

# LASER CUTTING TECHNOLOGIES

# LASER CUTTING



- HAWK LASER
- THUNDERBIRD
- SPECIAL MACHINES
- LASER AUTOMATION

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



**ERMAKSAN**  
INNOVATIVE TECHNOLOGIES

[www.ermaksan.com.tr](http://www.ermaksan.com.tr)



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.





FIBERMAK MOMENTUM GEN-5

PAGE  
10



FIBERMAK MOMENTUM GEN-3

PAGE  
16



FIBERMAK SIDE LOADING

PAGE  
22



FIBERMAK RAPTOR

PAGE  
28





THUNDERBIRD

PAGE  
34



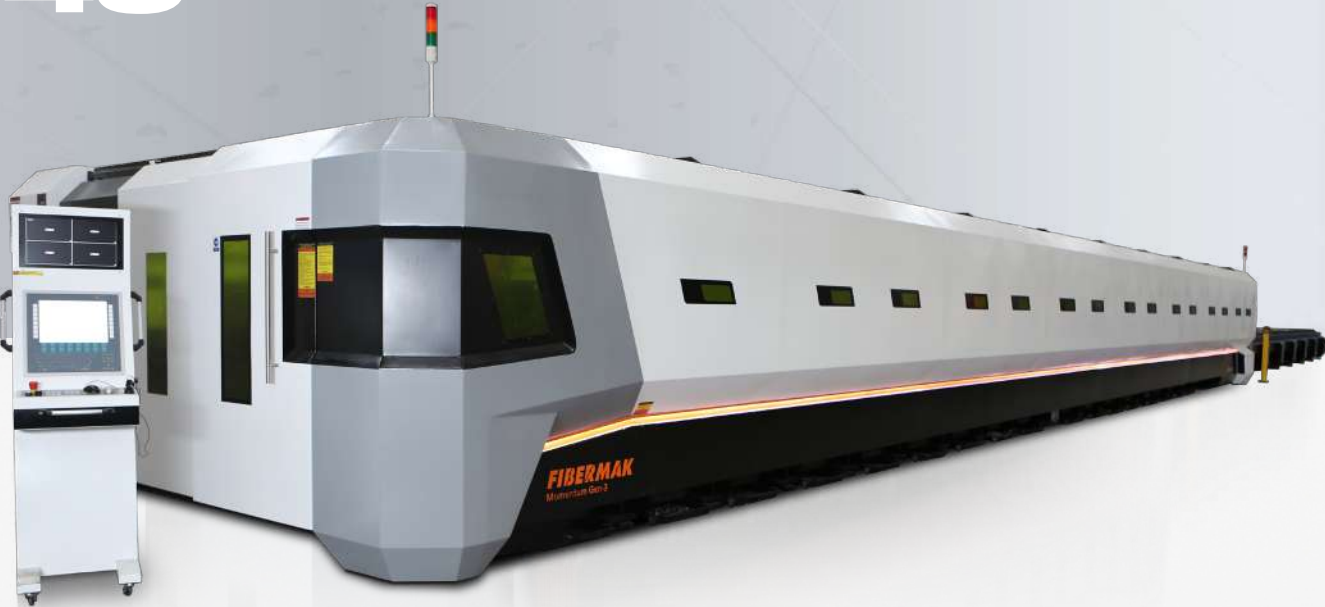
HAWK LASER

PAGE  
40



SPECIAL MACHINES

PAGE  
46



LASER AUTOMATION

PAGE  
54





# FIBERMAK MOMENTUM GEN-5

AI-Powered Laser  
Technology



2 kW - 30 kW  
power option

21.5" multi-touch  
control panel

2.5 - 4G  
acceleration  
option

Metalix/Lantek  
CAD/CAM  
software

AI-aided  
manufacturing

5 axis bevel  
cutting option



## Increase Your Performance !

With its engineering designs, FIBERMAK Momentum Gen-5 offers innovative solutions to the industrial world while creating a stronger appearance with its unique stance and details embedded in its designs. With its cambered and structured body and strong curves, the new design also inspires with its unique colours.

Designed to meet all your needs, the new FIBERMAK Momentum Gen-5 servo motor and 4G acceleration options provide its users with superior performance and high efficiency at high cutting speed. The Industry 4.0 compatible control panel, with the entire software designed and developed by Ermaksan engineers, will maximize your production efficiency by making your work connected and smart with the perfect combination of technology and engineering. You'll also get a shorter return on investment while taking advantage of the latest features it has to offer.



### AUTO SHEET / MULTISHEET

#### (Auto Sheet)

It allows the part to be cut to be sent to the cutting by selecting the sheet detected by the camera.

#### (Auto MultiSheet)

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.

### 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

### HIGH PRECISION CUTTING

With ultra-fast EtherCAT communication technology, the driver, motor, and all control units apply the determined values in the most precise and fastest way. Thus, you get problem-free cuts just in time and with micron precision.

### 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.

### CAMERA-AIDED LASER BEAM CENTERING

This technology eliminates the need to manually center the laser beam within the nozzle. Higher cutting quality is achieved by centering the beam with the help of the camera in just a few seconds.

### SMART FACTORY SOLUTIONS

With Industry 4.0 solutions, it provides the opportunity to create a Smart Factory with a fast and flexible structure, which enables innovation by increasing productivity in businesses, improves processes, and minimizes errors.



| SPECIFICATIONS/ MACHINE           |        | SM 2,5X1,25                                                                         | SM 3X1,5        | SM 4X2          | SM 6X2          | SM 8X2          | SM 9X2          |
|-----------------------------------|--------|-------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| WORKING AREA                      | mm     | 2500x1250                                                                           | 3000x1500       | 4000x2000       | 6150x2000       | 8000x2000       | 9000x2000       |
| MAX. LOAD CAPACITY                | kg     | 1000                                                                                | 1500            | 2500            | 4000            | 5500            | 6000            |
| AXIAL MOVEMENTS                   | -      | -                                                                                   | -               | -               | -               | -               | -               |
| X, U AXES / SERVO MOTOR TABLE     | mm     | 2550                                                                                | 3050            | 4050            | 6200            | 8200            | 9200            |
| Y AXIS / SERVO MOTOR BRIDGE       | mm     | 1270                                                                                | 1550            | 2050            | 2050            | 2050            | 2050            |
| Z AXIS / SERVO MOTOR CUTTING HEAD | mm     | 150                                                                                 | 150             | 150             | 150             | 150             | 150             |
| ACCELERATION                      | G      | 2,5                                                                                 | 2,5             | 2,5             | 2,5             | 1,5             | 1,5             |
| SERVO MOTOR MAX. AXIS SPEEDS      | m/min  | 141 (combination speed) (X, Y single axis speed 100 m/min)                          |                 |                 |                 |                 |                 |
| LINEAR MOTOR MAX. AXIS SPEEDS     | m/min  | 170 (combination speed) (X, Y single axis speed 120 m/min)                          |                 |                 |                 |                 |                 |
| AUTOMATIC LOADING UNLOADING UNIT  | Pallet | 2 (30 sec)                                                                          | 2 (35 sec)      | 2 (45 sec)      | 2 (65 sec)      | 2 (75 sec)      | 2 (100 sec)     |
| MACHINE DIMENSIONS (L x W x H)    | mm     | 8190x3460x2200                                                                      | 10360x5295x2310 | 12430x5900x2310 | 16794x5900x2310 | 21135x6020x2310 | 22250x4300x2200 |
| MACHINE WEIGHT                    | kg     | 12500                                                                               | 14500           | 18500           | 24500           | 35000           | 37000           |
| MACHINE AXES                      | -      | 4-Axis ( X, Y, Z, U )                                                               |                 |                 |                 |                 |                 |
| POSITITIONING ACCURACY            | mm     | ± 0,03                                                                              |                 |                 |                 |                 |                 |
| REPETITION ACCURACY               | mm     | ± 0,015                                                                             |                 |                 |                 |                 |                 |
| CNC                               | -      | BECKHOFF                                                                            |                 |                 |                 |                 |                 |
| CAD/CAM SOFTWARE                  | -      | METALIX, LANTEK                                                                     |                 |                 |                 |                 |                 |
| NETWORK CONNECTION                | -      | Ethernet                                                                            |                 |                 |                 |                 |                 |
| CONTROL PANEL                     | -      | 21.5-inch screen 1920 x 1080, alphanumeric keyboard, PLC keys, touchscreen keyboard |                 |                 |                 |                 |                 |

| SPECIFICATIONS / RESONATOR     |       | YLS 2000                          | YLS 3000               | YLS 4000               | YLS 6000               |
|--------------------------------|-------|-----------------------------------|------------------------|------------------------|------------------------|
| RESONATOR                      | Watt  | 2000                              | 3000                   | 4000                   | 6000                   |
| LASER BEAM QUALITY             | rad   | 2 - 2,5                           | 2 - 2,5                | 2 - 2,5                | 2 - 4                  |
| POWER STABILITY                | %     | 1 - 2                             | 1 - 2                  | 1 - 2                  | 1 - 2                  |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100                               | 100                    | 100                    | 100                    |
| COOLANT FLOW RATE              | L/min | 10                                | 20                     | 20                     | 40                     |
| CUTTING CAPACITIES (MAX)       | -     | -                                 | -                      | -                      | -                      |
| MILD STEEL ( S235JR,S355MC )   | mm    | 16                                | 18                     | 20                     | 25                     |
| STAINLESS STEEL (AISI 304)     | mm    | 8                                 | 10                     | 12                     | 15                     |
| ALUMINUM (AlMg3)               | mm    | 6                                 | 8                      | 12                     | 15                     |
| BRASS (CuZn37)                 | mm    | 4                                 | 5                      | 6                      | 8                      |
| COPPER (Cu-ETP)                | mm    | 4                                 | 5                      | 6                      | 8                      |
| AVERAGE CONSUMPTION            | kW    | 18                                | 20                     | 22                     | 28                     |
| CUTTING HEAD                   | -     | Precitec Procutter 2.0            | Precitec Procutter 2.0 | Precitec Procutter 2.0 | Precitec Procutter 2.0 |
| PULSE FREQUENCY RANGE          | kHz   | 5                                 |                        |                        |                        |
| POWER RANGE                    | %     | 10-105                            |                        |                        |                        |
| LASER WAVELENGTH               | nm    | 1070 ± 5                          |                        |                        |                        |
| EXCITATION                     | -     | laser diode                       |                        |                        |                        |
| AUXILIARY GASES                | -     | -                                 |                        |                        |                        |
| STEEL                          | -     | Oxygen (0.5-6 Bar)                |                        |                        |                        |
| STAINLESS STEEL                | -     | Nitrogen ( 0.5-25 Bar)            |                        |                        |                        |
| ALUMINUM                       | -     | Dry Air or Nitrogen ( 0.5-25 Bar) |                        |                        |                        |

| SM 6X2,6                                                                            | SM 8X2,6        | SM 9X2,6        | SM 10X2,6       | SM 12X2,6                                       | SM 14X2,6       | SM 16X2,6       | SM 18X3         |
|-------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-------------------------------------------------|-----------------|-----------------|-----------------|
| 6150x2600                                                                           | 8000x2600       | 9000x2600       | 10000x2600      | 12000x2600                                      | 14000x2600      | 16000x2600      | 18000x3000      |
| 5000                                                                                | 6500            | 7500            | 8500            | 10000                                           | 11500           | 13000           | 17000           |
| -                                                                                   | -               | -               | -               | -                                               | -               | -               | -               |
| 6200                                                                                | 8200            | 9200            | 10200           | 12200                                           | 14200           | 16200           | 18200           |
| 2700                                                                                | 2700            | 2700            | 2800            | 2800                                            | 2800            | 2800            | 3200            |
| 150                                                                                 | 150             | 150             | 150             | 150                                             | 150             | 150             | 150             |
| 1,5                                                                                 | 1,2             | 1,2             | 1               | 1                                               | 1               | 1               | 1               |
| 113 (Result Speed)(X, Y Single axis speed 80m/d)                                    |                 |                 |                 | 85 (Result Speed)(X, Y Single axis speed 60m/d) |                 |                 |                 |
| 141 (resultant speed) (X, Y single axis speed 100 m/min)                            |                 |                 | -               | -                                               | -               | -               | -               |
| 2 (65 sec)                                                                          | 2 (90 sec)      | 2 (100 sec)     | 2 (130 sec)     | 2 (150 sec)                                     | 2 (180 sec)     | 2 (200 sec)     | 2 (220 sec)     |
| 16794x6700x2310                                                                     | 21078x6700x2310 | 22250x6700x2310 | 25000x5100x2200 | 26500x5000x2300                                 | 30500x5500x2200 | 35000x5100x2200 | 41675x7100x2310 |
| 30500                                                                               | 38000           | 45000           | 55000           | 63500                                           | 7000            | 75000           | 93000           |
| 4-Axis (X, Y, Z,U)                                                                  |                 |                 |                 |                                                 |                 |                 |                 |
| ± 0,03                                                                              |                 |                 |                 |                                                 |                 |                 |                 |
| ± 0,015                                                                             |                 |                 |                 |                                                 |                 |                 |                 |
| BECKHOFF                                                                            |                 |                 |                 |                                                 |                 |                 |                 |
| METALIX, LANTEK                                                                     |                 |                 |                 |                                                 |                 |                 |                 |
| Ethernet                                                                            |                 |                 |                 |                                                 |                 |                 |                 |
| 21.5-inch screen 1920 x 1080, alphanumeric keyboard, PLC keys, touchscreen keyboard |                 |                 |                 |                                                 |                 |                 |                 |

| SPECIFICATIONS / RESONATOR     |       | YLS 8000    | YLS 10000                                      | YLS 12000                                      | YLS 15000                                      | YLS 20000                                      | YLS 30000                                      |
|--------------------------------|-------|-------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| RESONATOR                      | Watt  | 8000        | 10000                                          | 12000                                          | 15000                                          | 20000                                          | 30000                                          |
| LASER BEAM QUALITY             | rad   | 2-4         | 2-4                                            | 2-4                                            | 3,5 mm                                         | 3,5 mm                                         | 3,5 mm                                         |
| POWER STABILITY                | %     | 1-2         | 1-2                                            | 1-2                                            | ± 2                                            | ± 2                                            | ± 2                                            |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100         | 100                                            | 100                                            | 100                                            | 100                                            | 100                                            |
| COOLANT FLOW RATE              | L/min | 40          | 60                                             | 70                                             | 150                                            | 200                                            | 150                                            |
| CUTTING CAPACITIES (MAX)       | -     | -           | -                                              | -                                              | -                                              | -                                              | -                                              |
| MILD STEEL ( S235JR,S355MC )   | mm    | 25          | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| STAINLESS STEEL (AISI 304)     | mm    | 15          | 25 (for laser cut suitable sheet) 20 standards | 25 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| ALUMINUM (AlMg3)               | mm    | 15          | 25 (for laser cut suitable sheet) 25 standards | 25 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards |
| BRASS (CuZn37)                 | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| COPPER (Cu-ETP)                | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| GALVANIZED                     | mm    | 4           | 4                                              | 4                                              | 6                                              | 6                                              | 6                                              |
| AVERAGE CONSUMPTION            | kW    | 34          | 42                                             | 50                                             | 59                                             | 70                                             | 59                                             |
| PULSE FREQUENCY RANGE          | kHz   | 5           | 5                                              | 5                                              | 0 - 5                                          | 0 - 5                                          | 0 - 5                                          |
| POWER RANGE                    | %     | 10-105      | 10-105                                         | 10-105                                         | %10 - %105                                     | %10 - %105                                     | %10 - %105                                     |
| EXCITATION                     | -     | laser diode |                                                |                                                |                                                |                                                |                                                |



# FIBERMAK MOMENTUM GEN-3

Long Life  
Performance



2 kW - 30 kW  
power option

2.5 - 18 m length  
options

1G / 4G  
acceleration  
option

Metalix/Lantek  
CAD/CAM  
software

Hydraulic loading/  
unloading

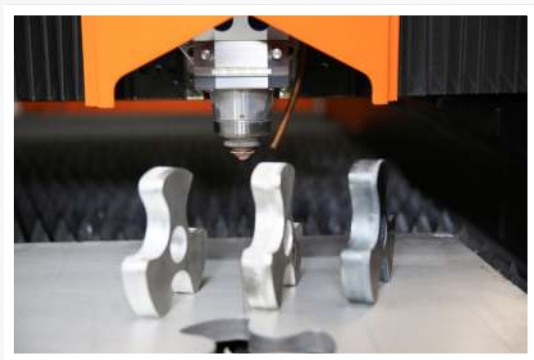
5 axis bevel  
cutting option



Adds Power to Your Power

GEN-3 series lasers with superior Ermaksan technology, which received numerous international awards, notably iF Design, Reddot, Good Design, and Design Turkey with their powerful and dynamic design, offer unique features for those who know what they want. These lasers were introduced to the market as engineering marvels designed to meet user expectations such as strong body structure, long-lasting performance, functionality, and precision against tough production conditions. It's engineering design features such as easy programming, simple language, shortcut keys, easy-to-use buttons, height-adjustable arm with its innovative technology approach, provide the operator with excellent comfort.

While 2.5 G acceleration is offered as standard in FIBERMAK Momentum GEN-3 series servo motor models, the machine is upgraded to the GEN-4 model with the 4G high acceleration option enabled by dynamic analyses and perfect design.



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 down-time and hardware costs

HIGH PRECISION CUTTING

With ultra-fast EtherCAT communication technology, the driver, motor, and all control units apply the determined values in the most precise and fastest way. Thus, you get problem-free cuts just in time and with micron precision.

BUILDING A JOB LIST

Dozens of programs can be queued and run automatically at once by creating a job list.



RIGID AND STRONG BODY

Thanks to its strong body with dynamic and static rigidity, it provides a long service life and high precision machining.

PIERCETEC CUT CONDITIONS

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

SMART FACTORY SOLUTIONS

With Industry 4.0 solutions, it provides the opportunity to create a Smart Factory with a fast and flexible structure, which enables innovation by increasing productivity in businesses, improves processes, and minimizes errors.

| SPECIFICATIONS/ MACHINE           |        | SM 2,5X1,25                                                                         | SM 3X1,5        | SM 4X2          | SM 6X2          | SM 8X2          | SM 9X2          |
|-----------------------------------|--------|-------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| WORKING AREA                      | mm     | 2500x1250                                                                           | 3000x1500       | 4000x2000       | 6150x2000       | 8000x2000       | 9000x2000       |
| MAX. LOAD CAPACITY                | kg     | 1000                                                                                | 1500            | 2500            | 4000            | 5500            | 6000            |
| AXIAL MOVEMENTS                   | -      | -                                                                                   | -               | -               | -               | -               | -               |
| X, U AXES / SERVO MOTOR TABLE     | mm     | 2550                                                                                | 3050            | 4050            | 6200            | 8200            | 9200            |
| Y AXIS / SERVO MOTOR BRIDGE       | mm     | 1270                                                                                | 1550            | 2050            | 2050            | 2050            | 2050            |
| Z AXIS / SERVO MOTOR CUTTING HEAD | mm     | 150                                                                                 | 150             | 150             | 150             | 150             | 150             |
| ACCELERATION                      | G      | 2,5                                                                                 | 2,5             | 2,5             | 2,5             | 1,5             | 1,5             |
| SERVO MOTOR MAX. AXIS SPEEDS      | m/min  | 141 (combination speed) (X, Y single axis speed 100 m/min)                          |                 |                 |                 |                 |                 |
| LINEAR MOTOR MAX. AXIS SPEEDS     | m/min  | 170 (combination speed) (X, Y single axis speed 120 m/min)                          |                 |                 |                 |                 |                 |
| AUTOMATIC LOADING UNLOADING UNIT  | Pallet | 2 (30 sec)                                                                          | 2 (35 sec)      | 2 (45 sec)      | 2 (65 sec)      | 2 (75 sec)      | 2 (100 sec)     |
| MACHINE DIMENSIONS (L x W x H)    | mm     | 8190x3460x2200                                                                      | 10360x5295x2310 | 12430x5900x2310 | 16794x5900x2310 | 21135x6020x2310 | 22250x4300x2200 |
| MACHINE WEIGHT                    | kg     | 12500                                                                               | 14500           | 18500           | 24500           | 35000           | 37000           |
| MACHINE AXES                      | -      | 4-Axis ( X, Y, Z, U )                                                               |                 |                 |                 |                 |                 |
| POSITITIONING ACCURACY            | mm     | ± 0,03                                                                              |                 |                 |                 |                 |                 |
| REPETITION ACCURACY               | mm     | ± 0,015                                                                             |                 |                 |                 |                 |                 |
| CNC                               | -      | BECKHOFF                                                                            |                 |                 |                 |                 |                 |
| CAD/CAM SOFTWARE                  | -      | METALIX, LANTEK                                                                     |                 |                 |                 |                 |                 |
| NETWORK CONNECTION                | -      | Ethernet                                                                            |                 |                 |                 |                 |                 |
| CONTROL PANEL                     | -      | 21.5-inch screen 1920 x 1080, alphanumeric keyboard, PLC keys, touchscreen keyboard |                 |                 |                 |                 |                 |

| SPECIFICATIONS / RESONATOR     |       | YLS 2000                          | YLS 3000               | YLS 4000               | YLS 6000               |
|--------------------------------|-------|-----------------------------------|------------------------|------------------------|------------------------|
| RESONATOR                      | Watt  | 2000                              | 3000                   | 4000                   | 6000                   |
| LASER BEAM QUALITY             | rad   | 2 - 2,5                           | 2 - 2,5                | 2 - 2,5                | 2 - 4                  |
| POWER STABILITY                | %     | 1 - 2                             | 1 - 2                  | 1 - 2                  | 1 - 2                  |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100                               | 100                    | 100                    | 100                    |
| COOLANT FLOW RATE              | L/min | 10                                | 20                     | 20                     | 40                     |
| CUTTING CAPACITIES (MAX)       | -     | -                                 | -                      | -                      | -                      |
| MILD STEEL ( S235JR,S355MC )   | mm    | 16                                | 18                     | 20                     | 25                     |
| STAINLESS STEEL (AISI 304)     | mm    | 8                                 | 10                     | 12                     | 15                     |
| ALUMINUM (AlMg3)               | mm    | 6                                 | 8                      | 12                     | 15                     |
| BRASS (CuZn37)                 | mm    | 4                                 | 5                      | 6                      | 8                      |
| COPPER (Cu-ETP)                | mm    | 4                                 | 5                      | 6                      | 8                      |
| AVERAGE CONSUMPTION            | kW    | 18                                | 20                     | 22                     | 28                     |
| CUTTING HEAD                   | -     | Precitec Procutter 2.0            | Precitec Procutter 2.0 | Precitec Procutter 2.0 | Precitec Procutter 2.0 |
| PULSE FREQUENCY RANGE          | kHz   | 5                                 |                        |                        |                        |
| POWER RANGE                    | %     | 10-105                            |                        |                        |                        |
| LASER WAVELENGTH               | nm    | 1070 ± 5                          |                        |                        |                        |
| EXCITATION                     | -     | laser diode                       |                        |                        |                        |
| AUXILIARY GASES                | -     | -                                 |                        |                        |                        |
| STEEL                          | -     | Oxygen (0.5-6 Bar)                |                        |                        |                        |
| STAINLESS STEEL                | -     | Nitrogen ( 0.5-25 Bar)            |                        |                        |                        |
| ALUMINUM                       | -     | Dry Air or Nitrogen ( 0.5-25 Bar) |                        |                        |                        |

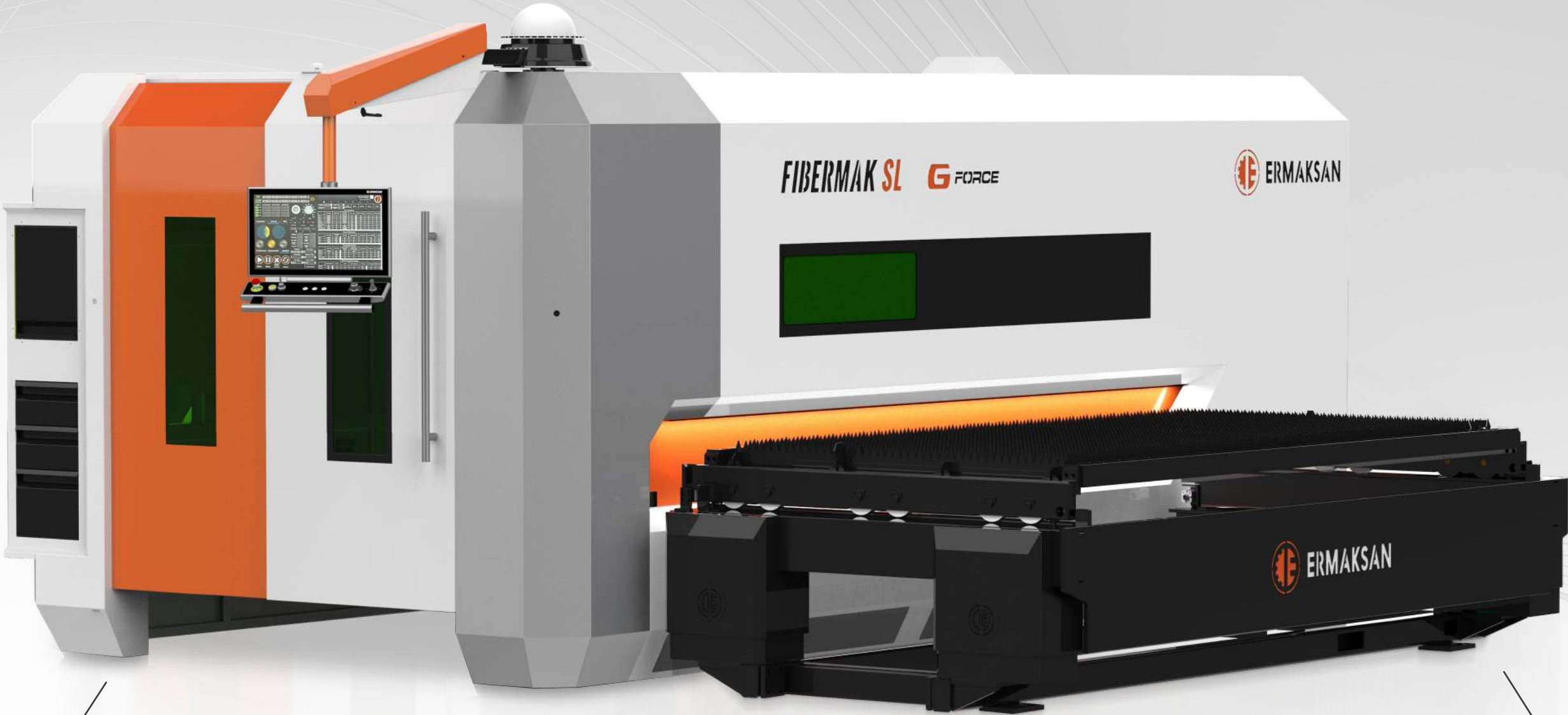
| SM 6X2,6                                                                            | SM 8X2,6        | SM 9X2,6        | SM 10X2,6       | SM 12X2,6                                       | SM 14X2,6       | SM 16X2,6       | SM 18X3         |
|-------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-------------------------------------------------|-----------------|-----------------|-----------------|
| 6150x2600                                                                           | 8000x2600       | 9000x2600       | 10000x2600      | 12000x2600                                      | 14000x2600      | 16000x2600      | 18000x3000      |
| 5000                                                                                | 6500            | 7500            | 8500            | 10000                                           | 11500           | 13000           | 17000           |
| -                                                                                   | -               | -               | -               | -                                               | -               | -               | -               |
| 6200                                                                                | 8200            | 9200            | 10200           | 12200                                           | 14200           | 16200           | 18200           |
| 2700                                                                                | 2700            | 2700            | 2800            | 2800                                            | 2800            | 2800            | 3200            |
| 150                                                                                 | 150             | 150             | 150             | 150                                             | 150             | 150             | 150             |
| 1,5                                                                                 | 1,2             | 1,2             | 1               | 1                                               | 1               | 1               | 1               |
| 113 (Result Speed)(X, Y Single axis speed 80m/d)                                    |                 |                 |                 | 85 (Result Speed)(X, Y Single axis speed 60m/d) |                 |                 |                 |
| 141 (resultant speed) (X, Y single axis speed 100 m/min)                            |                 |                 | -               | -                                               | -               | -               | -               |
| 2 (65 sec)                                                                          | 2 (90 sec)      | 2 (100 sec)     | 2 (130 sec)     | 2 (150 sec)                                     | 2 (180 sec)     | 2 (200 sec)     | 2 (220 sec)     |
| 16794x6700x2310                                                                     | 21078x6700x2310 | 22250x6700x2310 | 25000x5100x2200 | 26500x5000x2300                                 | 30500x5500x2200 | 35000x5100x2200 | 41675x7100x2310 |
| 30500                                                                               | 38000           | 45000           | 55000           | 63500                                           | 7000            | 75000           | 93000           |
| 4-Axis (X, Y, Z,U)                                                                  |                 |                 |                 |                                                 |                 |                 |                 |
| ± 0,03                                                                              |                 |                 |                 |                                                 |                 |                 |                 |
| ± 0,015                                                                             |                 |                 |                 |                                                 |                 |                 |                 |
| BECKHOFF                                                                            |                 |                 |                 |                                                 |                 |                 |                 |
| METALIX, LANTEK                                                                     |                 |                 |                 |                                                 |                 |                 |                 |
| Ethernet                                                                            |                 |                 |                 |                                                 |                 |                 |                 |
| 21.5-inch screen 1920 x 1080, alphanumeric keyboard, PLC keys, touchscreen keyboard |                 |                 |                 |                                                 |                 |                 |                 |

| SPECIFICATIONS / RESONATOR     |       | YLS 8000    | YLS 10000                                      | YLS 12000                                      | YLS 15000                                      | YLS 20000                                      | YLS 30000                                      |
|--------------------------------|-------|-------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| RESONATOR                      | Watt  | 8000        | 10000                                          | 12000                                          | 15000                                          | 20000                                          | 30000                                          |
| LASER BEAM QUALITY             | rad   | 2-4         | 2-4                                            | 2-4                                            | 3,5 mm                                         | 3,5 mm                                         | 3,5 mm                                         |
| POWER STABILITY                | %     | 1-2         | 1-2                                            | 1-2                                            | ± 2                                            | ± 2                                            | ± 2                                            |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100         | 100                                            | 100                                            | 100                                            | 100                                            | 100                                            |
| COOLANT FLOW RATE              | L/min | 40          | 60                                             | 70                                             | 150                                            | 200                                            | 150                                            |
| CUTTING CAPACITIES (MAX)       | -     | -           | -                                              | -                                              | -                                              | -                                              | -                                              |
| MILD STEEL ( S235JR,S355MC )   | mm    | 25          | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| STAINLESS STEEL (AISI 304)     | mm    | 15          | 25 (for laser cut suitable sheet) 20 standards | 25 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| ALUMINUM (AlMg3)               | mm    | 15          | 25 (for laser cut suitable sheet) 25 standards | 25 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards |
| BRASS (CuZn37)                 | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| COPPER (Cu-ETP)                | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| GALVANIZED                     | mm    | 4           | 4                                              | 4                                              | 6                                              | 6                                              | 6                                              |
| AVERAGE CONSUMPTION            | kW    | 34          | 42                                             | 50                                             | 59                                             | 70                                             | 59                                             |
| PULSE FREQUENCY RANGE          | kHz   | 5           | 5                                              | 5                                              | 0 - 5                                          | 0 - 5                                          | 0 - 5                                          |
| POWER RANGE                    | %     | 10-105      | 10-105                                         | 10-105                                         | %10 - %105                                     | %10 - %105                                     | %10 - %105                                     |
| EXCITATION                     | -     | laser diode |                                                |                                                |                                                |                                                |                                                |



# FIBERMAK SIDE LOADING

Defy Tight Spaces



2 kW - 30 kW  
power option

2.5G Acceleration

21.5" touchscreen  
control panel

6000 kg max  
load capacity

2.5 - 6 m length  
options

Automatic nozzle  
changing option

Compact Design Providing 20% Area Advantage

With its side-loading design, Fibermak SL is the right choice designed for workshops with limited space without sacrificing from G-Force standards and quality. It only needs 68 m2 of floor space for standard 3x1.5m machines including the loading-unloading unit. If the workplace has a short hall, we recommend our customers to choose a side-loading fibre laser machine. Thanks to the high acceleration in G-Force series servo motor models, production time is reduced and productivity is increased by an average of 15% per hour.

The electric panel is now even more compact thanks to the structure developed in the side-loading machine. Thus, the number of equipment outside is also significantly reduced, providing great advantages to customers in terms of placement area, while saving installation time.



MUCH WORK IN A NARROW SPACE

Featuring a modular and ergonomic design, it is optimized for operator use and the physical environment to best meet user needs.

FAST AND CONTROLLED TABLE CHANGE

With the table positioned on the side, the table change time is 60% faster. Its proximity to the operator panel allows for more controlled changes during loading and unloading.

USER-FRIENDLY INTERFACE

Your work is now much easier with the user-friendly interface designed by Ermaksan engineers, considering operator needs. You can start automatic cutting with just a few steps and monitor the active job before and during cutting with the NC Graphics feature.

COMPACT STRUCTURE

The electrical cabinet is embedded inside the machine. Thanks to this compact structure, customer accessibility and intervention during maintenance and repair are facilitated.

HIGH PRECISION CUTTING

With ultra-fast EtherCAT communication technology, the driver, motor, and all control units apply the determined values in the most precise and fastest way. Thus, you get problem-free cuts just in time and with micron precision.

SMART FACTORY SOLUTIONS

With Industry 4.0 solutions, it provides the opportunity to create a Smart Factory with a fast and flexible structure, which enables innovation by increasing productivity in businesses, improves processes, and minimizes errors.



| SPECIFICATIONS/ MACHINE           |        | SL 2,5X1,25                                                                  | SL 3X1,5       | SL 4X2         | SL 6X2                    | SL 8X2          | SL 8X2,6                                                |
|-----------------------------------|--------|------------------------------------------------------------------------------|----------------|----------------|---------------------------|-----------------|---------------------------------------------------------|
| WORKING AREA                      | mm     | 2500x1250                                                                    | 3000x1500      | 4000x2000      | 6150x2000                 | 8100x2000       | 8100x2700                                               |
| MAX. LOAD CAPACITY                | kg     | 1000                                                                         | 1500           | 2500           | 2000                      | 3000            | 4000                                                    |
| AXIAL MOVEMENTS                   | -      | -                                                                            | -              | -              | -                         | -               | -                                                       |
| X, U AXES / SERVO MOTOR TABLE     | mm     | 2550                                                                         | 3050           | 4050           | 6200                      | 8200            | 8200                                                    |
| Y AXIS / SERVO MOTOR BRIDGE       | mm     | 1270                                                                         | 1550           | 2050           | 2050                      | 2050            | 2700                                                    |
| Z AXIS / SERVO MOTOR CUTTING HEAD | mm     | 150                                                                          | 150            | 150            | 150                       | 150             | 150                                                     |
| ACCELERATION                      | G      | 2,5                                                                          | 2,5            | 2,5            | 2,5                       | 1,5             | 1                                                       |
| SERVO MOTOR MAX. AXIS SPEEDS      | m/min  | 141 (combination speed) (X, Y single axis speed 100 m/min)                   |                |                |                           |                 | 113 (resultant speed) (X, Y single axis speed 80 m/min) |
| AUTOMATIC LOADING UNLOADING UNIT  | Pallet | 2 (20 sec)                                                                   | 2 (25 sec)     | 2 (30 sec)     | Automatic (Single Pallet) |                 |                                                         |
| MACHINE DIMENSIONS (L x W x H)    | mm     | 5200x4200x2610                                                               | 6900x4700x2610 | 6900x5322x2610 | 9000x5760x2610            | 11500x5760x2610 | 11500x6860x2610                                         |
| MACHINE WEIGHT                    | kg     | 11000                                                                        | 16000          | 21000          | 28650                     | 42200           | 45100                                                   |
| MACHINE AXES                      | -      | 4-Axis ( X, Y, Z, U )                                                        |                |                |                           |                 |                                                         |
| POSITIONING ACCURACY              | mm/m   | ± 0,03                                                                       |                |                |                           |                 |                                                         |
| REPETITION ACCURACY               | mm     | ± 0,015                                                                      |                |                |                           |                 |                                                         |
| CNC                               | -      | BECKHOFF                                                                     |                |                |                           |                 |                                                         |
| CAD/CAM SOFTWARE                  | -      | METALIX, LANTEK                                                              |                |                |                           |                 |                                                         |
| NETWORK CONNECTION                | -      | Ethernet                                                                     |                |                |                           |                 |                                                         |
| CONTROL PANEL                     | -      | 21.5" 1920 x 1080 display, alphanumeric keyboard, PLC keys, two touchscreens |                |                |                           |                 |                                                         |



| SPECIFICATIONS / RESONATOR     |       | YLS 2000                          | YLS 3000               | YLS 4000               | YLS 6000               |
|--------------------------------|-------|-----------------------------------|------------------------|------------------------|------------------------|
| RESONATOR                      | Watt  | 2000                              | 3000                   | 4000                   | 6000                   |
| LASER BEAM QUALITY             | rad   | 2 - 2,5                           | 2 - 2,5                | 2 - 2,5                | 2 - 4                  |
| POWER STABILITY                | %     | 1 - 2                             | 1 - 2                  | 1 - 2                  | 1 - 2                  |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100                               | 100                    | 100                    | 100                    |
| COOLANT FLOW RATE              | L/min | 10                                | 20                     | 20                     | 40                     |
| CUTTING CAPACITIES (MAX)       | -     | -                                 | -                      | -                      | -                      |
| MILD STEEL ( S235JR,S355MC )   | mm    | 16                                | 18                     | 20                     | 25                     |
| STAINLESS STEEL (AISI 304)     | mm    | 8                                 | 10                     | 12                     | 15                     |
| ALUMINUM (AlMg3)               | mm    | 6                                 | 8                      | 10                     | 12                     |
| BRASS (CuZn37)                 | mm    | 4                                 | 5                      | 6                      | 8                      |
| COPPER (Cu-ETP)                | mm    | 4                                 | 5                      | 6                      | 8                      |
| AVERAGE CONSUMPTION            | kW    | 18                                | 20                     | 22                     | 28                     |
| CUTTING HEAD                   | -     | Precitec Procutter 2.0            | Precitec Procutter 2.0 | Precitec Procutter 2.0 | Precitec Procutter 2.0 |
| PULSE FREQUENCY RANGE          | kHz   | 5                                 |                        |                        |                        |
| POWER RANGE                    | %     | 10-105                            |                        |                        |                        |
| LASER WAVELENGTH               | nm    | 1070 ± 5                          |                        |                        |                        |
| EXCITATION                     | -     | laser diode                       |                        |                        |                        |
| AUXILIARY GASES                | -     | -                                 |                        |                        |                        |
| STEEL                          | -     | Oxygen (0.5-6 Bar)                |                        |                        |                        |
| STAINLESS STEEL                | -     | Nitrogen ( 0.5-25 Bar)            |                        |                        |                        |
| ALUMINUM                       | -     | Dry Air or Nitrogen ( 0.5-25 Bar) |                        |                        |                        |

| SPECIFICATIONS / RESONATOR     |       | YLS 8000    | YLS 10000                                      | YLS 12000                                      | YLS 15000                                      | YLS 20000                                      | YLS 30000                                      |
|--------------------------------|-------|-------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| RESONATOR                      | Watt  | 8000        | 10000                                          | 12000                                          | 15000                                          | 20000                                          | 30000                                          |
| LASER BEAM QUALITY             | rad   | 2-4         | 2-4                                            | 2-4                                            | 3,5 mm                                         | 3,5 mm                                         | 3,5 mm                                         |
| POWER STABILITY                | %     | 1-2         | 1-2                                            | 1-2                                            | ± 2                                            | ± 2                                            | ± 2                                            |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100         | 100                                            | 100                                            | 100                                            | 100                                            | 100                                            |
| COOLANT FLOW RATE              | L/min | 40          | 60                                             | 70                                             | 150                                            | 200                                            | 150                                            |
| CUTTING CAPACITIES (MAX)       | -     | -           | -                                              | -                                              | -                                              | -                                              | -                                              |
| MILD STEEL ( S235JR,S355MC )   | mm    | 25          | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| STAINLESS STEEL (AISI 304)     | mm    | 15          | 25 (for laser cut suitable sheet) 20 standards | 25 (for laser cut suitable sheet) 25 standards | 25 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 50 (for laser cut suitable sheet) 25 standards |
| ALUMINUM (AlMg3)               | mm    | 15          | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 30 (for laser cut suitable sheet) 25 standards | 40 (for laser cut suitable sheet) 25 standards | 35 (for laser cut suitable sheet) 25 standards |
| BRASS (CuZn37)                 | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| COPPER (Cu-ETP)                | mm    | 8           | 8                                              | 8                                              | 10                                             | 10                                             | 10                                             |
| GALVANIZED                     | mm    | 4           | 4                                              | 4                                              | 6                                              | 6                                              | 6                                              |
| AVERAGE CONSUMPTION            | kW    | 34          | 42                                             | 50                                             | 59                                             | 70                                             | 59                                             |
| PULSE FREQUENCY RANGE          | kHz   | 5           | 5                                              | 5                                              | 0 - 5                                          | 0 - 5                                          | 0 - 5                                          |
| POWER RANGE                    | %     | 10-105      | 10-105                                         | 10-105                                         | %10 - %105                                     | %10 - %105                                     | %10 - %105                                     |
| EXCITATION                     | -     | laser diode |                                                |                                                |                                                |                                                |                                                |

# FIBERMAK RAPTOR

Both Compact  
and Functional



1.5 G accelertion

Power option  
up to 6 kW

600 kg load  
capacity

2.5 - 6 m length  
options

±0,055 mm  
Positioning  
accuracy

Pipe / profile  
cutting option



## Ergonomic and Affordable

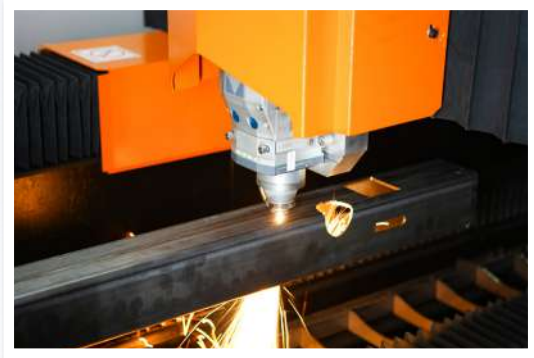
Fibermak RAPTOR Fibre Laser Cutting machine has been produced with the goal of providing an economical solution without sacrificing from cutting quality with its compact external structure that takes up less space, favouring a modular and ergonomic design.

With 1.5 G acceleration, 80 m/min speed, single cutting trolley, auto-focused cutting head and lightened profile body structure, it is an ideal laser cutting machine manufactured in high quality standards for our customers looking for an economical solution. The LED light bar in the body adds an aesthetic illumination to the RAPTOR series lasers, introducing elegance and modernity to the external appearance of the machine.



### PIPE PROFILE CUTTING

With the Combi Raptor, the ability to perform both pipe profile cutting and sheet metal cutting on the same machine offers flexibility and functionality to its users.



### FLEXIBILITY

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

### BUILDING A JOB LIST

Dozens of programs can be queued and run automatically at once by creating a job list.

### HYDRAULIC SHUTTLE TABLE

Nonstop cutting with two cutting tables ensures continuity in production. With the hydraulic table changing system, it provides the opportunity to load sheets even during cutting and collect the cut parts without stopping the machine.

### 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.

### SMART FACTORY SOLUTIONS

With Industry 4.0 solutions, it provides the opportunity to create a Smart Factory with a fast and flexible structure, which enables innovation by increasing productivity in businesses, improves processes, and minimizes errors.

| SPECIFICATIONS/ MACHINE           |        | RAPTOR 2,5X1,25                                                      | RAPTOR 3X1,5   |
|-----------------------------------|--------|----------------------------------------------------------------------|----------------|
| WORKING AREA                      | mm     | 2500x1250                                                            | 3000x1500      |
| MAX. LOAD CAPACITY                | kg     | 600                                                                  | 750            |
| AXIAL MOVEMENTS                   | -      | -                                                                    | -              |
| X, U AXES / SERVO MOTOR TABLE     | mm     | 2550                                                                 | 3050           |
| Y AXIS / SERVO MOTOR BRIDGE       | mm     | 1270                                                                 | 1550           |
| Z AXIS / SERVO MOTOR CUTTING HEAD | mm     | 150                                                                  | 150            |
| ACCELERATION                      | G      | 1,5                                                                  | 1,5            |
| SERVO MOTOR MAX. AXIS SPEEDS      | m/min  | 113 (resultant speed) (X, Y single axis speed 80 m/min)              |                |
| AUTOMATIC LOADING UNLOADING UNIT  | Pallet | Automatic (Single Pallet)                                            |                |
| MACHINE DIMENSIONS (L x W x H)    | mm     | 8200x2450x2200                                                       | 9250x4500x2200 |
| MACHINE WEIGHT                    | kg     | 7900                                                                 | 9500           |
| MACHINE AXES                      | -      | 4-Axis (X, Y, Z,U)                                                   |                |
| POSITIONING ACCURACY              | mm     | ± 0,055                                                              |                |
| REPETITION ACCURACY               | mm     | ± 0,032                                                              |                |
| CNC                               | -      | BECKHOFF                                                             |                |
| CAD/CAM SOFTWARE                  | -      | METALIX, LANTEK                                                      |                |
| NETWORK CONNECTION                | -      | Ethernet                                                             |                |
| CONTROL PANEL                     | -      | 21.5"1920x1080 display alphanumeric keyboard, PLC keys, touchscreens |                |

CONTROL PANEL

All software on the Control Panel has been developed by the ERMAKSAN engineers and you may add special features.

- Control panel is the unit which controls the system and sends the user commands to the machine.
- Control panel is resistant to various environmental conditions. Shock, dirt, humidity, temperature, etc.
- It is used as a touch screen and an external keyboard is available.
- With the speed adjustment potentiometer on the control panel, you can increase and decrease the axis speed in the working area.
- NC graphic display.

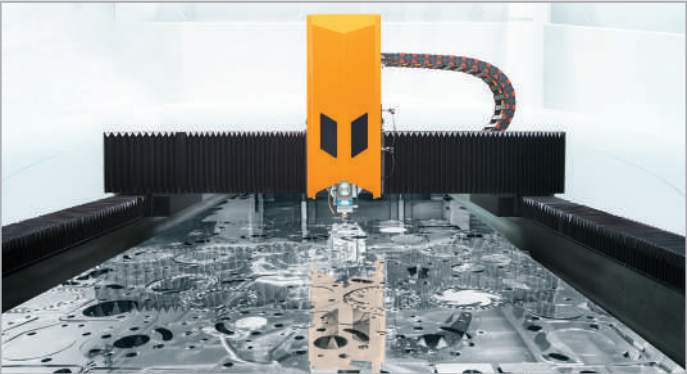


| SPECIFICATIONS / RESONATOR     |       | YLS 1000                          | YLS 2000              | YLS 3000              | YLS 4000              | YLS 6000               |
|--------------------------------|-------|-----------------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| RESONATOR                      | Watt  | 1000                              | 2000                  | 3000                  | 4000                  | 6000                   |
| LASER BEAM QUALITY             | rad   | 1 - 2                             | 2 - 2,5               | 2 - 2,5               | 2 - 2,5               | 2 - 4                  |
| POWER STABILITY                | %     | 1 - 3                             | 1 - 2                 | 1 - 2                 | 1 - 2                 | 1 - 2                  |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 50                                | 100                   | 100                   | 100                   | 100                    |
| COOLANT FLOW RATE              | L/min | 8                                 | 10                    | 20                    | 20                    | 40                     |
| CUTTING CAPACITIES (MAX)       | -     | -                                 | -                     | -                     | -                     | -                      |
| MILD STEEL ( S235JR,S355MC )   | mm    | 8                                 | 16                    | 18                    | 20                    | 25                     |
| STAINLESS STEEL (AISI 304)     | mm    | 4                                 | 8                     | 10                    | 12                    | 15                     |
| ALUMINUM (AlMg3)               | mm    | 3                                 | 6                     | 8                     | 10                    | 12                     |
| BRASS (CuZn37)                 | mm    | 2                                 | 4                     | 5                     | 6                     | 8                      |
| COPPER (Cu-ETP)                | mm    | 2                                 | 4                     | 5                     | 6                     | 8                      |
| AVERAGE CONSUMPTION            | kW    | 14                                | 18                    | 20                    | 22                    | 28                     |
| CUTTING HEAD                   | -     | Precitec Light Cutter             | Precitec Light Cutter | Precitec Light Cutter | Precitec Light Cutter | Precitec ProCutter 2.0 |
| PULSE FREQUENCY RANGE          | kHz   | 5                                 |                       |                       |                       |                        |
| POWER RANGE                    | %     | 10-105                            |                       |                       |                       |                        |
| LASER WAVELENGTH               | nm    | 1070 ± 5                          |                       |                       |                       |                        |
| EXCITATION                     | -     | laser diode                       |                       |                       |                       |                        |
| AUXILIARY GASES                | -     | -                                 |                       |                       |                       |                        |
| STEEL                          | -     | Oxygen (0,5-6 Bar)                |                       |                       |                       |                        |
| STAINLESS STEEL                | -     | Nitrogen ( 0,5-25 Bar)            |                       |                       |                       |                        |
| ALUMINUM                       | -     | Dry Air or Nitrogen ( 0,5-25 Bar) |                       |                       |                       |                        |

CUTTING HEAD SPECIFICATIONS

Precitec LightCutter cutting head is used for FiberMak Raptor series lasers below 4 kW, Precitec ProCutter is used for those with 4 kW and above.

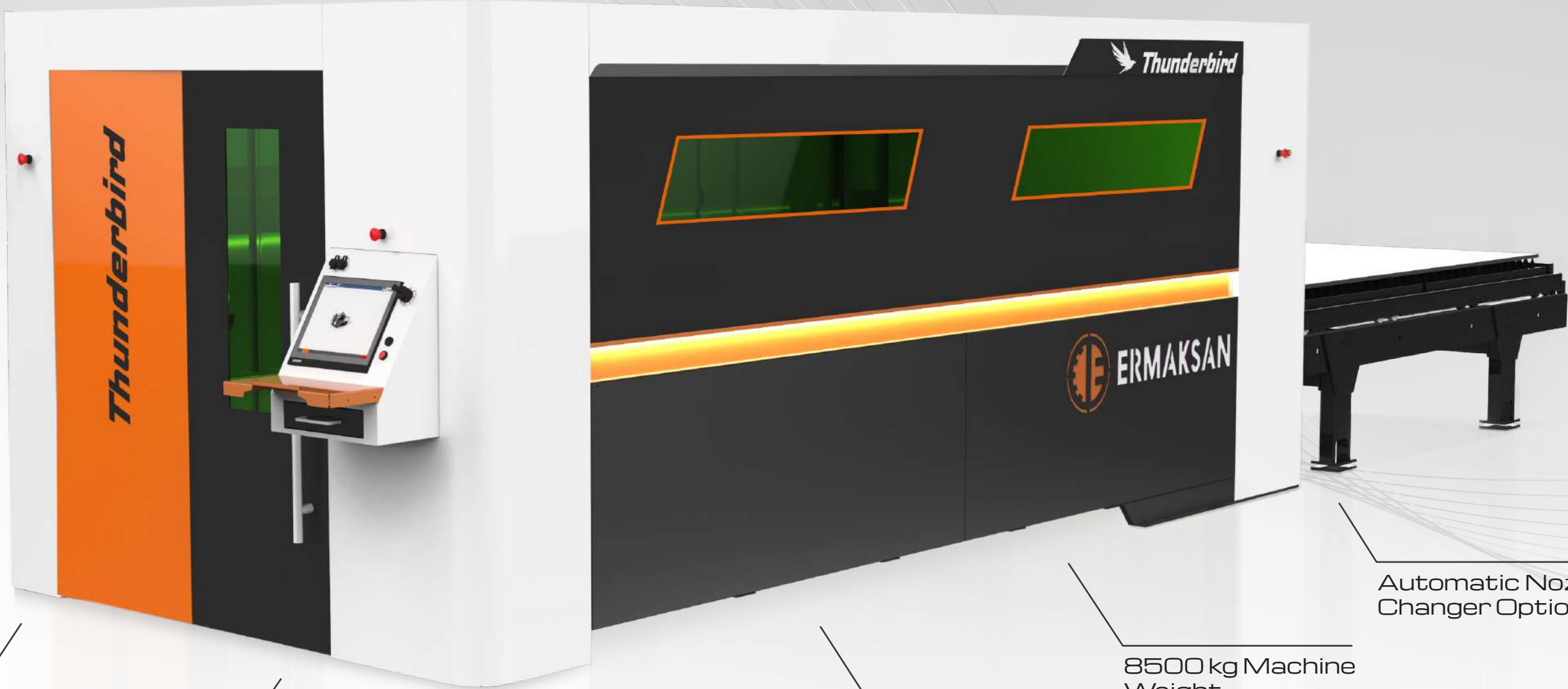
- Manually adjustable focus lens
- Precision height control
- Lower protection glass





# THUNDERBIRD LASER

Smart Investment



3x1.5m table size

2-20 kW power option

1G acceleration

Double Shuttle Table

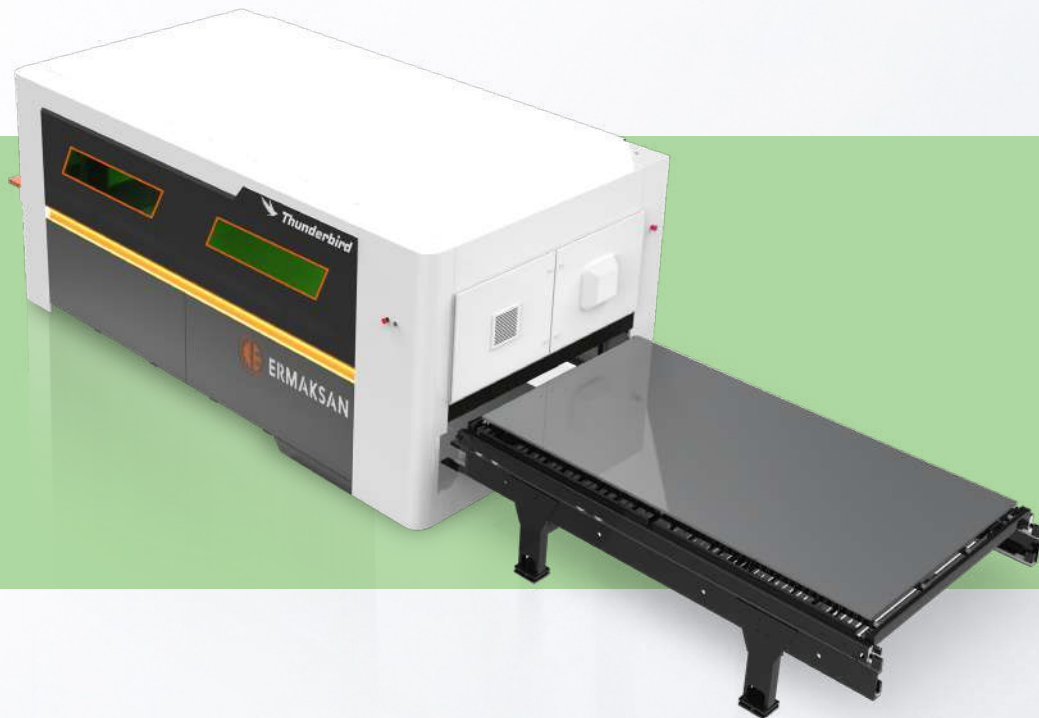
8500 kg Machine Weight

Automatic Nozzle Changer Option

Efficiency Meets Affordability in a Compact Laser

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.



QUICK TABLE EXCHANGE

With the double pallet table system, both tables are moved simultaneously, enabling faster loading and unloading and saving 75% of the table change time.



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.

LONG LIFE SPAN

Manufactured using high quality components, Thunderbird Lasers are suitable for working under heavy conditions for many years with their strong body and rigid structure.

SAVE TIME AND MONEY

It allows you to save both time and resources thanks to the Shorter piercing times, low gas and energy consumption, and easy maintenance and repair.

SMART FACTORY SOLUTIONS

With Industry 4.0 solutions, it provides the opportunity to create a Smart Factory with a fast and flexible structure, which enables innovation by increasing productivity in businesses, improves processes, and minimizes errors.



| SPECIFICATIONS/ MACHINE           |        | THUNDERBIRD 3X1,5                                                                 |
|-----------------------------------|--------|-----------------------------------------------------------------------------------|
| WORKING AREA                      | mm     | 3000x1500                                                                         |
| 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     | 9250X4500X2200                                                                    |
| 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          | YLR 6000          |
|--------------------------------|-------|-----------------------------------|-------------------|-------------------|-------------------|
| RESONATOR                      | Watt  | 2000                              | 3000              | 4000              | 6000              |
| LASER BEAM QUALITY             | rad   | 2 - 2,5                           | 1 - 2             | 1 - 2             | 2 - 4             |
| POWER STABILITY                | %     | 1 - 2                             | ± 0,5             | ± 0,5             | 1 - 2             |
| FIBER CABLE OUTPUT MEASUREMENT | µm    | 100                               | 100               | 100               | 100               |
| COOLANT FLOW RATE              | L/min | 10                                | 20                | 15                | 40                |
| CUTTING CAPACITIES (MAX)       | -     | -                                 | -                 | -                 | -                 |
| MILD STEEL ( S235JR,S355MC )   | mm    | 16                                | 18                | 20                | 25                |
| STAINLESS STEEL (AISI 304)     | mm    | 8                                 | 10                | 10                | 15                |
| ALUMINUM (AIMg3)               | mm    | 6                                 | 8                 | 10                | 12                |
| BRASS (CuZn37)                 | mm    | 4                                 | 5                 | 6                 | 8                 |
| COPPER (Cu-ETP)                | mm    | 4                                 | 5                 | 6                 | 8                 |
| AVERAGE CONSUMPTION            | kW    | 18                                | 20                | 22                | 28                |
| CUTTING HEAD                   | -     | Procutter Thunder                 | Procutter Thunder | Procutter Thunder | Procutter Thunder |
| PULSE FREQUENCY RANGE          | kHz   | 5                                 |                   |                   |                   |
| 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) |                   |                   |                   |

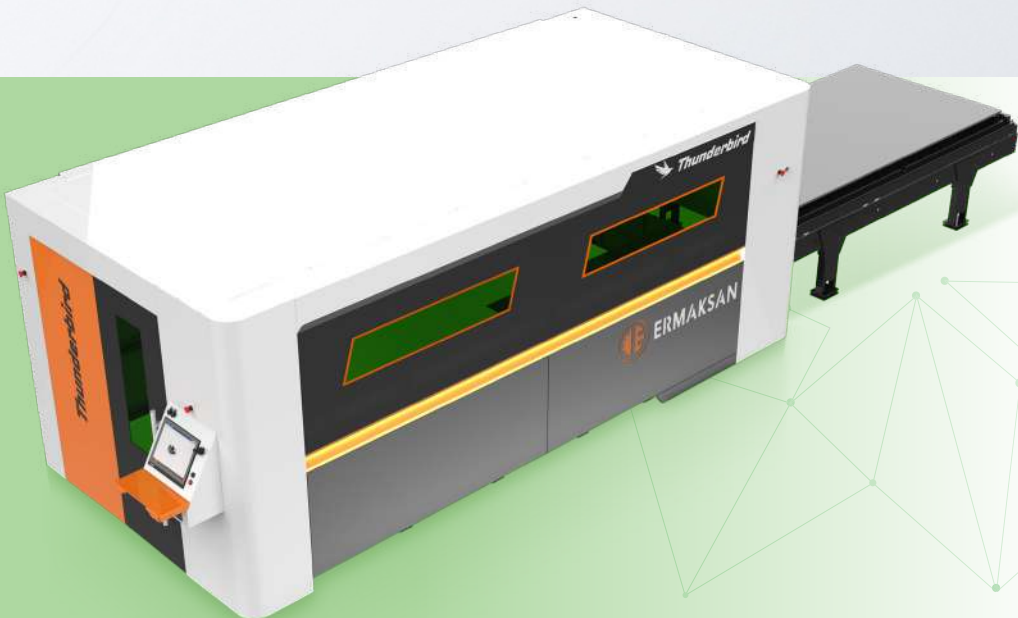
Affordable

Clean Cut

Compact

Reliable

User Friendly



# HAWK LASER

Both Economic  
and Monolithic



1kW - 4 kW  
power option

300 kg load  
capacity

+ 0.1mm  
positioning  
accuracy

1.5 G acceleration

15" touchscreen  
control panel

IoT option



The Perfect Combination of Price and Performance

Thanks to its easy-to-install and compact structure, it provides a fast and efficient production laser process by reducing the installation, assembly, commissioning, and transportation times. With sources between 1000 W and 4000 W, it has the ability to process flawlessly and with high precision without sacrificing from cutting quality. Moreover, you can learn the features of the machine quickly thanks to its extremely user friendly interface. You can customize the HAWK Laser series laser cutting machines, which offer high performance and economical solutions, according to your needs. For example; you can choose to have with an open or closed cabin, you can also choose to increase your productivity by stepping into digitalization in production with the Industry 4.0 option.



LONG LIFE SPAN

Manufactured using high quality components, Hawk Lasers are suitable for working under heavy conditions for many years with their strong body and rigid structure.

SAVE TIME AND MONEY

It allows you to save both time and resources thanks to the Shorter piercing times, low gas and energy consumption, and easy maintenance and repair.

SERVO MOTOR

It allows you to work with low energy consumption without sacrificing from performance.

ERGONOMIC DESIGN

In addition to the stylish design, Hawk Laser also offers great convenience to the operator thanks to its ergonomic structure. The operator can safely reach the cutting area, load new sheets and collect the cut pieces.

LOW INVESTMENT COST

Hawk Laser is the most economical product of our fiber laser family. It offers you low investment costs. When you assess the price and performance, you will see that the performance is way ahead.

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           |        | HAWK 2,5X1,25                                                                    | HAWK 3X1,5     |
|-----------------------------------|--------|----------------------------------------------------------------------------------|----------------|
| WORKING AREA                      | mm     | 2500x1250                                                                        | 3000x1500      |
| MAX. LOAD CAPACITY                | kg     | 500                                                                              | 700            |
| AXIAL MOVEMENTS                   | -      | -                                                                                | -              |
| X, U AXES / SERVO MOTOR TABLE     | mm     | 2250                                                                             | 3050           |
| Y AXIS / SERVO MOTOR BRIDGE       | mm     | 1270                                                                             | 1530           |
| Z AXIS / SERVO MOTOR CUTTING HEAD | mm     | 110                                                                              | 110            |
| ACCELERATION                      | G      | 1                                                                                | 1              |
| SERVO MOTOR MAX. AXIS SPEEDS      | m/min  | 106 (resulant speed) (X, Y single axis speed 75 m/min)                           |                |
| AUTOMATIC LOADING UNLOADING UNIT  | Pallet | -                                                                                |                |
| MACHINE DIMENSIONS (L x W x H)    | mm     | 8865x2400x1800                                                                   | 9365x3748x2200 |
| MACHINE WEIGHT                    | kg     | 5000                                                                             | 5500           |
| MACHINE AXES                      | -      | 4-Axis (X, Y, Z,U)                                                               |                |
| POSITIONING ACCURACY              | mm     | ± 0,1                                                                            |                |
| REPETITION ACCURACY               | mm     | ± 0,05                                                                           |                |
| CNC                               | -      | BECKHOFF 2215                                                                    |                |
| CAD/CAM SOFTWARE                  | -      | METALIX, LANTEK                                                                  |                |
| NETWORK CONNECTION                | -      | Ethernet                                                                         |                |
| CONTROL PANEL                     | -      | 15-inch screen 1024 x 768, alphanumeric keyboard, PLC keys, touchscreen keyboard |                |

| SPECIFICATIONS / RESONATOR   |       | YGL 1000 HE                       | YGL 2000 HE           | YGL 3000 HE           | YGL 4000 HE           |
|------------------------------|-------|-----------------------------------|-----------------------|-----------------------|-----------------------|
| RESONATOR                    | Watt  | 1000                              | 2000                  | 3000                  | 4000                  |
| LASER BEAM QUALITY           | rad   | < 0,4< 1< 2,2                     | 2 - 2,5               | 1 - 2                 | 1 - 2                 |
| POWER STABILITY              | %     | ± 1                               | 1 - 2                 | ± 0,5                 | ± 0,5                 |
| FIBER CABLE OUTPUT DIAMETER  | µm    | 20-50-100                         | 100                   | 100                   | 100                   |
| COOLANT FLOW RATE            | L/min | 16                                | 10                    | 20                    | 15                    |
| CUTTING CAPACITIES (MAX.)    | -     | -                                 | -                     | -                     | -                     |
| MILD STEEL ( S235JR,S355MC ) | mm    | 10                                | 16                    | 18                    | 20                    |
| STAINLESS STEEL (AISI 304)   | mm    | 5                                 | 8                     | 10                    | 10                    |
| ALUMINUM (AlMg3)             | mm    | 3                                 | 6                     | 8                     | 10                    |
| BRASS (CuZn37)               | mm    | 2                                 | 4                     | 5                     | 6                     |
| COPPER (Cu-ETP)              | mm    | 2                                 | 4                     | 5                     | 6                     |
| AVERAGE CONSUMPTION          | kW    | 14                                | 18                    | 20                    | 22                    |
| CUTTING HEAD                 | -     | Precitec Light Cutter             | Precitec Light Cutter | Precitec Light Cutter | Precitec Light Cutter |
| PULSE FREQUENCY RANGE        | kHz   | 0 - 5                             |                       |                       |                       |
| POWER RANGE                  | %     | 5-100                             |                       |                       |                       |
| LASER WAVELENGTH             | nm    | 1070 ± 5                          |                       |                       |                       |
| IMPULSE                      | -     | 0 - 10v                           |                       |                       |                       |
| ASSIST GASES                 | -     | -                                 |                       |                       |                       |
| STEEL                        | -     | Oxygen (0.5-6 Bar)                |                       |                       |                       |
| STAINLESS STEEL              | -     | Nitrogen ( 0.5-25)                |                       |                       |                       |
| ALUMINUM                     | -     | Dry Air or Nitrogen ( 0.5-25 Bar) |                       |                       |                       |

HAWK LASER CONTROL PANEL (OPEN BODY)



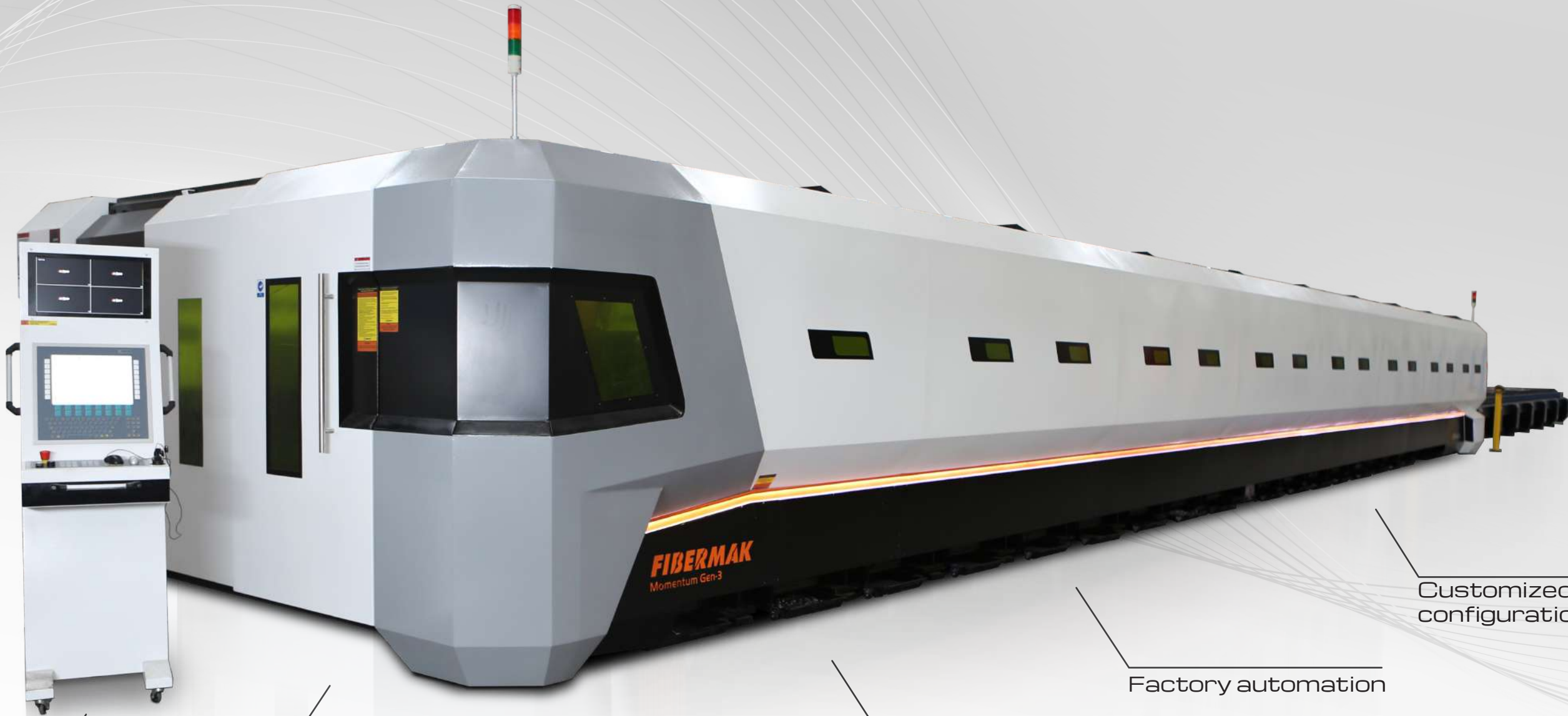
- Control panel is the unit which controls the system and sends the user commands to the machine.
- Control panel is resistant to various environmental conditions.
- With the speed adjustment potentiometer on the control panel, you can increase and decrease the axis speed in the working area.
- NC graphic display





# SPECIAL MACHINES

Special Machines  
for Special Jobs



Different size  
and power  
options

Advanced  
engineering  
studies

Bevel cutting  
options

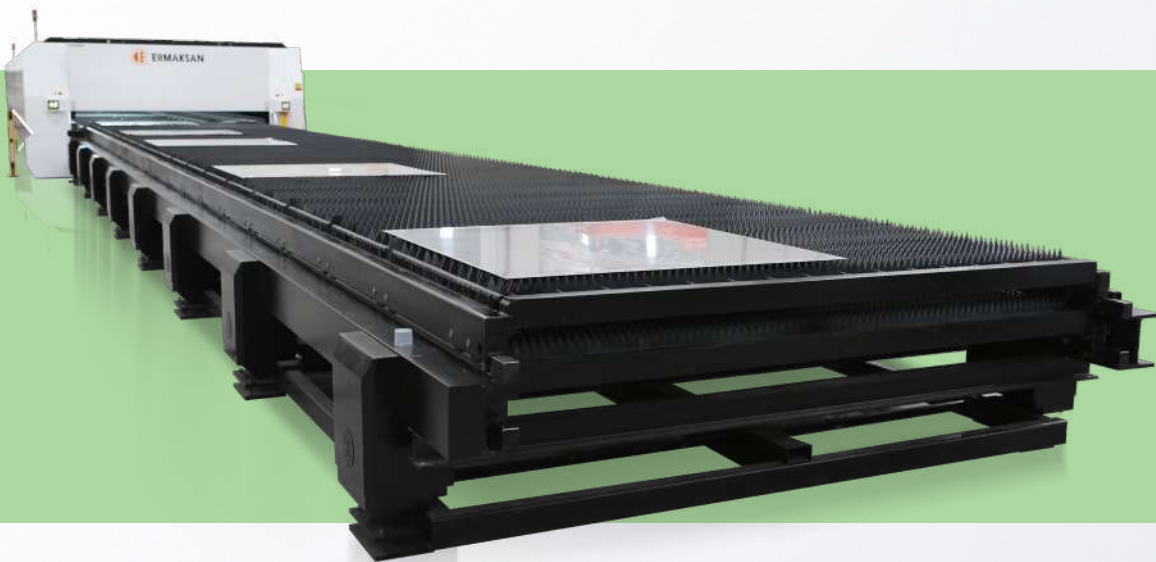
Industry 4.0

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 beveled 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.

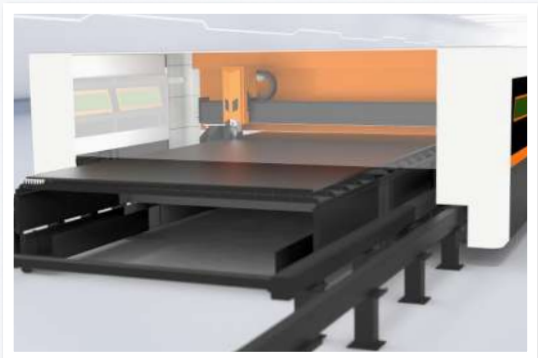
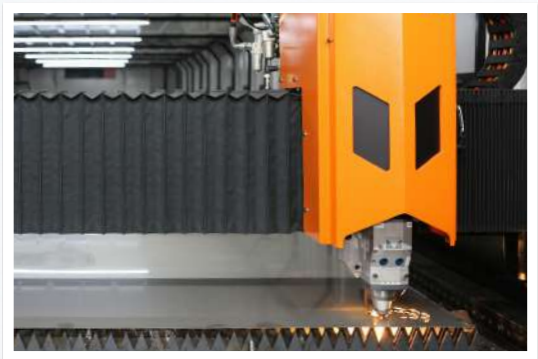
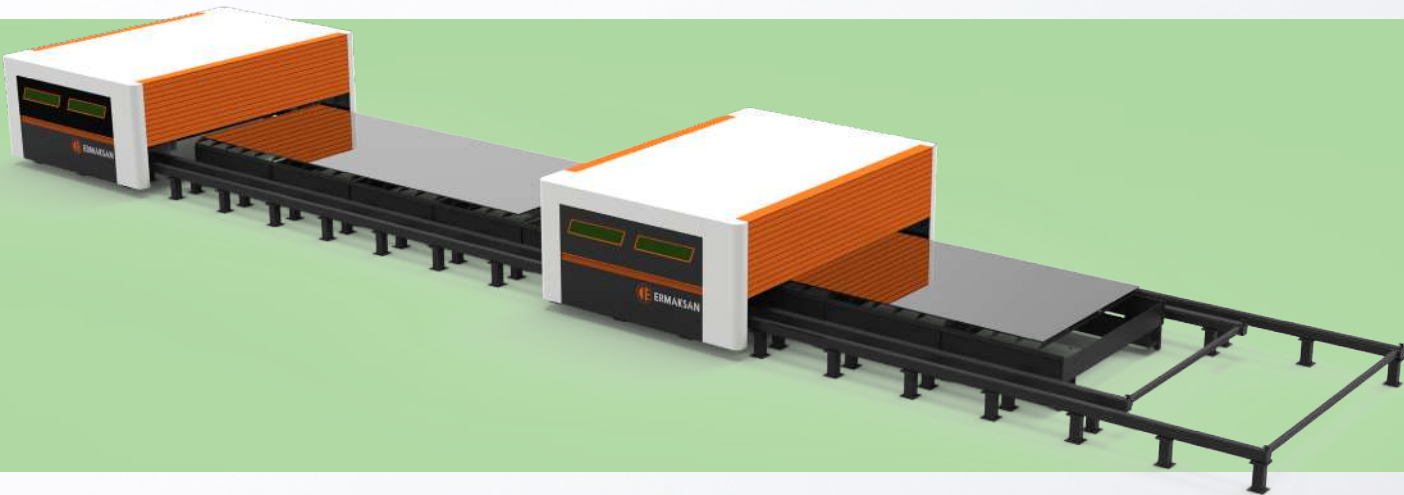




Dual Gantry Laser Cutting Machine

The Dual Gantry Laser Cutting Machine is an advanced solution that combines the capabilities of two laser systems into one versatile machine. With larger working areas of 8m x 3m, 14m x 3m, or even larger, this system features two independent gantries, each equipped with its own laser head and source. This configuration allows for precise and efficient cutting across separate or combined areas, with automatic tracking to ensure collision-free operation.

Every project has its own unique demands, and we focus on enhancing productivity by providing customized solutions tailored to meet each client's specific requirements.



FLEXIBILITY

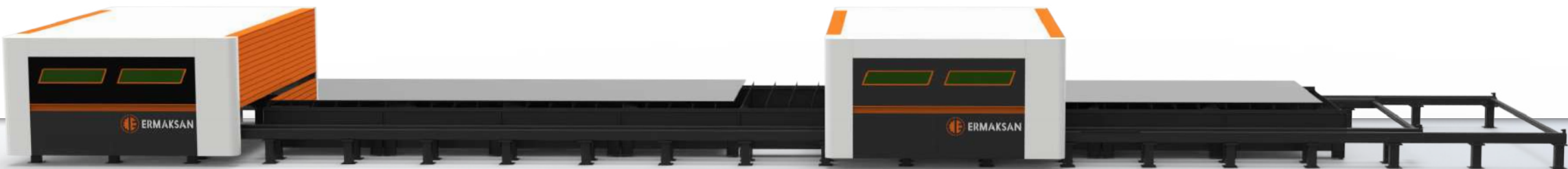
The Dual Gantry Laser Cutting Machine offers unmatched flexibility by simultaneously processing various metals—whether thin, thick, or different materials—with precision. Additionally, its two-gantry system allows the machine to handle specific tasks in separate working areas or process larger materials all at once, maximizing efficiency.

LOW ENERGY CONSUMPTION

With two resonators at different power levels, this machine optimizes energy use by cutting thin materials with a lower-power resonator. This approach ensures lower energy consumption while delivering superior cutting quality, regardless of material thickness.

PRODUCTIVITY

This innovative design merges two machines into one, offering manufacturers unparalleled productivity. The dual gantry system enables the simultaneous operation of both laser heads, leading to faster processing times and significantly higher throughput.





ART of  
AUTOMATION



# LASER AUTOMATION

Maximum  
Productivity



Fully compatible  
with Fibernak

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. In order to maximize the efficiency and profitability of your business by taking advantage of TOWERMAK, Ermaksan's professional team will help you determine the right combination of machine, tower, conveyor, and loading systems. Discover the laser automation solutions that best suit your needs.



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    | 1500x3000      |
|                                             |       | 1500x2500      |
|                                             |       | 1500x2000      |
|                                             |       | 1500x1500      |
|                                             |       | 1250x2500      |
|                                             |       | 1000x2000      |
|                                             |       | 1000x1500      |
|                                             |       | 1000x1000      |
| 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 | 2              |
| COMB AXIS MAX. SPEED (HORIZONTAL)           | m/min | 10             |
| CNC CONTROLOR                               |       | BECKHOFF       |
| MACHINE DIMENSIONS ( L x W x H )            | mm    | 5540x5560x3700 |
| ENERGY                                      |       | 380V, 50Hz     |
| TOTAL SYSTEM WEIGHT                         | kg    | 8100           |
| TOWERMAK MULTIMASTER 4x2 (3 PALLETS)        |       |                |
| SHEET DIMENSIONS                            | mm    | 2000x4000      |
|                                             |       | 2000x3000      |
|                                             |       | 2000x2000      |
|                                             |       | 1500x2500      |
|                                             |       | 1500x2000      |
|                                             |       | 1500x1500      |
|                                             |       | 1250x2500      |
|                                             |       | 1000x2000      |
|                                             |       | 1000x1500      |
|                                             |       | 1000x1000      |
| 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    | 7130x7015x4140 |
| 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 know your sensitivity"

The machines we produce using high technology with our experience of more than half a century have been contributing to precise and efficient production all over the world for years. Along with the dynamics of digital transformation, we offer customized solutions to our customers, make production more flexible and efficient, and offer the most cost-effective solutions. Thus, we are very proud of contributing to smart production processes in the fourth industrial revolution.





**FILTERING SYSTEM**

Ensures cleaning of smoke and small particles formed during cutting via suction. This system, which is activated automatically when the cutting starts, filters the harmful air in the cutting area and gives it back to the environment. Thus, a healthier working environment is provided.



**HANDWHEEL**

It is an equipment that facilitates the positioning of the head even without staying by the control panel.

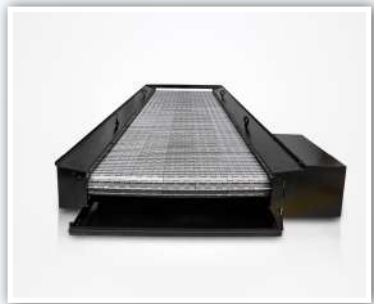
**WIRELESS HANDWHEEL**

Provides wireless and manual axis movements for quick positioning of the cutting head.



**PALLET CONVEYOR**

It is a system that enables the pieces falling into the machine during cutting to be brought to the operator by an automatic transport vehicle. With this system, while the workpieces reach the operator, on the other hand, the slag sticking to the workpieces is prevented by the discharge of the resulting scrap pieces.



**SIDE DISCHARGE CONVEYOR**

This is a belt system that transfers the pieces and slags falling from the grills to the collection chamber after the cutting process. It is removed from the side by design in order to reduce the waiting time in larger sized machines.



**ERMAKSAN RESONATOR**

State-of-the-art fibre laser resonators produced in Ermaksan Opto-electronics centre stand out with their power classes ranging from 1 to 15 kW, high beam quality, and advanced control features. Ermaksan's high strength; The fiber laser family offers users single mode and multi-mode options, while also providing excellent power; It also guarantees stability, high efficiency and beam quality.



**IPG-YLS SERIES RESONATOR**

IPG-YLS Series (Cabin type) resonators, which are provided according to customer needs and requests, have significant advantages thanks to the quality of easy and on-site maintenance. Power options from 1 to 20 kW are available.



**IPG-YLR SERIES RESONATOR**

Being customized according to customer needs and requests, IPG-YLR Series (Cassette type) resonators offer affordable solutions to their users. Power alternatives between 1 to 4 kW are available.



**IPG COOLING UNIT**

Provides cooling of the relevant parts for continuity and precision in cutting. The laser unit is the collimation part in the cutting head and the part that provides cooling of the lens. It has a water-based cooling system. It is used with IPG - YLS series resonators.

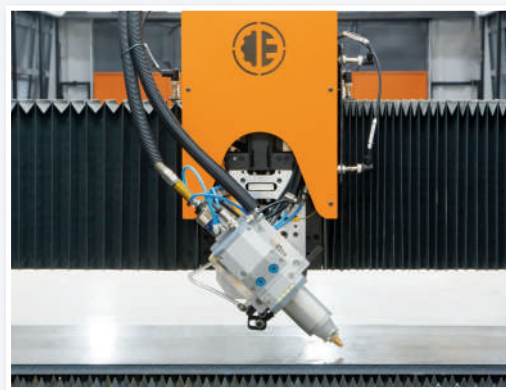




### CUTTING HEAD

- The beams produced in the laser unit are carried by the fiber cable up to the cutting head. The cutting head transfers beams from fiber cable to the processing surface.
- The beams arranged in the collimation unit are transferred to the focusing unit.
- The laser beam is set at the desired focus with the help of the lenses in focusing unit.
- The Protection Glass is the part that prevents the slag from cutting to damage the lenses.
- Instant system control can be done by the LEDs on the cutting head.
- The Height Sensor Insert is an element of the height control system used to adjust the distance between the cutting head and the machining surface. The information from here is converted into numerical values by transferring to an upper unit.
- Nozzle directs the auxiliary gases. Along with this, it helps to make height control.

### BEVEL CUTTING HEAD



- Thanks to its motor-controlled biaxial cutting head, it can move  $\pm 45$  degrees.
- For angled welding operations of 45 degrees or less, it is possible to cut angularly in a planar manner to open a welding groove.

### 3D BEVEL HEAD



- Makes 3D angled cuts possible
- It can cut up to  $\pm 45^\circ$  angle
- Easy wiring and assembly
- 360° rotation capability

### PRECITEC PROCUTTER 2.0 CUTTING HEAD

With the ProCutter 2.0 cutting head, you will no longer need to choose between high quality and high speed, because you can obtain both. The cutting head runs smoothly at high laser powers thanks to its advanced cooling concept and extended travel paths. Fluctuations in the quality of the material to be cut are resolved without any intervention of machine operator.

### PRECITEC PROCUTTER ZOOM 2.0 PIERCETEC CUTTING HEAD

The intended use of PierceTec is to confirm that the first piercing is completed and to allow the machine to start cutting without waiting for piercing time set from the CNC. This feature saves time and increases efficiency.

### PRECITEC PROCUTTER ZOOM 2.0 CUTTING HEAD

With its higher focal length and replaceable Spot Size feature, Pro-cutter enables fast cutting on thin materials and high quality cuts on thick materials.

### PRECITEC PROCUTTER THUNDER CUTTING HEAD

It offers permanently stable and precise operation. It provides highly dynamic drive and flexibility. It automatically controls the focus position and delivers outstanding results when machining different material thickness.

### PRECITEC LIGHTCUTTER AUTO FOCUS CUTTING HEAD

LightCutter is an ideal and economical solution for all laser cutting applications in low to medium power range up to 4 kW.





## CONTROLLER

- With the 21.5" Beckhoff control panel, Windows10® operating system and multi-touch screen used in Fibermak GEN-5 series laser cutting machines, it can provide all the information and parameters that the operator needs from a single screen and perform the necessary operations or changes online faster.
- All software on the control panel has been written by Ermaksan engineers. Thanks to its flexible structure, the places of the menus used can be changed according to the needs and usage habits of the operator.
- Integrated camera system helps to monitor the cutting process on the CNC screen.
- The device works more efficiently by providing information on how often and at what intervals operators should perform device and equipment maintenance.
- Thanks to Industry 4.0 integration, the working efficiency of the machine can be continuously monitored.
- Thanks to the user interface, operators are prevented from accidentally interfering with the system and high-level users can easily control this flow.
- If changes to the cutting parameters are forgotten, the cutting parameters embedded in the system can be recalled.
- It is possible to re-create cutting parameters with precise definitions for different materials and cutting types.
- With the multi-camera system option to be added to the system, online transactions can be monitored and recorded with more than one camera. Information messages can be sent to phone numbers with sim card support option integrated in the operator panel.
- By connecting the system to the internet, machine status and information can be sent to the given e-mail addresses.
- By connecting the system to the internet, machine status and information can be sent to the provided email addresses.
- With the adjustable arm added to the control panel, the control panel can be adjusted to the desired angle, inclination and height.

\*Different versions of BECKHOFF can be offered for different model machines

## BECKHOFF CONTROLLER



## ERCUT 7 CONTROL PANEL

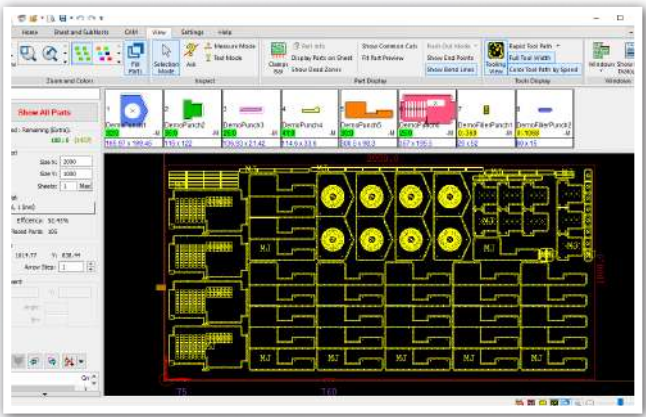


- The shuttle table is controlled more safely and quickly with the CNC control panel on the rear side of the machine.
- 7" colour touch screen with high brightness and resolution
- The error and warning messages displayed with pop-up windows provide users the best user experience
- Thanks to the simple and plain interface, it provides the user a comfortable and reliable experience



**METALIX CAD/CAM**

Offering a complete and comprehensive CAD/CAM solution, Metalix updates its software based on the latest developments in sheet metal processing technologies.

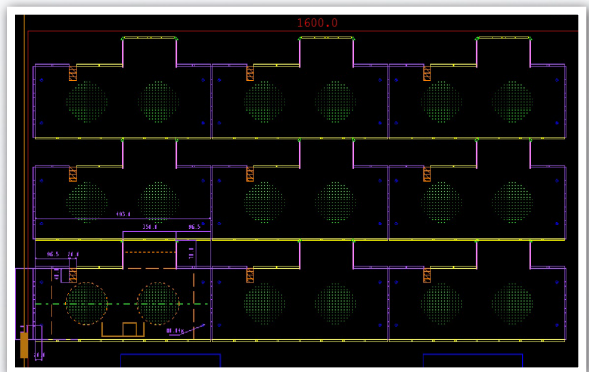
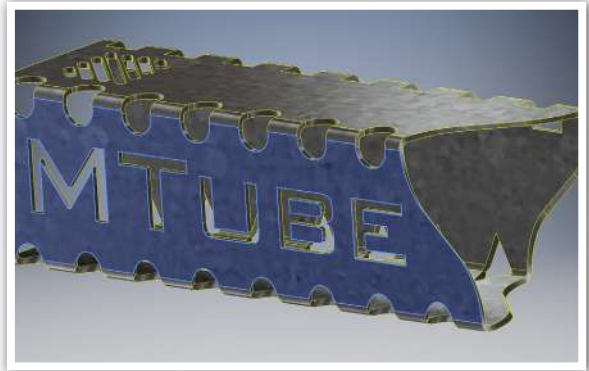


**METALIX CAD/CAM**

- High accuracy Time / Cost analysis
- Nesting with minimum waste rates
- Cameraless terminal license standard
- 2D & 3D import from Solid with Cadlink
- High and effective programming speed
- Mtube in machines with pipe cutting option
- Use of multiple machines with single license

**CAD/CAM TECHNICAL SPECIFICATIONS**

- All the functions of the CAD/CAM software are integrated in a single program, thus functions such as part design, call, nesting (automatic or manual) etc. can be used without switching the program.
- Production management process: CAD/CAM software is ready to connect to production management systems (ERP) by means of automatic processes.
- Teamwork: It can be used either as an independent productivity cell or as a part of a network system.
- Sheet metal stock with part management and open database: All parts information are stored in databases that is organized so that users can easily find the needed parts and sheets since they are classified based on fields such as material, thickness, etc.
- 2D design: CAD/CAM software has advanced geometry and editing functions.
- Real time cost calculation: CAD/CAM software calculates the cutting time and cost. This calculation takes into account the number of piercing, cutting length, marking, material cost, hourly operation of the machine, auxiliary material costs.
- CAD/CAM software can be used to make bevels on side surfaces.



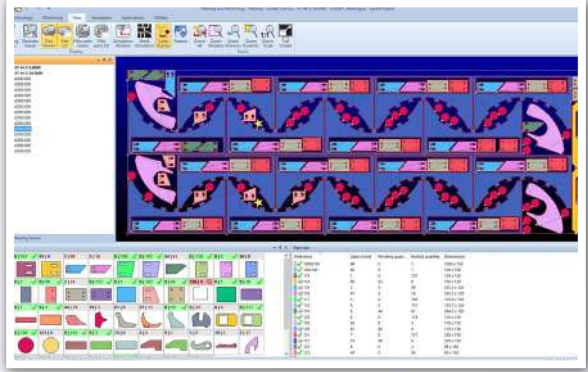
**LANTEK INSIDE CAD/CAM**

Programming with Lantek Inside is as easy as using your smartphone. The operator can easily design the program and initiate the cutting process.



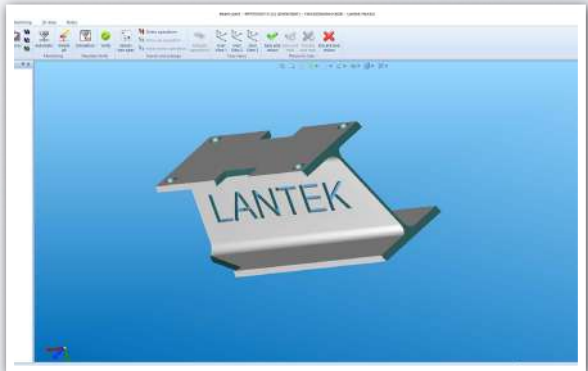
**LANTEK EXPERT CUT CAD/CAM**

Lantek Expert Cut is a nesting software designed for users to simply follow the steps specified by the system. This system is a combination of automatic, semi-automatic and manual nesting that provides great flexibility and optimum performance.



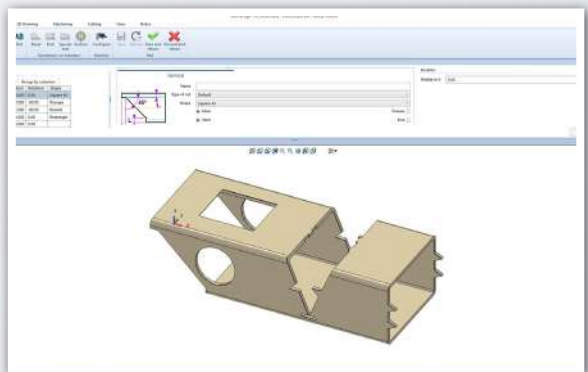
**LANTEK FLEX3D CUT CAD/CAM**

It facilitates 3D CAD/CAM design and cutting of standard profiles, including square or round pipes. The automatic and semi-automatic features of 3D nesting software maximize the use of materials and optimize CNC code with anti-collision technology.



**LANTEK FLEX3D TUBE CUTTING**

Lantek Flex3d Tubes is a CAD/CAM software system for designing, nesting and cutting pipes and pipe pieces. The system is a parametric system that allows the user to change the values of any previously performed operations, including changes in the initial parameters of each pipe (extension, shortening, diameter change).







PROFILE AND PIPE CUTTING OPTION

In our FiberMak Momentum series machines, in addition to flat bed cutting, we also offer our users the options of pipe and profile cutting.

While your machine performs flat bed metal cutting, your operator saves time by connecting the pipe or profile to be cut on the loading-unloading cart independent of the shuttle tables.

One fixed chuck and one driver chuck are used during pipe, square, rectangular, "U" and "L" shaped profile materials cutting. Support clamps are also used in the material loading section and the cut material section.

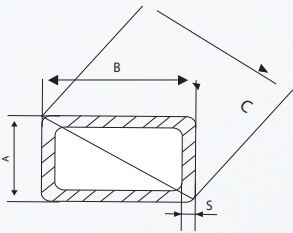
In addition to the Cad/Cam software for flat sheet cutting delivered with our machines which are provided with Pipe - Profile cutting option, a 3D Cad/Cam software is also provided where it is possible to draw and/or load drawings of the pipe and profile parts, to open the desired holes and figures, to perform nesting operations and cutting simulations.

PIPE - PROFILE WALL THICKNESS

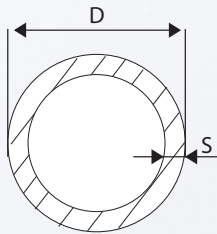
| Laser Source Power | Mild Steel | Stainless steel |
|--------------------|------------|-----------------|
| 0,5 kW             | 4 mm       | 2 mm            |
| 1 kW               | 8 mm       | 4 mm            |
| 2-3-4-6 kW         | 8 mm       | 8 mm            |



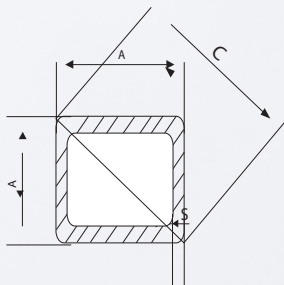
Pipe and profile cutting option to increase the production efficiency



|       | MIN   | MAX    |
|-------|-------|--------|
| A(mm) | 20    | 100    |
| B(mm) | 30    | 150    |
| C(mm) | 36,06 | 180,28 |



|       | MIN | MAX |
|-------|-----|-----|
| A(mm) | 20  | 200 |



|       | MIN   | MAX    |
|-------|-------|--------|
| A(mm) | 20    | 140    |
| C(mm) | 36,06 | 180,28 |



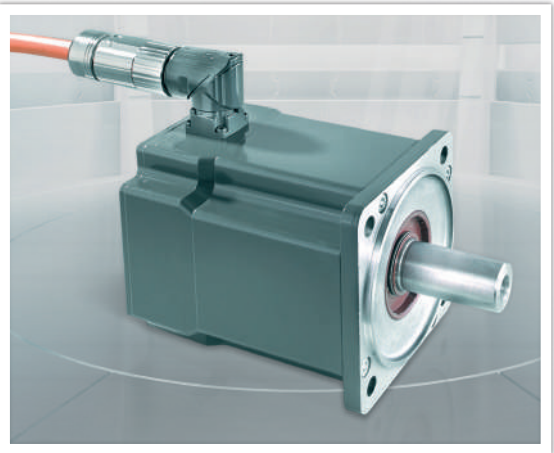
Pipe and profile cutting option allows to cut the pipe, square, rectangular, "U" and "L" shaped profiles.



## SERVO MOTOR TECHNOLOGY

Single-wire servo technology offers more precise positioning. Positioning is done micron level precision. This is one of the basics for the accuracy of the part geometry.

- Low cost without compromising the performance
- Low energy consumption
- Easy maintenance and repair
- Low maintenance need



## LINEAR MOTOR TECHNOLOGY

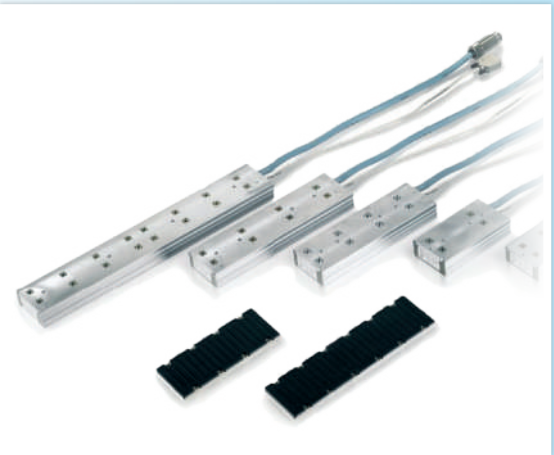
Fibermak uses linear motor technology in bridge motions.

## LINEAR MOTOR WORKING PRINCIPLES

In linear motors, the position information is read over the linear scale through the optical eye. In this case, position control is ensured with micron level precision.

Due to the fact that linear motors work in frictionless environment;

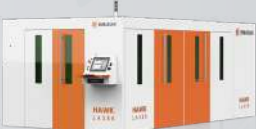
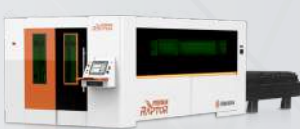
- It reaches high speed and acceleration easily.
- Its maintenance is practical and easy.



## SHUTTLE TABLE

It consists of two movable tables. While processing on the table inside the machine continues, the other table can be loaded with sheet metal or machined parts can be collected. In this way, it allows continuous cutting. In addition to the shuttle table, full automatic loading and unloading systems may also be added.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |       |    |        |      |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|----|--------|------|-------------|
| <div></div> |       |       |    |        |      |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | GEN-5 | GEN-3 | SL | RAPTOR | HAWK | THUNDERBIRD |
| Lineer 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 (5m 3x1,5m için)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ○     | ○     | —  | —      | —    | —           |
| Profile Cutting Trolley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ○     | ○     | —  | —      | —    | —           |
| Shuttle table                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ●     | ●     | ●  | ○      | —    | ●           |
| Central Lubrication System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ●     | ●     | ●  | ●      | ●    | ●           |
| Suction Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ●     | ●     | ●  | ●      | ○    | ○           |
| 45° Bevel Cut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ○     | ○     | ○  | —      | —    | —           |
| 3D Bevel Head                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ○     | ○     | ○  | —      | —    | —           |
| Slag Cleaning Device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ○     | ○     | ○  | ○      | ○    | ○           |
| Side Conveyor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ○     | ○     | ○  | —      | —    | —           |
| Anti-Collision System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ○     | ○     | ○  | ○      | ○    | ○           |
| Industry 4.0 (IoT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ○     | ○     | ○  | ○      | ○    | ○           |
| ERAI (Artificial Intelligence)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ●     | ●     | —  | —      | —    | —           |

● 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.

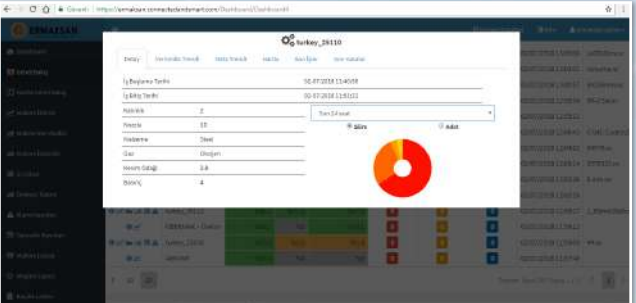
- ANY WHERE**  
Monitor and track machine performance over the flexible easy to use WEB interface from any where
- ANY TIME**  
Reach your machine performance data any time you like.

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



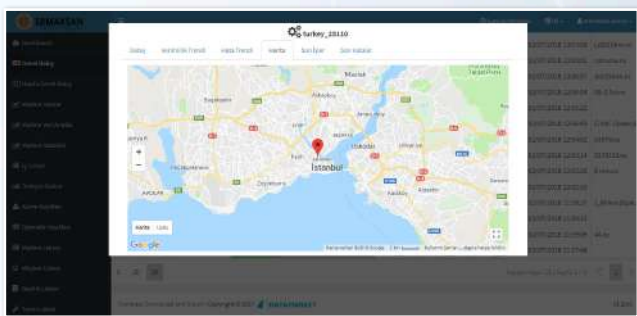
Collects all the information during the stand-by, production and preparation processes to generate a general productivity chart.

EQUIPMENT DATA



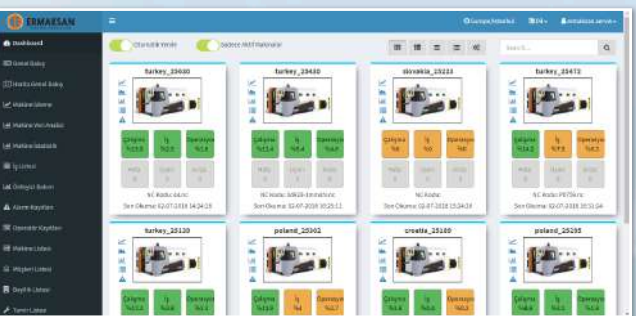
It shows the instantaneous data of the operational elements of the machines as trend graph.

MACHINE MONITORING SCREEN



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

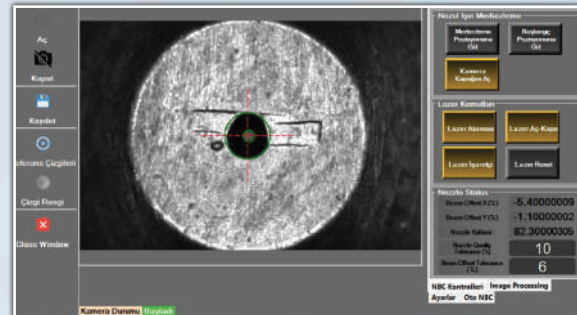
STATUS OF THE MACHINES



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



The camera-aided laser beam centering adjustment system enables the operators to adjust the laser center effortlessly when needed.

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.

## 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

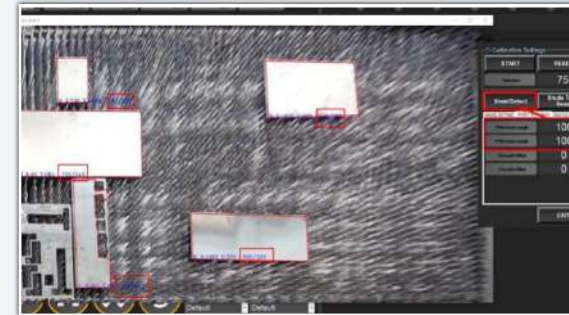
## MIXED GAS



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.

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

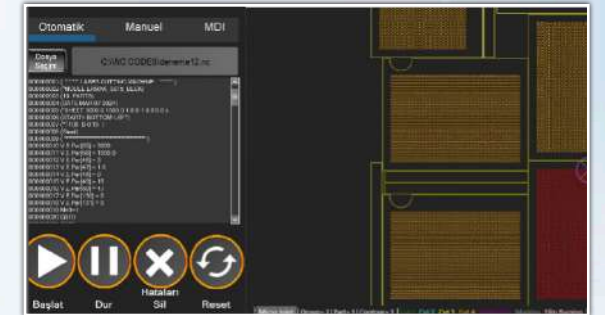
## AUTO SHEET / MULTISHEET



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)

## NC GRAPHICS AND REALTIME STREAMING



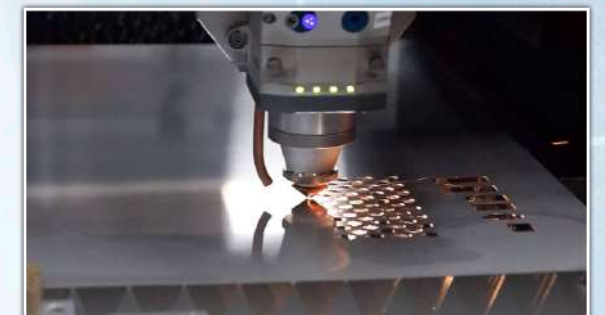
While the machine is cutting, it displays the 2D graphic of the NC code in color and allows you to follow which line of code it is on, all within a simple and user-friendly interface.

## ERAI - AI ASSISTANT



With ERAI - AI Assistant, discover features you didn't know about your machine, access solutions to errors, and have a guide to show you the way. ERAI is always there for technical support and guidance.

## FAST PIERCING

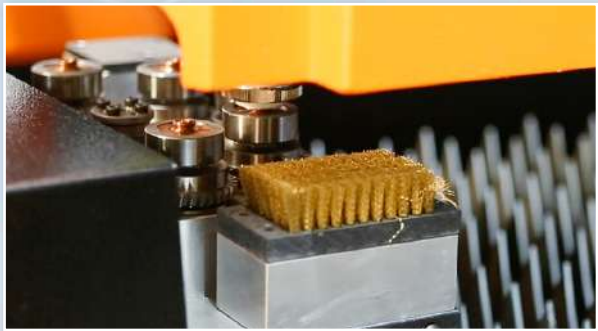


This technology provides the capability for quick and precise piercing in a shorter time. It enhances efficiency with monitored processes and focus adjustment. Synchronized with the cutting head movement, it optimizes operations for medium-thickness plates without requiring extra time or movement.



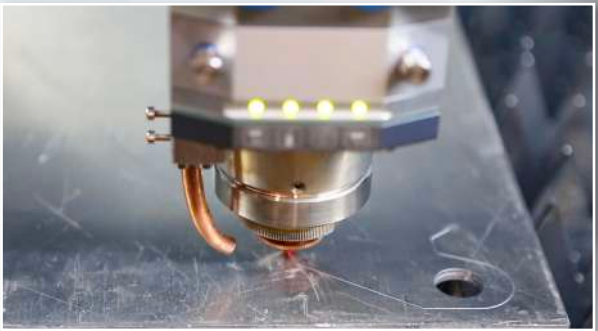
“Smart features help manufacturers minimize downtime, reduce waste, improve quality, increase output and optimize production processes. Thus helping to increase productivity”

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



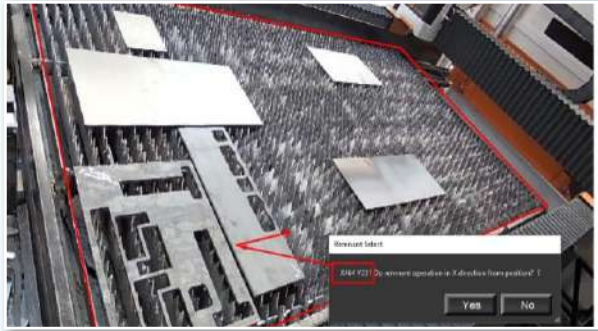
An automatic profile alignment system has been developed for precise profile cutting with a profile cutting table in machines with Fibermak pipe and profile cutting options. This feature prevents measurement drifts that may occur in profile cuts.

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.





"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.





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\* EN \* FL V1.1 / 23 / Catalogue information is subject to change without notice.