

500x750 HORIZONTAL SHI (II.GENERATION – version 3)

Semiautomatic, hydraulically manipulated two-column band saw machine.

The band saw machine is designed for cutting in semiautomatic cycle perpendicularly as well as angularly. It enables angle cuts to the left (60 grades) and to the right (60 grades).

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:

- The Controller with PLC MITSUBISHI and features an automatic feed control BRP.
- Control panel MITSUBISHI as standard equipment. It uses touch display and PLC, which enable semi-automatic cutting (basic setting included) as well as communication with operator.
- Controller shows a lot of information about cutting process on the display:
 - Cutting cycle indication,
 - indication BRP,
 - indication – blade tightening,
 - time of the cut,
 - loading of blade in amperes,
 - speed of the blade,
 - cutting times measuring,
 - list of error messages.
- User's setting:
 - autostop of hydraulic unit
 - mode of arm moving after end of the cut
 - mode fast moving of the arm
 - mode time lag of shift speed
 - mode blade moving
 - mode jaw moving after cutting cycle finish
 - diagnostic of inputs and outputs"
- STOP function – cutting : it enables to stop cutting by pressing STOP button at any time. The Frame goes up with the running blade without opening the vice.
- Regulation of shaft speed (moving to cut) is manual and uses throttle valve placed beside control panel. Automatic (safety) regulation of shift speed PEGAS BRP. Principle: Machine will stop after exceeding set loading (defined in amperes).
- The ergonomical control panel is mounted on the movable console and its position does not depend on the turntable position at any angle. The control of the machine is optimized with our control panel and the field of view is better for an operator. The control panel is equipped with mechanical buttons and digital display of the machine control system. Mechanical buttons control basic saw movements (arm, vice, feeder and turntable movements) and cutting cycle start. The safety button is present on the panel as well. Buttons for controlling the movements of the machine are part of a high-quality foil keyboard.

Construction:

- The machine is constructionally designed in that way, so that it corresponds to extreme exertions in productive conditions. A robust construction of machine includes vice allows to take advantage of bimetal blades maximally.
- 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.
- Drive pulley and tighten pulley are both metal castings.
- The arm uses sensor and magnetic tape for position evaluation above material. 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.
- 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 in steel 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.
- Turn table is massive weldment. Turn table for angular cuts with milled leading parts of base. Turn table enables comfortable clamping of cutted material. Accurate rotating of turntable is ensured by using hydr. cylinder and the linear leading, the movement of the turntable is transferred via gears and rack.
- Hydraulic angle setting:
 - a) move with the arm using the button to needed angle (fast speed/micro speed)
 - b) using RTO function (rotate to position) with automatic setting of needed angle arm position.
- Hydraulic position fixation by a "lock"
- The angles indicated on the digital display on the control panel MITSUBISHI. Reading of angle by incremental sensor and magnetic tape.

Basic equipment of machine:

- The blade leading in guides with hardmetal plates and leading bearings and along cast iron pulleys.
- The blade is 6 grades sloped regarding the level of the vice => higher performance when cutting, profiles, longer bladeflife, higher performance when cutting full materials.
- 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.
- 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.
- Manuall tightening of band. Optional: Hydraulic tightening of band.
- Automatic indication of blade tension.
- A cleaning brush for perfect cleaning and function of blade, passive driven by pulley.
- Band drive of machine is solved by cone gear box with maintenanceless oil filling. Three-phases electromotor with double winding, with a frequency converter for a fluent regulation of the blade speed from 20 to 100 m/min. Sturdy flange with shaft. Termoprotection of engine.
- 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. Base is designed for manipulation manipulation with machine by pallet truck and also by any hight lift truck or by crane.
- Indication of blade tightening and opening of the cover.
- Controlling 24 V.
- Hydraulc unit out of machine – better cooling and comfortable access. It handles machine movements: pressure to the cut, urm up movement, vices movements, turning of the turntable. It contains a velve for setting of vice pressure.

Basic accessories of machine:

- Two massive cylinders support material to be cut. Movable by linear leading.
- Spray gun for chip rinsing
- Lighting of workink space.
- Band saw blade.
- Set of spanners for common service.
- Manual instructions in eletronic 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

		0°	45°	60°	45°	60°	^b _a ^o
	D [mm]	500	500	330	500	300	x
	D [mm]	400*	280*	200*	280*	190*	x
	axb [mm]	750x480	500x480	330x480	500x480	300x480	750x450

* Recommended values. Recommendations of band blade producers are to be followed when choosing to cut full material, their dimensions are limited by available size of the teeth for the specific type of the band.

^o Cutting of the bundle without upper vice HP. HP = accessory for additional price. The cutting parameters are limited when using.

CAUTION: In case the machine is with heating (option), the possible angle to the right is 45° only. It is necessary to remove heating covers before turning the bigger angle than 45°, but pay the strong attention to avoid of collision!!

the shortest cutting	18	mm
the smallest divisible diameter	40	mm
the shortest rest during one cut	15	mm

Performance parameters

Drive of the blade	kW	5,5
Drive of the hydraulic aggregate	kW	0,75
Pump of the cooling emulsion	kW	0,12
Motor of the band drive cooling	kW	0,06
Total input	kW	9,6
Cutting speed – fluently set	m/min	20-100
Diameter of the blade	mm	6500x41x1,3
The blade is sloped regarding the level of the vice		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	Manually/ hydraulically -accessories
cleaning of the blade	cleaning brush driven by a pulley

Parameters

length		width	Height		height of the table	weight
[Lmin]	[Lmax]	[B]	Hmin]	[Hmax]	[V]	(kg)
3100	3600	1760	2210	2400	815	2035

