

OXYGEN

PLASMA



# SAPPHIRE

Robust construction and high productivity for production in perfection  
One of the most awarded CNC cutting machine in it's class

OXYGEN  
PLASMA

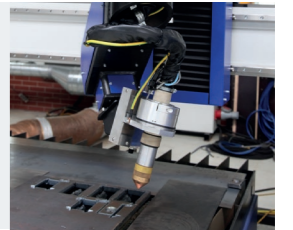
# SAPPHIRE



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## VORTEX 3D CUTTING HEAD

The fully automated plasma cutting head enables very precise bevelling and chamfering in a single sheet cutting process. Angle of rotation +/- 540° and head angle deflection +/- 47°, makes our cutting machine a universal tool able to work in three dimensions together with preparing welding phases on Y, V and K. Vortex 3D cutting head is equipped with sensors: anti-collision, electrical/mechanical touch and height sensor. This allows using technologies such as: Contour Cut®, Contour Cut Speed®, Diameter Pro® and True Hole®.



2

## OXYGEN TORCH HARRIS

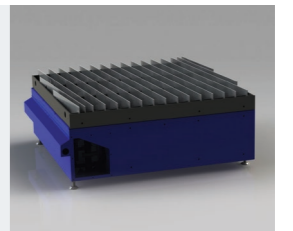
Oxygen torch is the cutting solution destined to cut structural low-carbon and low-alloy steel. It is capable of processing wide range of material thickness. The torch was fitted out the height sensor, automatic ignition and possibility of manual angle setting.



3

## SUCTION TABLE

Modular section tables grant efficient elimination of dust during the cutting process. The cutting machine was implemented with the self-supporting construction as the base for the frame with replaceable grids. Such construction offers safe and the best possible safety and performance of the table. The cutting table is provided with intelligent system of dust discharge from the cutting area. Each segment consists of supporting structure with discharge channels, diagonal grid, scrap tank and pneumatic controlled channels.



4

## CNC CONTROLLER

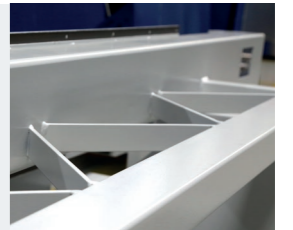
ECS872 centre is a high quality industrial device, equipped with touch screen. Efficient components and construction resistant to extreme production conditions guarantee failure free operation. Unsurpassed functionality of proprietary software and intuitive drive interface enable full exploitation of the machine's capacity.



5

## CONSTRUCTION

Gantry construction is based on welded steel beams which thanks to stress relief is characterised by high rigidity while maintaining relatively small mass. Applied construction solutions assure stability of the machine geometry which is not prone to maladjustment during large mass or thermal loads. This ensures high process safety also for three shift working companies.



## CHARACTERISTICS

Sapphire cutting machine is dedicated to work in the most severe production conditions. It is suitable for three shift work system and guarantees high quality processing to meet your needs while keeping efficiency at a substantial level. Sapphire is defined by a stable construction and numerous outstanding technological solutions, which guarantee failure-free use.

Sapphire, as optimal solution for the heavy industry, is popular among the machine production plants, shipyard, and among those who value efficiency and reliability. Considering a broad scope of applications (plasma and oxygen cutting, plasma marking, punch marking, drilling) the machine is a versatile tool created to meet even the most demanding customers' expectations. Sapphire cutting machine has been utilized more than 400 industrial plants where it is proving its excellence.

## MAIN FEATURES

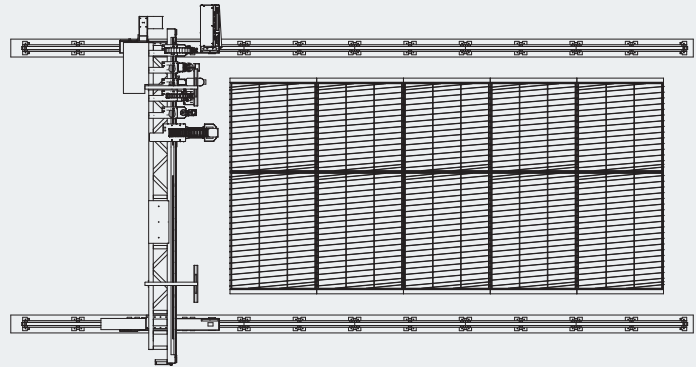
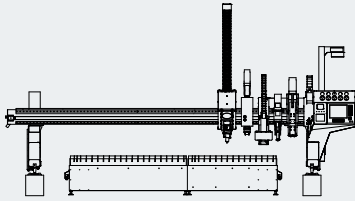
- ▶ Highly dynamic and precise in automated 2D/3D cutting of sheets, tubes, beams
- ▶ Capability of processing plates up to 200 mm thickness
- ▶ Expanded base of predefined cutting parameters
- ▶ Unlimited possibility of increasing the length of the working area

## STANDARD PLASMA POWER SUPPLIES

Hypertherm	Max piercing	Max from the edge	Kjellberg	Max piercing	Max from the edge
Powermax 65	10 mm	32 mm	PA-S45W	20 mm	45 mm
Powermax 85	12 mm	38 mm	HiFocus 80i	12 mm	25 mm
Powermax 105	16 mm	44 mm	HiFocus 161i Neo	30 mm	50 mm
Powermax 125	25 mm	57 mm	HiFocus 280i Neo	35 mm	70 mm
MaxPRO 200	32 mm	75 mm	HiFocus 360i Neo	40 mm	80 mm
HSD 130	25 mm	38 mm	HiFocus 440i Neo	50 mm	120 mm
HPR 130 XD	25 mm	38 mm	HiFocus 600i Neo	80 mm	160 mm
HPR 260 XD	32 mm	64 mm	SmartFocus 130	25 mm	40 mm
HPR 400 XD	50 mm	80 mm	SmartFocus 200	30 mm	60 mm
HPR 800 XD	50 mm	160 mm	SmartFocus 300	40 mm	80 mm
			SmartFocus 400	50 mm	100 mm

Given data depends on the material involved and its structure.  
The ability to pierce depends on the material, thickness and also height sensor, and drive.



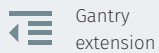


#### MODEL

#### SAPPHIRE

Drives	Servo AC
Cutting width	2000-7000 mm
Basic working length	Any length from 1500 mm
Positioning speed	25000 mm/min
Cutting thickness	to 200 mm (300 mm – option)
Cutting quality	DIN-EN ISO 9013
Positioning accuracy	DIN-EN 28206
Cutting table height	740-760 mm

#### ADDITIONAL EQUIPMENT



Gantry extension



Plasma marking



Drilling



Filtration



ESR System



Punch marking



Automatic pallet table



Vortex 3D head



Heat shields

The manufacturer reserves the right to make changes and/or improvements without notice.



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# **ADDITIONAL EQUIPMENT**

JANTAR / SAPPHIRE



### GANTRY EXTENSION

Gantry extension broadens the machining capability of the large size elements placed in extended area. For quick and easy adjustment extended area is equipped with an additional remote control with all necessary functions.



### VORTEX 3D HEAD

The fully automated plasma support enables very precise bevelling and chamfering in a single sheet cutting process. Angle of rotation +/- 540° and head angle deflection +/- 47°, makes our cutting machine a universal tool able to work in three dimensions together with preparing welding phases on Y, V and K. Vortex 3D cutting head is equipped with sensors: anti-collision, electrical/mechanical touch and height sensor. This allows using technologies such as: Contour Cut®, Contour Cut Speed®, Diameter Pro® and True Hole®.



### FILTOVENTILATION

Filtoventilation system is used to eliminate potentially dangerous fumes and dust by-products of thermal cutting operations. We offer models with filter area within the range 80 to 240 m² and efficiency up to 15.000 m³/h. The optional spark extinguishing system guarantees damping down glowing embers and provides a longer lifetime of filter cartridges.



### PLASMA MARKING

Marking lines, inscriptions and shapes on the metal sheet - facilitates welding and forming according to specified shapes. Marking is also used in technological description for traceability of some elements as it is the DIN-EN 1090 Standard requirement.



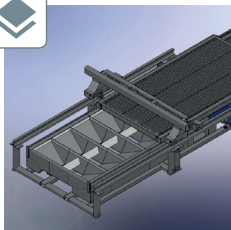
### ESR SYSTEM

Optional device that can operate outside the cutting machine's working area, utilizing plasma or oxygen head. The gantry's special extension allows unimpeded operation of the carriage over the rotator which controls the direction of pipe movement. The rotator is equipped with special gear with rotary head to cut the pipes of 50-900 mm diameter.



### PUNCH MARKING

The punch marking device is mounted on the special support. The marking system is permanently applying the text inscription on sheet metals. The marking is performed by the tempered needle which is punching on the marked area.



### AUTOMATIC PALLET TABLE

Exchangeable pallet table consists of two working areas which enable the possibility of alternate entering and departing the working area allowing the unloading of finished elements and loading new material. Pallet table is equipped with belt feeder responsible for collecting elements which are too small to retain on the grate. The table is equipped with safety laser gates to realize the required safety of work.



### DRILLING

Drilling device is utilized for spot drilling in the cutting elements to preparing thread holes. In many manufactures it successfully replaced the manual spot drilling which was performed at a great cost of time and labor.

	Gantry extension	Filtoventilation	ESR System	Automatic pallet table	Vortex 3D head	Plasma marking	Punch marking	Drilling
<b>JANTAR</b>	■	■	■	■	-	■	■	■
<b>SAPPHIRE</b>	■	■	■	■	■	■	■	■



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