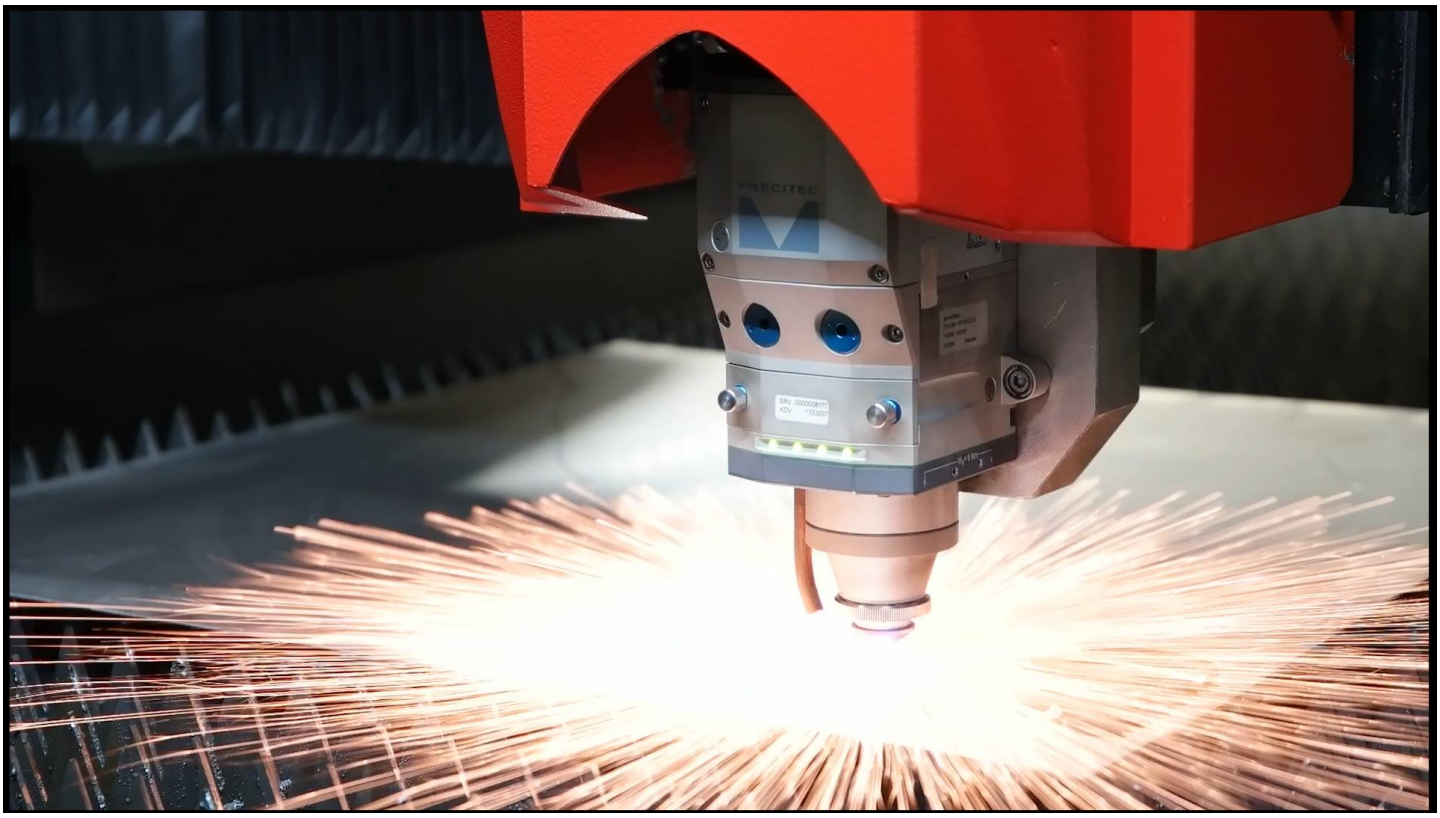
KYSON 860 FIBER LASER
8’ x 60’ 6 kW



Fiber Lasers | Press Brakes | Shears | Ironworkers | Bandsaws | Plate Rolls | Angle Rolls | Dishing Presses | Flanging Machines | Drilling Machines

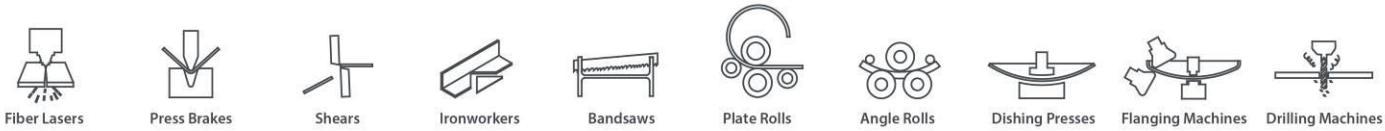
ABOUT RMT

Revolution Machine Tools (RMT), founded by long time industry leader Kyle Jorgenson, is a metal fabrication machine tools company. RMT's design team has created the most innovative and precise tools in the North American market today. We have partnered with leading manufacturers to build our designs to our stringent specifications in state of the art manufacturing facilities.

Kyle Jorgenson started in the Machine Tool industry working with his father, Roger Jorgenson, who founded Jorgenson Machine Tools in 1974. Roger taught Kyle how important relationships and customer service are and Kyle has built his reputation on those principles. RMT is supported by an ever expanding team of industry professionals, which include design, marketing, service and support, who have these same values and respect Kyle's vision. Together, they are creating a revolution in the Machine Tool industry.

RMT's main focus is in large cutting, forming, and rolling machines for the metal fabrication industry.
RMT's research and development team has created the most innovative, fast, durable and accurate machines in the industry. Our machines are all backed by a strong warranty and an outstanding service team dedicated to keeping your machines operational. We understand the time value of money and how expensive downtime can be.

RMT offers several innovative machines including Fiber Lasers, Press Brakes, Plate Rolls, Ironworkers, Angle Rolls, Shears, Structural Steel Drills, Band Saws, and much more. All RMT product designs are built for durability, precision, repeatability, and speed.

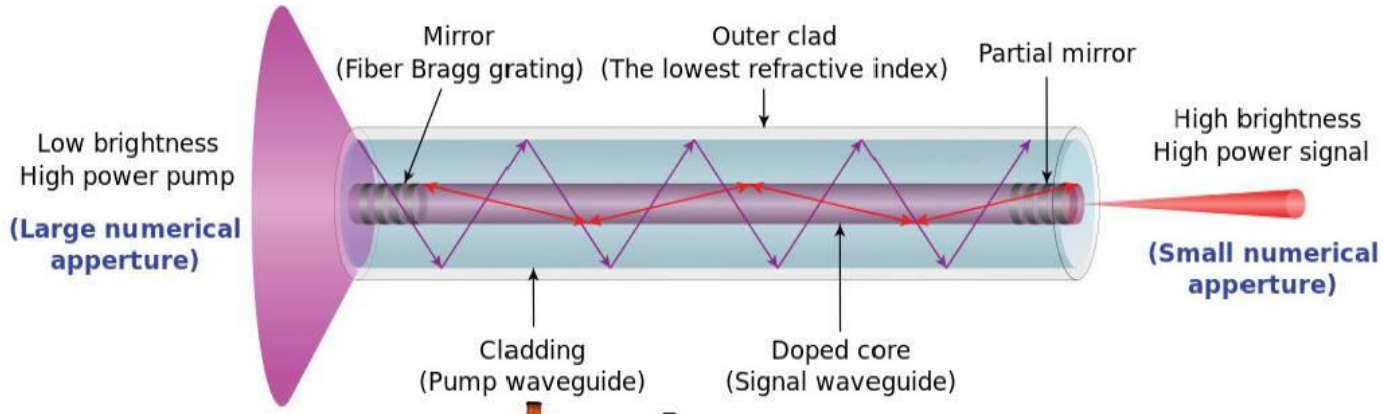


BENEFITS OF RMT KYSON FIBER LASERS

LASER LIGHT SOURCE AND CHILLER

RMT has partnered with industry leaders for the highest quality laser light sources on the market. Ytterbium fiber lasers operating at the 1070 nm wavelength are perfect for laser cutting. The operating wave-length, multi-kilowatt power, good beam quality, wide operating power range, power stability and small spot size on our laser are perfect for most cutting applications. Fiber lasers have a wide dynamic operating power range and the beam's focus and position remain constant, even when the laser power is changed, allowing consistent processing results every time. A wide range of spot sizes can be achieved by changing the optics configuration. These features enable the end user to choose an appropriate power density for cutting various materials and wall thicknesses.

The laser light source chiller is a closed-loop liquid cooling system. The temperature of the light source is constantly monitored by the chiller, ensuring the light source is running at optimal temperatures. The standard cooling system will protect the laser in an environment up to +190 °F.



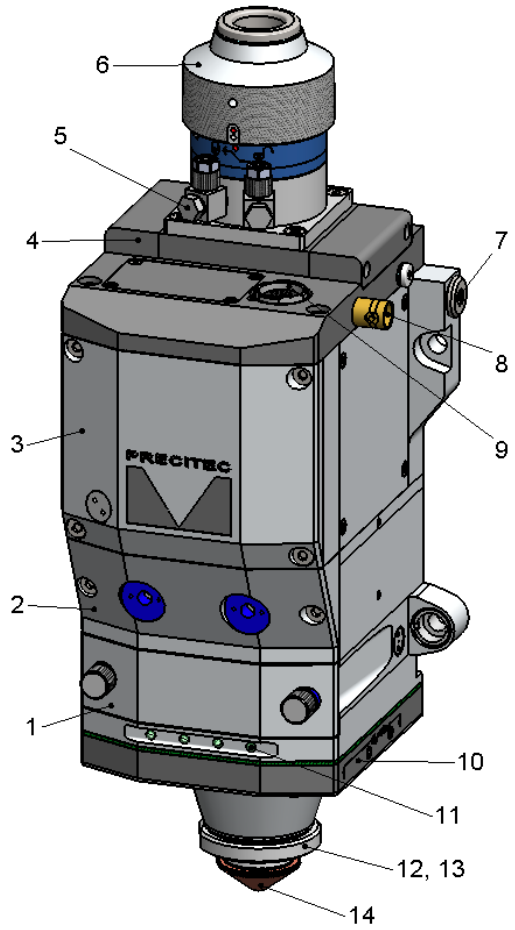
We benefit from;

- No Mirrors
- No Glassware
- No Cathodes
- No Anodes
- No Turbines/Fans
- No Vacuum Pump
- No Laser light source Lasing Ga
- No loss of power over time
- No Beam Divergence

CUTTING HEAD

RMT KYSON fiber laser cutting machines used lightweight, intelligent cutting head. Even installed in the smallest possible space, PRECITEC ProCutter offers a fully-integrated sensor system that monitors the cutting process and provides the user with relevant information. The head ensures that each component can be reproducibly manufactured at a high standard of quality.

The ProCutter offers a complete solution for the laser-based fusion cutting of thin and medium material thicknesses in the wavelength range around 1 µm. In flame cutting, greater material thicknesses can also be processed while maintaining high standards of quality. The potential of the cutting head is optimally converted into productivity, especially in the case of flatbed and pipe cutting machines, where innovative technologies are combined with proven concepts, providing the best possible performance, range of flexibility and degree of reliability.



Parts

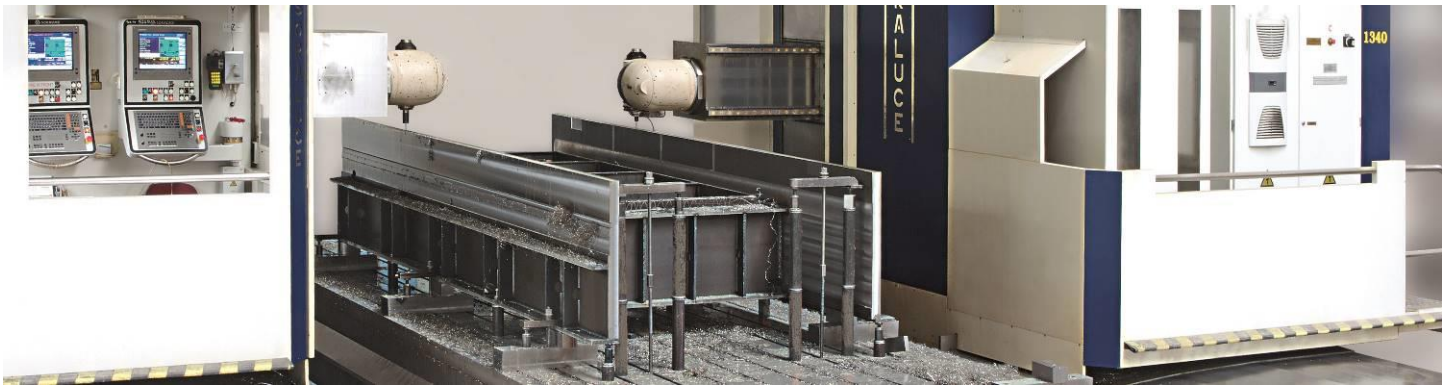
1	Protective window (process side)
2	Focusing unit with horizontal beam adjustment
3	Collimation unit with vertical focus adjustement
4	Protective window (fiber side)
5	Cooling water for fiber connector
6	Fiber connector
7	Cutting gas connector
8	BNC Distance measurement connector
9	Communication connector
10	Sensor insert SE
11	Status display (4 x LED)
12	Ceramic part
13	Nut
14	Nozzle

Sensors in Procutter

1	Collimator lens contamination sensor
2	Focusing lens contamination sensor
3	Protective window contamination sensor
4	Scattered laser light sensor
5	Cutting head general heat sensor
6	Sensor insert heat sensor
7	Back pressure sensor
8	Online cutting gas pressure sensor

ROBUST FRAME CONSTRUCTION

A heavier frame means less vibration and better accuracy. The machine frames are reinforced to minimize twists and deformation while the robust frame of the machine is joined to the chassis by steel bars.



The machine frame goes through a heat treatment process for welding stress relief. Our RMT KYSON frames are machined with 5 axis CNC machining centers with single reference fixing. This keeps all axis parallel and the surfaces of the machine precise which provides great accuracy and longevity to the machine.

HIGH PRECISION DRIVE SYSTEM

The Wittenstein high precision helical gear rack and pinion system uses precision planetary and servo-worm reducers. Our special design eliminates any noticeable backlash variance. The rack used in these systems is also hardened & precision ground.

CUTTING TABLE

The dual cutting table system is designed for increasing your workflow and reducing time spent on placing and removing materials. Four hydraulic cylinders raise and lower the cutting table to position the material while loading and unloading the machine. Cutting table exchange speed can be adjusted according to thickness of materials.

CONVEYOR SYSTEM

A special hard steel construction conveyor system, standard on our machines, is located under the workspace. The conveyor removes slag and small parts during the cutting process. The operator can choose the movement direction of the conveyor.

DUST-COLLECTION FUNCTION

An automatic flap opens and closes according to the movement of the processing head, offering on-the-spot dust collection during processing. It also allows for acrid smells or fumes created during cutting to be removed from your shop environment. Automatic Zoned fume extraction is standard on all RMT Fiber Lasers

CONTROL & SOFTWARE

The RMT KYSON Fiber Laser is controlled with a Beckhoff CNC control unit which provides unprecedented control of the cutting process. The control panel features an alphanumeric keyboard, PLC keys on the sides, touch screen keyboard and USB ports. The memory and storage can be increased based on manufacturing demands while the open CNC program, with a Windows based operating system, makes data sharing easy with other com-puters. A 15'' TFT LCD screen ensures that even in poor lighting you have optimal addressability and contrast.

• Job List

Used for continuing automatically to the next program even for different material types and thicknesses by automatic parameter selecting.

• Manual Remnant

A cutting function used for removing the part from the scrap plate after cutting the material.

• Job repeat and sheet angle detection

Starting point and sheet angle detection are all features of the RMT KYSON.

• Pierce feature

Achieve high-quality cuts while cutting thick sheets.

• Online parameter changes

Operator can make changes to the parameters during the cutting process.

• Graphical chase with NC Graphic

Watching the real time cutting process graphically with NC Graphics.

• Practical solutions

Axis moves to the start point with the touch of a button.

• Film Burning

You can use various film burning options.

• Work reports in PDF format

You can save detailed PDF work reports of the cutting process.

• Wireless connection and service

You can connect to the machine remotely with an Internet connection provided by wireless modem, USB type adapter or 3G modem for servicing and software upgrades.

• Test run

Axis movement simulation without cutting.

• One Shot via HMI

You can easily make laser focal adjustment with the one shot feature.

• Piercing assist

• Failure & warning messages

Laser light source, chiller, cutting head, shuttle table, extraction unit and programming failures are monitored on CNC screen.

• Running LaserNET from HMI

LaserNET program provides information to the laser unit and can also can be run via HMI.

• Focus tests

Focus optimization can be done manually via HMI. Easier access to technical service, one-shot focus etc.

• Real-time I/O informing

The digital-analog I/O information can be viewed in Realtime via HMI.

• Record all errors

All errors and warnings are recorded by the machine.

• Feedrate changing during the cut

You can reduce or increase the speed during the cutting process.

• Inch-Meter conversion

KYSON fiber lasers can work in both imperial and metric systems.

• Languages

Standard settings include English, Russian, Italian, Spanish and Polish. Other languages are available upon request.

• Check part

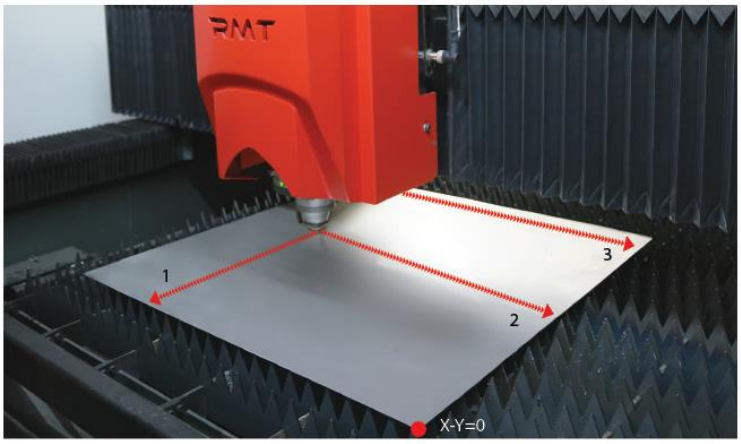
This feature will allow you to check the parameters and cutting quality.

• Gas control with PID

Faster, better and more precise gas control with PID.

AUTOMATIC SHEET DETECTION AND FLY CUT

The angle of the sheet and its corner are found automatically by using 3-point detection method on the sheet. Fly cutting allows for extreme cutting speeds on thinner materials that don't require piercing.




Hexagonal Flycut sample

RETRACTION METHOD

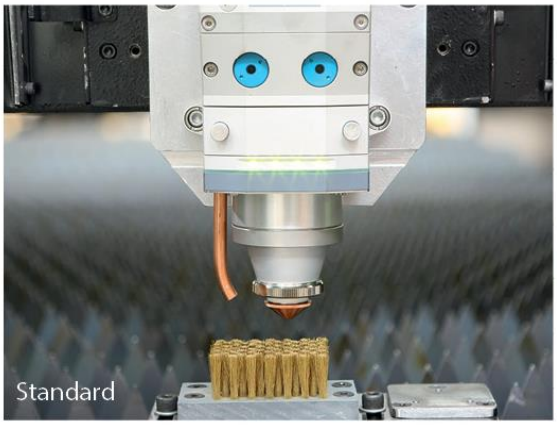
Minimize process-ing time and achieve better stability by selecting the optimal retraction method which can be set according to the material and plate thickness.

NOZZLE CLEANER

Keeping your machine cutting quickly and cleanly is important. Our nozzle cleaner helps improve the life of your nozzles so your cuts stay consistent, longer.

NOZZLE CHANGER (Optional)

Our optional automatic nozzle changer allows you to change material and thickness on the fly without the need for manual nozzle changing. When you need to make production deadlines, every minute matters.


Standard


Optional

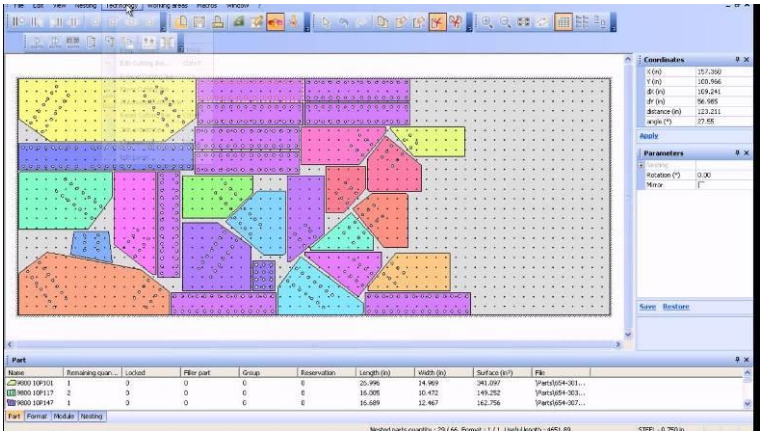
CAD-CAM SYSTEMS

RMT KYSON Fiber Laser using software radan Radprofile Cut Cad / Cam with its own postprocessor.

Features like auto nesting and machining, calculating the time, micro-joint, total cut and more allow ease of cutting.

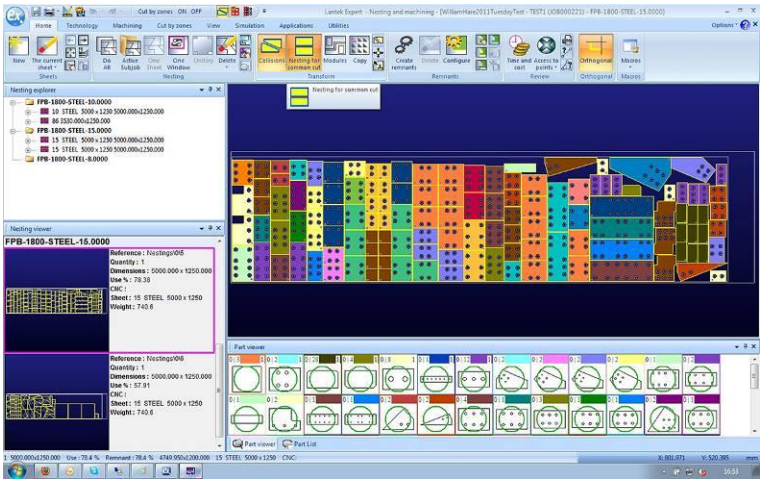
All data for cutting is installed in the technological Radan charts. This program is designed for nesting and machining and is installed directly on the CNC, without any adjustment to the cutting parameters.

Radan is a fast, modern programming application designed to assist in transferring data from CAD to NC code. If Radan is unable to cut a hole smaller than (0.5mm by the thickness of the material), it will be marked automatically.

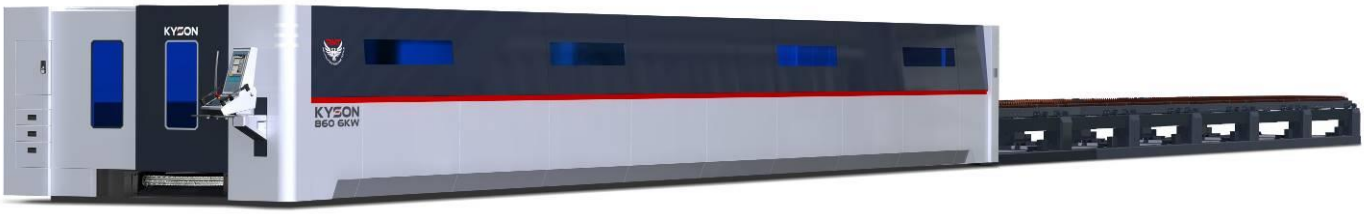


lantek Expert Cut is a CAD/CAM nesting software specially designed to automate the CNC programming of sheet metal cutting machines (oxy-cut, plasma, laser, water jet). It is the result of more than 25 year of experience of close collaboration with both manufacturers and machine operators. It perfectly combines machine technology with customers' programming and management requirements.

All of the Lantek Expert Cut options are integrated into one program. Lantek Expert is fully integrated with Lantek Integra, an ERP which offers different CAD/CAM/MES/ERP solutions for the sheet metal and fabrication sector. Additionally, Lantek Expert is designed to connect to an external ERP.



RMT – KYSON 860 6 KW



STANDARD	OPTIONAL
Stress relieved laser machine frame	Linear Drive
Auto-changing dual pallet system	Dust Collection Unit
Light source	Additional Operator Glasses
Chiller	Lens with 7.874" Focus Length
Radan or Lantek CAD/CAM system	Sheet loading & unloading systems
Precision Rack & Pinion Drive System (Made in Germany)	Automation & Storage systems
3 lower protective lenses	Automatic Nozzle Changer
5 Nozzles each of the Following: (1.0mm, 1.2mm,1.5mm, 2.0mm , 2.5mm , 3.0mm)	Custom table sizes
3 Ceramic Nozzle Adapters	Up to 6 kW laser laser light sources
Auto-calibrated nozzle system	Light safety barrier
Lens with 5.9" Focus Length	Air conditioner for electrical panel
Smart Slag Collection System/ Chip Conveyor	Metalix, Almacam etc. CAD/CAM software
Fiber Beam Transmission System (Fiber Cable)	LCM (laser cut monitor) sensor for pierce detection and cut loss control
Operates with both N2 and O2 (cutting) gases	
Home Position Alignment System	
Auxiliary Gas Selector	
Auxiliary Gas Pressure NC function	
Auto Reflection Warning	
Working Lights	
Warning Indicator Lamps	
Lens Cleaning Kit	
Removal and Adjustment Tools	
Ground Plates	
User Manuals in English	

TECHNICAL FEATURES				
RESONATOR			Watt	IPG YLS 6000
POWER RANGE			%	10-105
LASER BEAM QUALITY @ COLLIMATOR			rad	2 - 4
POWER STABILITY			%	1 - 2
PULSE FREQUENCY RANGE			kHz	5
LASER WAVELENGTH			nm	1075 ± 5
OUTPUT FIBER CORE DIAMETER			Inch	.0039"
EXCITATION				Laser diod
COOLING WATER FLOW RATE			l/min	40
CUTTING CAPACITY (Maximum)			-	-
	MILD STEEL		Inch	1"
	STAINLESS STEEL		Inch	1"
	ALUMINUM		Inch	0.75"
		GALVANIZED	Inch	0.375"
		BRASS	Inch	0.375"
		COPPER	Inch	0.375"
MAXIMUM WORKSHEET DIMENSIONS			Feet - Inch	60' X 8 '6"
MAXIMUM BURDEN CAPACITY			Lbs	45,000
MACHINE AXES			-	4-Axes [X, Y, Z, U]
AXIAL MOVEMENTS			-	-
X,U AXES	Servo Motorized Table		mm	60' 8"
Y AXIS	Servo Motorized Bridge		mm	8'8"
Z AXIS	Servo Motorized Cutting Head		mm	6"
ACCELERATIONS			-	-
X,U AXES	Servo Motorized Table		G	1
Y AXIS	Servo Motorized Bridge		G	1.5
Z AXIS	Servo Motorized Cutting Head		G	2.5
MAXIMUM AXES VELOCITIES			Inch	4400 IPM (simultaneous) (X, Y single axis velocity 3300IPM)
POSITIONING ACCURACY			Inch	± 0.00118"
REPETITION ACCURACY			Inch	± .00059"
FOCAL LENGTH			mm	125-200
SHUTTLE TABLE (Automatic Loading - Unloading Unit)			pallet	2 (200 sec)
ASSIST GAS			-	-
Assist sensor1	MILD STEEL		-	Oxygen (0,5-6 Bar)
Assist sensor2	STAINLESS STEEL		-	Nitrojen (0,5-25 Bar)
Assist sensor3	ALUMINUM		-	Dry Air or Nitrogen (0,5-25 Bar)
CUTTING HEAD			-	Precitec Procutter
CNC			-	BECKHOFF CP6242
CAD/CAM SOFTWARE			-	Lantek or Radan
NETWORK CONNECTION			-	Ethernet
DISPLAY				15-inch display 1024 x 768, alphanumeric keyboard, PLC keys on the sides, touch screen keyboard
AVARAGE POWER CONSUMPTION			kW	38
MACHINE DIMENSIONS (LxWxH)			Inch	135' 3" X 15'4" X 7'3"
MACHINE WEIGHT			Lbs	189,000

*All specs are subject to change without notice.
*Sheet metal cutting thicknesses and speeds varies when the factors such as material quality, assist gas purity, environment conditions, parameter setting, original spare part usage, periodical maintenances, cleanness of optics are not proper.