

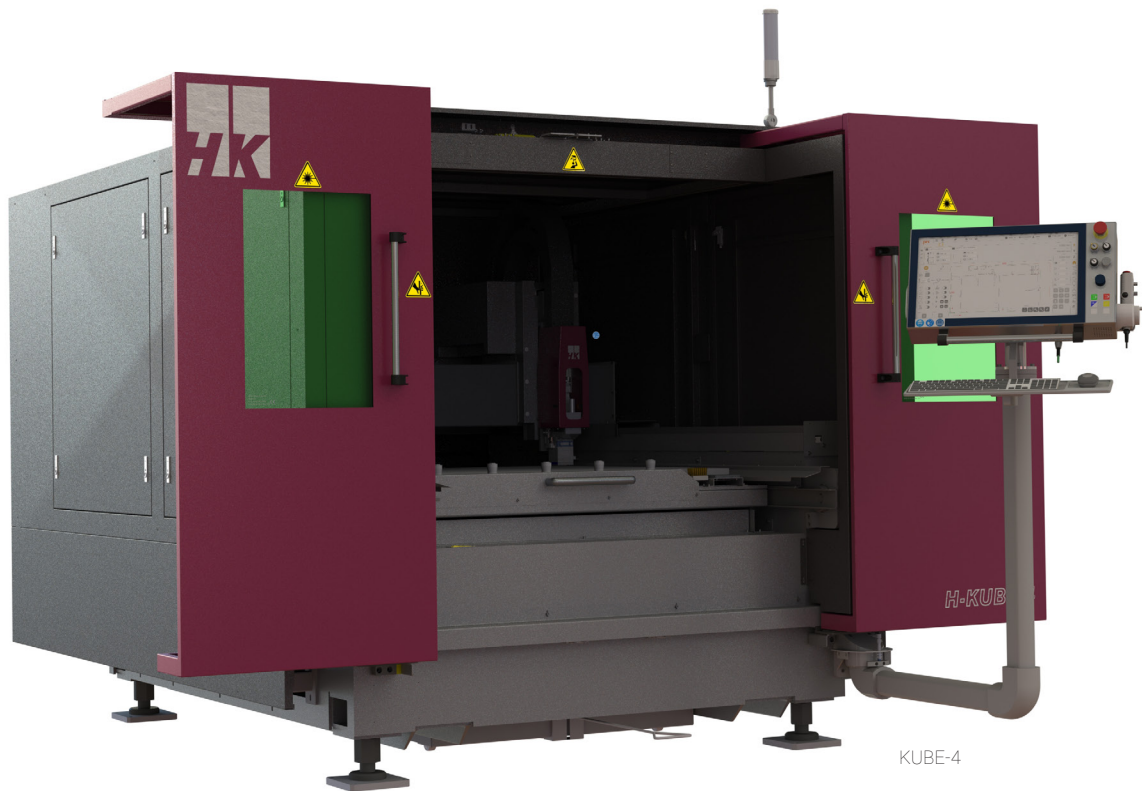


H-KUBE 4

SMALL-FORMAT LASER CUTTING SYSTEM



4x4 FLATBED LASER CUTTING MACHINE



H-KUBE flatbed fiber cutting system is designed and built for small-footprint production environment, with great flexibility and productivity of sheet utilization with high-precision laser cutting, and includes a convenient material handling process. It is easy to install and set-up, designed to lower the operation cost, with high output due to its unique and ergonomic design for loading/unloading

Small Footprint - High Productivity - High Efficiency - Affordability

- Compact 4' x 4' system footprint saves shop floor space
- Machine's frame is a built in solid stiff structure and durable for high-speed cutting
- 3kW fiber laser provides high-speed, high-quality laser cutting for a variety of materials
- Unique and ergonomic design for pull-out cutting table enables fast load/unload for the raw and processed sheets
- Built-in 4' x 8' support table system is unique on the H-KUBE, and enables efficient handling and cutting of a 4'x8' sheet
- X-Y-Z motion system optimized for this compact laser system, and provides high-speed laser cutting
- Cutting table is locked inside the machine on four points by robust mechanism
- The work-table can be rotated nearly vertically for easy load/unload of materials
- The entire 4'x 4' work area is accessible from over-head loading/unloading solution
- The electrical cabinet is completed integrated to the machine frame
- User-friendly high-speed PC based control with touch-screen and intuitive HMI screen
- The front door is a fully sealed cover design and the opening/closing process is operated by one touch control button

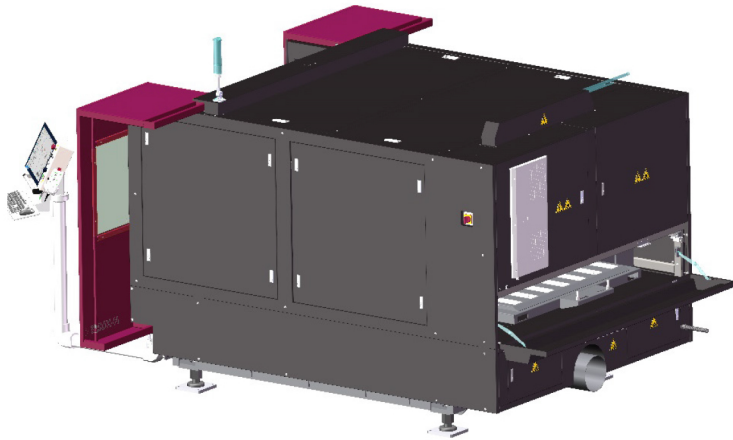
KUBE - 4

OVERSIZE SHEET SUPPORT (OPTION)

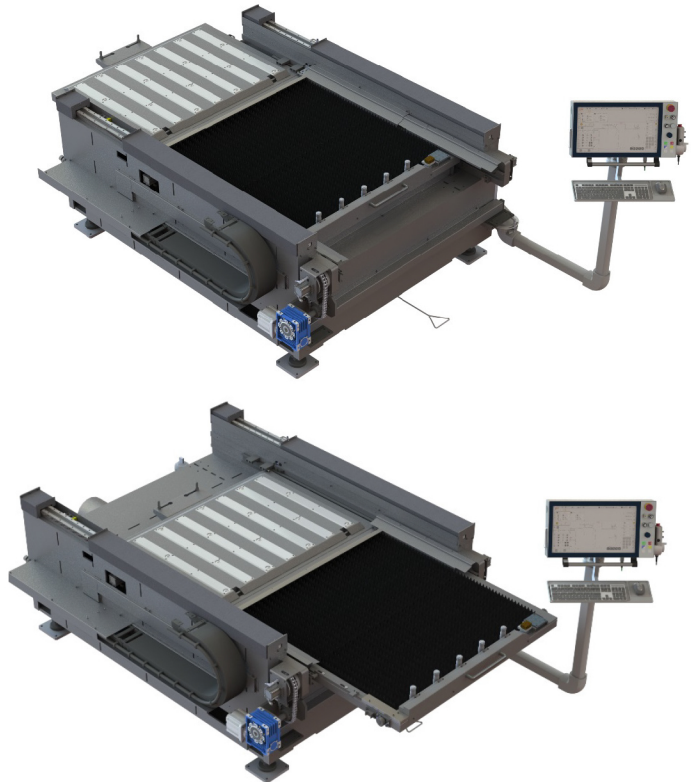
The H-KUBE4 machine can have an oversized sheet support for easy loading in order to allow the cutting of 2.5m x 1.25m (8' x 4') sheets.

The sheet support will move together with the work table when it is being pulled out for loading/unloading. The sheet support has its own wheels. An additional 8'x4' sheet support with roller balls can move together with the cutting table in a horizontal direction.

The cutting table has two hooks that can drag and push along the additional sheet support.



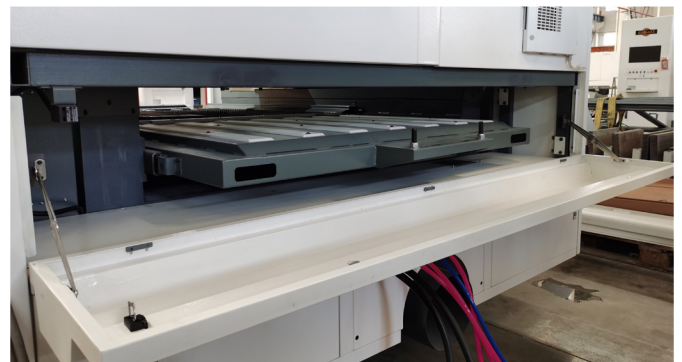
There is an additional panel on the back of the machine to allow unloading of the oversized sheet from that side.



KUBE-4 BACK-SIDE

The sheet support system fits entirely within the existing lay-out dimension of the KUBE machine. Back panel is hinged and have locks for the safety.

The fume extraction system of the machine consists of one fully welded channel and a sealed scrap box at the bottom. Where the dust and smoke generated in the laser cutting process can be efficiently extracted by the air flow from the dust collector.



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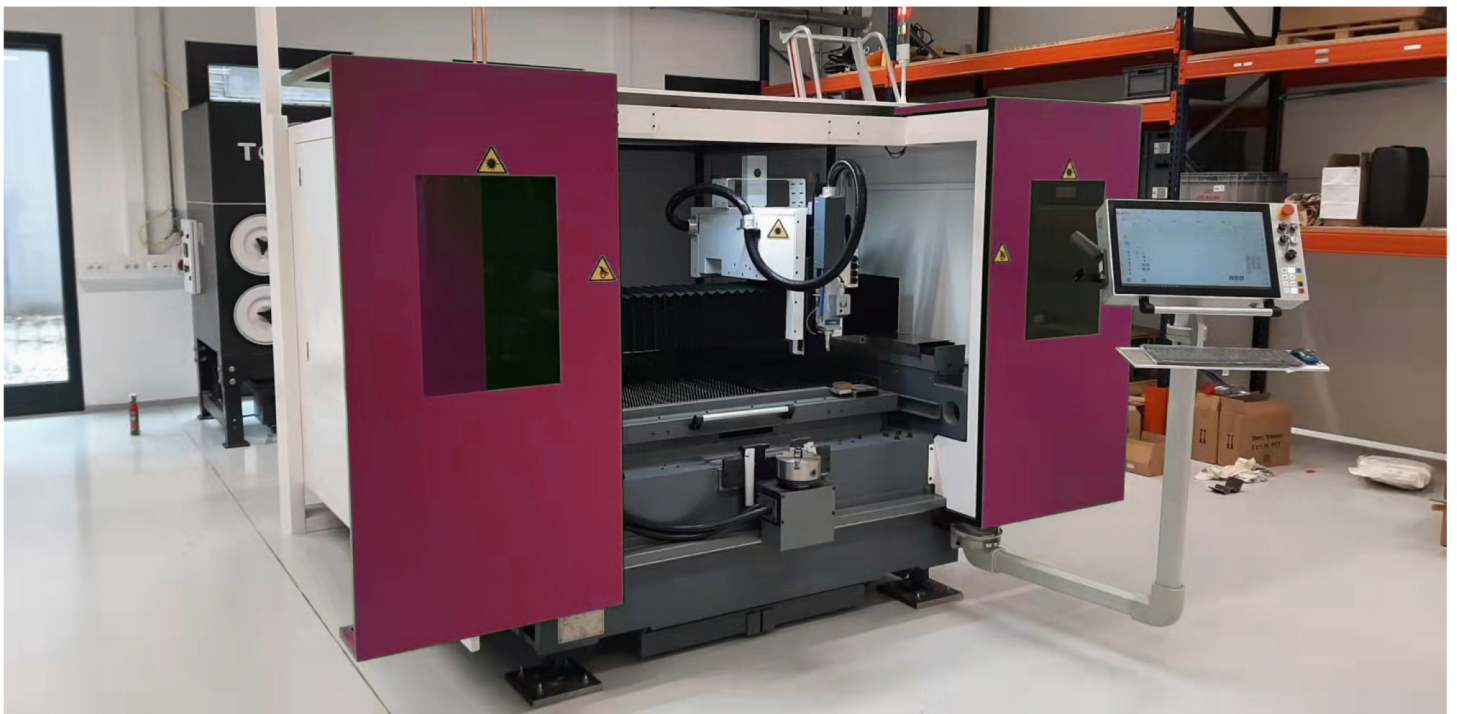
CONTROL SYSTEM

The KUBE machine is equipped with a high-quality state-of-the-art CNC system with integrated power supply, and multi-axis drive technology. The numerical control is a compact, flexible, robust system with an integrated safety solution for automation. Specifically for the high requirements of the laser cutting process. The system has integrated fast inputs and outputs for all laser cutting process with specific signals. The motion control system is designed to allow high dynamic interpolated axis movements with great precision. The numerical control and the PLC are implemented on a dedicated powerful processor. All communication between the CNC, the integrated PLC, and the different laser system components goes over a digital field-bus using EtherCAT technology.



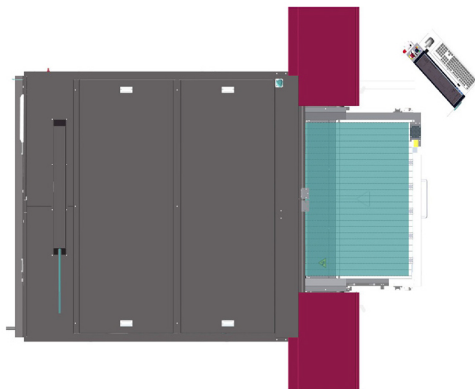
LASER CUTTING GAS SYSTEM

Up to three types of cutting assist gasses can be connected to the H-KUBE4 machine. An automatic gas selection valve will supply the right gas for each application. A digital servo valve will keep the cutting gas pressure constant, while the input pressure remains 1 bar higher than the demanded process gas pressure. This means the gas container can be used until they are empty and without losing stability of the piercing or cutting process in question. The fast reaction times of the digital servo valve and the short supply lines from the valve to the cutting head allow fast changes in gas pressure between piercing and cutting process without a need for any dwell times.



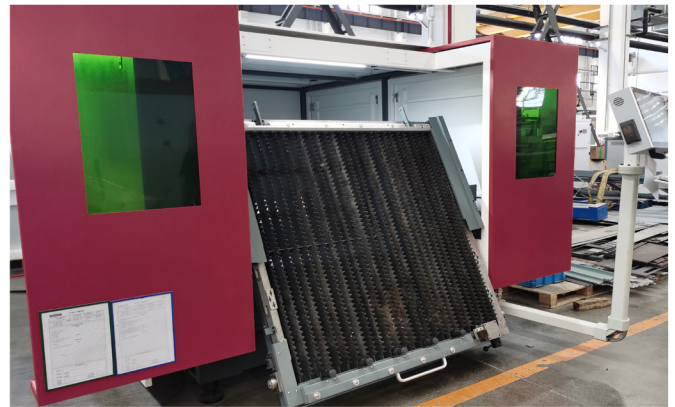
PULL-OUT TABLE OVERHEAD LOADING/UNLOADING

When the operator access the doors to the KUBE, the working table can be pulled half-way out of the machine manually. At that point, the entire working area on the working table is accessible for overhead loading/unloading solutions. This is the method for loading/unloading heavy material (>440lbs).



ERGONOMIC LOADING/UNLOADING

The ergonomic handling is offered by the work table tilting system. The operator can automatically tilt the working table to a near vertical position, so both the loading of new sheets, the picking of cut parts, and the unloading of ready cut sheets can happen without any heavy lifting involved.



MOTION SYSTEM

The H-KUBE4 machine has three CNC controlled servo axes. The laser process head moves in vertical direction on the ball screw driven Z-axis. The Z-axis with the laser process head moves in the horizontal plane by a gantry system where both the X- and Y-axis are rack and pinion. The X-axis movement is generated by two powerful low-inertia servo motors, rigidly coupled to two high-precision gearboxes where the rotational movement of the pinion is further transmitted to linear movement by high-precision racks. The two motors are synchronized precisely by the CNC. The Y-axis movement is generated by a powerful low-inertia servo motor, rigidly coupled to a high-precision gearbox where the rotational movement of the pinion is then further transmitted to a linear movement by a high-precision rack.

SPECIFICATIONS

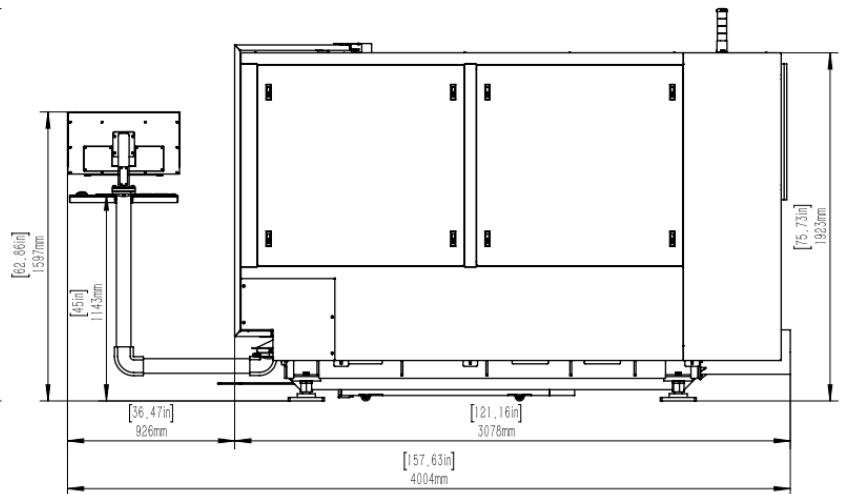
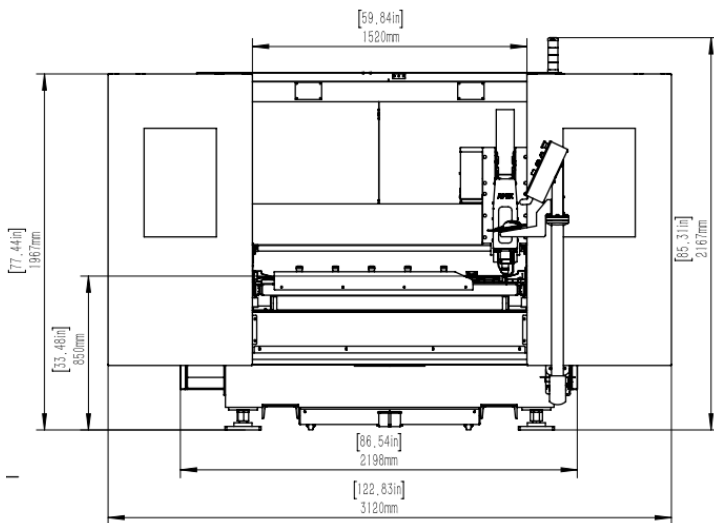
Item	Details	Unit
Working range 2D cutting (X x Y)	49x49	in
X-axis stroke	51	in
Y-axis stroke	50	in
Z-axis stroke	3.94	in
Max. speed X & Y axis	2.362	ipm
Max. acceleration X & Y axis 2D cutting	1.0	G
Positioning accuracy	± 0.001	in
Machine weight	7,600	lbs
Machine dimensions (L x W x H)	158x87x86	in
Max. power consumption	8	kVA

CUTTING CAPACITY

Material (in)	3kW	4kW	8kW
Mild Steel	0.6 in	0.8 in	1.2 in
Stainless Steel	0.4 in	0.5 in	1 in
Aluminum	0.4 in	0.5 in	1 in
Copper	0.2 in	0.2 in	0.3 in
Brass	0.3 in	0.4 in	0.4 in

AUTO FOCUS CUTTING HEAD

Item	Specification
Focal length cutting lens	5.90 in
Max stroke of focus point	14mm
Max gas pressure	20 bar
Max cutting gas flow	100 m3/h



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