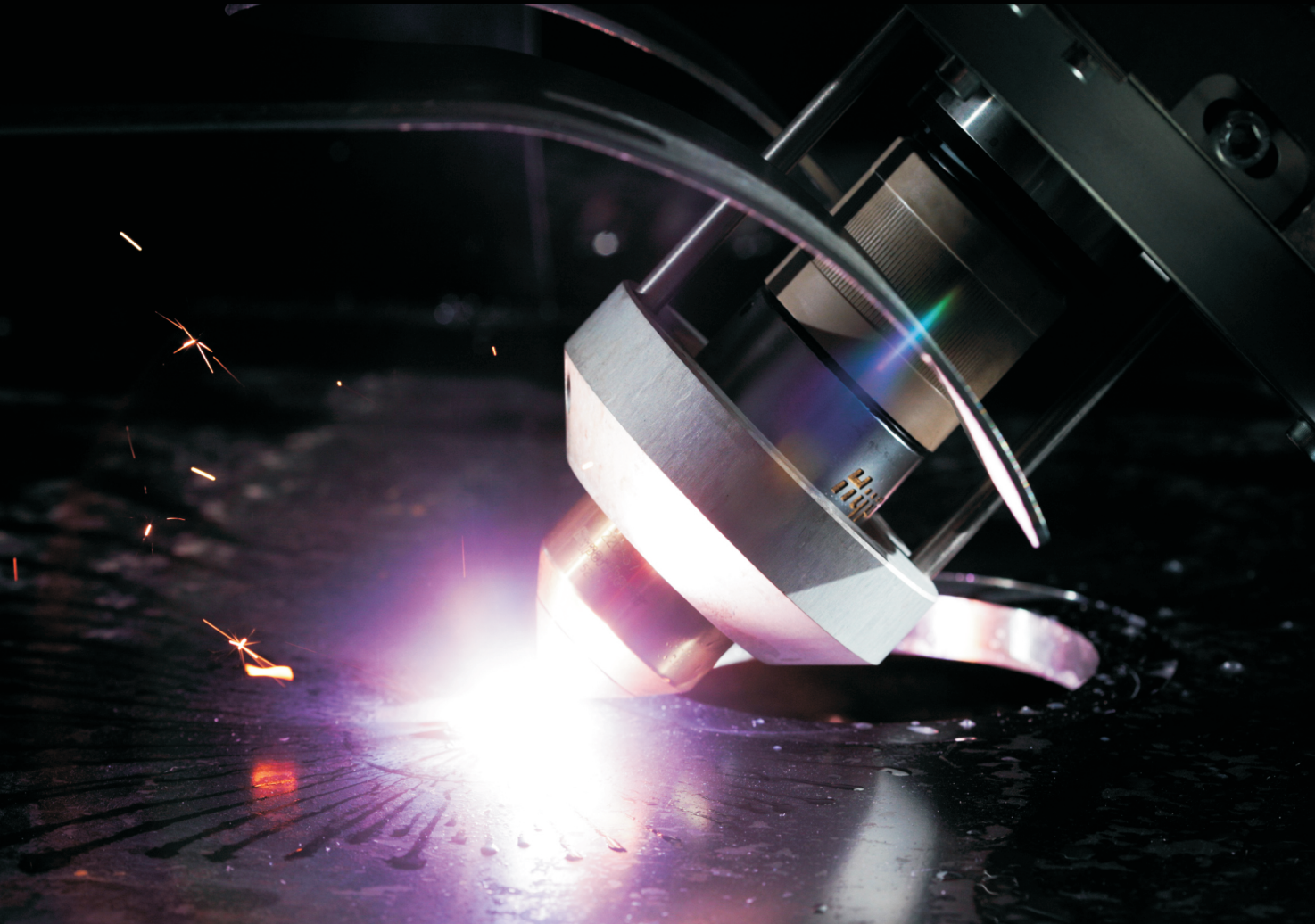


Kinetic



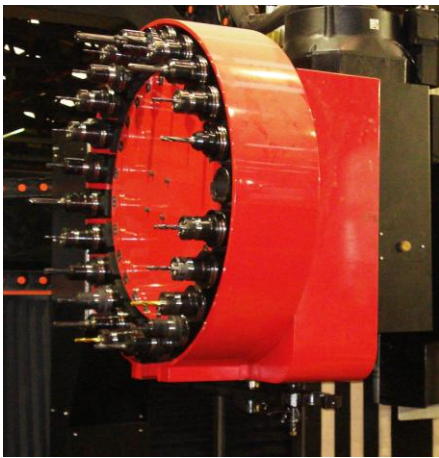
One Machine Does it All

The golden rule for automation is to minimize handling. On the Kinetic machines this is achieved by performing as many tasks as possible on a single machine.

The integration of multiple processes onto a plate-cutting machine minimizes downstream labor or simply adds value in service center applications.

Performing all these tasks with a computer programmable machine ensures part consistency and provides large labor savings through the manufacturing process.

Kinetic software for programming the machine has been specifically designed for seamless integration of multiple tools.



K5000xmc Automatic Toolchanger

Automatic tool changers fitted the carriage of the machine ensures fast tool changing and improved part processing

Processes that can be incorporated onto the Kinetic machines include:

- Hypertherm plasma systems
HPR130XD, HPR260XD, HPR400XD and HPR800XD, others available on request
- 11kW to 36kW (15HP to 48HP) High speed spindle to 4000rpm with through spindle cooling for milling drilling, tapping, counter sinking and counter boring
- Automatic tool changer for tool changing the high speed spindle with 24 tools. Additional capacity available on request
- Flame cutting (Single or multi-torch, high low flame, multi stage piercing)
- Marking systems (Plasma marking, ink-jet marking and powder marking)
- Full automatic contouring bevel cutting for plasma and oxy fuel
- Routing or Other customer specific tooling



From Plate to Finished Part on One Machine



Face Milling



End Milling



Drilling



Plasma Bevel Cutting



Oxy Fuel Cutting

Kinetic Machine Technology

Customer Satisfaction

Kinetic manufactures cutting machines for the demanding end user, where accuracy, reliability and robustness are very important.

At Kinetic when we sell a machine, our goal is to provide a machine and technical service that exceeds our customer expectations.

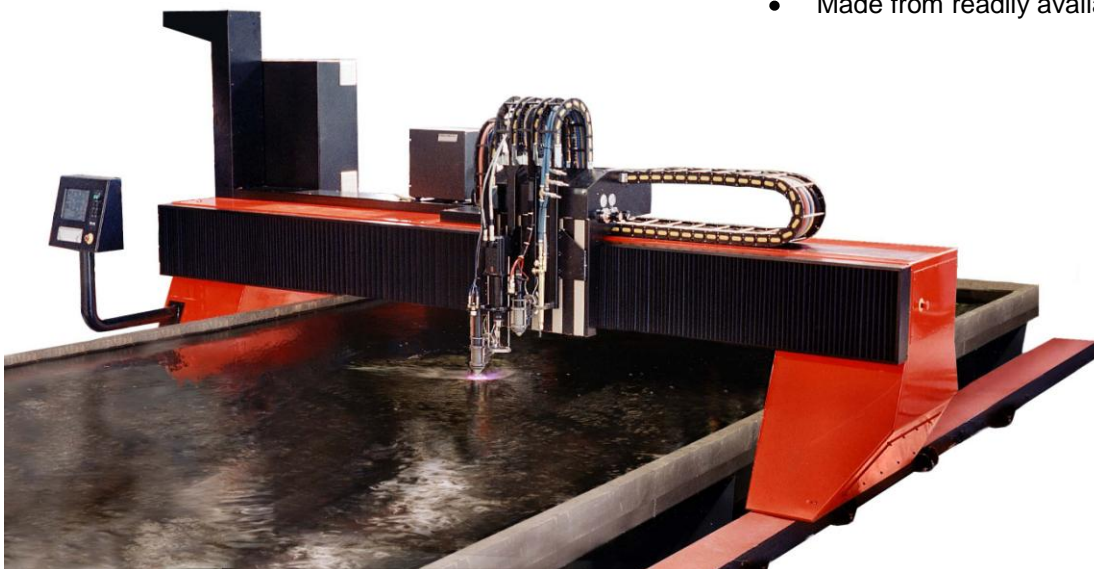
Here is what one customer had to say:

“The machine is working great and it has increased my productivity and shop production tremendously. I am very pleased with the quality and durability of your product and without a doubt I made the right decision in buying your equipment.”



The Kinetic machines are engineered to ensure high customer satisfaction. This is achieved by the following:

- Accurate and repeatable
- Reliable
- Rugged and designed for 24 hour, seven day a week operation
- Easy to use, minimizing operator dependence and training
- Serviceable, with technical support to ensure when things do go wrong, the problems are rectified quickly to get the machine back into production
- Made from readily available components



Improving the Financial Return

When comparing the financial return of one cutting machine from another, it may appear that all things are equal. This is largely due to the commonality of various primary cutting systems and the associated common process variables.

An example is the use of common plasma systems, which have the same cutting speeds under the same conditions.

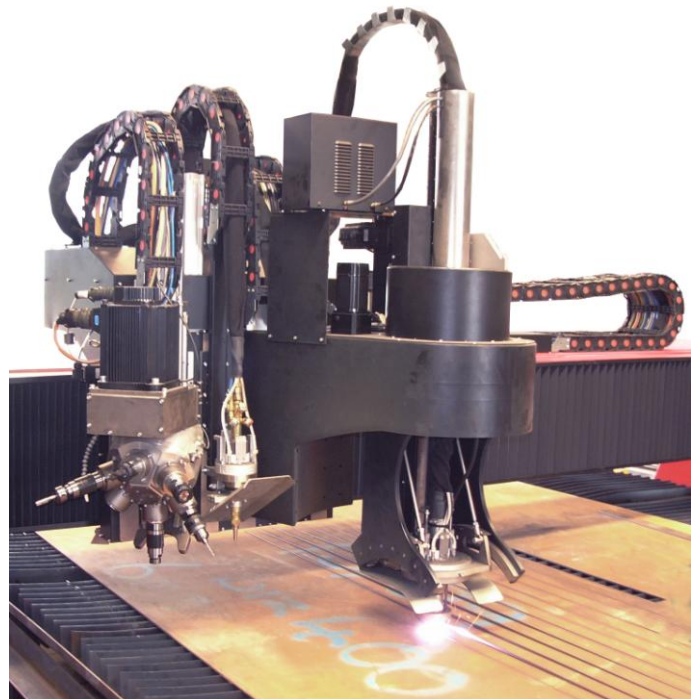


K3000xmc Machine Showing from RHS:
24 Automatic Toolchanger
11kW Spindle
two spare vertical stations
Hypertherm HPR400 Plasma
Oxy Fuel torch

However there are substantial numbers of areas where direct comparisons can be made. These include:

- Integration of multiple tools on one machine
- Machine accuracy and repeatability to minimize errors
- Ease of use and the level of machine on board diagnostics
- Maintenance requirements and cost of spare parts

We believe the Kinetic range of machines is unmatched for all of the above.



Main Carriage on a Kinetic K3000 machine fitted with six station drill turret, oxy fuel flame torch and Hypertherm HPR 260 plasma in the Kinetic contour bevel

Accuracy and Repeatability

The accuracy and repeatability demanded of modern plate burning machines is increasing, as customers demand closer part tolerances and better cut-quality.

This is accentuated by the development of fine plasma systems, which in some applications can have part accuracies and cut qualities approaching lasers.

The primary factors that affect the accuracy of a machine (not process) are:

- Machine design
- Drive system
- Linear guiding system

Machine Design

Providing a machine capable of producing consistent accurate parts begins with the machine design. The machine must be extremely rigid, not too heavy: so the machine is able to accelerate quickly, and the machine must have very smooth precise travel.

The innovation and advanced engineering designs of the Kinetic machines, combined with the uncompromising use of the highest specification components has resulted in machines with optimal cutting accuracy, smooth travel and a long maintenance free life.

Features of the Kinetic Machine design:

- Simplicity by design
- Successful implementation of modern technology to the machine
- Rigid machine design capable of withstanding high vertical loads generated during high speed drilling
- Highest specification linear guides, drives and control system
- Dual long axis drive
- Full guide-way and drive protection on all axes to prolong drive and guide life
- All service supply on all axes through cable track (drag chain)
- All components are standard and are available directly from the component manufacturer



Part cut on Kinetic machine
Showing drilling, tapping, counter-boring
and oxy fuel bevel cutting in one set-up



Y AXIS DRIVE
with Concertina Bellows Removed

Drive Systems

With the control systems available today, dual drive systems can be controlled to accuracies unable to be matched by single side drive systems.

In addition, dual drives eliminate the high point loading on the guide rails generated by single side drive machines under acceleration, which lead to guide failure.

The Kinetic machines have the following features:

- Dual drive system on either end of the traveling gantry provides machine accuracies to +/- 0.15 mm/m (0.006"/36")
- Vertical axes use programmable motors driving reciprocating ball-screw drives to enable automatic settings for height, vertical speed and drilling depths
- Traverse speeds up to 25 m/min (1000 in/min.) This is limited due to safety reasons.

Linear Guide System

The unrivalled linear guide system used in machine tools is re-circulating linear bearings. These guides provide for unmatched rigidity, smooth travel and load carrying capacity.

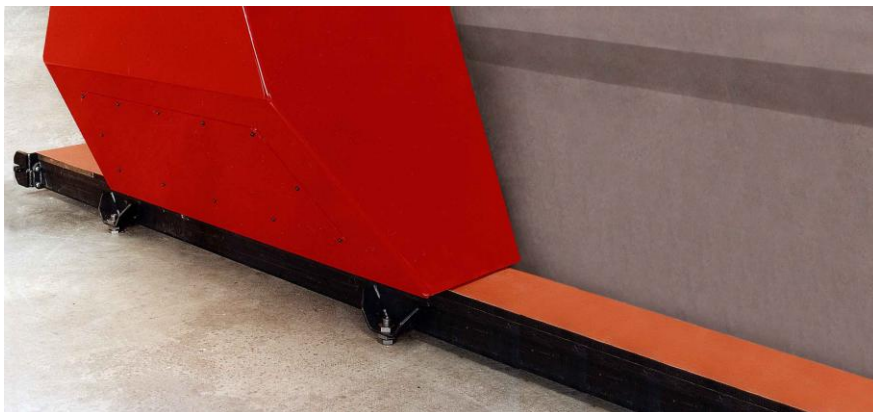
Because linear bearings are the ultimate in linear guides, they are used almost exclusively on all precision CNC milling machines, EDM machines, lathes and laser machines for all linear travel.

However the limiting factors for the use of linear bearings are the relatively high cost and the requirement to limit the debris on the rail, which can lead to premature failure.

Higher specification plate-burning machine manufacturers use rectangular linear rails for the gantry axis and on the vertical torch lifter axes. Usually these bearings are unprotected and often the bearings are the low load rated round guides.

With the Kinetic machines, linear bearings are used on all axes of the K1000, K1200, K2000 and K4000. Linear bearings are optional on the K3000 machine.

In addition every axis of the Kinetic machines has full protection for the linear guides and for the drive system.



LONG AXIS DRIVE SHOWING AXIS PROTECTION

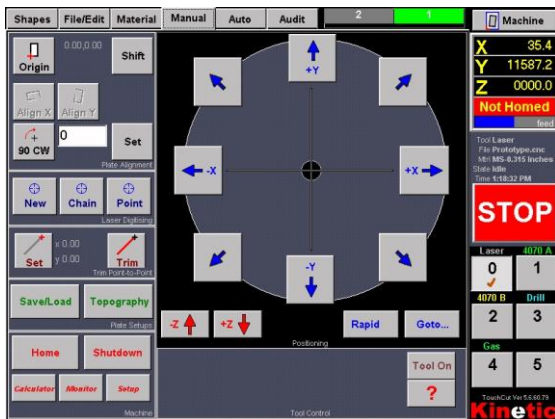
Machine Automation

Kinetic was one of the first, if not the first, machine manufacturer to incorporate the advantages of PC machine control to plasma plate cutting in 1995.

With the advanced graphics, processor speed and reliability of the modern PC's, most machine control manufacturers now incorporate these advantages to their controllers.

As with the Kinetic machines, the most common method to use the PC controller is for the operator interface, with a dedicated motion control board to perform machine control.

The result is a Windows™ operating environment that is easy to operate and has unrivalled functionality.



Operator Interface

The interface on the Kinetic machines is either a 15" or 17" LCD screen with a glass-faced touch-screen.

This is a very graphical, easy to understand interface, where the touch-screen is used to select "buttons" on screen.



Ease of Use

This touch-screen interface system provides an interface where different screens are used to import files, manually move the machine, and set up the cutting processes and to log machine performance.

Interface Features

- Easy to learn and use.
- Intelligent operator interface which displays only relevant information to the operator
- Unrivalled automated setting of cutting parameters to minimize operator input and skill requirements, providing reliable and consistent cut quality
- Real time graphics are shown of parts being cut including different tools shown using different colors
- Zoom in and auto panning
- KINETIC SmartStart feature allows for restarting a cut at any point along a part, simply by touching the required position on the screen. This feature also allows for a lead-in to restart the cutting operation
- Six configurable plate setups allow the operator to switch between jobs quickly and reliably
- Laser plate alignment pointer and digitizer
- Over 90 different standard shapes are provided ranging from simple shapes to sign writing and 3D developments
- Practically no limit to program size
- Management data for jobs and processes is shown and has both cumulative and re-settable parameters. These include tool on times, number of pierces and cutting distance

Connection

Machine connection to the factory PC network is with a noise immune fiber optic link. The file is loaded into the machine using the Windows™ interface.

Alternatively files can be loaded using a memory stick.

Service

We don't think customers want service; it's just that they need service. And when they need it they need it immediately.

We agree and try to eliminate the need for machine service. When service is required, our goal is to supply it immediately.

We achieve this by:

- Minimizing service requirements. This is by the use of the best components available combined with a machine design to enhance the component technology
- Designing and documenting the machines for easy serviceability, so if it is required, the customers have the choice to perform the service work themselves or to use a Kinetic service technician.
- Using standard components so all parts are readily available
- Providing technical service to the customers promptly when required.

The Kinetic machines are supplied with a comprehensive operation and service manual.

During machine installation, maintenance fitters and electrical technicians receive comprehensive training on the Kinetic machine. This includes preventive maintenance, fault finding and machine servicing.

Training of local contracting electrical technicians for machine service work is also optional.

Spare Parts

Some spares are provided with the Kinetic machine. These include a tool kit with proximity sensors, relays, and other items.

As previously stated, the machine is designed using readily available components that are readily available from many suppliers.

In addition, Kinetic has a comprehensive list of machine spares in Iowa USA, Melbourne and Brisbane in Australia and Auckland New Zealand and these can usually be delivered to site by overnight courier.

Service History

With over 200 machines operational around the world, Kinetic has managed to ensure the service costs have been kept to an absolute minimum.

We encourage potential customers to contact our existing customer's for a reference on the service requirement and quality of service provided by Kinetic.

K4000xmc Plate Processing Machine



MACHINE SPECIFICATIONS

Traverse Speed	25 m/min (1000 ipm)
Machine accuracy	+/- 0.15mm/m (0.006"/3')
Guiding System	Linear bearings on all axes
Drive	AC Servo (dual X)
Drive System X & Y	Rack and Pinion
Vertical Drives	Programmable ball-screw
Maximum tools on main carriage	Spindle plus capacity for four lifters
Cutting Widths	2.6, 3.2, 3.8, 4.4, 5.1m, 6.2m) (8'8", 10'8", 12'8", 14'8", 16'8", 20'8") Other widths also available
Cutting Lengths	6.3 to 50m (20'8" to 150')
Control	Dual 32 bit processors, Windows TM based
Interface	17" LCD Glass Faced Touch Screen

SPINDLE SPECIFICATIONS

Spindle Power	20 Hp (15 kW)
Spindle Tool Holder	4 TAPER Through Coolant
Spindle Speed	To 4000 rpm
Tool Change	24
Largest Drilled Hole	50mm (2")
Largest Bored Hold	127mm (5")
Largest Tapping Hole	M24 (1")
Clamp Foot	Servo Drive (Patent Pending)

CUTTING HEAD OPTIONS

Cutting Head Options	Plasma Oxy Fuel Multi carriage
Bevel Options	Combination plasma and oxy fuel bevel Triple oxy fuel bevel system

Optional Tooling

Plasma Torches

Kinetic uses the following Plasma systems.

Hypertherm precision plasma applications

HPR26 and HPR400xd with automatic gas console

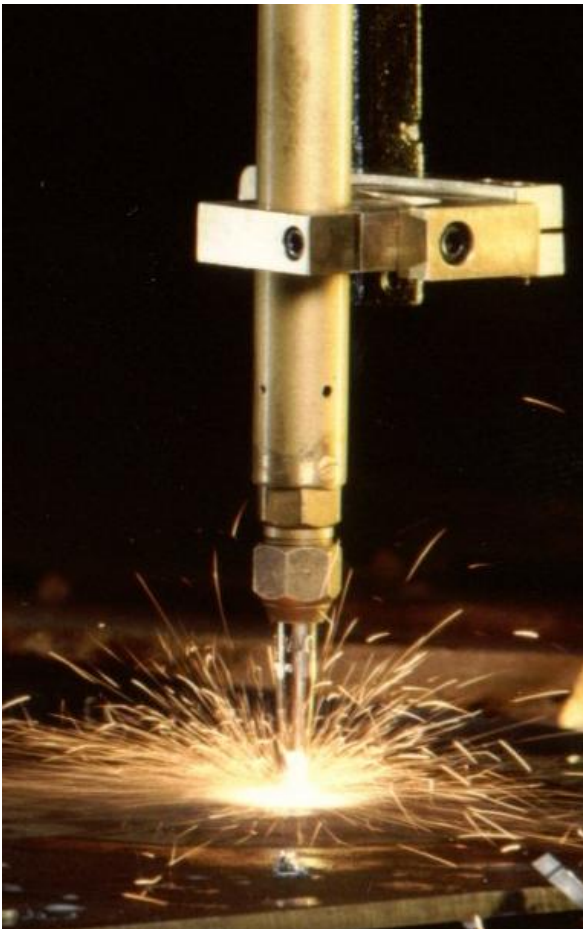
Hypertherm plasma technology for cut speed and economy

HT2000, HT4400

Other plasma options available on request

Features included with the Kinetic Plasma

- Automatic setting of voltage and current
- Automatic pierce height setting
- Voltage height control during cutting
- Initial plate height sensing
- Automated setting of plasma gases (optional where applicable)



Flame Torches

Oxy Fuel flame torches are required for thick plate cutting of steel.

Harris machine torches are fitted as standard unless the customer specifies otherwise.

Options for flame torches include:

- High and low flame settings
- Automatic ignition
- Automatic height control
- Multi stage piercing
- Multiple torch setups
- Automatic torch spacing option



7 Hp Six Station Turret

The latest option for the Kinetic plasma machines is the high speed six station machining turret. With 5.5kW of power the turret is ideal for drilling to 20mm (3/4") thru thick plate. Equipped with six tool turrets and a very fast tool change time, this turret is ideal for combining with plasma systems for plate processing

With Speeds to 3500rpm the drill turret has very fast hole drilling and tapping. In addition external coolant spray prolongs the life of the cutting tools and is fully programmable

Included with the turret drill is the following:

- Six station turret with 2 second (approx.) tool change time
- 5.5 kW (7.2 HP) AC Servo motor drive
- Drilling to 25mm with a pilot drill or blind drilling to 20mm (3/4")
- Tapping to M12 (1/2")



4 HP Pilot Drill

This pilot drill is fully programmable for feed, speed and depth. The drill also has peck cycles for deep hole drilling. Foot shown is for plate height sensing.

Drill specifications are:

Spindle Power 4Hp AC Servo
Drill Capacity 1/2" (10mm) using solid drills
Maximum Depth 4" (100) plate



Various Marking Systems

Various marking systems can be fitted to the machines including plasma marking, ink jet marking, percussion marking or other customer specific marking heads.

Pipe Cutting Systems

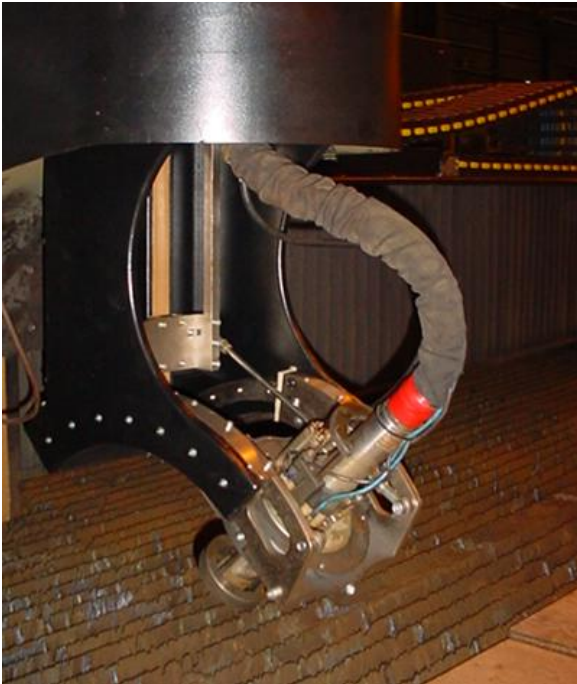
Two Pipe cuttings options are available for fitting on the floor mounted rail machines. These systems can process pipe to 600mm (2') or 900mm (3') diameter and 12m long (40').

If fitted under a combination cutting and drilling machine, the pipe can be cut, drilled and milled.



Picture showing assortment of cut parts, put together after cutting of pipe, plasma machine not shown

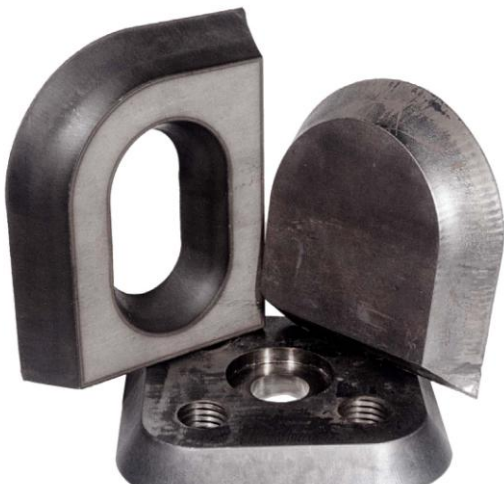
Kinetic Combination Bevel



This patented combination bevel developed by Kinetic is one of the simplest bevel cutting mechanisms available.

Both plasma and flame bevel cutting with the one bevel system is now possible with a changeover time of around fifteen minutes

This bevel fits to the K2500, K3000, K4000 and K5000 machines



Above: Plasma cutting of 1" stainless steel and 1" mild steel. (Top 2 pieces). Bottom part above showing drilled and tapped part prior to being bevel flame cut.

Kinetic Triple Flame Bevel

This system is for a stand alone and allows for single pass cutting of K bevels or bevel and land. This setup allows for contour bevel cutting.



PrimeCut 3 Nesting and Processing Software

PrimeCut 3 combines the power of automatically nesting your parts, with collision detection and flexible tooling options. Your task is simplified from start to finish. Import your parts and nest them across multiple plates in double-quick time. Plate processing is also made easy with PrimeCut's flexible tooling options.

Powerful 2D & 3D shapes libraries

Multi-process support: cutting, bevelling, drilling and marking

Flexible tooling options

Intuitive workflow model

Graphically represented parts for quick identification

Track nesting requirements at a glance

Nest parts across multiple plates

Create plates from standard sizes or from saved remnants

Predefined and customizable reports

- Easy to Learn, Quick to use
- Automatic nesting across multiple plates
- Manual Nesting with collision detection and easy drag and drop part placement
- Adjustable gap between parts and other customizable settings
- Power arrays allow flipping and offsetting of even rows and columns
- Nest onto remnant plates of any shape
- Save your parts and plates together in a workspace

- AutoCAD 2000 DXF compatible
- Powerful 2D shapes and 3D developments
- Simple part touchup capabilities including complex line smoothing
- Intelligent tool processing with leadin placement optimized for part quality
- Remnant plate cutting and saving
- Configurable Post-Processor for multiple machine support
- Generation of Job sheets and customizable reports

101019

*Nest, Path and Cut
with just a few clicks!*