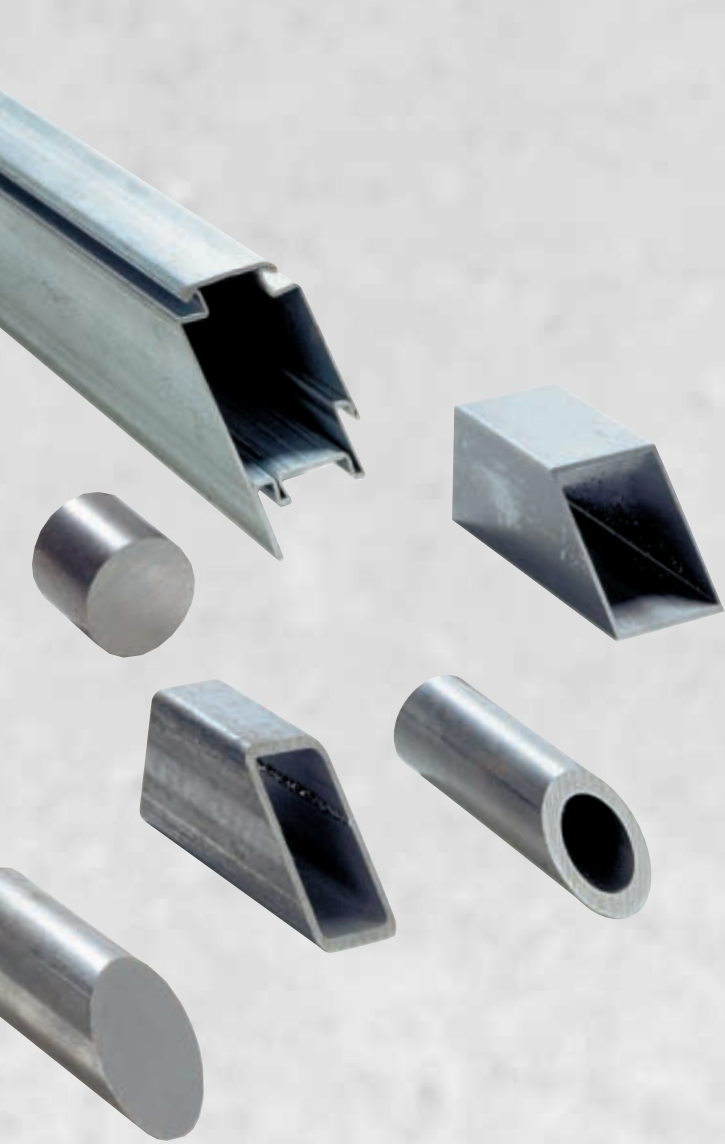


BEHRINGER



The Production Metal Circular Sawing
Machines of the PSU 450 Series

PSU 450

High-performance Circular Sawing Machine

Excellent handling features, high safety standards and the extraordinary large cutting range allowing the use of HSS circular saw blades with a diameter of up to 17.7" are outstanding characteristics of the PSU 450 G.

Additional features of the PSU 450 G are the variable material back fence, the vertically adjustable clamping unit and the electric saw stroke limitation in upward and downward direction. These are standard features of the PSU 450 G.



Drive System

A special gear box in connection with a 4.0/4.8 HP motor ensures a precise and reliable power transmission. The EISELE rotation compensation feature prevents the saw blade from being damaged.



Turn table

An easy-to operate miter cutting device allows for the cutting of any miter angle between 30 ° on the left hand side through 90° and 0° on the right hand side. There are fixed stops at 45° and 90° (left and right hand side). As the machine base and turn table are at the same height, it is ideal to mount special fixtures.



Operator's Control Panel

The operating controls are clearly identified on the operating panel. This allows for a convenient and user-friendly operation of the machine.

The standard design of the PSU 450 G includes

- ▷ Pole-changing three-phase motor 4.0/4.8 HP
- ▷ Saw blade speed 46/92 SFM
- ▷ Vertical clamping unit with short stroke cylinder
- ▷ Flood coolant system
- ▷ Hydraulic system

Optional features

- ▷ Speed range of 28/56/112/224 SFM (other speed rates upon request)
- ▷ Horizontal clamping devices
- ▷ Clamping pressure reduction feature
- ▷ Spray mist coolant system

The following accessories are available

- ▷ Roller conveyors
- ▷ Mechanical and electronic length measuring systems

Standard

Accessories

PSU

The PSU 450 H



High-Performance Circular Sawing Machine

Universal Use

Based on our many years experience in designing sawing machines for both workshops and large volume production, we created the PSU 450 H, the ideal machine for frequently alternating sawing conditions and requirements. Set-up times are minimized by operator-friendly and convenient handling features without the use of additional tools.



Quality in Detail

The machine base

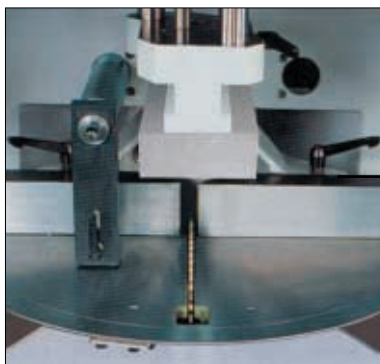
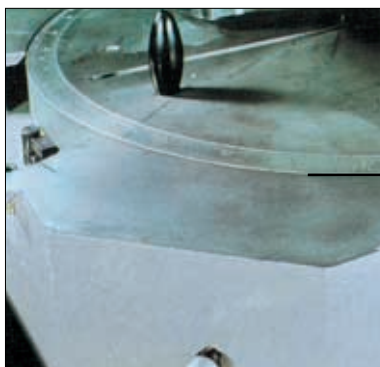
The robust machine base which is designed as a steel-weld construction, ensures a virtually vibration-free sawing operation with a low noise level. The machine base integrates a stationary high-performance flood coolant system as well as a chip container. The large door in the machine allows for a quick and easy change of the saw blade.

The turn-table

The easy-to-operate miter-cutting unit allows for adjusting any miter angles between 30° on the left hand side through 90° and 0° on the right hand side. There are fixed stops at 45° and 90° (on the right and left hand side). The large-scale vernier allows for a very exact setting of any miter angle. The base plate and the turn-table are made of GGG60-material and are therefore very rigid and wear-resistant.

Large cutting capacity

By using saw blades with diameters from 13.7" to 18.5", a large cutting range is offered. Round material with a diameter as large as 5.9" can be cut as well as tubes or pipes with a diameter up to 6.3". The cutting range can be enlarged even further by adjusting the material back fence by means of a crank and scale. The maximum adjustment is 5.0" to the rear.

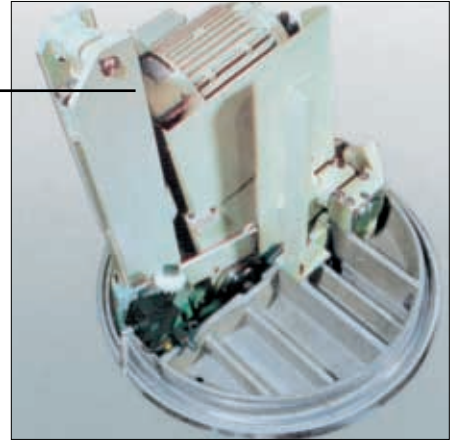


PSU Basis



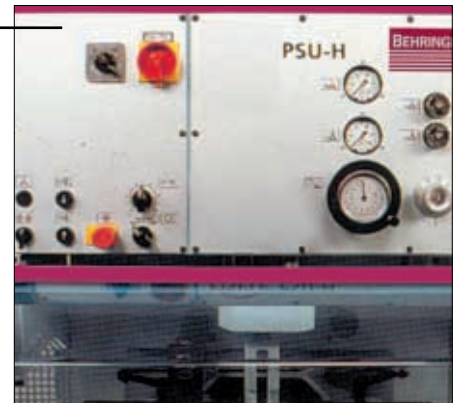
Drive System

The saw blade is driven by a wear resistant tooth and worm gear combined with a robust pole-changing three phase 4.0/4.8 HP motor. The gear box unit is designed with a worm gear which is made of special high-alloy material. The gears are hardened, ground and helical and bathed in oil which ensures longevity. The EISELE torque compensation feature of the gear box considerably reduces the risk of saw blade damage. The tilting bearing is free of play due to the preloaded needle bearings.



Operator's control panel

The operating panel of the PSU 450 H is very user-friendly surface and is easily accessible. It is provided with a hand wheel for adjusting the material back fence, the vertical and horizontal clamping pressure control as well as other operating keys which are ideally positioned.



Hydraulic system

The EISELE PSU 450 H has an entirely hydraulically controlled and variably adjustable saw blade feed with electrical saw stroke limitation in upward and downward direction. A high-performance 2.4 HP motor combined with a 6.6 gallon pump provide optimum reliability.

Standard

The standard PSU 450 H includes:

- ⊕ A pole-changing three-phase motor 4.0/4.8 H
- ⊕ Saw blade speed rates 46/92 SFM
- ⊕ A vertical clamping unit with clamping pressure reduction (long-stroke cylinder)
- ⊕ A horizontal clamping unit with clamping pressure reduction (on the left hand side of the saw blade)
- ⊕ Adjustable material back fence (5.0" to the rear side)
- ⊕ Flood coolant system
- ⊕ Hydraulic system with a 6.6 gallon pump

Optional features are:

- ⊕ Speed range of 28/56/112/224 SFM (other speed rates on request)
- ⊕ Frequency-controlled drive, 10.7 HP, 28-230 SFM
- ⊕ Cutting pressure control via ammeter for automatic shut-down of sawblade
- ⊕ Additional horizontal clamping unit (on the right-hand side of the saw blade)
- ⊕ Spray mist system



Accessories

The following accessories are available:

- ⊕ Roller conveyors
- ⊕ Mechanical and electronic length measuring systems

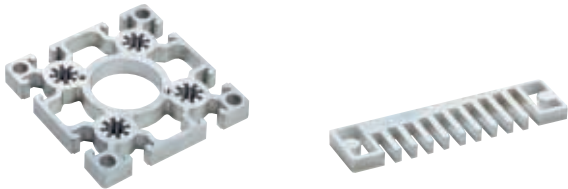
PSU

The PSU 450 L



High-Performance Circular Sawing Machine for Sawing Aluminium

- ▷ For precise cutting of aluminium sections and solid material
- ▷ Miter cutting within a range of 30° - 90° - 30° - 0° (left to right)
- ▷ Connection for addition of a chip exhaust system
- ▷ Speed range – 5,800/11,600 SFM
- ▷ Optional: An overall noise reduction hood with extended lateral tunnel arms reaching from the base frame over the protection hood - very effective.



PSU

The PSU 450 GS

Production Pipe Sawing Machine with Two-Hand Control

The machine is specially designed for cutting both bent tubes and straight tubes without any problems. The base construction is ideally suited for mounting special fixtures on the turn plate and in the vertical clamping system, thus making it possible to cut any bent tubes and to meet any requirements of the muffler and exhaust pipe industries.

The Two-hand safety control combined with the various clamping fixtures provided by the user covering the saw blade completely meet the EC-guidelines for accident prevention and other safety standards.

The vertical clamping unit is designed as a long stroke cylinder with a max. stroke length of 6.3". The release stroke can be set via a time relay on the operating panel.

The standard PSU 450 GS includes:

- ▷ Motor 4.0/4.8 HP
- ▷ Speed range – 28/56/112/224 SFM
- ▷ Long stroke cylinder with a max. stroke length of 6.3"
- ▷ Clamping pressure reduction
- ▷ Spray mist system
- ▷ Two-hand safety control
- ▷ Piece counter
- ▷ Hydraulic system
- ▷ Base construction with pedestals (moving by fork-lift truck is possible)

Special requirements of the customer will be considered as well:

- ▷ Bore holes in the base plate and vertical clamping plate for mounting special fixtures.
- ▷ Rapid speed rate for approaching the section to be sawn, then changing to normal feed rate when performing the sawing operation Customer-specific control systems
- ▷ Frequency-controlled drive



Standard

Pipe Sawing Machine

High-Performance Circular Sawing Machine for single-piece and mass Production

Thanks to the material feed unit and optional automatic mitering (on the VES model), the PSU 450 VE and VES run in the automatic mode. With its optimized sawing parameters, the newly designed clamping system with self-adjusting clamping units and PLC controls, the PSU 450 VE is ideally suited for single piece and mass production.

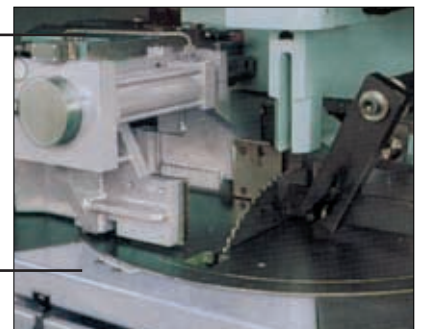


Material feed unit with clamping jaws (raisable)

The material feed unit includes clamping jaws which is driven by a hydraulic motor via a chain. The number of pieces to cut is entered on the PLC-control unit and the desired piece length can be set via a hand wheel and digital readout. The minimum feed length for 90° cuts is .39", the maximum length is 55.1". The multiple stroke feature allows 9 indexes. The self-adjusting clamping jaws with long-stroke cylinder in combination with a powerful hydraulic system does not require any additional tools, even when material dimensions change. This helps eliminate expensive set-up times. The material feed unit is raisable, thus allowing for easy loading of heavy sections either by a crane from the top or by a fork lift truck from the front side.

Miter angle adjustment on the PSU 450 VE

The miter angle adjustment is accomplished via a turn table made from wear-resistant material. There are fixed stops at 90° and 45° on the left and right hand side and the saw unit can be easily rotated manually. The total miter range of the saw unit is 120°.



Miter angle adjustment on the PSU 450 VES

This model has an automatic turn table. The turn table rotates automatically in coordination with the material feed cycle between two fixed stops which can be set to the desired angle. This automatic miter unit allows cutting of various angles between 90° through 30° on the left or right hand side.



The control unit

The PLC control is easy to operate with short programming procedures and controls the working cycles of the machine centrally. When set to automatic mode, the working cycles are executed automatically.

The saw unit

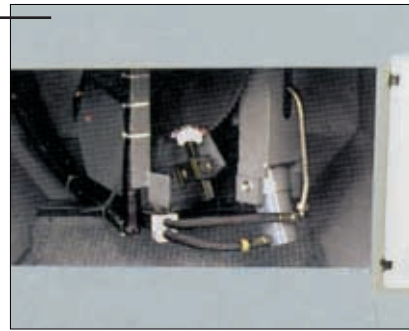
The saw unit is provided with a completely hydraulically controlled, variably adjustable drive with electric stroke limitation by potentiometers for both directions, upward and downward. The robust saw unit combined with a powerful gearbox and rapid positioning times ensure short cycle times.

Standard

The standard PSU 450 VE/S includes:

- ◊ PLC-control
- ◊ Pole-changing three-phase motor 4.0/4.8 HP
- ◊ Speed rates – 46/92 SFM
- ◊ Self-adjusting clamping units
- ◊ Clamping units are equipped with clamping-pressure reduction controls
- ◊ Raisable material feed unit
- ◊ Flood coolant system
- ◊ Hydraulic system

Accessories



Optional accessories available for the PSU 450 VE/S:

- ◊ Speed range - 28/56/112/224 SFM (other speed rates on request)
- ◊ Load-controlled saw blade switch-off via ammeter
- ◊ Spray mist coolant system
- ◊ Chip conveyor
- ◊ Chip wheel holder and chip wheels
- ◊ Roller conveyors and length measuring systems

DSU PSU 450 NC 1

High-Performance Circular Sawing Machine with NC-longitudinal axis

The PLC control of the PSU 450 NC1 offers user friendliness and extremely short programming procedures for a reliable automatic operation. Only the number of pieces to be cut and the length of the pieces to be cut need to be entered into the program. Miter angles within the range of left and right hand side up to 30° acute angle can be adjusted manually. The NC longitudinal axis positions the feed grippers by a servo motor, ball screw spindle and encoder.



The standard PSU 450 NC 1 includes:

- ◊ PLC-control
- ◊ NC-longitudinal axis for an accurate material positioning
- ◊ Pole-changing three-phase motor 4.0/4.8 HP
- ◊ Speed rates- 26/52 SFM
- ◊ Self-adjusting clamping units
- ◊ Clamping units are equipped with clamping pressure reduction controls
- ◊ Raisable material feed unit
- ◊ Flood coolant system
- ◊ Hydraulic system

PSU

PSU 450 CNC 2 IPC

The High-Performance Circular Sawing System with IPC-control

PSU 450 L CNC 2 IPC

The High-Performance Aluminium Circular Sawing System with IPC-control



Forward-looking

Flexible

The flexible IPC-controlled High-Performance Circular Sawing System for the utmost cost-effective production of small and large quantity runs

- ◊ Two controlled axis are ensuring exact material length positioning and miter angle settings.
- ◊ The standard integrated output gripper unit takes the cut pieces out of the machine and puts them at a defined place.
- ◊ Automatic positioning and retracting of the grippers out of the collision range
- ◊ Shortest cycle times due to the controlled saw stroke
- ◊ High-performance, load-independent positioning drives dramatically reduce the cycle times

Sorting unit on output side is designed as a controlled axis (PSU 450 CNC 3 IPC)

- ◊ By way of this third axis, the material can be exactly positioned to allow for multiple miter cuts
- ◊ Furthermore, the various pieces or sawing orders can be sorted and separated accordingly at different positions such as piece containers, tables, chutes etc. by means of the third axis in connection with a tilting roller conveyor
- ◊ The third axis can be designed in various length dimensions (sorting lengths)



The graphic interactive IPC-control allows for

- ▷ Quick and clear display of a sawing order by an interactive user guidance on the monitor
- ▷ Sawing orders – same profile with a pre-selected number of pieces cut from the same material
- ▷ Sawing orders – same profile, different pieces to be cut, however, all pieces out of the same piece of material.
- ▷ Sawing orders – different profiles, different pieces can be cut from different pieces of material.
- ▷ Production of pieces by help of a self-explanatory graphical display
- ▷ Profile data bank with technology/specification data
- ▷ Linking up the machine with an additional Office-PC working station
- ▷ Error recording feature including date and time for message
- ▷ Actual value displayed, therefore especially service-friendly
- ▷ Standard: Service-modem for on-line-diagnostics

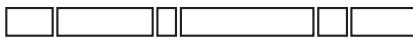


Possible cutting sequences

The sorting unit of the PSU is controlled by the program. Therefore, a variety of cuts can be carried out one after another. Miter angles between 30° on the left hand side and 30° on the right hand side can be cut. The unit is automatically moved out of the collision range of the saw unit.



90° cuts with same length



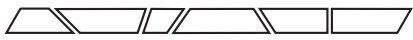
90° cuts with different lengths



Cuts with same miter angles; same or different lengths



Cuts with alternating angles; same or different lengths



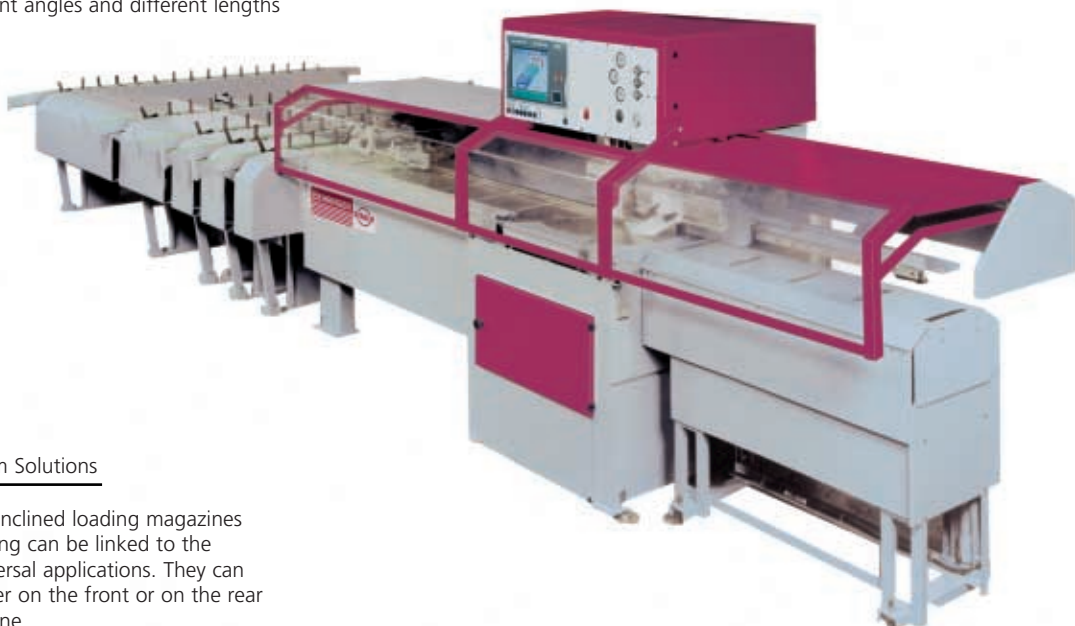
Cuts with different angles and different lengths

Accessories available:

- ▷ Frequency-controlled motor, 10.7 HP, 28-230 SFM
- ▷ Saw feed adjustable from control unit
- ▷ Chip conveyor
- ▷ Spray mist coolant system
- ▷ Tilting roller conveyor with sorting function available in different lengths.
- ▷ Sorting systems with several sorting stations, for different lengths
- ▷ Special clamping jaws for thin-walled profiles and tubes
- ▷ Handling systems
- ▷ Roller conveyors in different designs

The EISELE sawing systems with their convenient handling and user friendly features are the ideal machines for the user with varying and demanding requirements.

Accessories



The EISELE System Solutions

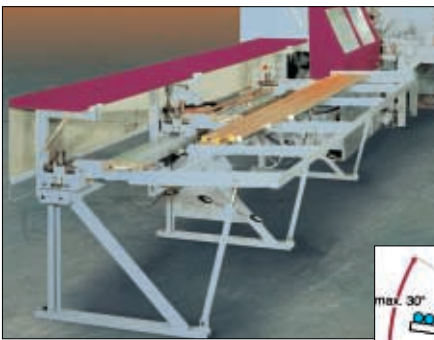
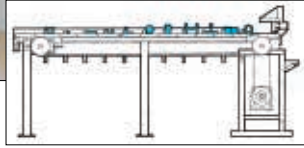
Flat, bundle and inclined loading magazines for material loading can be linked to the machine for universal applications. They can be mounted either on the front or on the rear side of the machine.

Options

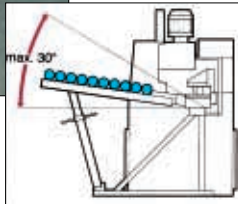
System solutions for a variety of applications



Flat magazine (chain) for automatic loading of all profiles.



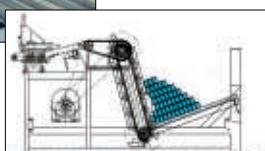
Inclined magazine for the automatic loading of round, rectangular and square material.



Bundle loading magazine for the automatic loading of round, rectangular and square material with separation unit for thinner cross sections .



Bar loading magazines for the automatic loading of large-diameter round, rectangular and square material.

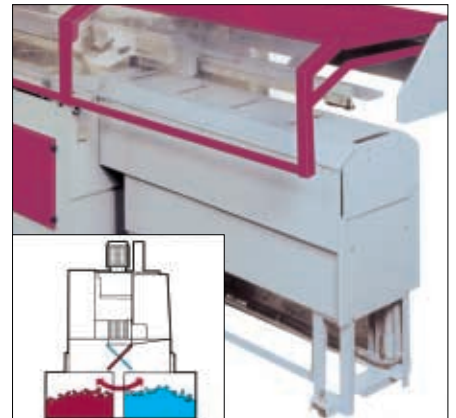


Infeed

Safety fences, light barriers

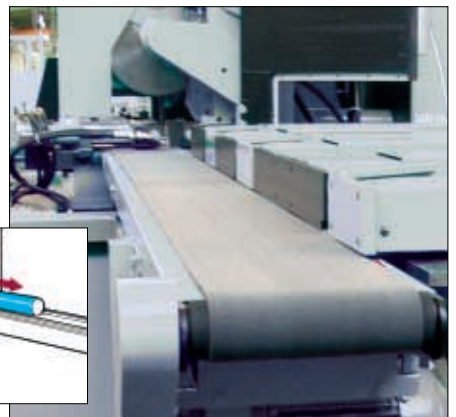
The CE-conformity of the machine system requires the appropriate safety features such as safety fences, light barriers and anti-skid mats etc.

Sorting systems



Tilting, sorting roller conveyor for sorting of trim cuts and remnants and for transferring finished pieces to other positions.

Discharge



Belt conveyor with single or multiple sorting or buffer stations depending on the requirements. Transferring of pieces to other units such as brush-deburring, furnaces, robots etc or stamping of the pieces (etching, stamping etc.)

Model		PSU 450 G	PSU 450 H	PSU 450 L	PSU 450 GS
Special Application				Aluminium	Production sawing of tubes two hand safety control
Sawblade Diameter – Max.	inches	17.7	18.5	18.5	17.7
Cutting Range – Max.	inches				Depends on each application
Rectangles	90°	10.2 x 1.1	15.7 x 1.1	15.7 x 1.1	/
Rectangles	45°	7.0 x 1.1	11.0 x 1.1	11.0 x 1.1	/
Squares	90°	5.5	5.9	5.9	/
Squares	45°	4.7	5.5	5.5	/
Round	90°	5.9	6.3	6.3	/
Round	45°	5.9	6.3	6.3	/
Cutting Speeds-Standard	SFM	46/92	48/96	48/96	28/56/112/224
Optional Speeds	SFM	Upon request	30/60/120/240	Upon request	Upon request
Main Drive Motor	HP	4.0/4.8	4.0/4.8	8.7/10.7	4.0/4.8
Frequency Motor	HP		10.7 30-240 SFM	Upon request	10.7 28-230 SFM
Feed Rate / Sawblade Adjustable	In./Min.	0/33	0/33	0/106	0/33
Return Speed of sawblade	In./Min	177	177	177	177
Turn table rotation to both sides	Degrees	30-90-30-0	30-90-30-0	30-90-30-0	
Connection for chip exhaust system	Quantity			2	
Gross Weight	Pounds	2,420	2,750	2,750	2,420
Net Weight	Pounds	2,200	2,500	2,500	2,200
Dimensions LxWxH	Inches	67x42x70	48x60x81	48x60x81	30x59x79

Model		PSU 450 VE/VES	PSU 450 NC 1	PSU 450 CNC 2 IPC	PSU 450 L CNC 2 IPC
Special Application					Aluminium
Sawblade Diameter – Max.	inches	18.5	18.5	18.5	18.5
Cutting Range – Max.	inches				
Rectangles	90°	12.2 x 1.1	9.4 x 3.3	9.4 x 3.3	9.4 x 3.3
Rectangles	45°	10.2 x 1.1	7.0 x 2.7	7.0 x 2.7	7.0 x 2.7
Squares	90°	5.9	5.9	5.9	5.9
Squares	45°	5.1	5.1	5.1	5.1
Round	90°	6.3	6.3	6.3	6.3
Round	45°	5.9	5.9	5.9	5.9
Cutting Speeds-Standard	SFM	48/96	48/96	30/60/120/240	6,000/12,000
Optional Speeds	SFM	30/60/120/240	30/60/120/240	Upon request	Upon request
Main Drive Motor	HP	4.0/4.8	4.0/4.8	4.0/4.8	8.7/10.7
Frequency Motor	HP	Upon request	10.7 30-240 SFM	10.7 30-240 SFM	Upon request
Feed Rate/Sawblade Adjustable	In./Min.	0/33	0/33	0/33	0/106
Return Speed of sawblade	In./Min.	177	177	177	177
Turn table rotation to both sides	Degrees	30-90-30	30-90-30	30-90-30	30-90-30
Rotation in Automatic mode	Degrees	To fixed stop		30 Left/30 Right	30 Left/30 Right
		On VES –30 Left/30 Right			
Single stroke of feed unit	inches	55.1	58.6	58.6	58.6
Multiple stroke	inches	55.1 x 9	393.6	393.6	393.6
Feed unit speed / forward	In./Sec.	9.8	19.6	19.6	19.6
Feed unit speed / return	In./Sec.	9.8	19.6	19.6	19.6
Connection for chip exhaust system	Qty.				2
Gross weight	LBS.	5,170	5,170	5,720	5,720
Net weight	LBS.	4,600	4,600	5,150	5,150
Dimensions LxWxH	inches	115x53x81	115x53x81	166x53x81	166x53x81

Behringer Eisele reserves the right to make technical and construction improvements. Illustrations, dimensions and weights are not binding.





Program

Other machines and products in our program

VMS 2000

Manual and semi-automatic vertical circular sawing machines of the VMS series



VA-0 / -II

Straight-cut fully-automatic systems for virtually any machineable steels



VA-L

Straight-cut fully-automatic systems for cutting non-ferrous metals and aluminium



Special systems

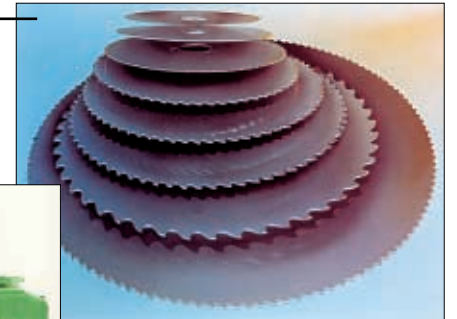
Special sawing systems and system solutions upon request

Accessories

A large selection of high-quality HSS circular saw blades with a specially treated surface, perfectly tuned to the requirements of our high-performance circular sawing machines

The Original EISELE Coolant Concentrate ensures high cutting-performance and longer blade life.

The EISELE concentrate for spray mist coolant systems reduces the coolant and lubricant consumption to an absolute minimum. It is environmentally-friendly (biologically degradable), which means that disposal and storing costs can be minimized and the health risk of the operator considerably reduced.



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