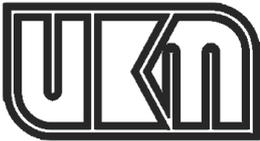


BSM 80

information brochure



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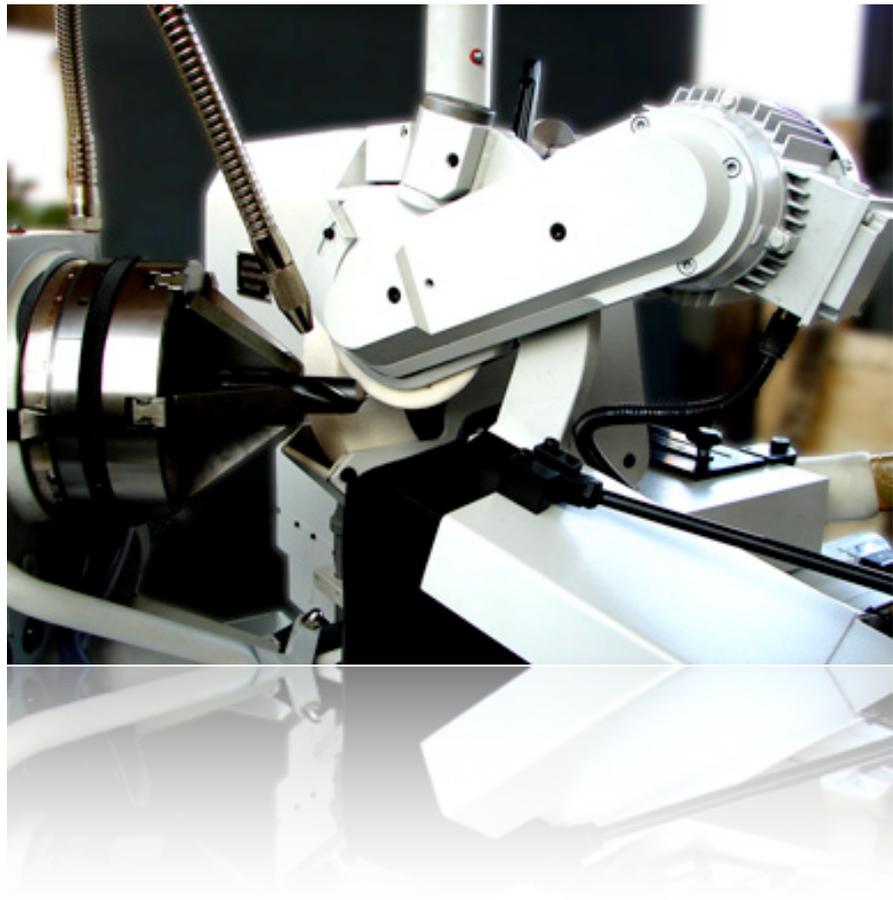
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BSM 80

Drilling and boring are very important machining Operations by chip removal. Due to varying shapes and angles of cutting edges, the drill which became a high-duty tool is adapted to a wide range of materials and production processes. High cutting Performance and long tool life of the cutting edge including precise and clean bore holes depend on an accurate bit and on precise cutting edges. KLINGEL-Drill Grinding Machines Models BSM 80 / BSM 100 fully meet these requirements.

Construction

The basic machine of both models is composed of the machine frame, the wheel carriage with the grinding spindle and the tool carrier with the clamping chuck.

The strongly dimensioned machine frame offers sufficient room for the electric control and the cooling plant.

The wheel carriage is mounted in longitudinal and transverse direction on roller guideways which are free from backlash. Adjustment to both directions is by means of handwheels with scale reading.

The grinding spindle supported on rolling bearings is driven, free from Vibration, by a built-in motor. The grinding wheel is mounted on a clamping flange with balancing snap ring groove. Tapered shaft ends of the grinding wheel spindle allow for fast change of grinding wheels.

Provision is made for an infinitely variable adjustment of the tool carrier with respect to the various angles of the point.

The operational movements - drive of the clamping chuck, lateral oscillating movement and infinitely variable axial stroke for the free cut - are positively connected with each other. They are driven by a pole changing motor with two revolution speeds for both clockwise and anticlockwise Operation. The Standard cam allows the grinding of right hand cutting drills with two and three cutting edges.

The clamping chuck of model BSM 80 is equipped with a Single set of clamping jaws for a chucking capacity ranging from 10 to 50 mm. Extra long clamping jaws ensure the centering in the shank of the drill.

Contrary to normal Standard machines, BSM 80 is built in accordance with individual requirements and consequently may contrast with them. Customers may adapt the drill grinding machines to their special needs using the following devices and attachments.

The cooling plant is housed in the machine base. Its tank holds approx. 70 litres. For a particularly heavy accumulation of sediment we recommend a separator with a capacity of 250 litres.

Thinning out is effected with the second grinding wheel immediately after the grinding of the point without unclamping the drill.

The oscillating device moves the wheel carriage longitudinally with respect to the grinding wheel shaft ensuring the uniform wear of the entire wheel width.

Because of the automatic advance with infinitely variable speed and preselection counter, the grinding Operations are performed automatically.

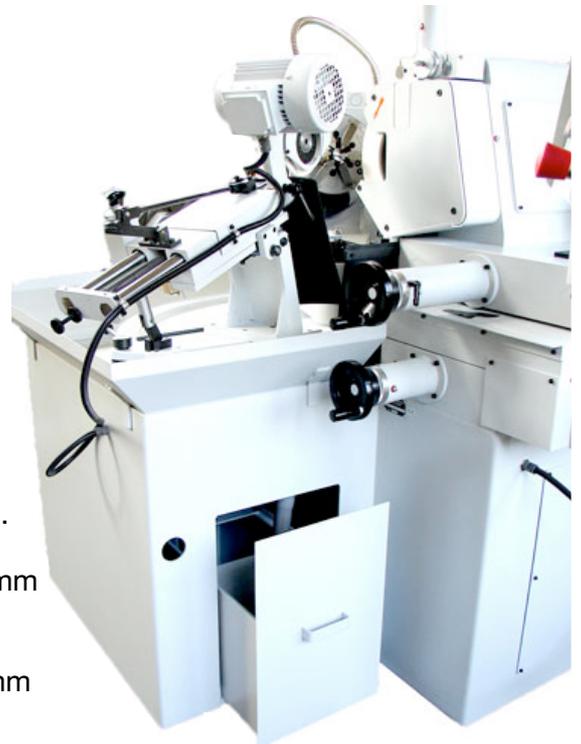
Dressing of the circumference and wheel surface is possible with the dressing device for the main grinding wheel with longitudinal and transversal adjustment of the spindle.

The positioning device moves the clamping chuck automatically to the correct position for the clamping of the tool.



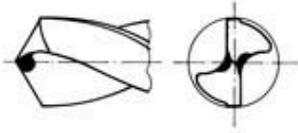
Technische Daten

Tool mounting in chuck	5 - 80 mm
Tool length	unlimited
Automatic grinding with Cutting edges Cutting direction	2 - 3 clockwise and anticlockwise
Tool revolution speeds	8-12-15-23 /min.
Advance per minute infinitely variable	approx. 0,4 - 4 mm
Main grinding wheel revolution speed power	ø 300x70x127 mm 1420 U/Min. 0,55 kW
poning wheel revolution speed power	ø 150 mm 2765 /min 0,55 kW
coolant pump	0,065 kW
connected load	approx. 3,2 kW
total weight	1100 kg



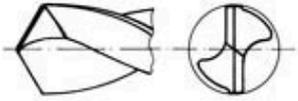
Technical data are subject to change.

Grinding methods



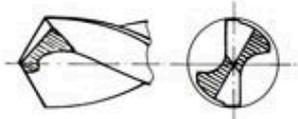
Cone surface grinding

Cone surface grinding is effected on the rotating drill at infinitely variable adjustment of the clearance angle. Without unclamping the tool and without repositioning, the cross cutting edge is corrected by means of the thinning device.



Grinding of facets

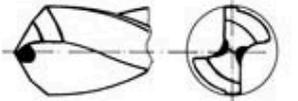
Facets are ground on the rotating drill too. The two different rake pairs are produced by means of a "facet cam".



Cross cutting

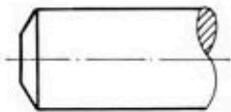
The cross cutting is realised by two operating phases. First the cutting edges are ground at the rotating drill. It follows the end of the rake up to the drill point with a sharp-edged thinning grinding wheel. The drill is not running.

With BSA 40/50 up to approx. 15 mm \varnothing possible,
With BSM B0/100 up to approx. 30 mm \varnothing possible.



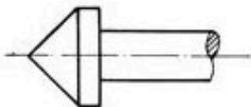
Grinding for gray cast iron

The set-off cutting edge is obtained by adjusting of the angle of the point without unclamping the drill. In any other respect, grinding and thinning correspond with cone surface grinding operation.



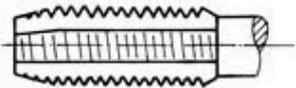
Core drills

with 3 or 4 cutting edges undergo continuously a finish grinding process. Free grinding is realised by an infinitely adjustable axial motion.



Countersinks

The grinding of core drills with 2,3,4 or 6 cutting edges is performed at an extremely small clearance angle (infinitely variable adjustment). Additional attachments are provided to be put on for tools with one and with five cutting edges.



Screw taps

With 2,4, or 6 cutting edges are first ground with the tool rotation. Only by straight fluted screw taps.

The grinding methods shown on these illustrations may be performed exactly by using the corresponding accessories.