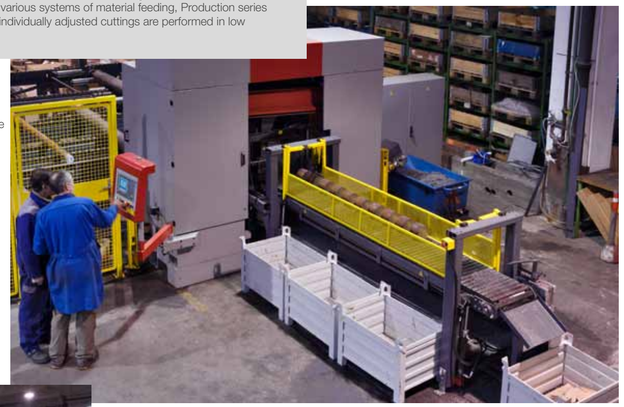
Automation – low personnel-intensive operation

The Production series machines were developed for the use in machining centres and fully automated plants. Thanks to the combination of various systems of material feeding, Production series automatic saws and material removal units, individually adjusted cuttings are performed in low personnel-intensive operations.

- Multiple material holders with integrated material transport with connection to storage systems
- Possible cutting in layers in order to utilize the whole cutting capacity of the saw
- Machine controlled centrally from the control panel
- Data transmission between the machining centre and existing storage systems
- Simple systems for material removal or separation, with free-filled transport boxes
- Follow-up processes of further processing such as deburring, demagnetising, and cleaning
- Devices with robotic arms or Cartesian robots



Material supply

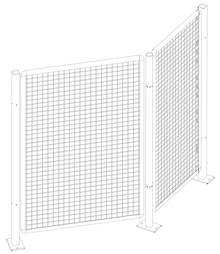
Various possibilities of automatic material feeding are available for individual cutting tasks. From simple transverse material holders and chain or pocket transverse material holders to automatic solutions with the connection to storage systems, a wide range of extensions is available for individual adjustment to particular cutting.

Material removal

Various material removal units are available, from simple transport and feeding systems to separation systems and automated further processing such as deburring, demagnetising, or robotic solutions.

securflex® *Safety* with the system

Personnel are the most valuable part of every business and must be protected in compliance with current safety criteria. The SECURFLEX safety system allows every device to be secured individually, depending on the environment and requirements. Besides grids, maintenance and door elements, the system offers a laser light lock system for extensive safety, especially in the area of material feeding and removal in the machining centre.
The device securing is further divided into safety circuits to prevent operation interruptions in areas not affected by the particular incident.



Elaborated to every detail

Remote diagnostics and maintenance

Ideal for cutting pipes and sections – the MICRONIZER micro-spray unit applies an oil film on the teeth tips and the rear side of the band.

PCC sensor

Permanent control of the cutting precision. If the set value is exceeded, the machine operation shall be stopped after the current cycle termination with a report.

Bundle clamping device

Cutting in layers and bundles means increased productivity, i.e. the saw utilisation. The main clamping vice and the material feeder clamping vice are equipped with vertical clamping units.

Hydraulics preheating

At low temperatures, the hydraulic oil is heated before the saw is started, which reduces the idle time for necessary viscosity to be achieved.

Microniser

The device is recommended especially for cutting pipes and profiles. It applies a thin oil film to the rear side of the band and to the teeth tips.

Clamping pressure regulation

Sensitive regulation of the clamping pressure for the main vice and material feeding to prevent possible deformations of thin-walled pipes and profiles.

Chip remover

A high-performance grabbing conveyor designed to ensure a sufficient capacity of the chip removal at the maximum cutting power.

ESA system

Thanks to the ESA system individual cuts are little time-intensive, thus the execution time of individual cuts decreases significantly.

Chips removing pistol

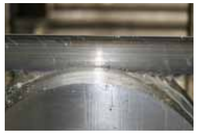
For cleaning bearing surfaces or regular rinsing of chips collected in the chip tank.

USB port

Simple, uncomplicated data transmission from prepared lists of cut sizes or a programming device using flash disks directly to the control memory.

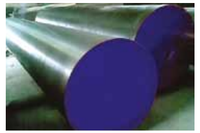
Cooling liquid heating

Heating of the cooling liquid at low temperatures prevents the emulsion from freezing and protects the saw from possible damages.



Input 7.5 kW

A packet for a higher output of the drive engine for specially hard materials.



EPCon1 system

The control is equipped with a database of various material classes and appropriate cut values, cutting resistance, and material feeding.

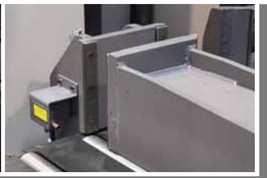
Hardmetal package

In order to reach optimal cutting results of the saw when using bands fitted with hardmetal, it is recommended to use a hardmetal package with a higher input and modified guiding.

System X/XP – strong partner in handling

A highly flexible handling solution for difficult tasks. A unique system of profiles allows the roller tracks of the X system to be individually adjusted, bearing capacity to be increased and the distance between rollers changed as requested by the customer. The X system is completed with a wide range of accessories and connection parts.

Production 300.280
Production 400.360
Production 500.460



PRODUCTION

BOMAR®

www.bomar.cz

Production series – pure machining

The Production series machines are designed for the highest cutting performance with bimetal saw bands. Modern control technique and the use of polymer concrete provides very short cycle times and almost vibration-free cutting.

With complete cladding the saw meets current directives for machines and ensures safety and a clean work-space.

Equipment as an argument

- Highly sensitive regulation of the cutting pressure for optimal cutting time and precise angles of cut sizes
- Sectional main clamping vice for fixing the material before and behind the cut
- Short-length remains in an automatic operation
- Continuous band speed 20–120 m/min. thanks to a frequency convertor
- Material detection through a laser light lock system
- Material feeding over a ball bolt and a linear measuring system
- Preloaded, large linear guiding for the saw frame, band guide arm, and material feeding unit
- Hydraulic band tensioning with the release function at machine downtimes
- Through roller track with embedded, machined supporting rollers

Elaborated to every detail

Within the Production series development, a special emphasis was laid on an ideal ratio between the cutting power and saw band lifetime. The Production series products are efficient machining machines for cutting full materials. A modern, safe design and the use of advanced control technologies represent the basic parameters brought by the series. The whole innovation extent may be recognised by mere observation of many detailed solutions.

Overview of *technical data*

Production *300.280*	0°	280 mm	300×280 mm	300×280 mm	280 mm	250 mm	250 mm
Saw blade	4910×34×1,1 mm							
Drive	3 kW							
Cutting speed	20–120 m/min							
Production *400.360*	0°	360 mm	400×360 mm	400×360 mm	360 mm	360 mm	360 mm
Saw blade	5520×41×1,3 mm							
Drive	4 kW							
Cutting speed	20–120 m/min							
Production *500.460*	0°	460 mm	500×460 mm	500×460 mm	460 mm	400 mm	400 mm
Saw blade	5730×41×1,3 mm							
Drive	5,5 kW							
Cutting speed	20–120 m/min							

Precise guiding

High cutting power requires a band precision guide. Production series machines are equipped with a combination of large guiding rolls and large-area, ground hardmetal guides located directly on the cutting edge.

Hydraulic tensioning

Proper saw band tensioning is adjusted hydraulically and constantly checked electronically. During machine down-times tensioning is decreased.

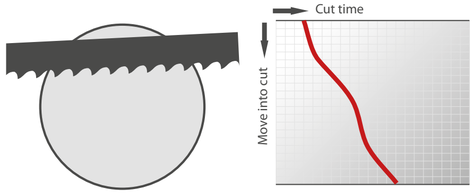
Downfeeding

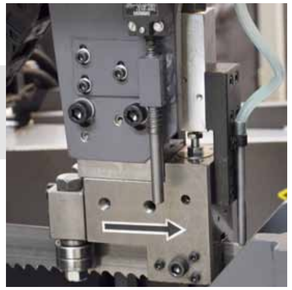
Downfeeding is provided by two massive hydraulic moving cylinders. Downfeeding and cutting pressure are adjusted directly on the control panel and controlled by the ADFR system which ensures automatic additional adjustment of the cutting pressure.

ADFR Highest precision. Fast cutting. Minimal wear.

The ADFR system regulates automatically and in real time the coordination of the cutting pressure and downfeeding. A sensor scans the saw band current loading and regulates downfeeding according to the material shape. With materials of bigger cross-sections, the cutting channel is extended and the saw band loading increased. If downfeeding in these sections is adjusted automatically, the saw band lifetime may profoundly shorten or the cutting time may significantly extend due to lower downfeeding.

ADFR *function* during cutting





Possible electronic adjustment

In coordination with the CNC machine control, the cutting curve is adjusted individually to the material shape and quality.

Tensioning force

Clamping vice jaws of the Production series are fitted with hardened rails, providing ideal tensioning at low wear.

Massive feeder clamping vice

Thanks to a massive design of the feeder clamping vice full materials may be moved within the maximum capacity of the cut.

Minimum distance

The left guide of the saw band is always automatically adjusted with the main clamping vice, thus it is always close to material tensioning.

Separated material tensioning

The main clamping vice is sectional, providing ideal tensioning of the material on the left and right of the band, and remains of short lengths for the lowest waste possible.

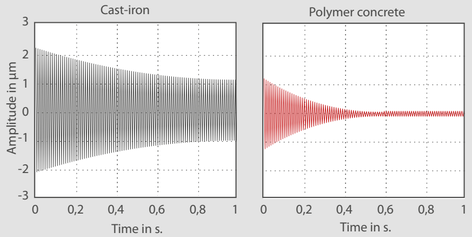
Closed tensioning

The bearing surface of the sectional main clamping vice is fitted with a new system which requires no inserted rails, i.e. it leaves no open cut for guiding.

Certified safety

All saws of the Production series are delivered with a Declaration of conformity with the current EU Directives for machinery, issued by TÜV Süd for the Czech Republic.

Polymer concrete – reduced vibrations



Low vibration-level cuts are the basis for precision and long durability. Polymer concrete as a production material offers a damping capacity for the use in cutting machines.

In connection with a large, tolerance-free linear guiding the polymer concrete technology provides almost vibration-free cuts with cutting power exceeding 100 cm^2 per minute with M42 bimetal saw bands.

The polymer-concrete mixture used was developed specifically for the use in saws and represents a well guarded operational secret of the BOMAR company.

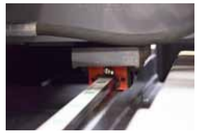
In order to damp vibrations, the Production series saws are fitted with polymer concrete in various places. The saw frame, bottom part, and column form a damping frame, providing incomparably quieter cutting.

Material feeding with innovation

The material feeding system of the Production series is designed for the highest stress in a permanent operation. Thanks to a drive through a ball bolt and servomotor, accelerating and braking ramps independent on the material may be formed so that even heavy materials may be cut n a very short cycle time. A 750 mm feeder in a simple stroke, or up to 9,999 mm in a multiple stroke, provides time-saving feeding of shorter lengths of cut sizes thanks to gradual feeding.

Ball bolt

The 750-mm feeding is realised via a ball bolt, providing high speeds of feeding and of the controlled accelerating and braking ramps for heavy materials.



Preloaded guiding

Tolerance-free feeding is laid on preloaded linear guides. Precise guiding is the basis for the permanent quality of precise cut sizes and the precision of repeated cutting.

Through roller track

For careful material transport, the Production series machines are equipped with through roller tracks leading up to the main clamping vice.

Adjustable

An adjustable discharge chute on the material off-take side ensures further individual processing.

Control technique for optimal productivity

With the application of modern control techniques, Production series automatic saws are flexible and universal regarding their use, but yet with simple control. Thanks to the modular control system, the Production series machines are ideal for the use in personnel-free cutting centres. Their control is more than simple so that the personnel training could be as short as possible.

Control centre

Control elements as well as control fields with a large colour display are located centrally on a swivelling display.

- Clear information on maintenance and error messages with unambiguous description
- Ready to be included in cutting centres with material intake and off-take systems
- Large colour display for status messages output and programming
- Short simple training thanks to a dialogue control in the Step-by-Step system

Extension possibilities

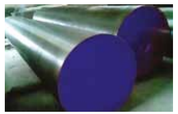
- ESA system for economical cutting
- EPCon1 system for automatic adjustment of the machine according to material classes
- USB port for transmitting data from prepared programming
- Remote diagnostics and maintenance for fast, uncomplicated processing directly from the workshop

ESA-System – automatics of individual cuts

With the ESA system individual cuts are little time-intensive. The process of individual cuts is reduced to the material insertion into the feeding area and uncomplicated programming of the cutting length and material dimensions. Material notching is precisely detected with a laser system and the cut-off to length is performed according to data in the system. The cutting may be repeated later on, and the material is pushed rearwards.

EPCCon1 system – preliminary selection of material classes

The control is equipped with a database of various material classes and appropriate cut values, cutting resistance, and material feeding. During the programming, a material class is selected and the machine is automatically adjusted to the material processed before the first cut. The EPCCon1 system allows the material classes and appropriate cutting data to be inserted.



Remote diagnostics and maintenance

To keep a permanent trouble-free operation and duration and to remove errors as fast as possible, a data connection with the plant is formed. All relevant data of the machine are transferred, thus error removal is significantly faster and maintenance reports are sent to competent personnel.