



**karmetal**  
*SAWlutions*



## **VORTEX 100**

# **HIGH PERFORMANCE AUTONOMOUS CIRCULAR SAWING MACHINE**




\*Photo may feature machine with optional accessories



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VORTEX 100 HIGH PERFORMANCE AUTONOMOUS CIRCULAR SAWING MACHINE

## CUTTING CAPACITY

	<b>Ø360</b>
	<b>15-105 mm</b>
	<b>15-85 mm</b>

## TECHNICAL SPECIFICATIONS

<b>Main Motor</b>	: 11 kW
<b>Hydraulic Motor</b>	: 4 kW
<b>Conveyor Motor</b>	: 0,37 kW
<b>Chip Brush Motor</b>	: 2000 RPM, 4,6 Nm step motor
<b>Rear Feeding Stroke</b>	: 1250 mm (Multiple Index)
<b>Front Feeding Stroke</b>	: 20 mm (Multiple Index) (OPTIONAL)
<b>Rear Servomotor</b>	: 750 Watt, 3000 rpm
<b>Front Servomotor</b>	: 750 Watt, 3000 rpm (OPTIONAL)
<b>Bow Servomotor</b>	: 2000 Watt, 2000 rpm, with brake
<b>Blade Speed</b>	: 20 – 180 RPM
<b>Blade Dimensions</b>	: Ø360 x 2,6 mm Ø285 x 2 mm Ø360 x 2/4 mm (HSS Blade)
<b>Weight</b>	: 3.600 (4.500*) kg (*with loading magazine)
<b>Machine Dimensions</b>	: 1.900 (7.500*) x 2.700 x 1.900 mm (*with loading magazine)

## STANDARD FEATURES

### **15" Industrial PC**

- Only intelligent sawing mode,
- Record of all cutting data and ability to export this data
- User authorization definition
- Cutting information screen
- Ability to import worklist from Pc's or mobile devices
- Communication via LAN or Wi-fi
- Accessibility via mobile application



### **Intelligent Sawing (IPS)**

- 13.000 different predefined material
- Materials are listed in 6 different standards
- 6 different sawing performance mode (Normal, Blade Saver, Extra Low Speed, High Performance, Ultra Performance, Customized)
- Heat treated material defining
- Automatically selection of most appropriate cutting parameters depending on the cutting channel, material grade, heat treatment, sawing mode, blade type and blade TPI according to predefined parameters in the database.
- Accurate calculation of sawing start/end points



### **Servo Controlled Bow Motion**

- Linear motion with ball screw and linear guides
- Speed adjustment between 1~10.000 mm/min
- Full control on the cutting pressure



### **Mineral Casting**

- The base of the machine is filled with specially developed mineral casting. Mineral casting is 80 times better vibration absorber with respect to steel.



### **Servo Controlled Rear Vise**

- Servo motor controlled, 1250 mm stroke rear vise
- Both rear and front vises close to 20 mm
- After the cut is finished, rear vise moves opposite direction of blade to avoid blade friction

### **Cover**

- Elegant design  
Compatible with international safety regulations (2 contact safety relay etc.)
- Noise and steam isolation



### **7 Color LED Display**

- Blue when standby
- Green while in operation
- Red while not suitable for operation
- Yellow while there is a warning during operation
- Flashing red while operation is interrupted because of an alarm during operation
- Flashing green when operation is finished
- There is also another display on the top of the machine



### **11 kW High Torque Main Motor**

- 700 Nm nominal output
- No loss of torque in neither low nor high frequency
- Closed loop operation (Thanks to the encoder on) provides full torque control
- High efficiency Mitsubishi Inverter
- External coolant fan
- Direct drive; no belt or gear reduction
- Capability to perform sawing between 20-180 RPM without any loss of torque



### **Pallet Type Chip Conveyor**

- Speed control via frequency inverter
- External warning light for faults on conveyor
- Easy adjustment of operation frequency and duration



### **Mist Coolant System**

- Coolant is executed by spraying herbal oil to the cutting area
- In case, bore oil could be used to execute coolant



### ***6 Meters Automatic Material Loading Magazine***

- 6 meters long, 120 cm. stocking area automatic loading magazine



### ***Hydraulic Front and Rear Vises***

- Both vises on the machine are hydraulic
- Front vise has the pressure switch, Sawing cannot be executed if the front vise is open
- While feeding the material, feeding system is hydraulically lifted to avoid scratch on the front vise

### ***Blade Cleaning Brush System***

- There are two brushes on the machine. One is motorized and the other is run by the blade
- Motorized brush rotates up to 2000 RPM
- Brush speed is adjusted by inverter according to blade speed

### ***Adjustment Of Vise Pressures***

Both rear and front vise pressures could be adjusted from the hydraulic control panel



### ***Automatic Guide Lubrication***

All of the guides and ball screws on the machine is lubricated periodically by the automatic lubrication system



### ***Automatic Scrap Separator***

- When a new material is loaded on the machine, the front and rear scraps are separated by the separator




### ***Ø360 and Ø285 Blades***

- Both Ø360 and Ø285 blades can be installed on the machine.



## OPTIONAL FEATURES

<p><b>A. Mist Collector</b></p>	
<p><b>B. 3<sup>rd</sup> Vise</b></p> <ul style="list-style-type: none"> <li>- When installed on the front of the machine, reduces remnant to 20 mm.</li> </ul>	
<p><b>C. Bundle Loading Magazine</b></p> <ul style="list-style-type: none"> <li>- A special magazine which can be loaded more material with respect to standard magazine</li> </ul>	
<p><b>D. Material Loading Tower</b></p> <ul style="list-style-type: none"> <li>- It has ability to stock different dimension and different featured materials.</li> <li>- It can load and unload the material to the machine unmanned</li> <li>- It is designed special for the customer depending on the place, number of cassettes, and the material size to be stocked up.</li> </ul>	
<p><b>E. Unloading table for Cut Material</b></p> <ul style="list-style-type: none"> <li>- Instead of free fall of the cut material, moving the material far from the machine and unloads</li> <li>- Usually used for long material</li> </ul>	
<p><b>F. Unloading Robot for Cut Material</b></p> <ul style="list-style-type: none"> <li>- Instead of free fall of the cut material, grabs the cut piece and aligns on the pallet or box in front of the machine</li> </ul>	

## TERMS

***Delivery (After Receipt of Written PO)***

**:**

***Type of Delivery***

***:Ex-Works***



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