

Waterjet cutting has been an ever-growing cutting technology since its invention in the 1970's and has become mainstream and popular in both fabrication shops and machine shops.

**MC Machinery**, a subsidiary of **MITSUBISHI**, introduced waterjet into their product line in 2006 to complement their other metal cutting machines like laser, edm and milling.

In 2015, **AKS Cutting Systems** and **MITSUBISHI** partnered for **AKS** to be the Exclusive and Official Licensee of the **MITSUBISHI X Series Waterjet Cutting Systems** to manufacture, market and distribute the product. These X Series systems utilize the strength and durability of the **MITSUBISHI** design, including the **MITSUBISHI** CNC control, and offer customers a world-class waterjet design, taper control technology, ultra-high 90,000 psi pressure capability, and made in the USA.



## Why Waterjet?

Waterjet cutting is typically added to those shops who need to improve upon the cut edge quality of their plasma cut parts and who need to eliminate heat affected zones on their laser or plasma cut parts.

Waterjet cutting is perfect for those applications like cutting aluminum, stainless steel, brass, bronze, copper, Inconel, alloy materials, and even composite materials.

## AKS offers

The **MITSUBISHI X Series** model product line up of waterjet cutting machines including:

### “water-kut” X2

entry-level and value machine with basic waterjet cutting machine features

### “water-kut” X3

mid-level and production machine specifically designed for fabrication shop

### “water-kut” X4

high performance machine with high accuracy for most demanding applications

**“AKS is the Exclusive and Official Licensee of MITSUBISHI X Series Waterjet”**



## FIBER LASER

Fiber laser is the latest technology in metal cutting and consists of a solid-state laser beam delivered through a fiber optic cable to the laser cutting head, replacing the mirror and reflection systems used in traditional CO2 lasers. The fiber optic cables deliver the laser beam to the material with 3X more efficiency as CO2 lasers, and virtually no degradation.

Fiber lasers are much more cost effective than traditional CO2 lasers with no mirrors to maintain and calibrate, and no laser assist gases required. Fiber lasers offer higher cut speeds, lower operating costs and higher productivity than CO2 lasers, plasma, and waterjet for typically thinner materials under 1/4" thick.



*“...excellent cutting capability on reflective materials like aluminum, copper, titanium and brass.”*

## FIBER LASER

Unlike traditional CO2 lasers, fiber lasers also offer excellent cutting capability on reflective materials like aluminum, copper, titanium and brass.

**AKS Fiber Laser** systems are offered in a range of power supplies from 1000 watts to 3000 watts and can cut up to 3/4" thick mild steel and thinner parts in other materials.

Fiber laser cutting produces a high quality cut edge surface, with the highest part tolerance, while typically offering the lowest cost per part.



## OXYFUEL

Oxy-fuel cutting, or flame cutting, relies on steel's chemical reaction with oxygen to melt the steel. It can only be used to cut carbon steel, usually thicker than 2", and is not effective to cut stainless steel or aluminum.

Oxy-fuel is flame cutting in its basic form, with resultant large kerf widths over 1/4" wide, with angled edge quality, heat affected zones and dross/slag.

Oxy-fuel is the most acceptable form of cutting large, thick steel parts, especially for applications in the construction, oil & gas, shipbuilding, and structural industries, and it often includes multiple cutting heads on the same gantry. It is the least expensive form of cutting in both initial capital investment costs and in hourly operating costs, compared to plasma, waterjet, or laser.

Oxy-fuel cutting heads are often added to the **AKS "dura-kut"** plasma cutting system. The **AKS "dura-kut"** offers large table capability, optimizing the complete cutting process with both high-definition plasma cutting, and oxyfuel cutting on the same bridge. Oxy-fuel cutting of carbon steel is most typical for applications of 2" – 6" thick plate, in which part tolerance and cut edge quality is not as important.



## BENDERS

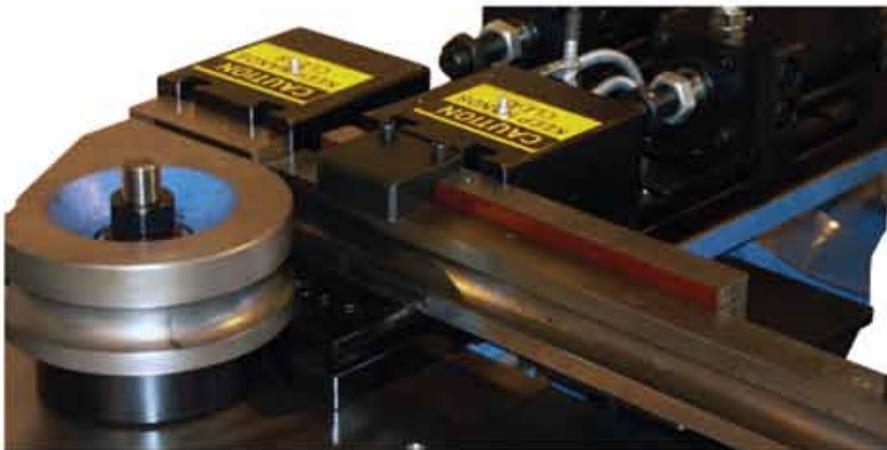
**AKS** also offers expertise in **BENTEC™ Benders** - hydraulic bending machines for both simple **ram** and **rotary** style bending, and **CNC** hydraulic rotary draw benders available for both mandrel and non-mandrel precision bending. Bending applications include:

- round tube, pipe, conduit
- square and rectangular tubing
- handrail
- flat and round solid bar
- extrusions
- bus bar and channel

A full range of **BENTEC™ Benders** are available from the low-end manual ram units using pin inserts and adjustable shoe holders and stop nuts, to the high-end precision **CNC** hydraulic rotary draw mandrel bending for precise, accurate and repeatable bends up to 195 degrees.

The **BENTEC™ Bender** ram units can also double as a simple horizontal press brake with die holders available to accept most dies and punches, or easily manufactured in your shop.

**AKS** offers an extensive range of designed tooling, which cover most applications for both ram and rotary style bending. Forming dies, standard pressure dies, clamp dies, mandrel design, including form, plug and ball-type mandrels, are also available through **AKS** tooling design experience and expertise.



# CONTROLLERS & SOFTWARE

**AKS Cutting Systems** utilizes our two partner suppliers, **MITSUBISHI** and **Hypertherm**, for CNC Control Technology and Operating Software for our cutting systems. Whether plasma, waterjet, oxy-fuel or fiber laser, the **AKS Cutting System** relies on the expertise of our CNC controls manufacturers and partners:

- **Hypertherm** - Edge®Pro CNC with Phoenix™ Software is the world's leading plasma cutting control technology. Coupled together with **Hypertherm** ProNest application and programming software, plasma cutting is optimized for maximum throughput and efficiency while user friendly from the beginner to the expert.
- **MITSUBISHI** - M700 Series CNC Controller is a world leader in CNC controllers with tens of thousands of installations. Combined with the power of **MITSUBISHI** Servo Drives and Servo Motors, the complete Controls package is of the highest quality, design and support throughout the world. **Metamotion** provides the user interface application software and uses **MetaNEST** and **MetaCAD/CAM** for all the programming and application needs.



## ROBO-KUT

The **AKS "robo-kut"** is the leading 5-axis bevel head in the plasma cutting industry. The **"robo-kut"** is designed with robotic style precision gearing and planetary gearboxes that can be incremented in arc-seconds or fractions of degrees for tightest precision and accuracy. It includes a magnetic breakaway head to prevent component damage upon a crash.

The **"robo-kut"** is machined from solid billet aluminum block and doesn't use weldments or stamped parts like competitive cutting heads. It is extremely rigid, durable and capable of +/-45 degree cutting of V,K,Y,A bevels. The motion of the head creates no wind-up allowing continuous rotation and looping.

The **"robo-kut"** is patented for an automatic calibration routine which insures repeatability of the beveling system and produces cutting  $\frac{1}{2}$ " diameter "bolt ready holes" in 1" thick steel plate. The **AKS "robo-kut"** offers a  $\frac{1}{2}$  : 1" ratio for holes in many applications, superior than competitive designs which are limited to the traditional 1" : 1" ratio.



# CONSUMABLES

**AKS Cutting Systems** is your complete single source for all machine consumables, spare & replacement parts. From the smallest diamond orifice of waterjet cutting, to the largest power supply unit of plasma cutting, our customers can trust the original equipment manufacturers' (OEM) products from **AKS**, because of our close preferred relationships with all our major suppliers. **AKS** stocks only genuine, top-shelf, competitively priced consumables and parts for our plasma, waterjet, oxy-fuel, fiber laser and bender machines. These products will insure maximum performance of your machinery because they're designed and manufactured by the OEM manufacturer to their exact specifications.



Our dedicated parts support staff will help you keep your equipment in optimum operation by providing you with prompt, thorough and experienced support.

## TRAINING

**AKS Cutting Systems** offers a comprehensive training package with each and every cutting system we sell.

A factory-certified technician:

- trains your personnel on-site at your facility
- reviews machine operation, programming, and maintenance training
- covers application training with specific machine set-up and function.

In addition to system training package with each machine purchase, additional training is always available for your personnel at our factory. Regularly scheduled classes as well as customer and application specific classes are available by request. Our experienced training staff provides your team support and instruction to help you optimize your machine operation and application processes.

## SERVICE

With the dedication of our dealers' regional support network, and the expertise of our factory service and training technicians, **AKS**

**Cutting Systems** offers our customers a world-class service support network consisting of a complete service capability second-to-none in our industry and includes:

- technical phone support
- operation and programming assistance
- trouble-shooting
- on-site service
- parts inventory

Relying on our partners like **Hypertherm**, **MITSUBISHI** and **KMT**, and the coordination of our factory service management team, our customers are 100% satisfied all the way from installation through the life of the machine. The value of our service support and application expertise is immeasurable and allows our customers to maximize their machine performance.





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FOR OVER 100 YEARS.

Call us at 216-267-1818  
or visit [www.akscutting.com](http://www.akscutting.com)

