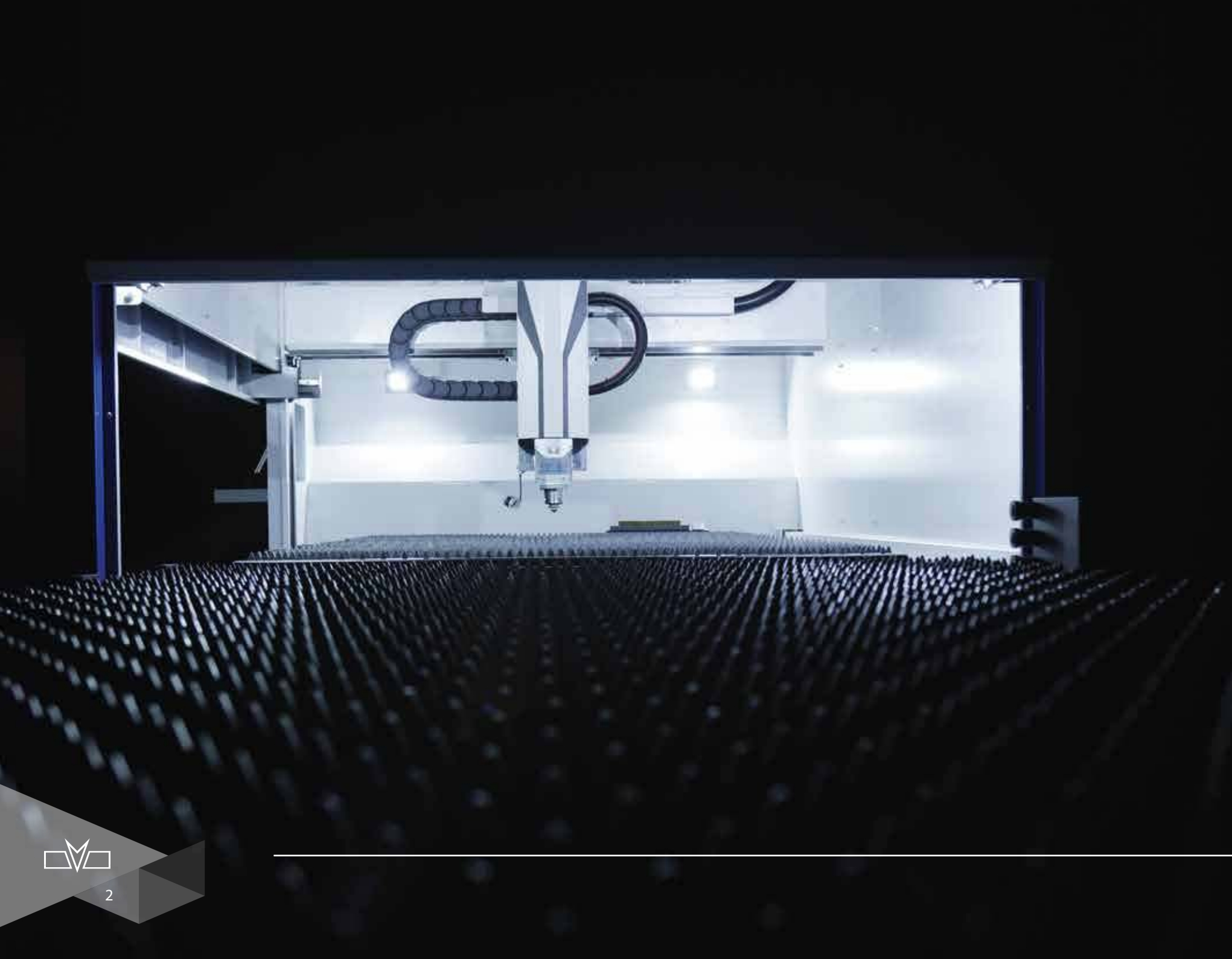

STEELBURNER
HYPERION

Hyperion the God of light. A Titan in Hellenic mythology.



Contents

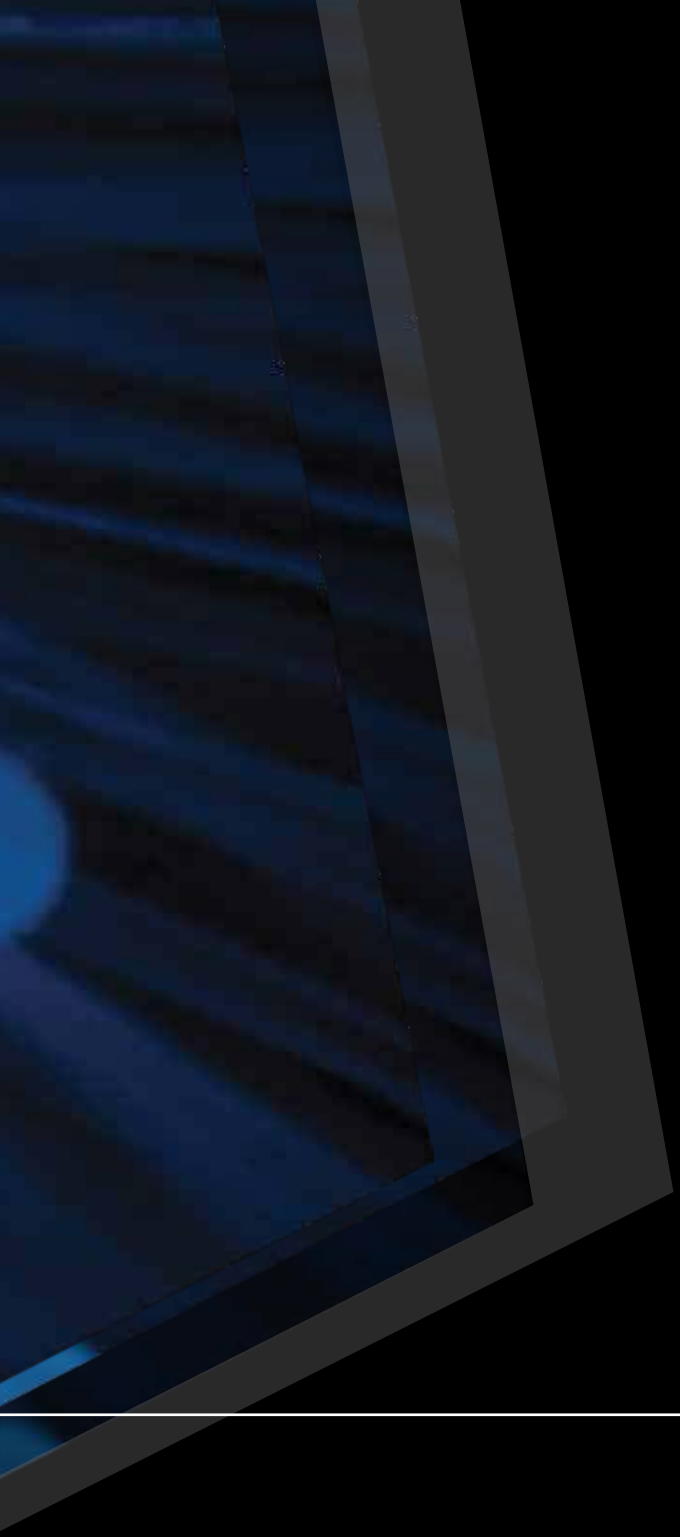
Fiber Technology 4-5

Hyperion Q Series 6-9

- Construction & Design 10-17
- Performance 18-21
- Interface & Control 22-25
- Features 25-29

Technical Data 30-31





Fiber Technology

When steelburner's engineers started working on Hyperion, they knew that it was essential for the machine to be equipped with the latest fiber technology!

Fiber laser is the leading technology because:

It is reliable

Able to work trouble free for over 100.000 hours. Even if a malfunction appears, the modular design makes the system possible to work with reduced power until fully repaired.

It is cost effective

With no moving parts, no laser gases, no mirrors and no lamps, the Fiber Laser source needs minimum to none maintenance. The absence of power loss during beam delivery and no need of mirror alignment ever, minimize the working cost.

It is environmental friendly

With over 5 times less energy consumption and wall plug efficiency over 40% compared to CO2 laser technology, the environmental impact is significantly reduced. This impact is further limited by the much lower cooling requirements and the zero-power consumption when the system is idle.

It is much faster

Over 5 times faster cutting speeds in thin sheets compared to CO2 lasers and almost as fast in thick sheets. In thick sheets piercing time with Fiber laser is much faster than with CO2 lasers.

It is more versatile

With Fiber laser technology, all kinds of metal can be cut. Mild steel, Stainless steel, Aluminium, Brass, Copper, Titanium and special steel alloys can be processed.

It is more accurate

The smaller spot size and the higher absorption rate from the materials, make even the most complex and precise contours possible without any problem.

Q SERIES

Hyperion Q is the flagship among our CNC laser cutting machines.

The Laser is Diode Pumped with a doped fiber as gain medium where most of the laser module is made of fiber. No laser gases are used and no mirrors for beam delivery are needed. Instead, the laser beam is guided to the material through a fiber optic cable.

For manufacturing of Hyperion Q series, the most advanced and world-wide proven components are used. The same components have successfully gained the trust of the world's largest machine tool manufacturers.

As a result of our constant effort for improvement, we introduce the brand-new Hyperion Q Fiber Laser system. Even faster, more precise and friendlier to use.

Hyperion Q is proudly engineered, designed and manufactured in Europe.

Hyperion Q series In Numbers

30 kW
maximum laser power

180 m/min
maximum positioning speed

3 G
maximum acceleration

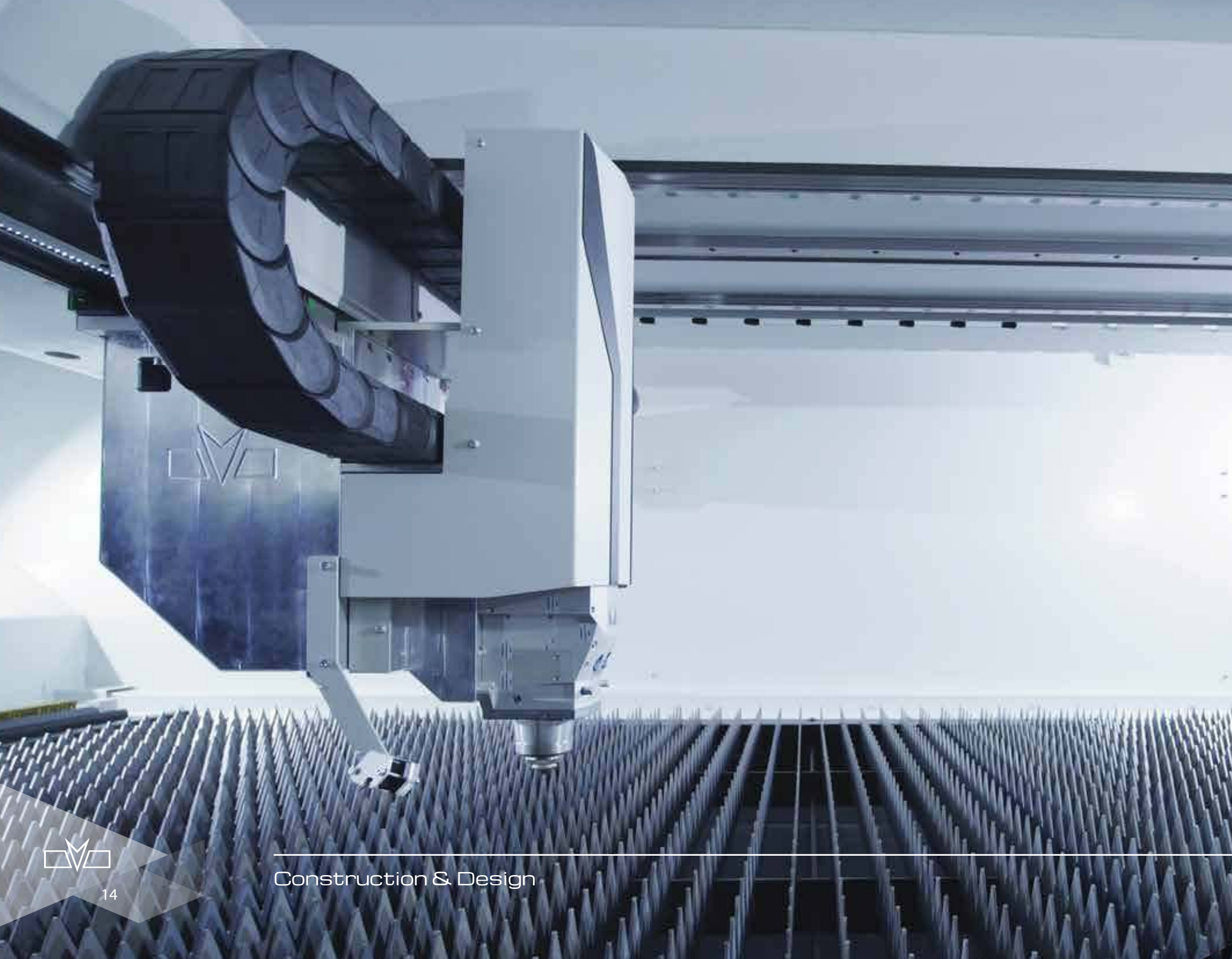
60 mm
maximum thickness



Construction & Design



Steelburner’s goal was to combine a robust , solid construction with an all-in-one , compact yet beautiful design!





Construction & Design

If we were asked to describe the design of Hyperion Q with only one word, the one that comes directly to our minds is ...Clever!

The frame follows the closed cross section principal. It is made of high-grade carbon steel, fully welded, annealed to be relieved from internal stresses and then machined in a high precision milling center. By this we have managed to keep the footprint remarkably small and at the same time eliminate any deformation during operation.

To increase performance all moving parts are made of high-strength aluminium alloy and the moving bridge is inspired from aircraft structure. Exceptionally stiff, lightweight and fully balanced, able to handle high acceleration and speed without sacrificing accuracy when cutting contours of high complexity.

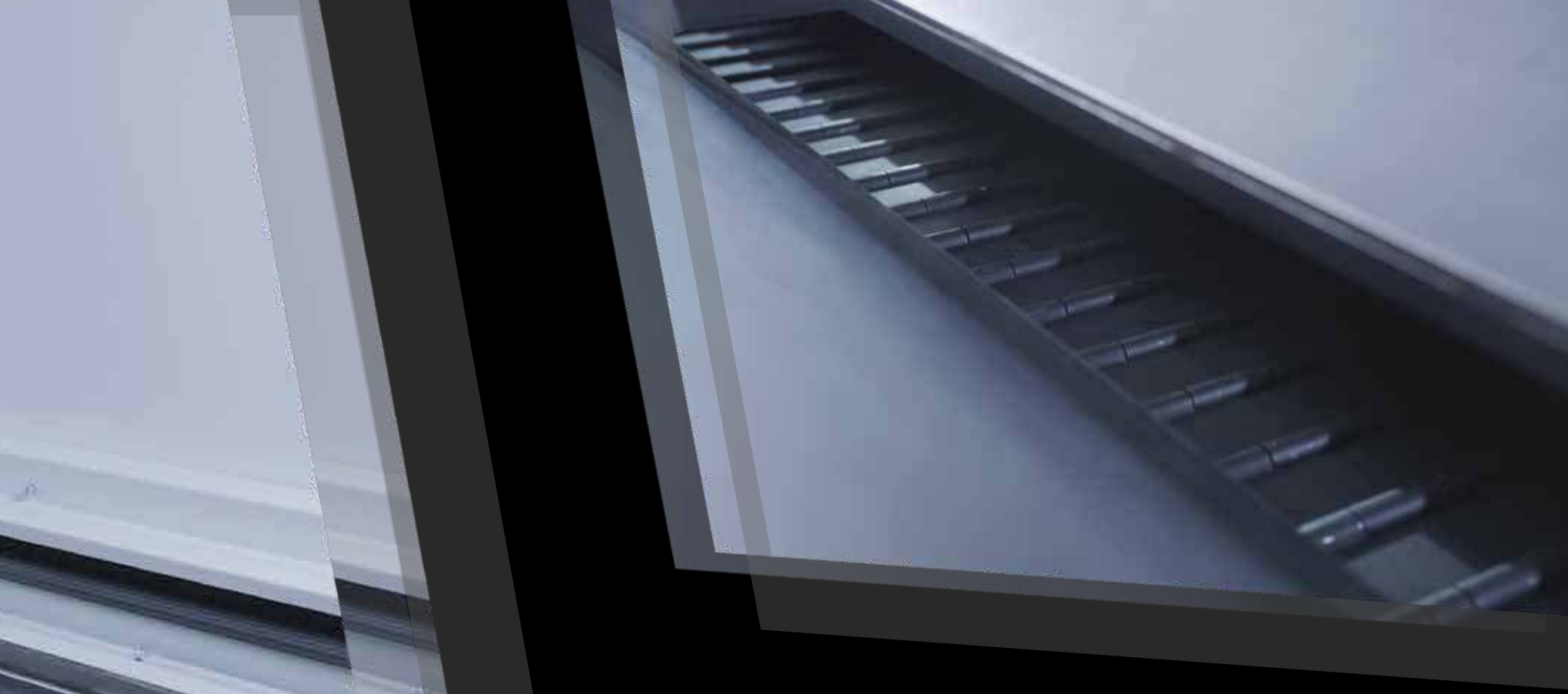
The base of the machine is also the housing of all vital components. All external equipment like laser source and water chiller, are incorporated into machines housing. The machine is very compact in one unified piece. The small footprint makes Hyperion Q suitable to fit in any working area, and the ''plug & play'' design limits installation period as low as one day.

Small Footprint

Massive Construction

Helical Toothed Rack & Pinion Drive





Focused on detail!

- Fully automated vertical doors
- Easy accessible process area
- Automatic twin pallet shuttle table
- Twin system laser protected conveyor belt


M_A= 6 Nm



Performance

Performance

This powerhouse is equipped with the most advanced and worldwide proven components and technologies.

The exceptional quality helical toothed rack and pinion drive system, combined with the best servo motors and the most precise gearheads available in the market, ensures speed of 180m/min and acceleration of 3G. Even with this performance the energy consumption is kept as low as possible.

The focusing head comes from Precitec. Able to adjust the focusing point in milliseconds and measure the distance from the material with 0.01mm precision. It is designed to handle high pressure assist gas and it is equipped with various monitor sensors. Optionally the beam diameter can be manipulated to achieve maximum performance in both thin and thick materials.

Part of the standard equipment is the automatic three gas selector and the high resolution fully automatic proportional assist gas valve. The assist gas pressure is controlled with less than 0.1 bar accuracy. The operator can set the type and pressure of assist gas from CNCs database without any manual intervention.

The shuttle table is motorized and controlled from CNC providing smooth vertical movement. In standard equipment the machine comes with dual pallet shuttle table and it is able to swap the tables in just 30 seconds, significantly reducing the dead time between job execution.



180m/min speed

Up to 60mm thickness





Table swapping time 30s

3G Acceleration











Interface & Control

Interface & Control

Hyperion Q was designed with the operator in center. We have tried hard to make Laser cutting easy!

The “brain” of the machine is a high-end PC based CNC control in Windows operating system environment, using EtherCAT communication protocol, which is the fastest in the market. The operator’s interface is a large 24inches multitouch monitor. From there all machine’s controls are a few touches away. Wired or wireless connectivity is available with familiar Windows network tools. Many USB ports are available for even more versatile file transferring.

Steelburner’s software engineering team has evolved a laser parameter management software which takes care of all parameters for cutting and piercing process for each material and thickness. The laser power, pulse frequency, assist gas type, gas pressure, focus position, nozzle standoff and other parameters, that lead to the exceptional piercing and cutting quality. After stored, they can be recalled any time by a single touch of a button.

Hyperion Q machines are equipped with monitoring system featuring four HD cameras, with one of them mounted directly on the cutting head. The cameras are connected to a dedicated 24inces monitor with the capability of viewing all four cameras simultaneously. This makes operation even easier and safer.



Easy to use

Pre-installed fully customizable material parameter database



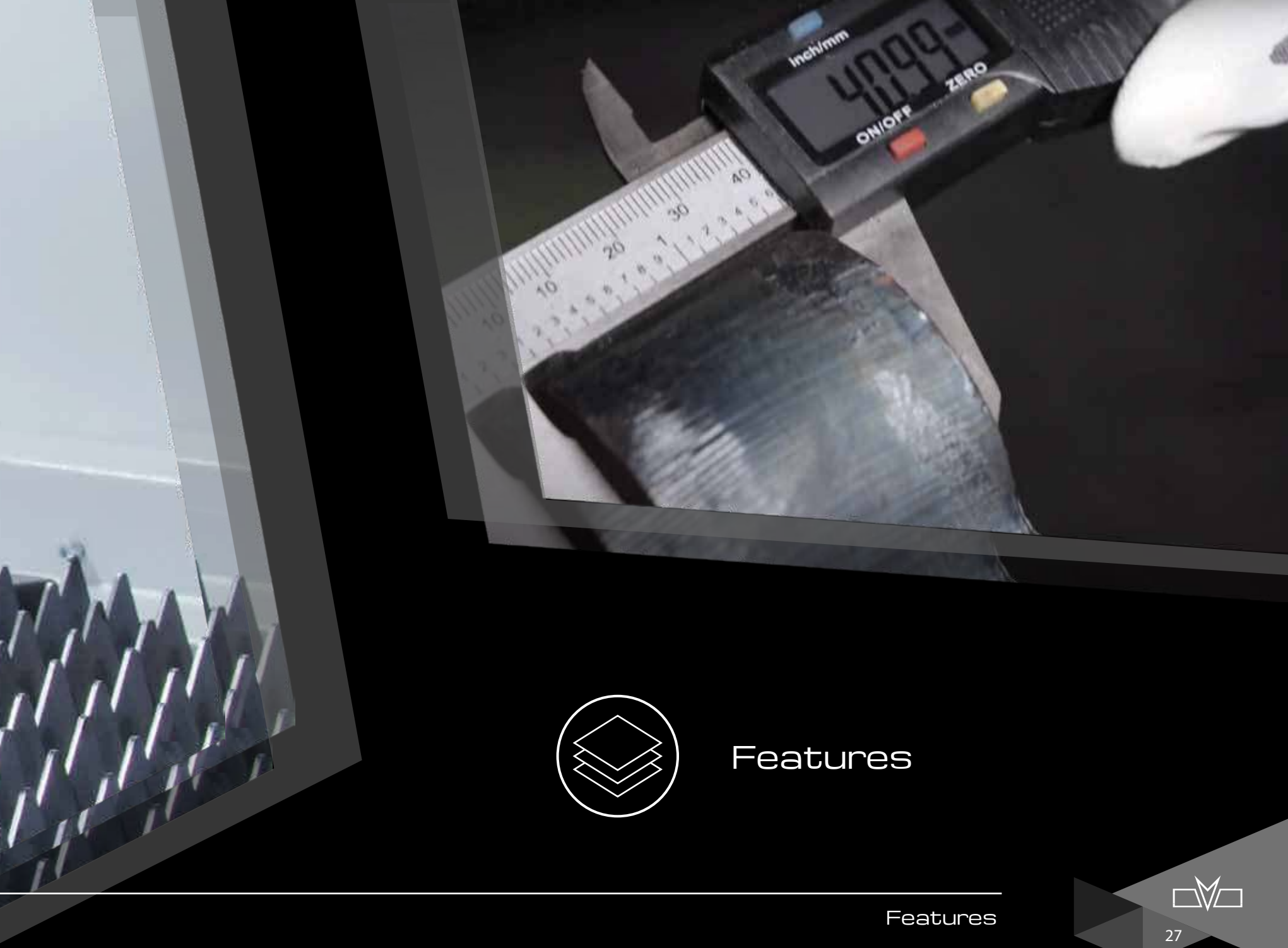


Connectivity and remote support tools

HD camera network for process observation







Features

Functions

Fly Cut

Cutting arrays of circular or rectangular contours by keeping constant speed and switching the Laser beam depending on the exact position. The result is cutting over 500 holes in just one minute.

Automatic Nozzle cleaning

The nozzle can be cleaned automatically on a special soft metal brush by the touch of a button.

Frog jump

Moving between contours with parabolic movement. The retraction height is depended on the distance of the next contour.

Fast Cut

Direct cutting by skipping piercing sequence and reducing retraction height. This process is time saving on thin materials.

Plate Determination / Detection

Automatic search of plates zero position, angle and size. The procedure can be performed automatically or manually before starting a cutting job.

Laser Marking

Able to mark using laser beam on parts before cutting them. Marking and cutting contours are included in the same job. No need to load different files for marking and cutting.

Film Burning

Performing a pass using the laser beam to evaporate the existing protection foil cover over stainless steel or sensitive metal surfaces without damaging the material below the cover. After film burning the cutting is much faster with excellent quality.

Automatic height sensor calibration

The sensor can be calibrated automatically in some seconds. Change of nozzle's size and shape is easy and the measuring of distance is kept always precise.



Add-ons

Automatic nozzle changer

Station to automatically change nozzles on the cutting head can be optionally added. List of jobs of different materials and thicknesses can be programmed to be automatically executed.

Spot Diameter Manipulation Focusing head

With one focal length lens, the spot size can be adopted accordingly to achieve the best performance in all thin and thick material. The maximum speed is reached on thin materials and CO2 Laser quality on thick materials. Piercing time is significantly limited on thick materials.

Sheet loader

An optional sheet loader can be added. In cooperation with the dual pallet shuttle table the productivity is increased and no other personnel but the operator is needed.

Sheet Storage Tower

Storage tower for sheet metal can be installed. Able to store over 30 tones of sheet metal it is the perfect solution for workshops aim to save floorspace. Can be combined with the automatic sheet loader to further increase productivity.



Technical Data

Hyperion Q	Models 3015	4020	6020	6025
Cutting Area	3020x1520x100 mm	4020x2020x100 mm	6020x2020x100 mm	6080x2580x100 mm
Overall Dimensions	8500x2400x2200 mm	10500x2900x2200 mm	14500x2900x2200 mm	14800x3500x2300 mm
Weight	12000 kg	17000 kg	21000 kg	25000 kg
Max Speed	180 m/min	180 m/min	180 m/min	180 m/min
Max Acceleration	3 G	3 G	3 G	3 G
Positioning accuracy	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Repeatability	0.025 mm	0.025 mm	0.025 mm	0.025 mm
Maximum Load	900 kg	1600 kg	2400 kg	3000 kg

Max. Sheet Thicknesses	Watt 4000	6000	8000	10000	12000	15000	20000
Mild Steel	20 mm	25 mm	30 mm	35 mm	40 mm	50 mm	60 mm
Stainless Steel	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	50 mm
Aluminium	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	50 mm
Brass	8 mm	12 mm	15 mm	20 mm	25 mm	25 mm	25 mm
Copper	6 mm	10 mm	12 mm	15 mm	20 mm	20 mm	20 mm

· Fiber laser generator of 30kW is also available.

www.steelburner.gr



www.steelburner.gr