

LASER CUTTING TECHNOLOGIES



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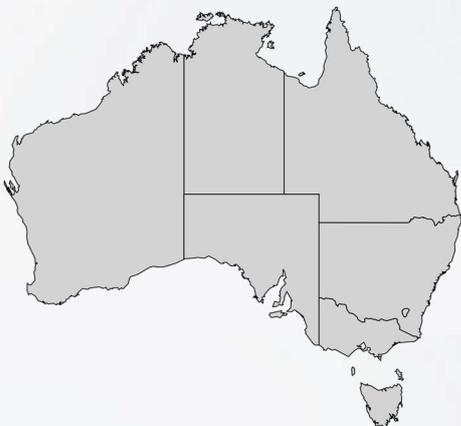
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LASER



- HAWK LASER
- THUNDERBIRD
- SPECIAL MACHINES
- LASER AUTOMATION

- FIBERMAK MOMENTUM GEN-5
- FIBERMAK MOMENTUM GEN-3
- FIBERMAK SL
- FIBERMAK RAPTOR



Laser technologies that grow your business



"Ermaksan is a global technology company that offers innovative solutions to industrial life."



Who are we ?

Ermaksan produces innovative, high-quality, and high value-added products and solutions with its brands. In its journey exceeding half a century, it has been taking determined steps towards the future by maintaining its strong stance in the fields of sheet metal processing, additive manufacturing, optoelectronics, and advanced defence technologies.

Continuing its investments on the path of sustainable growth without slowing down, Ermaksan contributes to efficient production in more than 120 countries through ERMAKUSA in the USA, ERMAK Deutschland GmbH in Germany and its various other distinguished dealers around the world. In order to meet the customer expectations of today's rapidly changing world and to offer the manufacturing technologies of the future today, the company produced Turkey's first metal 3D printer with the brand ERMAKSAN ADDITIVE and offered it to the additive manufacturing industry. EON PHOTONICS brand, which has Turkey's first private sector semiconductor Optoelectronic R&D centre, continues its production and development activities of high-tech products such as laser technologies, FBG sensors, CNC controllers, and Industry 4.0 applications.

With the innovative perspective of 21st century, Ermaksan continues its activities with the aim of being among the world's leading manufacturers in the fields of technology and R&D. By constantly monitoring new trends and customer expectations, Ermaksan designs and manufactures advanced technology, high value-added, environmentally friendly and energy-saving machines, and takes firm steps towards a more sustainable future by using resources effectively and efficiently.

Fiber Laser Technologies

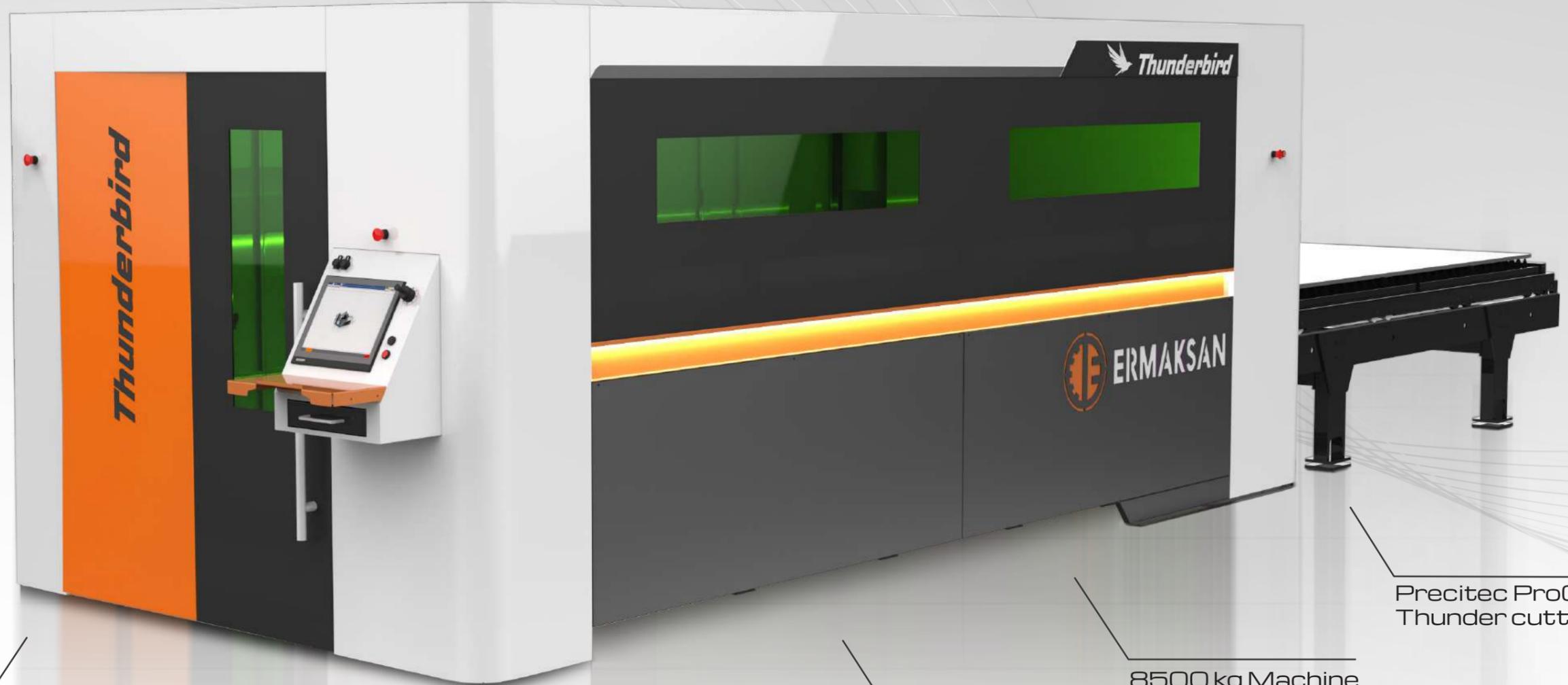
Increasing the production efficiency in laser cutting technology, Ermaksan offers the most ideal solutions to the requirements of the sector with various machine models put on the market. In addition to offering customized solutions for customer needs, Ermaksan contributes to smart production processes by developing machines suitable for automation. Today, factories are smarter, and productions are more digital and traceable with our Industry 4.0 solutions that will provide a high level of flexibility to production processes.

Ermaksan laser technology, which is used in many stages of the production sector, especially in automotive and aviation industries, contributes to the efficiency and continuity of production by meeting customer expectations with features such as high precision and cutting speed, minimum roughness, long-lasting working performance.

By constantly monitoring new trends and customer expectations, Ermaksan designs and manufactures environmentally friendly machines with state-of-the-art technologies, high added value, and energy saving, and takes firm steps forward with its stakeholders on the path of sustainable growth.



THUNDERBIRD



3x1.5m table size

2-3-4 kW power option

2D CAD/CAM software

X, U, Y and Z servo motor axes

8500 kg Machine Weight

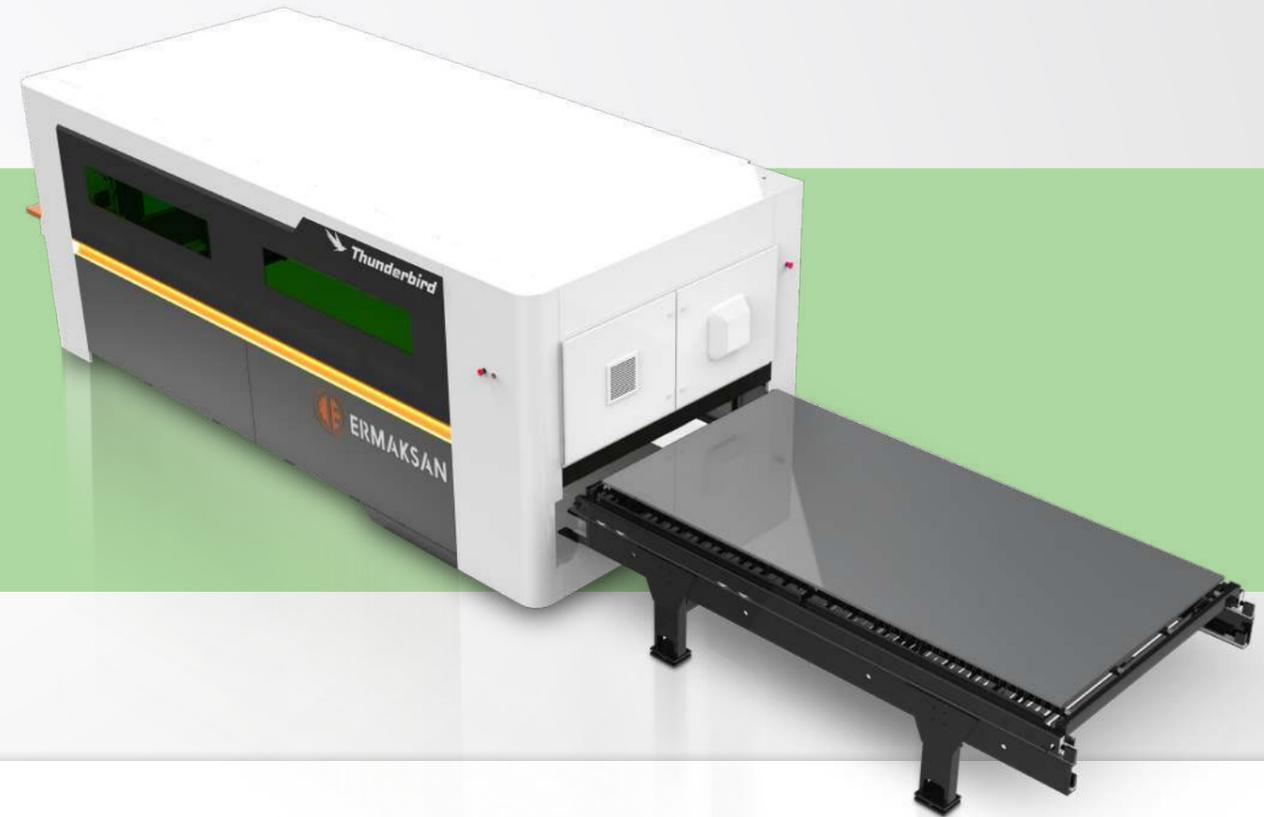
Precitec ProCutter Thunder cutting head

Most Economically Advantageous

The new THUNDERBIRD fiber laser machine offers economical solutions with its compact structure that does not require costly equipment. Low investment costs and quality components make it a competitive laser cutting machine. While the investment cost and operating cost are the most important advantages of this machine, its efficiency is one of its other advantages. THUNDERBIRD, with a table size of 3x1.5m, has a shuttle table and does not include a lifting and hydraulic system. A longer Z axis is used instead.

Equipped with the Precitec ProCutter Thunder cutting head, which is the ideal solution for efficient and economical laser cutting in the medium power range. This automatically controls the focus position and delivers outstanding results when machining different material thicknesses. In addition, the maintenance of the head is extremely quick and easy.

Although the THUNDERBIRD fiber laser system is an entry-level machine, it is the perfect choice for workshops that want to process thinner sheets without sacrificing standards and cut quality.



SHUTTLE TABLE

THUNDERBIRD Laser has two pallet design but without lift and hydraulic system. A longer Z-axis can be used instead.



LOW INVESTMENT COST

It offers an easy entry to the world of fiber laser cutting with its compact structure that does not require costly equipment. While investment cost and operating costs are the key advantages of this machine, efficiency is one of the other advantages as well.

COMPACT CONSTRUCTION

The electric cabinet embedded inside the machine and positioning of the resonator is over the machine. Thanks to this compact structure customer will have lower transportation cost and faster installation.

USER-FRIENDLY INTERFACE

Your work is now easier with the user-friendly interface designed by Ermaksan engineers. You can initiate automatic cutting processes with just a few steps, and monitor the active process before and during cutting with the NC Graphics feature.

SAVE TIME AND MONEY

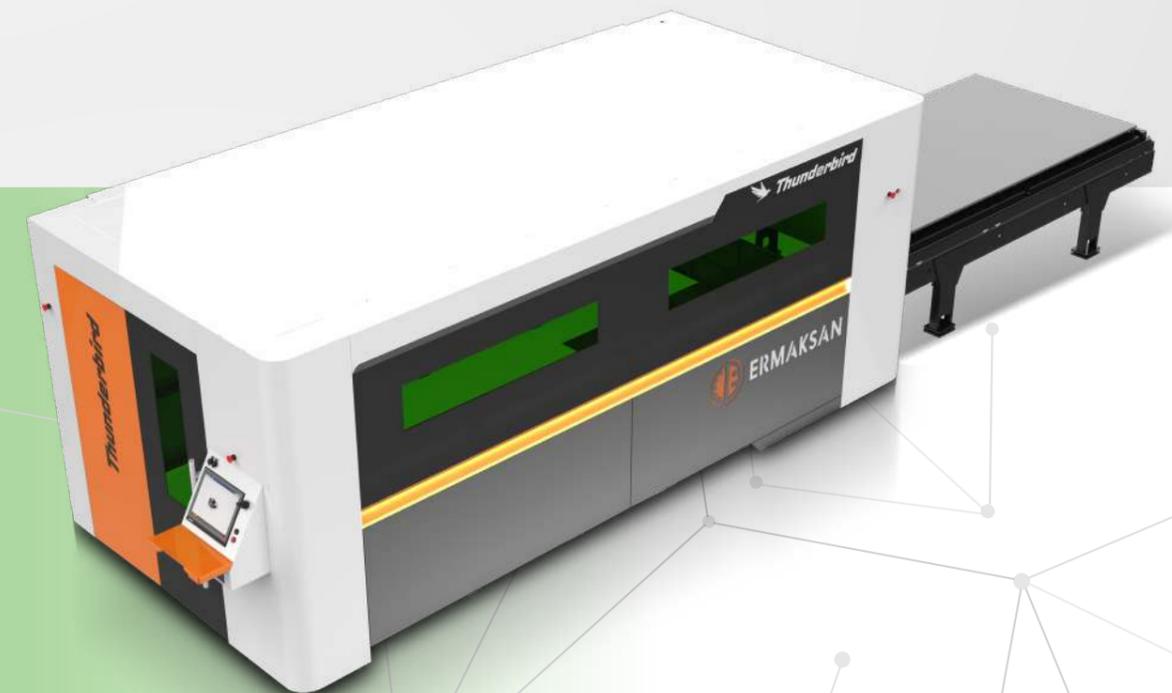
It allows you to save both time and resources thanks to the shortening of energy consumption, and easy maintenance and repair.

MACHINE UPDATE

With the philosophy of continuous improvement, Ermaksan engineers offer the most up-to-date version allowing you to get the most out of your machine.

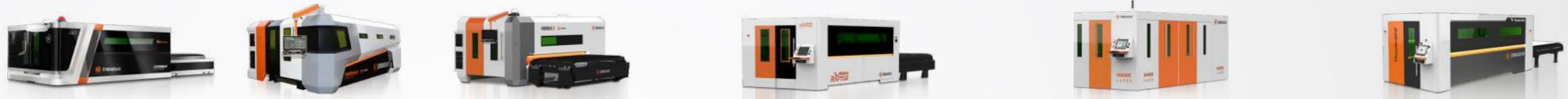
SPECIFICATIONS/ MACHINE		THUNDERBIRD 3X1,5
WORKING AREA	mm	3000 x 1500
MAX. LOAD CAPACITY	kg	1500
AXIAL MOVEMENTS	-	-
X, U AXES / SERVO MOTOR TABLE	mm	3050
Y AXIS / SERVO MOTOR BRIDGE	mm	1550
Z AXIS / SERVO MOTOR CUTTING HEAD	mm	300
ACCELERATION	G	1
SERVO MOTOR MAX. AXIS SPEEDS	m/min	106 (resulant speed) (X, Y single axis speed 75 m/min)
AUTOMATIC LOADING UNLOADING UNIT	Pallet	2 (35 sn)
MACHINE DIMENSIONS (L x W x H)	mm	9250 X 4500 X 2200
MACHINE WEIGHT	kg	8500
MACHINE AXES	-	4-Axis (X, Y, Z, U)
POSITIONING ACCURACY	mm/m	± 0,055
REPETITION ACCURACY	mm	± 0,032
CNC	-	BECKHOFF
CAD/CAM SOFTWARE	-	METALIX, LANTEK
NETWORK CONNECTION	-	Ethernet
CONTROL PANEL	-	15-inch screen 1024 x 768, alphanumeric keyboard, PLC keys, touch screen keyboard

SPECIFICATIONS / RESONATOR		YLR 2000	YLR 3000	YLR 4000
RESONATOR	Watt	2000	3000	4000
LASER BEAM QUALITY	rad	2 - 2,5	1 - 2	1 - 2
POWER STABILITY	%	1 - 2	± 0,5	± 0,5
FIBER CABLE OUTPUT MEASUREMENT	µm	100	100	100
COOLANT FLOW RATE	l/dak	10	20	15
AVERAGE CONSUMPTION (MAX)	-	-	-	-
MILD STEEL (S235JR,S355MC)	mm	16	18	20
STAINLESS STEEL (AISI 304)	mm	8	10	10
ALUMINUM (AlMg3)	mm	6	8	10
BRASS (CuZn37)	mm	4	5	6
COPPER (Cu-ETP)	mm	4	5	6
AVERAGE CONSUMPTION	kW	18	20	22
CUTTING HEAD	-	Procutter Thunder	Procutter Thunder	Procutter Thunder
PULSE FREQUENCY RANGE	kHz	50		
POWER RANGE	%	10-105		
LASER WAVELENGTH	nm	1070 ± 5		
IMPULSE	-	Laser diode		
ASSIST GASES	-	-		
STEEL	-	Oxygen (0.5-6 Bar)		
STAINLESS STEEL	-	Nitrogen (0.5-25)		
ALUMINUM	-	Dry Air or Nitrogen (0.5-25 Bar)		



• Economic
Compact
User friendly

Clean cut
Reliable



	GEN-5	GEN-3	SL	RAPTOR	HAWK	THUNDERBIRD
Linear Motor	○	○	—	—	—	—
CAD/CAM (Metalix)	●	●	●	●	●	●
CAD/CAM (Lantek, Almacam)	○	○	○	○	○	○
LCD Screen+Camera	●	●	●	—	—	—
Conveyor	●	●	●	○	—	—
Chiller	●	●	●	●	●	●
Light Body Guards	○	○	○	○	○	○
Pipe Cutting	○	○	—	○	—	—
Tower Automation	○	○	—	○	—	—
Handwheel	○	○	—	—	—	—
Center Beam Adjustment	○	○	○	—	—	—
Automatic Nozzle Changer	○	○	○	—	—	—
Side Opening Door	—	○	—	—	—	—
Pneumatic Lift Support System	○	○	—	—	—	—
Mobile Control Panel	○	○	○	○	○	○
Mirrored Machine	○	○	○	○	○	○
Covered Loading Unloading	○	○	—	—	—	—
4G (for 5m 3x1.5m)	○	○	—	—	—	—
Profile Cutting Trolley	○	○	—	—	—	—
Shuttle table	●	●	●	○	—	●
Central Lubrication System	●	●	●	●	●	●
Suction Unit	●	●	●	●	○	○
45° Bevel Cut	○	○	○	—	—	—
3D Bevel Head	○	○	○	—	—	—
Slag Cleaning Device	○	○	○	○	○	○
Side Conveyor	○	○	○	—	—	—
Anti-Collision System	○	○	○	○	○	○

● Standard ○ Optional — Not used



"We are with you in your digital transformation journey"

ALL INTEGRATED

Integrate your machine data with your MES and ERP applications.

ALL THE DATA

Record your machine historic performance data. Track your machine Job and Operator performance.

ALL THE MACHINES

Enable all your production line to be monitored. Retrofit you existing machines to our Industry 4.0 platform.

ANY WHERE

Monitor and track machine performance over the flexible easy to use WEB interface from any where

ANY TIME

Reach your machine performance data any time you like.

EFFICIENCY GRAPH OF THE MACHINE FOR THE LAST WEEK



Generates a trend graph by compiling the operational information of the machine. Operation performance for the previous week may be monitored.

DETAILED INFORMATION OF THE LAST WORK COMPLETED



Indicates all the details of the work done, and information such as how long it did take the operator to complete which work and in what way.

OEE VALUES OF THE MACHINE



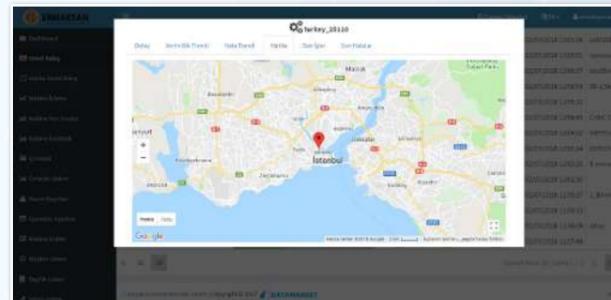
Collects all the information during the stand-by, production and preparation processes to generate a general productivity chart.

EQUIPMENT DATA



It shows the instantaneous data of the operational elements of the machines as trend graph.

MACHINE MONITORING SCREEN



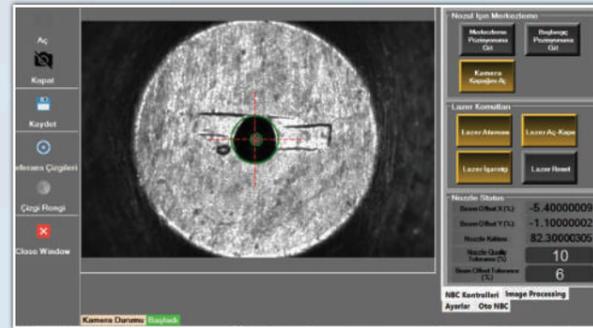
You may monitor your machines in different fields from a single screen.

STATUS OF THE MACHINES



This provides the lists of the operational and non-operational machines on the field and the summary of their operation.

AUTOMATIC BEAM CENTERING AND NOZZLE QUALITY DETERMINATION



Using the image processing technique, the laser head is placed on the center adjustment camera. With the help of the camera, the status of the beam is displayed on the screen and the off-center status is reported. Thus, the center adjustment is made thanks to the declared commands. During center setting, the nozzle loses its circular shape. If this situation exceeds the tolerance that will affect the cutting, a warning will appear and a nozzle change request is made.

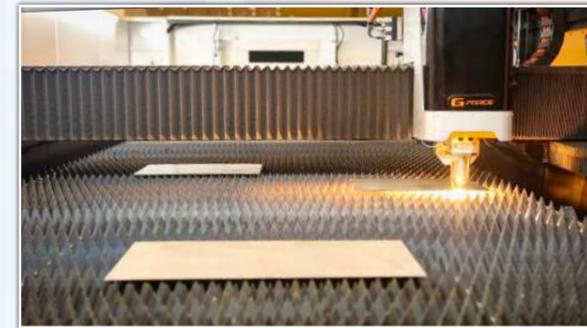
AUTOMATIC NOZZLE CHANGER



Different types of nozzles with different diameters must be used before cutting materials of different types and thickness. According to the selected sheet thickness and type, the system automatically selects and changes the defined nozzle.

"Ermaksan's smart features provide an excellent user experience by increasing the users' levels of ease, safety and comfort"

AUTO SHEET / AUTO MULTISHEET



It allows the part to be cut to be sent to the cutting by selecting the sheet detected by the camera. (Auto Sheet)

By assigning the jobs added to the work list to the sheet metals detected via the camera, it allows defining which part will be cut on which sheet. (Auto MultiSheet)

ANTI CRASH SYSTEM



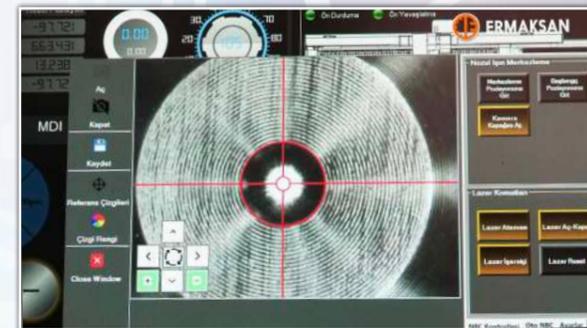
During cutting, possible collision between the laser cutting head and the displaced pieces is prevented, protecting the cutting head against damages. This feature ensures maximum safety while reducing downtime and hardware costs

MIXED GAS



We combine the advantages of cutting processes with a mixture of nitrogen and oxygen. We provide higher speeds and excellent quality with mixed gas and as well as lower gas cost.

CALBEC-CAMERA AIDED LASER BEAM CENTERING

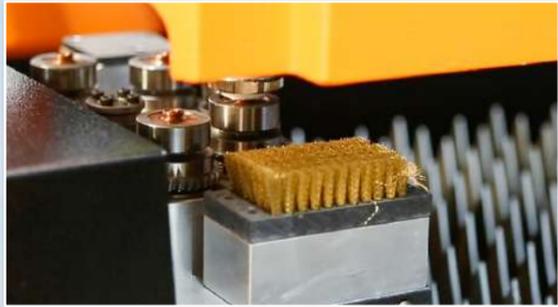


The camera-aided laser beam centering adjustment system enables the operators to adjust the laser center effortlessly when needed. Laser center adjustment camera is installed into the interior of the machine and this feature is activated by pressing a single button on the operator panel.



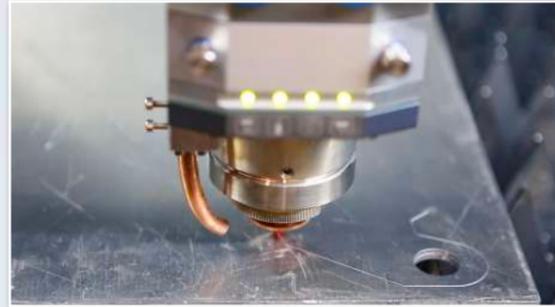
"Smart features help manufacturers improve productivity by minimizing downtime, reducing waste, improving quality, increasing output and optimizing production processes"

NOZZLE CLEANING / CALIBRATION



It is the process of automatically cleaning the slag and dirt accumulated in the nozzle used with the nozzle cleaning system, offered in standard with Fibermak series lasers, by means of a cleaning brush.

PIERCETEC CUT CONDITION



With its integrated sensor, PierceTec controls laser power and drilling duration in real time. PierceTec saves on cycle time and operating costs.

AUTOMATIC PROFILE ALIGNMENT



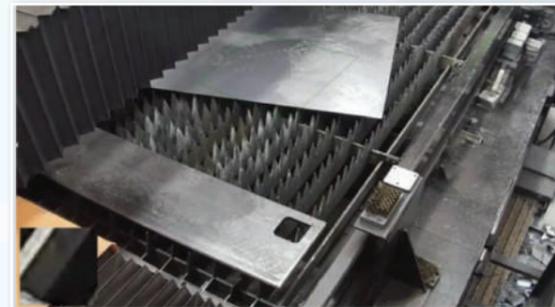
An automatic profile alignment system has been developed for precise profile cutting with a profile cutting table in machines with Fibermak pipe and profile cutting options. This feature prevents measurement drifts that may occur in profile cuts.

IOT - SENDING SMS / E-MAIL



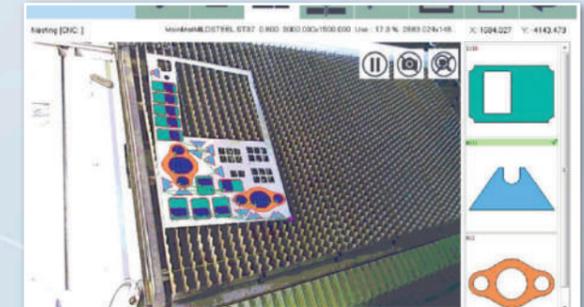
Machine status and information can be sent to the provided e-mail addresses by connecting the system to the internet. Information messages can be sent to phone numbers with sim card support option integrated in the operator panel. When the machine gives an error, the error code is sent via e-mail or SMS

SHEET SORTING



Sheet metal separation is performed on the X or Y coordinate of the selected point on the image. If there is an obstacle to cutting at the point selected by the image processing method, the cutting offset is made by detecting it on the image.

AUTOMATIC NESTING

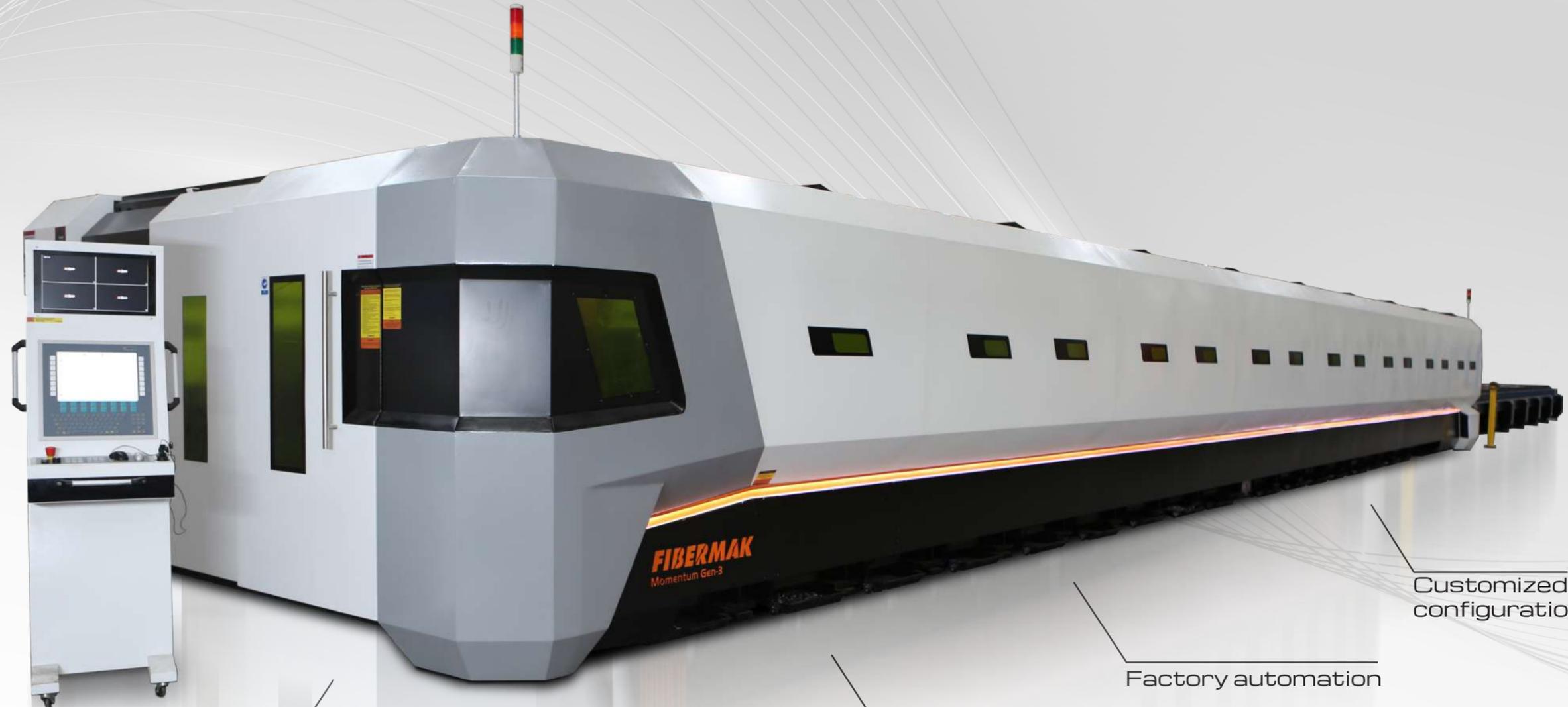


It is the process of relocating the part with data on the image taken from the camera and decoding it.



SPECIAL MACHINES

Special Machines
for Special Jobs



Different size
and power
options

Advanced
engineering
studies

Bevel cutting
options

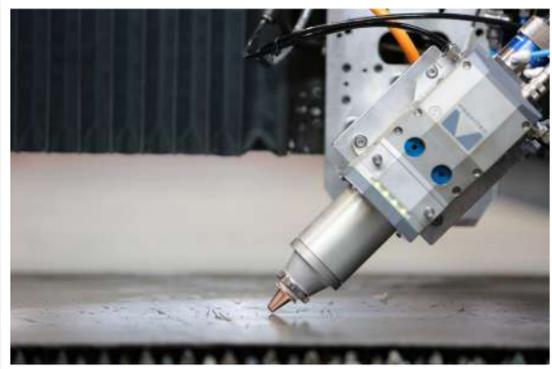
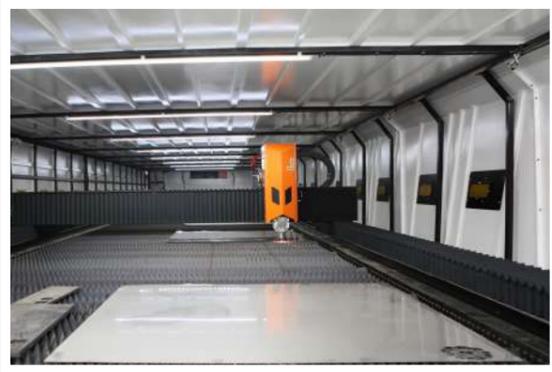
Industry 4.0

Factory automation

Customized
configurations

Flexible Solutions for Different Needs

In addition to our standard product portfolio that we have introduced to laser cutting industry, we also offer turnkey solutions for machines in different sizes and configurations according to the demands. Laser cutting machines with large format are designed specifically for customer needs. These massive machines, which process long and wide sheets at one go, also save time and labour by processing multiple small workpieces. Thus, these machines significantly increase productivity and provide its users a competitive advantage. Thanks to the motor-controlled 2/2.5-axis cutting head provided according to the customer's request, it is possible to open the weld groove with a bevel cut by moving 45 degrees to the right and left and 360 degrees around its own axis. In addition, FIBERMAK can also perform planar bevel angle cuts in welding processes with 45 degrees or smaller angles.



ADVANCED ENGINEERING STUDIES

With our experience of more than half a century and our strong engineer staff, we determine the machine you need and technical requirements with scientific techniques and offer the most appropriate solution to you.

BEVEL CUT

Thanks to its motor-controlled 2 / 2.5-axis cutting head, it has the ability to move left and right and around itself. Thus, it can make bevel cuts in bevelled welding processes.

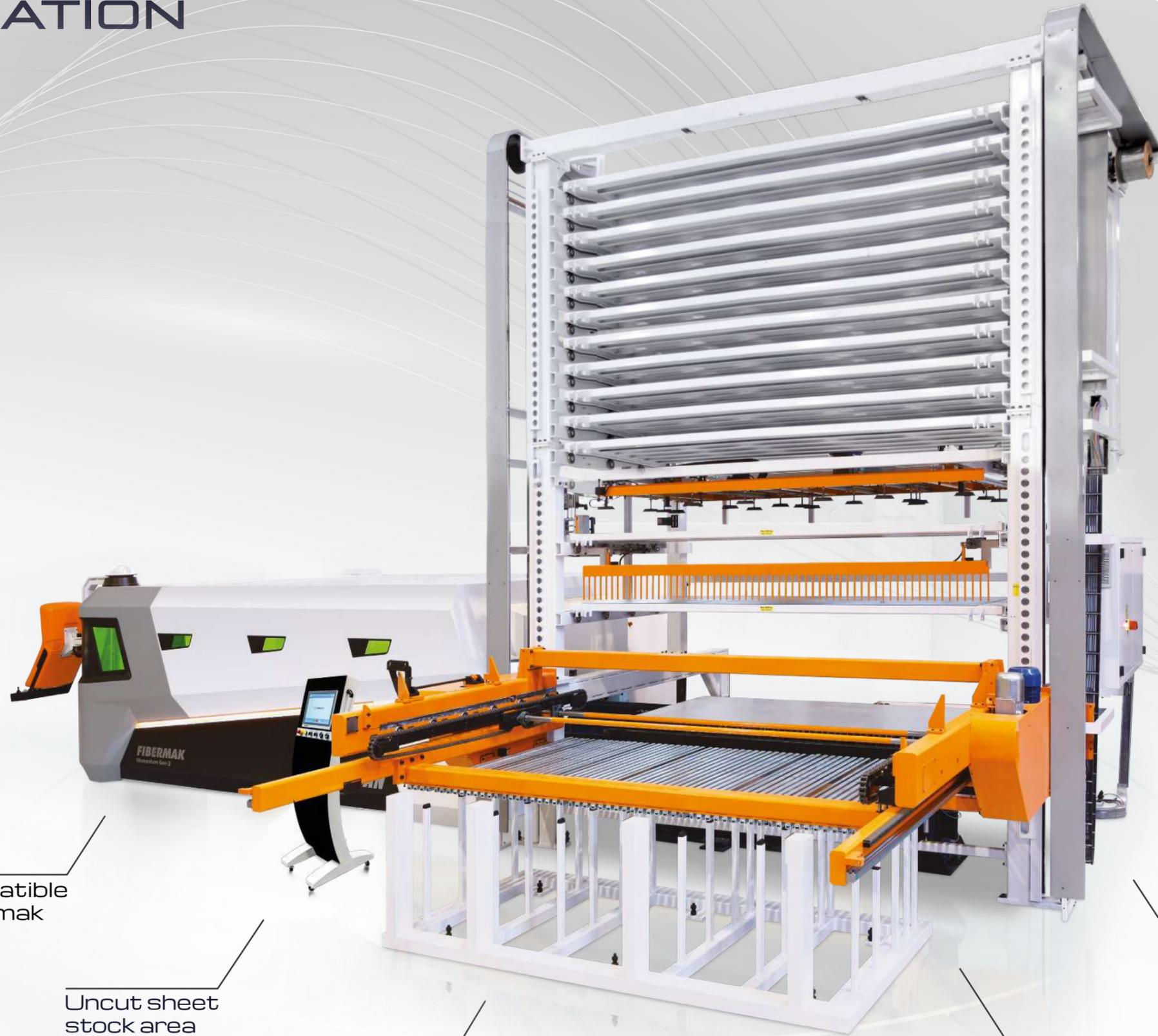
MAXIMUM SAVING

In large machines, suction covers and lateral conveyors operate according to the position of the cutting head, effectively performing vacuum suction and slag collection. Thus, significant energy savings are achieved.



LASER AUTOMATION

Maximum
Productivity



Fully compatible
with Fibermak

Uncut sheet
stock area

Cut sheet
stock area

Fully automatic
sheet metal loading
and unloading

Work list and work
repetition features

Zero time loss in
work transitions

TOWERMAK Tower Type Loading Unloading System

TOWERMAK is used for unmanned loading and unloading of 1500x3000 mm sheet metals for laser cutting machines. The system provides a high level of reliability, flexibility, and ease of use. With the automatic laser system, you can increase your production capacity by more than 60% depending on the type, thickness, size, nesting, etc. of the material. By incorporating smart laser automation into your metal processing departments, you streamline many functions of your factory as well as invest in savings.



FULLY AUTOMATED SYSTEM

The system can operate in a full-automatic manner by automatically loading the appropriate sheet metal and suitable cutting parameters for each material. Therefore, you can perform mass production and minimize time losses.

MASS PRODUCTION

By minimizing the operator-induced errors, a high-quality production process is carried out much faster.

FLEXIBILITY

It is designed with a flexible production focus for users who want to process different types of materials easily and without burrs.

FACTORY AUTOMATION

Fibermak laser cutting machine, which works in full harmony with tower loading and unloading systems, increases production quality and productivity, and provides your business with a competitive advantage.

EASE OF USE

In addition to efficient and fast operation, there are simple language options and easy programming to facilitate the operator's work. With this structure, it offers easy and reliable production management.

INTEGRATED WITH FIBERMAK

It is possible to integrate the most suitable TOWERMAK loading and unloading system into existing FIBERMAK laser cutting machines for our customers who would like to automate their laser cutting processes.

TOWERMAK MULTIMASTER 3x1.5 (3 PALLETS)		
SHEET DIMENSIONS	mm	1500 x 3000
		1500 x 2500
		1500 x 2000
		1500 x 1500
		1250 x 2500
		1000 x 2000
		1000 x 1500
		1000 x 1000
MIN. SHEET THICKNESS	mm	0,5
MAX. SHEET THICKNESS	mm	20
MAX. HEIGHT OF SHEET STACK	mm	85
CARRYING CAPACITY OF LOADING PALET	kg	3000
LIFTER AXIS MAX. SPEED (VERTICAL)	m/min	9
SUCTION CUP AXIS MAX. SPEED (VERTICAL)	m/min	6
PALLET PULLING AXIS MAX. SPEED (HORIZONTAL)	m/min	12
COMB AXIS MAX. SPEED (HORIZONTAL)	m/min	10
CNC CONTROLOR		BECKHOFF
MACHINE DIMENSIONS (L x W x H)	mm	5540 x 5560 x 3700
ENERGY		380V, 50Hz
TOTAL SYSTEM WEIGHT	kg	8100

TOWERMAK MULTIMASTER 4x2 (3 PALLETS)		
SHEET DIMENSIONS	mm	2000 x 4000
		2000 x 3000
		2000 x 2000
		1500 x 2500
		1500 x 2000
		1500 x 1500
		1250 x 2500
		1000 x 2000
		1000 x 1500
1000 x 1000		
MIN. SHEET THICKNESS	mm	0,5
MAX. SHEET THICKNESS	mm	20
MAX. HEIGHT OF SHEET STACK	mm	65
CARRYING CAPACITY OF LOADING PALET	kg	4000
LIFTER AXIS MAX. SPEED (VERTICAL)	m/min	9
SUCTION CUP AXIS MAX. SPEED (VERTICAL)	m/min	6
PALLET PULLING AXIS MAX. SPEED (HORIZONTAL)	m/min	12
COMB AXIS MAX. SPEED (HORIZONTAL)	m/min	10
CNC CONTROLOR :		BECKHOFF
MACHINE DIMENSIONS (L x W x H)	mm	7130 x 7015 x 4140
ENERGY		380V, 50Hz
TOTAL SYSTEM WEIGHT :	kg	15000

BRIDGE TYPE VACUUM LOADING SYSTEM

The bridge type vacuum loading system manufactured by ERMAKSAN provides great convenience to its users by allowing the raw material to be loaded easily and automatically on the shuttle table precisely and properly. It is a practical and affordable solution for mass production.

BRIDGEMASTER VACUUM LOADING AND UNLOADING SYSTEM

Automate your material load and unload cycles with the BRIDGEMASTER. This Bridge Type Vacuum Loading and Unloading System makes your material flow flexible, reduces manual material handling and increases productivity.

ROBOMASTER VACUUM LOADING SYSTEM

The machine performance is maximized by operating Fibermak and robot in harmony. Automatic sheet loading, collecting, and stacking processes are easily performed in this machine.

LOADMASTER VACUUM LOADING SYSTEM

The automatic jib crane type vacuum loading system manufactured by ERMAKSAN provides great convenience to its users by allowing the raw material to be loaded easily and automatically on the shuttle table precisely and properly. It is a practical and affordable solution for mass production.

VACUMASTER VACUUM LOADING SYSTEM

The semi-automatic jib crane type vacuum loading system manufactured by ERMAKSAN provides great convenience to its users by allowing the raw material to be loaded easily and automatically on the shuttle table precisely and properly. It is a practical and affordable solution for mass production.



"We produce the most suitable solutions for your needs with our advanced engineering approaches"



CONSULTANCY

With our competent and friendly staff, we provide guidance to our customers in their journey from pre-sales to after-sales, from proposing the right solution to using the offered solution effectively and efficiently. Your business needs, solutions that will meet the highest efficiency with the most appropriate budget are determined with the advanced engineering studies on the customized machinery and equipment. We will present you an offer after the most suitable model for you is determined.

Promising to offer you the most suitable solutions before sales, Ermaksan also promises to provide you the highest quality support service in sales, installation, training, and after-sales processes.

