VOLLMER

Service Center

System akemat U6 R2

The new machine concept for total machining.

Automatic saw blade machining for optimum precision.

A particularly cost-effective machining concept for the service industry.

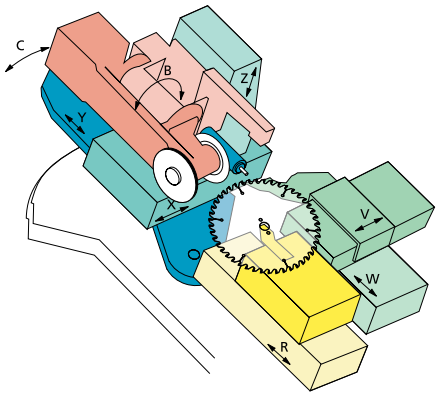
Machining using the akemat grinding principle with inclined saw blade

As a specialist in grinding carbide-tipped circular saw blades to the highest quality, Vollmer have had a successful extensive machine range for decades. Fully-automatic machining procedures and a process organization in multi-shift operation are prerequisite today for improved cost-effectiveness.

The akemat Service Center is the economical alternative for the totally automatic machining of carbide tipped circular saw blades; tooth tops, face and optional hollow face, all in one setting. Depending on the number and design of the loading carriages, approx. 50 to 100 saw blades.

This compact unit has been completely redeveloped using the akemat grinding principle, a characteristic of which is the positioning of the saw blade in an inclined position during the grinding process.

Eight CNC-axes guarantee extreme flexibility of the grinding machine for even the most complicated of tooth geometries, in one cycle. Two further CNC-axes control the operating movement of the loading system and ensure a quick change of saw blades. The saw blade is positioned independent of diameter and is precisely automatically measured with the measuring probe.



The X-, Y-, Z-, V-, W-, R-, B- and C- axes are CNC-controlled

Fully-automatic machining with two or three loading carriages.

Operation is simple. Several grinding programs have already been integrated and can be adjusted and called up on the LCD-colour display via the menus. The user is guided through the program via graphically supported clear text. Particularly advantageous is the ability to transfer information to the machine via the network (DNC). Exemplary grinding performances are guaranteed using either water or oil based coolants.

During the automatic grinding process, further loading carriages can be prepared for later loading (for example, for the automated shift during factory closure times).

The akemat Service Center with two loading carriages for the fully-automatic machining of approx. 50 saw blades

The akemat Service Center with three loading carriages for the fully-automatic machining of approx. 100 saw blades

Simple operation, intelligent control.

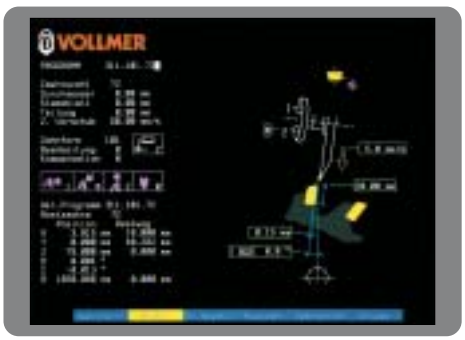
The control panel with LCD-colour display and simple user guidance

Operation is flexible via CNC-controlled axes and Vollmer industrial standard PMC-multi-processor control.

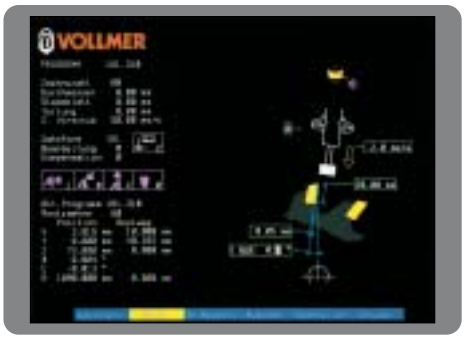
The saw blade data is entered only once, automatically stored for all machining and then transferred directly to the machine via fibre optics. Not only is this particularly easy, but also very cost-effective. Saw blades featuring different outside and bore diameters and varying tooth geometries are quickly located, positioned automatically, measured via the measuring probe, and then completely machined.

The LCD-colour display features identical simple user guidance at both the control desk as well as the data entry point. Furthermore, important information concerning the actual operational and functional situation can also be obtained from the colour display.

With the application of saw blade management with direct data transfer to your PC, only the stored data needs to be accessed.

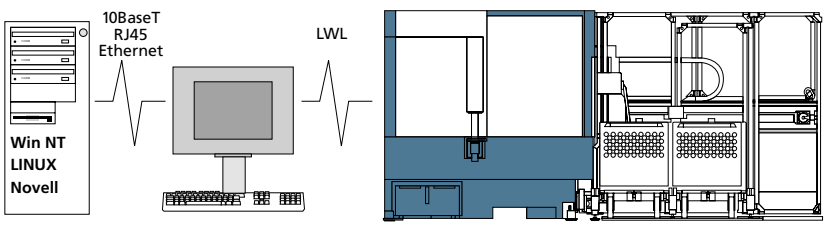


LCD-colour display face grinding



LCD-colour display optional hollow tooth grinding

LCD-colour display top grinding



Saw blade management (DNC) with direct data transfer to customer-owned EDP-system

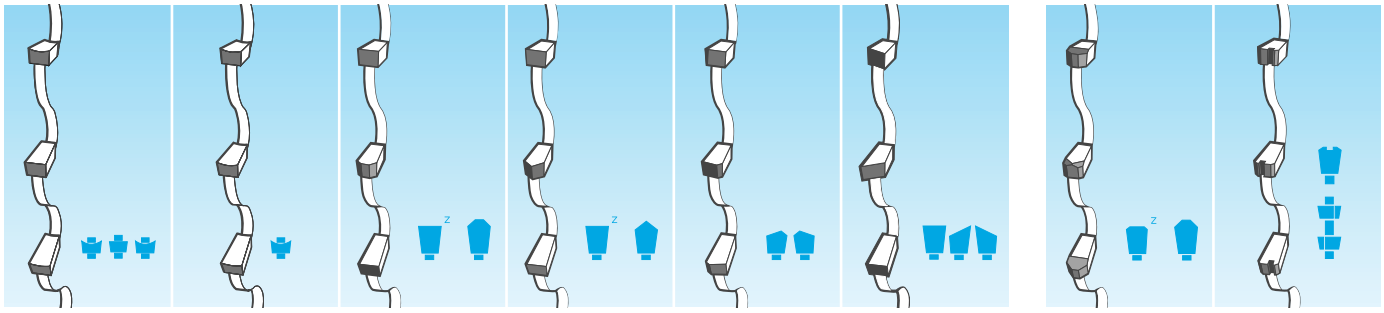
The highest precision for all tooth geometries.

The akemat Service Center offers you optimum flexibility for machining complicated tooth geometries. Each geometry, including varying chamfer angles and bevel grinding angles, is ground from one location. All bevel grinding angles can be individually selected. If the hollow face is to be ground, a high-frequency spindle can be connected.

Hard- and software programs for tooth geometries for the machining of wood are included as standard. With additional hard- and software packages, the application possibilities can be increased considerably. For example, programs for the machining of metal, for the machining of several surfaces on the tooth top or for oscillation grinding are all possible.

Exacting procedures guarantee the path-controlled tooth feed for tooth pitches of up to 120 mm. Rake angles and clearance angles are measured automatically via a measurement probe or selected from the set values. Tooth geometry is read by the measuring system. The blade thickness is also automatically read.

Tooth shape example



Hollow face tooth geometry

Combination hollow face / straight face

Square tooth - trapezoidal tooth

Square tooth - triangular tooth

Alternation tooth with chamfer

Group toothing

Trapezoidal tooth with tooth height difference (Braunscheiger tooth)

Chip breaker groove

Highly cost effective automatic operation.

The advantages of the akemat U6R2 grinding machine can also be achieved using the stand-alone machine. A later connection to a loading device is possible at any time, thus offering particular cost-effectiveness.

**With two loading carriages for approx. 50 saw blades
with three loading carriages for approx. 100 saw blades**

Carefully considered down to the last detail.

Hollow tooth grinding (optional)

Automatic measuring

The Service Center system akemat U6 R2 meets the highest of requirements in all aspects of stability, precision, safety, noise and emission protection – a prerequisite for top results. Full enclosure with distinctive design and optimum accessibility to the machine's interior via a large sliding door are all standard features. Automatic loading and unloading is achieved through a side door which closes during the grinding process.

Face grinding

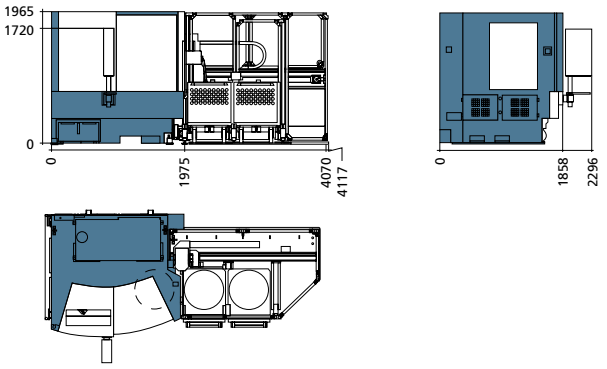
Top grinding with 200mm diameter grinding wheel

Technical data at a glance:

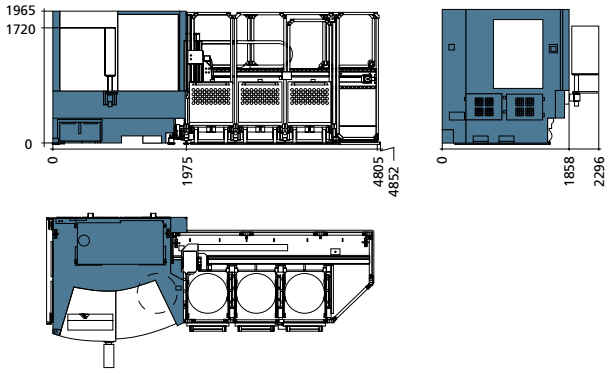
Circular saws				
Outside diameter	100	to	650	mm
without loading system		to	800	mm
Bore diameter	10	to	180	mm
without loading system	up	to	220	mm
Blade thickness	up	to	5	mm
without loading system	up	to	8	mm
Tooth pitch	6	to	120	mm
Rake angle	-30°	to	+30°	
Rake angle with hollow face	-10°	to	+25°	
Clearance angle	0°	to	30°	
Bevel grinding				
on tooth top	up	to	45°	
on tooth face	up	to	30°	
on the negative face	up	to	30°	
Tooth height difference	as required			
Grinding wheels				
on the tooth face				
Outside diameter			200	mm
Bore diameter			32	mm
Peripheral speed	25	to	45	m/s
on the hollow face				
Unit holding fixture diameter			6	mm
Unit speed			55000	min^{-1}
on the tooth top				
Outside diameter	200 mm/127 mm			
Bore diameter			32	mm
Peripheral speed with diameter 200 mm	25	to	45	m/s
Peripheral speed with diameter 127 mm	16	to	30	m/s
Working speed	up to 12 teeth/min			
Air consumption	approx. 70 l / min			
Grinding speed		to	20	mm/s
Coolant pump flow rate			80	l /min
Coolant tank content	approx.		120	l
Overall connected load	5.6 kVA,		6	kW
Weight	approx.		3000	kg

Dimensions:

Service Center system akemat U6 R2
with two loading carriages



Service Center system akemat U6 R2
with three loading carriages



VOLLMER WERKE
Maschinenfabrik GmbH
P.O.Box 1760
D-88396 Biberach/Riss
Phone 07351/571-0
Telefax 07351/571-130
info-vobi@vollmer.de
www.vollmer.de

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