PEGAS
GONDA

- It is a highly efficient automatic hydraulically controlled band-saw with multiple material feed.
- The machine is designed for vertical cuts.
- It is suitable for serial production in industrial premises. The machine is designed to saw steel materials, but also non-ferrous and light metals. However, we recommend consulting the manufacturer about this option.
- **No other materials may be sawn without approval from the manufacturer.**

Control system:

- Machine is equiped with programmable PLC SiEMENS SIMATIC S7-1200. Drive of band blade, movement of arm and movement of feeder are completely controlled and drive 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.)
- The machine enables to work with two modes:
    - o SEMIAUTOMATIC CYCLE: The machine cuts the material immediatelly in a semiautomatic mode. The operator uses the feeder of the machine for the manipulation with the material and for the exact feed of the material into the cutting zone. The movement of the feeder is realized by manual buttons or by GTO function. After starting GTO function the operator sets the position of the feeder, presses START GTO button and feeder goes to the set position.
    - o AUTOMATIC CYCLE: the feeder feeds the material according to the set programm. The operator sets the cutting programm, machine realizes these programms, it is possible to make thousand different programms.The part of one programm is a complete setting of the cut: blade speed, feed speed, setting of an automatic regulation, setting of the hight of the bar to be cut, setting of the lenght of the bar, angles values and number of pieces. The lenght and number of pieces it is possible to set in 20 lines, the machine feeds differently set lenghts automatically.
- 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 requiered cutting feed (mm/min) and bandsaw this cutting feed precisely set.
- Two basic regimes of automatic system regulation (ASR): ARP a RZP.
    - o RZP = Zone regulation. System enable to cut material in 5 zones, because of setting optional cutting feed and blade speed according on blade position.
    - o ARP = System of the automatic regulation of the cutting feed rate depending on the cutting resistance of the material or blunting the blade. Systém offers two basic modes of ARP: BIMETAL and CARBIDE.
        - ▪ BIMETAL mode is suitable for optimalization 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.
- The control panel is placed in the tightening pulley cover. The control panel is equiped with mechanical buttons and digital display of the machine control system. Mechanical buttons controls basic saw movements (arm, vice, feeder) and cutting cycle start. The safety button is present on the panel aswell. Buttons for controlling the movements of the machine are part of a high-quality foil keyboard.
- Safety module with autodiagnostics.

Construction:

- The machine is constructionaly designed in that way, so that it corresponds to extreme exertions in productive conditions. Massive construction enables using of carbid 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 toughtness 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.
- Cast iron pulleys sloped of 25 degrees regarding the level of the cut. Thanks to sloped arm the twist of the blade is eliminated and these 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.
- The machine uses incremental sensor for evaluation of current position above material.Top working position of the arm is controlled by automatical stop position detection (DPP). Upper working position of the arm is possible to set in control system.
- Down working position is set with adjustable mechanical stop and microswitch. Down working position of the arm is also possible to set in the saw control system. After reaching bottom working position the arm stops in the position set in the system.
- 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 optimalization of the chip movement through the fixed jaw directly to the chip extractor.
- Jaws move on two rails of linear leading using hydraulic cylinder. One jaw is longstroke (the movement by longstroke hydraulic cylinder), one is shortstroke (it releases its position when feeding the bar, the jaw is not worn out, the material does not slip). Shortroke jaw of he feeder and main vice with the short stroke rebound, it means contactless feeding of the crooked material.
- Regulation valves for setting a vice pressure in hydraulic system.
- Very rigid feeder with the feeding step 990 mm moves on four rails of the linear leading by hydraulic cylinders.
- There are two speeds of the feeder (micro feed when approaching the position). Periodic mode (feeder moves between zero position and the position of the set lenght of feed) or consecutive mode (feeder moves to the limit position, clamps the material and feed it to the cut consecutively.
- Incrementally straight sensor for indication of the position of the feeder and GTO (go to position) function. Feeder can have multiple feeding possibility.
- Indication of material in the feeder: optic sensor - it notices that there is a material in the feeder. If there is no material in the feeder, the signal reflects on the glass that is situated on movable jaw and it goes back to the sensor. The machine stops feeding and waits for another bar.
- The roller conveyer goes through the whole machine and supports the material in all its length. The roller conveyer of the feeder: bearings houses of the rollers are mounted into the basement – big robustness and precision.
- The feeder is equipped with the additional hydraulic Zimmer brake, which is situated on the rail of the linear leading of the feeder. This brake fixes the feeder in the exact position.
- The feeder clamping vice is a robust steel weldment. Jaws ensure safe clamping of the material.
- Jaws of the feeding vice move along two-rails linears using hydric cylinder. One jaw is long stroke (the movement by longstroke hydraulic cylinder). Second jaw is short stroke (utilization during bar feeding: not jaw wearing out, not slipping of material). Short stroke jaw is suitable for feeding of deformed material.
- Cutting zone is opened from side of the feeder device automatically, extends the blade lifetime when arm is moving to top position.
- The blade leading in guides with hardmetal plates and leading bearings and along cast iron pulleys.
- Blade leading though the guides solved by "clearanceless blade leading" – blade is push to guide by hydraulic clinder, which enables comfortable blade exchange
- 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 giude 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 neccessary to set the position manually.
- Hydraulic tightening of band.
- Automatic indication of blade tension.
- A cleaning brush is driven by an electroengine and ensures perfect cleaning of a blade.

# 850x1000 HERKULES X-CNC
Technical data

- There is a planet gearbox and three-phase electric-motor with frequency inverter for fluent speed change in range of 20-100m/min.
- 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 manipulation with machine by crane.
- Indication of blade tightening and opening of the cover.
- Controlling 24 V.
- Machine is equipped with hydraulic system which controles all functions of that maschine. It pushes the arm to cut, pulls up the arm, opens and closes vices, moving of feeder.

Basic equipment of the machine:

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

Cutting parameters:

		0°
●	D [mm]	850
▭ b a	a x b [mm]	1000 x 850
▨ b a O	a x b [mm]	1000 x 460

O Cutting bundles without vertical clamp. HP = accessory at extra cost. When HP is used, the cutting parameters will be limited.

Cutting parameters

Cutting parameters		
The shortest cutting	mm	30
The smallest divisible diameter	mm	185*
The shortest rest during one cut	mm	130 (with DPP) 110 (without DPP)
The shortest rest during automatic cut	mm	215
Single step of material feed Min	mm	3
Single step of material feed Max	mm	990
Multiple feed	mm	19999

* possibility to order special bars to clamp smaller diameter – accesory

Performance parameters

Performance parameters		
Blade dimensions	mm	9490x67x1,6 (9490x80x1,6)
Blade speed	m/min	15-80
Blade drive	kW	11,0
Pump of the cooling emulsion	kW	0,16
Blade cleaning brush motor	kW	0,12
Chip conveyor motor	kW	0,12
Motor of the blade drive cooling	kW	0,6
Frame ballscrew motor	kW	
Feeder ballscrew motor	kW	1,5
Electric input Ps	kW	17,7
Installed power Ps	kW	15,4
Electrical connection		3 x 400V, 50Hz, TN-S
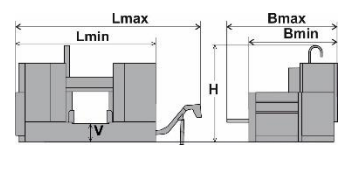
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Working movements	
Cutting feed	Hydraulically
Material feed	Hydraulically: acuraccy 0,6mm (option feeding of material with ball screw with accuracy 0,1 mm)
Clamping of material	Hydraulically
Blade tension	Hydraulically
Cleaning of the blade	A cleaning brush is driven by an electroengine

Parameters

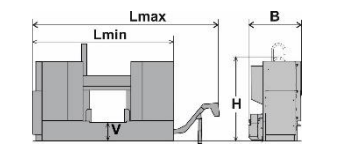| lenght		width		Height			weight	
[Lmin]	[Lmax]	[Bmin]	[Bmax]	[Hmax]	[Hmin]	[V]	(kg)	
4760	6280*	3140*	3830	3260	2820	620	11 800	

*L max = chip extractor included, for extractor removal or servis +2700 mm has to be counted with

**b min = without hydraulic cylinder of the feeder

Note: The saw is shipped in 3 pieces: saw, feeder and feeder covers

Parameters for transport: band saw machine

lenght		width	Height	weight	
[Lmin]	[Lmax]	[B]	[H]	(kg)	
4830	6280	1680	2820	7300	

Parameters for transport: feeder

lenght	width	Height	weight	
[L]	[B]	[H]	(kg)	
3600	1910	2090	4250	