

510x510 HERKULES X

Highly productive semi-automatic, hydraulically manipulated two column band saw machine.

Our offer suitable for cutting of the most problematic materials. These characteristics together with the planet drive and with the blade of 54 mm high ensure the maximum possible efficiency.

The machine is designed for vertical cuts.

It is suitable for serial production in industrial premises. Thanks to its robust construction enables to cut wide range of materials including stainless steels and tool steels both profiles and full materials.

Control system:

- Machine is equipped with programmable PLC SIEMENS SIMATIC S7-1200. Blade drive and bow movements are controlled by SIEMENS technology.
- The coloured touch screen HMI SIEMENS TP 700 COMFORT enables easy communication with an operator. It shows working conditions (blade speed, moving to the cut, cutting parameters etc.)
SEMI-AUTOMATIC CYCLE: The machine cuts the material immediately in a semi-automatic mode. An operator manually inserts and takes away material from the saw.
- Two basic regimes of automatic system regulation (ASR): ARP and RZP-2.
- RZP-2: cutting zones regulation. System enables to set of optimal shift speed (movement to cut) and blade speed in 5 different zones depending on blade position.
- ARP = System of the automatic regulation of the cutting feed rate depending on the cutting resistance of the material or blunting the blade.
- System offers two basic modes of ARP: BIMETAL and CARBIDE.
- BIMETAL mode is suitable for optimization of the cutting feed when cutting profiles by bimetal blades. The cutting feed is higher if the blade cuts sides of the profile. As the blade reaches the full material, the system reduces the cutting feed automatically so that teeth gap of the blade would not be filled.
- CARBIDE mode is suitable for cutting of full bars. If the blade is old (blunt), loaded is the cutting feed reduced. Reaction time is slower than in mode BIMETAL.
- Regulation of cutting feed is realized by controlled system by the servo-motor and throttle valve of hydraulic. Then is reached very precise cutting feed. Operator will input into program required cutting feed (mm/min) and bandsaw this cutting feed precisely set.
- The control panel is mounted on the cover of tensioning pulley. Control panel has mechanical buttons as well as digital touch display, which controls the machine. Mechanical buttons are serving to control basic movements of the saw (arm, vice and feeder with turntable (if the saw is equipped) and also button to turn the cycle on. Emergency button is present on the control panel to stop the machine immediately.

Construction:

- The machine is constructionally designed in that way, so that it corresponds to extreme exertions in productive conditions. Massive construction enables using of carbide blades comfortably.
- The arm of machine with columns situated as near the clamping vice as possible minimizes vibrations and enables max. cutting performance.
- The arm of the machine is robust, heavy weldment and it is designed so that a toughness and a precision of cut was ensured.
- The arm moves along two columns using a four row linear leading with a high loading capacity. Arm movement using two hydraulic cylinders.
- The robust steel pulleys sloped of 25 degrees regarding the level of the cut. Thanks to sloped arm the twist of the blade is eliminated and there is possibility to bring the blade closer to the minimal distance from the linear leading on columns. This arrangement eliminates vibrations and enables the max. cutting performance of the machine.
- Upper position automatically using of incremental sensor for measuring of a position above material. Upper cutting position of frame is detected automatically using control system after setting of the size parameters of cut material, or after pressing of button.
- Down position using adjusting stop and microswitch. After reaching of bottom position arm goes to upper position automatically.
- Vice is robust steel weldments.
- Main vice with divided jaw that clamps the material in front of as well as behind the cut. The jaws allow a safe grip. The optimization of the chip movement through the fixed jaw directly to the chip extractor.
- Jaws of the main vice move on two rails of linear leading using hydraulic cylinder. One jaw is longstroke (the movement by longstroke hydraulic cylinder), one is fixed.
- Regulation valves for setting a vice pressure in hydraulic system.

Basic equipment of machine:

- The blade leading in guides with hardmetal plates and leading bearings and along cast iron pulleys.
- There is a guide situated on the firm beam on the drive side. On the tightening side there is the guide situated on the moving beam.
- The guide beams of the blade are adjustable in the whole working range. A guide moving is connected with a vice-jaw movement so that to achieve the minimum distance of the guide and material. That is why it is not necessary to set the position manually.
- The guide beam of the blade is placed in linear rails (2 linear rails and 4 bearings) with high bearing capacity.
- The saw-band is equipped with a guard, which protects the operator from millings and cutting emulsion.
- Machine has hydraulic band tightening.
- Automatic indication of blade tension.
- A cleaning brush is driven by an electroengine and ensures perfect cleaning of a blade.

- There is a planet gear box drive and a three-phase electroengine, a fluent regulation of a circumferential blade speed by a frequency converter for a fluent change of blade speed. CAUTION: Drive with planet gearbox corresponds with drive with worm gearbox and engine of approx. double multiple power.
- The cooling system for emulsion, leaded to the guides of the blade and by LocLine system directly to the cut groove.
- Massive base with a tank for chips and with chip extractors. Base is designed for manipulation with machine by crane.
- Indication of blade tightening and opening of the cover.
- Controlling 24 V.
- Maschine is equipped with hydraulic system which controls all functions of that machine. It pushes the arm to cut, pulls up the arm and opens and closes vices.

Basic accessories of machine:

- Chip extractor
- Lighting of work space.
- Band saw blade.
- Set of spanners for common service.
- Manual instructions in electronic form (CD).

Operating cycle:

After starting the machine, vices are clamped automatically, cut is made by selected cutting speed, in the end position microswitch is on, arm goes to selected upper position and vices open automatically. The operator only handles material.

cutting parameters

	D [mm]	510	x
	D [mm]	510*	x
	axb [mm]	510x530	500x450

*recommended values

cutting parameters

	D [mm]	D [mm]	axb [mm]	axb [mm]
	510	510*	510x560	510x560
	x	x	500x450	500x450

*recommended values

the shortest cutting	10	mm
the smallest divisible diameter	50	mm
the shortest rest during one cut	50	mm

performance parameters

drive of the blade	kW	7,5
drive of the hydraulic aggregate	kW	1,75
pump of the cooling emulsion	kW	0,12
electroengine of the cleaning of the blade	kW	0,12
electroengine of the drive of the worm chip extractor	kW	0,12
Cooling	kW	0,06
Control circuit	kW	0,5
Chip extractor	kW	0,12
total input	kW	10,5
cutting speed – fluently set	m/min	15-80
diameter of the blade	mm	6060x54x1,6
electric connection		3x400V, 50 Hz, TN-S

control

feed of the Frame to the cut	hydraulically
feed of the material	manually
clamping of material	hydraulically
bend tension	hydraulically
cleaning of the blade	A cleaning brush is driven by an electroengine

Parameters

length	width	Height	height of	weight
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[L]	[B]	[Hmax]	[Hmin]	[V]	(kg)	
3400	1500	2600	2200	810	3750	