

 **Bohle**

Silberschnitt



Automatic Glass Cutting

This is Bohle.

The Bohle Group is Europe's leading manufacturer and supplier of tools, machinery and accessories for glass processing, glass finishing and picture framing. The family business, founded in 1923, is now represented by over 300 employees at fourteen locations in Germany and abroad. Divided into the eight product divisions Handling, Glass Cutting, Glass Bonding, Glazing, Tools, Machinery, Fittings and Framing, the total product range is precisely tailored to the respective customer groups from trade, industry and retail. Quality is the leading principle at Bohle - in every area. To live up to this standard, the company develops and manufactures many products themselves. A modern logistics centre quickly dispatches the ordered goods to the customer.



Bohle is close to the customer.

Bohle is an international company - with German roots. The products are exported to almost every country in the world; exports account for over 60% of business. In order to best recognize requirements which vary from market to market, Bohle is close to the customer: with two German locations, eleven foreign subsidiaries and over 100 agents worldwide.

The Bohle private brands.

During the more than 80-year history of the company, numerous product brand names originated under the company name Bohle. Today the brand names Silberschnitt, Veribor, Diamantor and Verifix represent entire product types within their areas of application.

Silberschnitt VERIBOR DIAMANTOR VERIFIX

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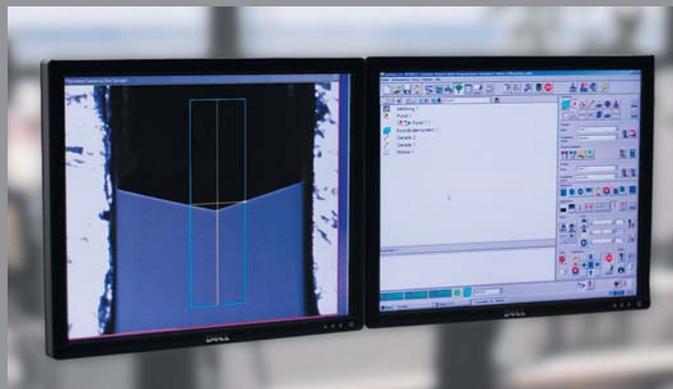
A faint, white line drawing of a cutting wheel assembly, showing a cylindrical wheel mounted on a shaft with various components like bearings and a holder.



At an early stage, Bohle recognised the remarkable properties of carbide steel. One of the major benefits of the material is that it features a service life which is several times longer than the life of conventional steel wheels. Furthermore, the carbide cutting wheels have consistently good cutting properties which provide clean cut edges for different glass thicknesses. A similar development can be seen with PCD (polycrystalline diamond). Bohle is continuously investing in the research and development of glass cutting technology. New materials are being tested both in our own laboratory and in day-to-day practice in trial plants as well.

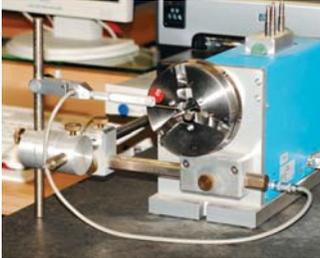
Best raw materials and outstanding machining

The careful selection and analysis of the raw material is the starting point for producing top quality glass cutting wheels. But not only the basic material is critical for the quality of the cutting wheel; tremendous know-how lies in the machining of the wheels. The wheels are ground to perfection on specially developed machines. The grind is adapted to suit the later application and results in consistently long service lives and optimal cutting results. The Silberschnitt cutting wheels obtain the best running qualities because the holes are hone processed and the side surfaces are fine polished and lapped. The majority of the world's well-known cutting machine manufacturers put their trust in Silberschnitt quality and standardly equip their systems with automatic cutting technology from Bohle.

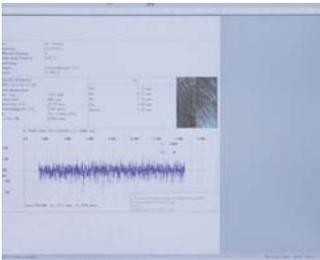


Results of the angle measurement

A solution for every requirement



Surface roughness measuring device



Result of surface roughness measurement

Equipped with the latest technology, Bohle manufactures cutting wheels for a wide variety of applications. In conjunction with our customers we develop wheels designed to meet the special demands of the final product being cut. No matter whether it is float glass, drawn glass, thin glass, thick glass, or special glass like display glass or borosilicate glass, Bohle develops the optimum solution for every requirement. Cutting angles as well as roughness of the grind are made to suit the intended application of the wheel. With the right combination of cutting angle, cutting pressure and cutting speed, it is ensured that the optimum tension is produced in the glass, significantly reducing splintering. Apart from special grinds for specific applications, Bohle produces three standard finishes which cover the majority of cutting requirements encountered.

As a company with high quality standards, Bohle naturally maintains their own test laboratory and is ISO 9001 certified.



» The grinds «

Silberschnitt
ACTIVE

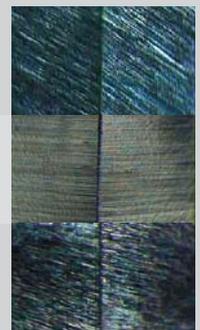
- For automatic cutting of shapes as well as laminated glass
- For open cuts in glass thicknesses of 2 to 6 mm in the automotive field
- For standard cutting with an angle from 145° and up
- For coated glass such as low-E

Silberschnitt
BASIC

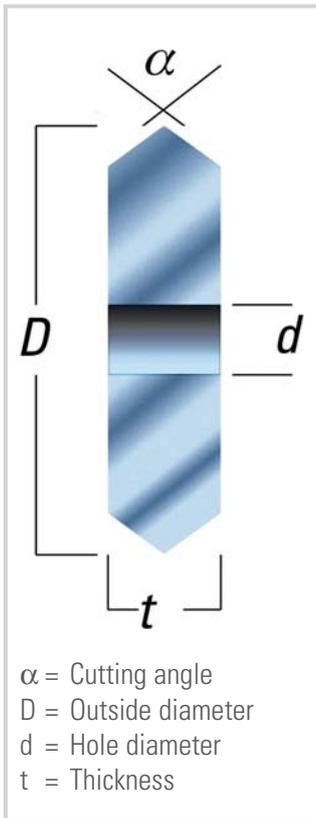
- For automatic cutting of float glass 2 to 8 mm thick

Silberschnitt
CONTACT

- For thin glass where high edge quality is required
- For display glass as well as LCD, TFT and PDP



Cutting angles



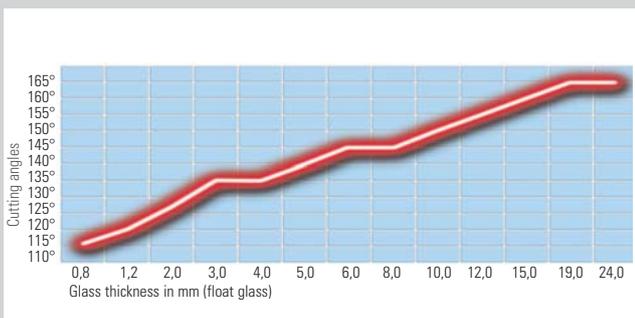
In the true sense of the word, glass is not cut, but rather broken. By scoring the surface of the glass with a cutting wheel, tension is built up in the glass. Bending the pane, either by hand or with a tool, results in a controlled break. In order to be able to cut glass of different thicknesses and coatings, the cutting wheel must have the optimum cutting angle. Only when the cutting angle is exactly suited to the glass can the best break quality be achieved and the edge damage be reduced to a minimum.

Cutting pressure

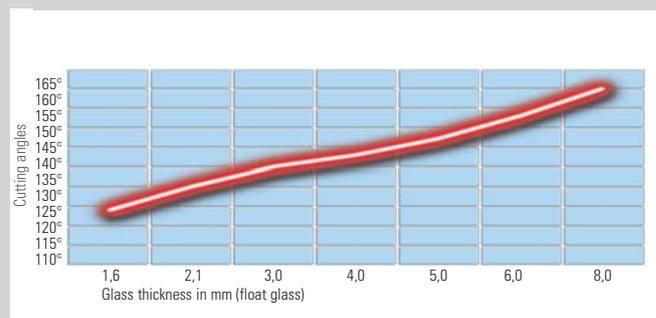
When cutting glass, the right combination of cutting pressure and cutting angle is very important to keep the score as uniform and narrow as possible. A good score looks like a fine, silvery thread. Excessive cutting pressure increases the risk of glass splintering. In this case, the broken edge exhibits a rough pattern with irregularities. The diagram below can help determine the optimum cutting angle.

Cutting speed

Not only the cutting pressure but also the cutting speed is important for a good cut. In general we can say that it is better to cut quickly, because doing so reduces the cutting pressure and allows a blunter wheel angle to be selected. This in turn improves the buildup of tension along the score in the glass and results in better breaking quality.



Cutting angle diagram for straight cuts



Cutting angle diagram for shape cuts

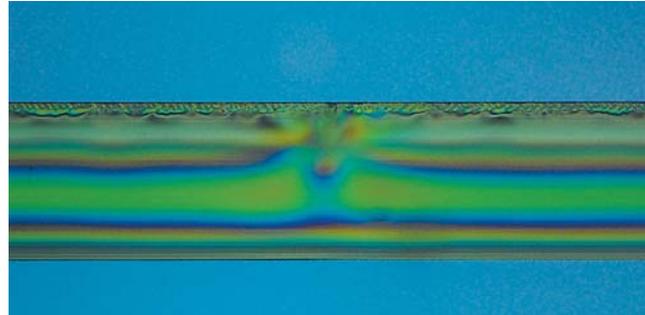
Wheel choice

The smaller, the better. As a rule, wheels with the smallest possible diameter should be used because, in conjunction with the cutting speed, they allow the cutting pressure to be reduced.

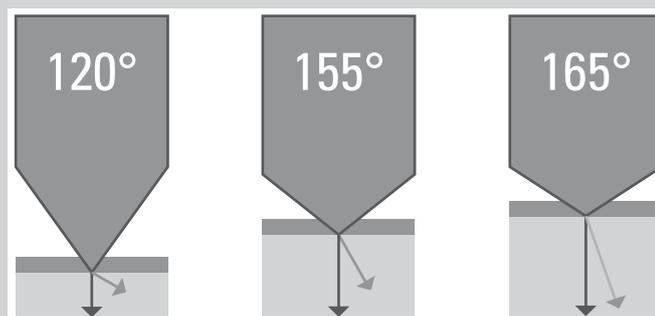
The cutting angle must be determined according to the glass thickness. The cutting geometry results in a force which creates tension in the glass. The more obtuse the cutting angle is, the greater the build-up of tension.

Customised solutions on the spot

In addition to standard solutions, Bohle will manufacture all Silberschnitt wheels in increments of 1° (from 75° to 165°) on request. The Bohle professionals will also be happy to assist you on site to find solutions for your applications. Whether you need cutting wheels, wheel holders, complete solutions or other products for automatic glass cutting: by working closely with the customer we can find optimum solutions. Call us. We will be glad to help you.



Polarisation filtered photo of a glass edge:
Snap-shot taken directly after cutting



Cutting angle and build-up of tension in the glass



Cutmaster Gold carbide cutting wheels with 10-fold service life

The innovative Cutmaster Gold carbide cutting wheels achieve what the glass processing industry has long been waiting for: the balance between cost reduction and quality improvement at the same time. Cutmaster Gold, the newest member of the Silberschnitt family of products, reduces costs due to its very long service life. Especially when cutting laminated safety glass as well as edge cutting at float glass facilities, service lives can be achieved which are at least ten times as long as that of standard cutting wheels.

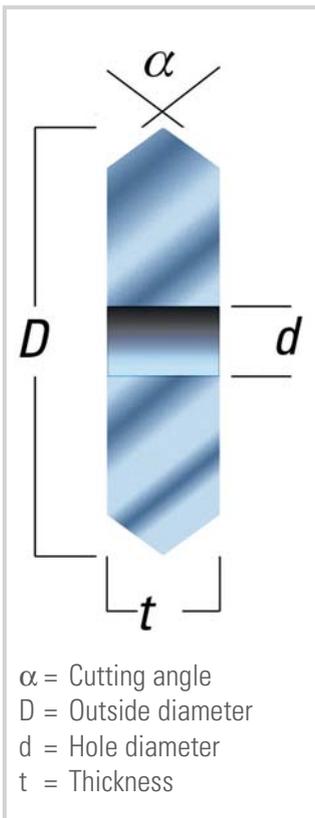
At float glass facilities Cutmaster Gold achieves over 250 km of cutting performance, which until now was only possible with higher priced wheels made of polycrystalline diamond (PCD). Furthermore, significant savings can be attained in maintenance: As a result of the long service lives, cutting wheels and wheel holders don't need to be exchanged as frequently as usual. Moreover, the adjustment of cutting pressure which comes with the wheel exchange is required less often. The quality improvement of the cutting result is achieved by the special material configuration of the wheel coating.

Contrary to standard carbide cutting wheels, the cutting quality remains at the same high level over the entire operating time. Especially when cutting laminated glass, this excellent quality significantly reduces the danger of glass breakage. To ensure the ultimate cutting performance and service life, Cutmaster Gold wheels are used only in metal pillar posts.

Standard glass cutting machines manufactured by Bavelloni, Benteler, Bottero, Bystronic, Grenzebach, Hegla, Intermac, Lisec, Macotec und Rohmer + Stimpfig can therefore easily be equipped with Cutmaster Gold.

» Reduce costs, improve cutting quality «

- 10-fold service life!*
- Less frequent wheel changing results in cost savings*
- Consistently high cutting quality over the entire time in use*



Type	02	12	03	
D	5,0	4,1	5,6	
t	1,0	1,08	1,08	
d	1,3	1,42	1,42	
Packing unit	1/100 pc	1/100 pieces		1/100 pieces
110°			12C110G	03C110G
118°			12C118G	
120°			12C120G	
125°			12C125G	03C125G
130°		12A130G	03A130G	03C130G
135°	02A135GL	12A135G	03A135G	03B135G 03C135G
145°	02A145GL	12A145G	03A145G	03B145G 03C145G
148°		12A148G	03A148G	03C148G
150°		12A150G	03A150G	03C150G
152°		12A152G	03A152G	
153°		12A153G	03A153G	03C153G
154°		12A154G	03A154G	
155°	02A155GL	12A155G	03A155G	03C155G
158°		12A158G	03A158G	03C158G

The Silberschnitt polycrystalline diamond (PCD) cutting wheel was developed for applications demanding a long service life and good cut edge quality. These extremely hard cutting wheels demonstrate their capabilities particularly well when edges are cut during float glass production: the service lives in this application are extraordinarily long. And when cutting very thin glass such as LCD, TFT or PDP, the Silberschnitt PCD wheels cut cleanly with practically no dusting or splintering. PCD wheels can be re-ground many times and are therefore especially economical. Bohle can produce cutting angles to suit your specific applications.

Diamond cutting wheels feature the following characteristics:

- An extraordinarily long service life
- Consistently high cutting quality over the entire lifespan
- Outstanding cut edges
- Significant reduction of glass splintering/dusting
- Adaptation to the particular application



Wheel holder, complete	Article No.	490D000	491D000	492D000	493D000	494D000	423D000
Wheel holder	Article No.	490.5	490.6	490.7	490.8	490.6	423.5
Axle	Dimensions	ø1,5 x 4,1	ø0,8 x 4,1	ø1,5 x 6	ø1,3 x 4,1	ø0,8 x 4,1	ø1,3 x 4,1
	Article No.	497D200	497D300	497D400	497D100	497D300	497D100
Wheel	Dim. in mm	ø5 x 1,08 x ø1,51	ø2,55 x 0,65 x ø0,8	ø5 x 1,08 x ø1,51	ø3,6 x 1,08 x ø1,31	ø3 x 0,65 x ø0,8	ø3,6 x 1,08 x ø1,31
	Article No.	483D000	484D000	483D000	482D000	485D000	482D000

Silberschnitt carbide cutting wheels



The optimum packaging for your cutting wheels

- Different packaging sizes to suit your requirements
- Cutting wheel edges are perfectly protected during transport
- Reclosable, handy transparent box
- Your stock of cutting wheels can be seen at a glance
- Labelling for simple reordering

Please note our packing units:

The first two numbers identify the wheel type. This is followed by a letter (A, B and C), which defines the grind. The three numbers following the letter indicate the cutting angle. If there is no letter after the cutting angle, it is a pack of 10 cutting wheels. The pack of 100 wheels is identified by an "H" at the end of the code. On pages 12 and 13 you will find a table showing the standard wheels available from Bohle ex stock.

Article number	Wheel type	Grind	Cutting angle	Packaging
03A155	03	A	155	10
03A155H	03	A	155	100

Wheels with special tolerances for Lisec cutting systems with holder type 439.0 / 439.1:

These wheels have special tolerances. (thickness tolerance +0.01).
The code number has an "L" (Lisec) following the cutting angle numbers;
the packing unit corresponds to that of all the other wheels.

Article number	Wheel type	Grind	Cutting angle	Packaging
02A155L	02	A	155	10
02A155LH	02	A	155	100

Customised solutions on the spot

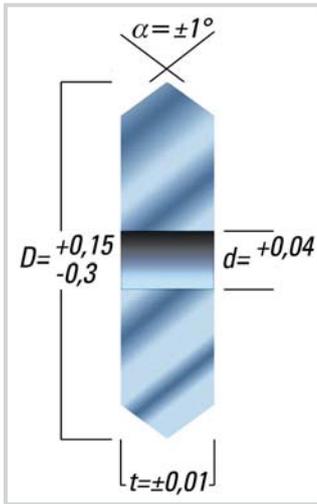
In addition to standard solutions, Bohle will manufacture all Silberschnitt wheels in increments of 1° (from 75° to 165°) on request. The Bohle professionals will also be happy to assist you on site to find solutions for your cutting requirements. Whether you need cutting wheels, wheel holders, complete solutions or other products for automatic glass cutting, by working closely with you we can find optimum solutions. Call us. We will be glad to help you.

In order to help you make the right choice from the large number of possible combinations, we have summarised the glass cutting wheels for the most frequent applications in the table below and they are readily available from stock.

- Please select the cutting wheel with the dimensions you require.
- The table on page 6 gives you recommendations for the correct cutting angle.
- Recommendations for choosing the correct grind can be found on page 5.



Type	06		66			05			04			12			02	
D in mm	2,5		3			3			4			4,1			5	
t in mm	0,65		0,65			1			1			1,08			1	
d in mm	0,8		0,8			1,3			1,3			1,42			1,3	
Packing unit	10 / 100 pc.		10 / 100 pc.			10 / 100 pc.			10 / 100 pc.			10 / 100 pc.			10 / 100 pc.	
Order Number / Cutting angle	06B000	06C000	66A000	66B000	66C000	05A000	05B000	05C000	04A000	04B000	04C000	12A000	12B000	12C000	02A000	02B000
77°																
90°																
116°																02B116
118°																
120°													12B120	12C120		02B120
127°													12B127	12C127	02A127	02B127
135°	06B135					05A135	05B135		04A135	04B135		12A135	12B135		02A135	02B135
140°	06B140					05A140	05B140		04A140	04B140		12A140	12B140		02A140	02B140
145°	06B145					05A145	05B145		04A145	04B145		12A145	12B145		02A145	02B145
148°												12A148				
150°	06B150					05A150	05B150					12A150	12B150		02A150	02B150
152°												12A152				
153°												12A153				
154°												12A154				
155°												12A155	12B155		02A155	02B155
156°																
158°												12A158				
159°												12A159				
160°												12A160	12B160		02A160	
165°												12A165	12B165		02A165	
for Wheel holder	432.6		432.6			432.3			414.000			422.0 432.0/432.1 434A000			432.3/416.0 419.0 432.0	
Axle	496.080		496.080			496.130			Steel axle BO414 riveted			496.422			Steel axle (BO414;2025.0)	

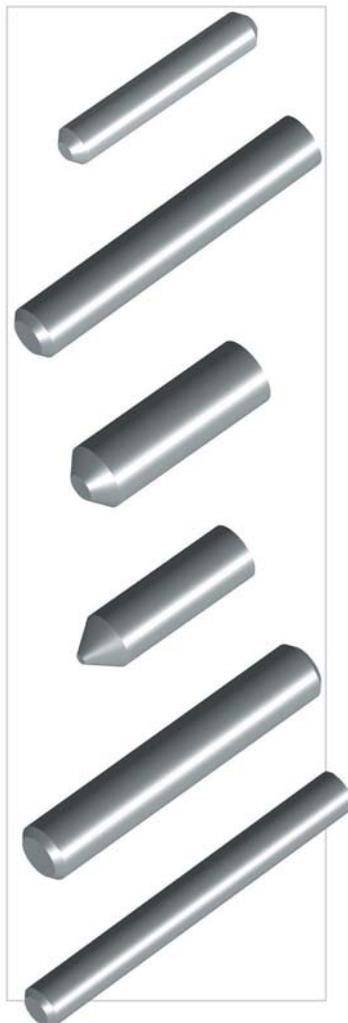


Example for ordering:

Article number	Wheel type	Grind	Cutting angle	Packaging
03A135	03	A	135°	10
03A135H	03	A	135°	100



		02...L			03			13			07			63		08		64	
		5			5,6			5,6			6			6		8		12,5	
		1			1,08			1			1,14			3		2		4	
		1,3			1,42			1,3			1,55			1,6		2,6		3	
0 pc.		Thickness tolerance +0.01mm 10 / 100 pc.			10 / 100 pc.			10 / 100 pc.			10 / 100 pc.			10 pc.		10 pc.		10 pc.	
00	02C000	02A000L	02B000L	02C000L	03A000	03B000	03C000	13A000	13B000	13C000	07A000	07B000	07C000	63A000	08A000	08B000	64A000		
																08B077			
																08B090			
6	02C116																		
	02C118			02C118															
20	02C120					03B120	03C120					07B120							
27	02C127		02B127L			03B127	03C127					07B127							
35		02A135L	02B135L		03A135	03B135		13A135	13B135		07A135	07B135				08B135			
40					03A140	03B140		13A140	13B140		07A140	07B140							
45		02A145L			03A145	03B145		13A145	13B145		07A145	07B145		63A145					
50		02A150L			03A150	03B150		13A150	13B150		07A150	07B150		63A150			64A150		
					03A152														
					03A153														
					03A154														
55		02A155L			03A155	03B155		13A155	13B155		07A155	07B155		63A155			64A155		
					03A156														
					03A158														
		02A160L			03A160													64A160	
		02A165L			03A165													64A165	
4.000																			
00			439.1			422.0		414.000			417.000		422.1						
00			439.2			432.0/ 432.1		432.3			418.000								
3																			
axle																			
(9, 2025.09)			496.439			496.422							496.160					496.300	



For mounting of the wheels in the wheel holder or support, Silberschnitt axles are available in various dimensions. With the present-day standard of machine engineering and the high demands made on the glass cuts, axles of carbide alloy steel are to be recommended. These axles meet all the demands for high cutting speeds and minimal wear and they guarantee that the cutting wheel rolls smoothly and easily. They are ideally suitable for extremely thin as well as thick glass.

Information about special-sized axles not shown in the catalogue is available on request. The following standard carbide axles are available ex stock (in packs of 10):

Article No.	Diameter in mm	Length ± 0.2 in mm	Arris
496.080	0,80	4,6	0,2 x 45° (2x)
496.130	1,30	4,2	0,2 x 45° (2x)
496.439	1,30	8	0,2 x 45° (1x)
496.138	1,38	4,2	-
496.138F	1,38	4,2	0,4 x 45° (1x)
496.422	1,39	9,0	0,2 x 45° (2x)
496.139F	1,39	4,6	0,8 x 35° (1x)
496.140	1,40	12	-
496.140F	1,40	12	0,4 x 45° (1x)
496.150	1,50	5,5	0,2 x 45° (1x)
496.160	1,60	9	0,2 x 45° (2x)
496.300	3,00	11	0,5 x 45° (1x)

BT4320 Cap for 432

The cap is slipped onto the holder 432 and ensures that the mounted axle as well as the wheel don't fall out. Sold in packs of 1.



Assortment case 4400.0

This case with 2 inserts allows you to keep your stock of diverse wheels nicely sorted. The case also includes a magnifying glass and the practical mounting aid (Art. No. 440).



With modern machines and production methods, shutdown time can be very costly. Silberschnitt wheel holders were specially developed to reduce the shutdown time needed when changing cutting wheels. Their main characteristics are that they can be quickly changed and that they guarantee a clean, safe cut.

Silberschnitt plastic wheel holders



Silberschnitt plastic wheel holders are precision parts with uniformly close tolerances. Thanks to the different colours, the wheel angle is immediately recognisable. Bohle uses high quality, wear-resistant plastics for the wheel types 416 and 417. One special feature of the plastic wheel holders is the low frictional resistance - essential for good running properties.

Silberschnitt steel wheel holders



Silberschnitt steel wheel holders are designed to meet the demands of modern glass cutting machines. High precision and the ability to be changed quickly are prominent features of these wheel holders. They are produced on CNC machines, ensuring that the slots for the cutting wheels are at perfect right angles to the holes for the axles. Minimal tolerances ensure an exact wheel run.



Thanks to efficient production and high quantities, steel wheel holders are very inexpensive. Many leading manufacturers of glass cutting machines exclusively use Silberschnitt model 432.0 steel wheel holders. These wheel holders are especially suitable for use in machines with high cutting speeds. In addition, they are ideal for use when cutting thick glass. These wheel holders are inherently stable and can reliably transfer even high cutting pressure to the glass surface.

New: The respective wheel angles are engraved in the 432.0 wheel holders. Thus the steel wheel holders likewise allow the immediate recognition of wheel angles.



Mounting aid 440

The practical mounting aid for wheel holder 432.0 makes wheel changing easy.



Customised solutions on the spot
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 Call us. We will be glad to help you.



	416			417			434
Material	plastic			plastic			bronze
Version	coloured			coloured			natural
Wheel ø	5mm			6mm			4,1mm
	wheel 02			wheel 07			wheel 12
	10/100			10/100			10
Order number	416A000	416B000	416C000	417A000	417B000	417C000	434A000
Special angle							
118°			416C118	light blue		417B118	light blue
120°		416B120		light blue		417B120	light blue
127°		416B127		yellow		417B127	yellow
135°	416A135	416B135		white	417A135	417B135	white
140°	416A140	416B140		blue		417B140	white
145°	416A145	416B145		black	417A145	417B145	black
150°	416A150	416B150		brown		417B150	red
155°	416A155	416B155		red	417A155	417B155	red
156°							434A156
160°	416A160			dark green			
165°	416A165			light green			



The right solution

Please refer to the specifications of your machine manufacturer when selecting the optimal wheel holder for your cutting machine. But this list is by no means exhaustive. Manufacturers: Bavelloni, Benteler, Bottero, Bystronic, Grenzebach, Hegla, Intermac, Lisee, Macotec and Rohmer + Stimpfig



							
Material	steel	steel	steel	steel	steel	steel	steel
Axle	incl.	incl.	for 496.138F	incl.	incl.	incl.	incl.
Wheel type	incl. 03	incl. 12	for 12/03	incl. 03A	incl. 12A	incl. 05A	incl. 66A
Wheel ø	5,6mm	4,1mm	for 4,1 / 5,6mm	5,6mm	4,1mm	3mm	3mm
	with inscription	with inscription	with inscription	without inscription	without inscription	without inscription	without inscription
			without wheels	Suitable for automotive applications. When ordering, please indicate the wheel angle and grind.			
127°	432.1271	432.1272	432.127				
134°	432.1341	432.1342	432.134				
135°	432.1351	432.1352	432.135				
140°	432.1401	432.1402	432.140				
145°	432.1451	432.1452	432.145				
148°	432.1481	432.1482	432.148				
150°	432.1501	432.1502	432.150				
152°	432.1521	432.1522	432.152				
153°	432.1531	432.1532	432.153				
154°	432.1541	432.1542	432.154				
155°	432.1551	432.1552	432.155				
156°	432.1561	432.1562	432.156				
158°	432.1581	432.1582	432.158				
160°	432.1601	432.1602	432.160				
163°	432.1631	432.1632	432.163				
165°	432.1651	432.1652	432.165				

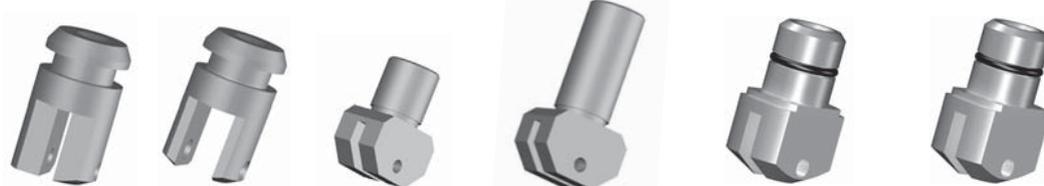


For:	432.0	432.3	432.1	432.6
Axle	496.138F	496.130	496.138F	496.080
Wheel type	12/03	05/02L	12/03	06/66
Wheel ø	ø 4,1 / 5,6mm	ø 3 / 5mm	ø 4,1 / 5,6mm	ø 2,5 / 3mm
	without angle inscription	without angle inscription	with hole for ball pressure piece	

Suitable for the following glass processing machines:

Armatec, Bando, Bavelloni, Benteler, Bystronic, Grenzebach, Hegla, Intermac, Laser, Lisec, MacoTec, Olbricht, Pannkoke, Pfister, Rohmer+Stimpfig

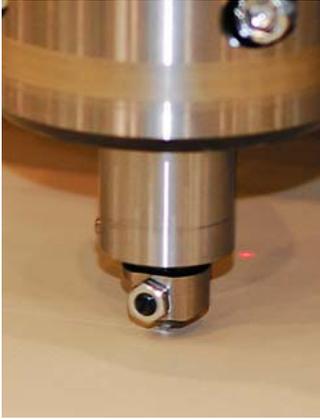
Wheel and axle not included.



Material	422.0	422.1	439.1	439.2	439.16	439.16V
	steel	steel	steel	steel	steel	steel
Axle	496.422	496.160	496.439	496.439	496.140F	496.140F
Wheel type	12/03	63	02L	02L	12/03	12/03
Wheel ø	ø 4,1 / 5,6mm	ø 6mm	ø 5mm	ø 5mm	ø 4,1 / 5,6mm	ø 4,1 / 5,6mm
			L = 11,5	L = 16,5		tempered

Suitable for the following glass processing machines:

Bottero	Bottero	Lisec	Lisec	Bottero	Bottero
Bystronic	Bystronic				
Grenzebach	Grenzebach				
Benteler	Benteler				



With Silberschnitt blades, films for sandblasting stencils or mounted etching stencils can be cut on modern CNC cutting tables. The narrow blades are used for fine contour cuts, the wide blades are suitable only for straight cuts. Films in thicknesses from 0.2 to 2.6 mm can be cut with the Silberschnitt blades.



	432.7	432.8	432.71	432.81	416.1	416.2
Blade holder	steel	steel	steel	steel	plastic	plastic
Blade shape	narrow	wide	narrow, 90° rotated	wide, 90° rotated	narrow	wide



» Fine contour cuts «

- with the Silberschnitt blades for film cutting

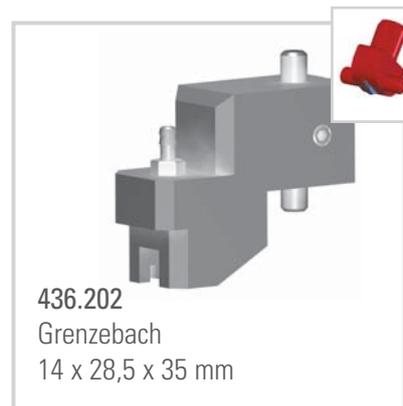


Bohle has been developing and producing complete solutions for cutting machines for many years. By this we mean not only cutting wheels and axles, but also wheel holders and complete pillar posts. The range of pillar posts manufactured to customers' specific wishes is being continuously expanded.

Silberschnitt pillar posts are available in different versions: for straight cuts with a limited trailing cutting wheel, for shape cuts with trailing wheels which can rotate up to 360°. You can choose whether the cutting wheel should stop in the last cutting position or be centered back to the 0° position after the cutting process. Silberschnitt pillar posts trail by 2 mm. On request, we can manufacture pillar posts with larger trailing distances.

With complete solutions from Bohle you can be sure that all the components - from the cutting wheel through the axle and wheel holder right up to the pillar posts - are perfectly matched. That guarantees optimal conditions for precise cutting.







Bohle also offers special solutions for applications in float glass facilities. In order to achieve improved cutting quality and service life, we can convert your existing pillar posts which use plastic wheel holders to become suitable for use with high precision metal holders. For use in float glass facilities, a modified holder 432.1 is inserted in the respective pillar post. The holder 432.1 has a hole which goes all the way through. A spring ball in the pillar post secures the wheel holder and prevents it from falling out. This function can only be achieved with Bohle pillar posts. Those made by other manufacturers do not meet the requirement.





436.BY
Bystronic
ø 29 mm, H = 35 mm



436.3BY
Bystronic
ø 29 mm, H = 35 mm



434K000
Biebuyck, for 3 carbide wheels,
ø 27,2 mm, Thickness = 14,6 mm



436.1016
Billco
ø 12 mm, H = 24 mm



436.101M
for Billco 432.0mini
ø 12 mm, H = 20 mm



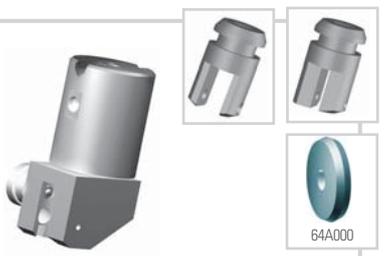
421.1
Bystronic, ø 16 mm,
H = 27,4 mm, L = 274 mm



436.1025 Bando
ø 8 mm, H = 44 mm,
limited rotation



436.1026 Bando
ø 16 mm, shaft ø 8 mm,
H = 44 mm, can rotate 360°



436.3015 Grenzebach, Bottero,
limited rotation, ø 15,6 mm,
H = 6 mm, L = 34,2 mm

Modern synthetic cutting fluids are definitely preferred over traditional cutting fluids like petroleum or kerosene. The greatest advantages: good lubricating effect, an audibly softer break and considerably improved edge quality. Furthermore, the modern cutting fluids bind the glass dust and significantly reduce the amount of glass splintering and dust. Silberschnitt cutting fluids are water-soluble, environmentally safe and available for a wide range of applications:

from fluids for cutting thick glass to evaporating cutting fluids for cutting glass with different coatings.

The Bohle cutting fluids are produced by the Aachener Chemical Works (ACW).

Some cutting fluids, for example for cutting thick glass, were developed by ACW in cooperation with Bohle.

Art. No.	Contents	ACW ID	Washable (A) Evaporating (V)	Applications	Viscosity (20°C)
50 028 00	1 l	6288	A	specially for thick glass	ap. 5 mPas
50 028 01	30 l	6288	A	specially for thick glass	ap. 5 mPas
50 028 31	200 l	6288	A	specially for thick glass	ap. 5 mPas
50 028 02	30 l	4153	A	automotive glass, general cutting, shape cutting	ap. 35 mPas
026	1 l	NT	A	regular glass cutting and laminated glass	ap. 5 mPas
025	30 l	NT	A	regular glass cutting and laminated glass	ap. 5 mPas
024	200 l	NT	A	regular glass cutting and laminated glass	ap. 5 mPas
50 028 05	30 l	5503	V	standard product für cutting insulated glass, automotive glass, mirror glass, low-E, general cutting up to 10 mm, 30° - 50°C	ap. 2 mPas
50 028 35	200 l	5503	V	standard product für cutting insulated glass, automotive glass, mirror glass, low-E, general cutting up to 10 mm, 30° - 50°C	ap. 2 mPas
50 028 06	30 l	6000	A	automotive glass, very demanding shape cutting, 40° - 90°C	ap. 65 mPas
50 028 36	200 l	6000	A	automotive glass, very demanding shape cutting, 40° - 90°C	ap. 65 mPas
50 028 07	30 l	5929	V	coated glass, special applications	ap. 2 mPas
50 028 37	200 l	5929	V	float glass production, glass thicknesses from 4 - 19 mm, working temperature 40° - 60° C	ap. 2 mPas
50 028 04	30 l	5250	V	insulated glass, mirror glass, general cutting up to 10 mm, laminated glass, cutting film with blade, 30° - 50°C	ap. 2 mPas
50 028 34	200 l	5250	V	insulated glass, mirror glass, general cutting up to 10 mm, laminated glass, cutting film with blade, 30° - 50°C	ap. 2 mPas

Float glass production

In float glass production, pure mineral oils are still often used for online cutting. All these products have drawbacks (e.g. residues) which often lead to problems in subsequent processes (e.g. in mirror production, soft coating, production of laminated glass). Because every manufacturer has different conditions in the production of float glass, the cutting fluid must also be suited to the respective requirements. Important criteria in the selection of cutting fluids are, for example, glass thickness, surface temperature or the system for application. ACW has developed cutting fluids specifically for float glass production suitable for the various requirements (see chart). To avoid problems in subsequent processes, only cutting fluids that evaporate should be used.

Other areas

The right choice of cutting fluid for the varied applications in the flat glass industry is strongly dependent on the individual conditions. Important criteria are, for example, the quality requirements of the cut (particularly when cutting shapes), the type of glass, the type of cutting system or subsequent glass processing. Talk to us before you start using a cutting fluid. We will help you to find the optimum product.

Viscosity of the cutting fluid

As a general rule, modern automatic cutting systems allow the dosage of the cutting fluid to be set without regard to the viscosity. Should problems arise, changing to a cutting fluid with more suitable viscosity can help.

**BO 702.0 Silberschnitt cut running pliers**

Heavy-duty model · all-metal · for thick glass up to 25 mm · precisely adjustable to glass thickness · optimum transmission of pressure even over a cut length up to 6 m

BO 704.0 Silberschnitt cut running pliers

All-metal · for glass thicknesses from 6 to 15 mm · with adjustment screw to set to individual glass thickness · optimum transmission of pressure · also ideal to open straight cuts, corner cut-outs, etc.

BO 710.0 Silberschnitt cut opening tapper for thick glass

Heavy-duty · all-metal construction · operates on the tapper head principle · adjustable tapper force · for a controlled break with clean glass edges even for difficult requirements

BO 706.0 Silberschnitt cut opener

For complicated cuts · ideal for opening corner, lateral or other shaped cuts · for glass 6 to 10 mm thick · with turnable pressure ring for optimum adjustment to all cuts · maximum reach 100 mm

BO 51 646 10 Tin side detector

This device detects which side of float glass panes has been in contact with the tin during float glass production · important for certain applications in glass processing · especially suitable for use with glass fusing · operated by 4 standard "AA" batteries · includes batteries and instruction manual

BO 701.5 Silberschnitt glass nibbling pliers with carbide cutting wheels

For efficient removal of shapes from glass strips - the carbide steel cutting wheels can be turned further when worn.

BO 50 096 38 Glass breaking pliers

Heavy-duty · 380 mm long · with especially long handles · hand forged · for glass up to 20 mm thick

**BO 50 080 20 Glass breaking pliers**

200 mm long · jaw width 24 mm · lacquered black · ground head

BO 50 081 18 Glass breaking pliers

180 mm long · jaw width 24 mm · lacquered black · ground head

BO 50 082 18 Glass breaking pliers

With curved jaw · 180 mm long · jaw width 14 mm · handles laquered black · ground head

BO 50 082 20 Glass breaking pliers

With curved jaw · 200 mm long · jaw width 20 mm · handles laquered blue

BO 2740.0 Thick glass cutting kit in aluminium case

This kit contains all necessary tools for cutting circles and straight cuts in glass up to 25 mm thick and with max. \varnothing of 120 cm. Now also includes oil glass cutter BO 2000.P POWER and practical aluminium carrying case.

BO 2000.P	Silberschnitt 2000.P POWER oil glass cutter
BO 2045.0	Silberschnitt transverse handle for glass cutters
BO 702.0	Silberschnitt cut running pliers
BO 710.0	Silberschnitt cut opening tapper for thick glass
BO 521.0	Silberschnitt thick glass circle cutter
BO 5002800	Silberschnitt cutting fluid for thick glass
BO 5002810	Dispenser for cutting fluid
BO 2720.0	Silberschnitt thick glass cutting sledge System 2000

BO 2720.0 Silberschnitt thick glass cutting sledge System 2000

Used with special Bohle straight edges · together with the Silberschnitt 2000.P POWER oil glass cutter (included in kit), with its trailing wheel and integrated cutting fluid, excellent results are achieved.

BO 2000.P	Silberschnitt 2000.P POWER oil glass cutter
BO 2045.0	Silberschnitt transverse handle for glass cutters
BO 5002800	Silberschnitt cutting fluid for thick glass
BO 5002810	Dispenser for cutting fluid



BO 5009525 Carbide steel glass nibbling pliers
with exchangeable jaws

BO 5009526 Spare jaws for carbide steel glass nibbling pliers

BO 5009527 Spare spring for carbide steel glass nibbling pliers

BO 51 667 81 Blades

Round blades \varnothing 25 mm, for separating laminated glass films, 5 blades in a small case

BO 4401.0 Magnifying glass

For assortment case, magnifying glass made of black plastic, 10x magnification, opening 15 x 15 mm, height 28 mm

BO 51 648 50 Pressure measuring device

With the pressure measuring device from Bohle (loads up to 500 N), the cutting pressure which is exerted onto the cutting wheel by the cylinder of the cutting head can now be accurately determined.

1 Pressure measuring cell F 500 N (9.81 N = 1 kg)

1 Display unit

1 Aluminium holder for pressure measuring cell

4 Brass spacers

1 Plastic carrying case

1 Operating manual

1 Calibration certificate

The Bohle Glass Academy offers a comprehensive seminar programme covering many areas of glass processing. Would you like to learn new techniques or improve your expertise in familiar areas? Recognised Bohle professionals and external instructors look forward to seeing you.

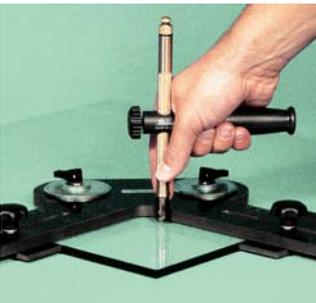


Automatic Glass Cutting

Instructor: Peter Pokoern

Subjects covered:

- Traditional hand tools and their use
- Effects of cutting geometry and type of grind
- Choice of wheel holders and optimising the choice of wheels
- Cutting and breaking flat glass of different thicknesses and types
- Problem solving in automatic cutting, the effects of different parameters
- Open cuts with shapes
- Use of cutting fluids
- Optimising cutting of laminated glass



Glass cutting - in a controlled and efficient way

Instructor: Ursula Feulbach, Richard Reich or Volker Brock

"But I already know how to cut glass ..." you might think. Find out for yourself: with these glass cutting techniques you will work much more efficiently. Even demanding cuts will no longer pose a problem. Move on to the next generation of glass cutting with the Silberschnitt 2000 system.

Subjects covered:

- Minimal reworking due to superior breaking quality
- Physical laws when severing glass
- Fracture analysis
- Corner cut-outs up to 15 mm and edge cut-outs up to 12 mm without sawing or drilling
- Cutting strips and circles from thick glass
- Open cut - severing glass without breaking
- Using various special glass cutters
- Useful aids for the daily work of a glazier

It's not always the wheel's fault

You know the situation: You're not really satisfied with the results of the cutting machine. Based on our experience, we have compiled a questionnaire to help you quickly identify possible problems and easily remedy them yourself. Please check if one or more of the following points may be the cause of your problem:

- Does the wheel still rotate easily when installed?
- Does the wheel have too much lateral play when installed?
- Is the wheel soiled?
- Is sufficient cutting fluid being applied or does it stop dispensing during the cutting process?
- Is the wheel angle right for the glass thickness/ glass type?
- Is the cutting pressure right for the wheel angle and the glass thickness/ glass type?
- Does the wheel holder have too much lateral play in the cutting head?
- Is the axle worn?
- Is the cutting speed appropriate for the glass being cut?
- Is the wheel positioned 100% precisely in the cutting direction?
(Wheel running slightly offset from the cutting direction?)
Can be recognised by hard breaking, poor broken edge quality and high wear.
Please note: This fault occurs gradually.
- Are you producing a fine, silvery track or a white track? A white track indicates too much cutting pressure or insufficient cutting fluid.
- Is the type of grind of the wheel appropriate for the cutting process and material?
- Are you using the right grind (ACTIVE) for coated glass?
- Is your glass heavily powder coated? This impairs perfect cutting and can cause the wheel to jam.
- Are you using glass with high stresses?
- Are you using the right wheel diameter for your glass?
- Small radii and thin glass should be cut with small cutting wheels.
- Is the wheel worn?

How to contact Bohle.

Export Bohle AG

Bohle Online-Shop www.bohle.de
If you don't have a contact person yet, dial
Phone +49 2129 5568-0 for our reception
Fax +49 2129 5568-201
E-Mail export@bohle.de
Picking goods up D - 42781 Haan · Siemensstraße 1
Postal address D - 42755 Haan · Postfach 101163

Opening hours

Monday to Thursday 8.00 am - 4.30 pm Friday 8.00 am - 2.00 pm

Picking goods up

Monday to Thursday 8.00 am - 3.00 pm Friday 8.00 am - 12.00 am

United Kingdom and Ireland Bohle Ltd.

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E-Mail info@bohle.ltd.uk
Sales Telephone 0161 342 1100
Sales Fax 0161 344 0111
Machinery Sales & Support 0161 342 1104
Account Payments Direct 0161 342 1112
Pickup Address Fifth Avenue, Tameside Park, Dukinfield
Postal Address Cheshire SK16 4PP

Office opening times

Monday to Friday 8.00 am - 5.30 pm

Trade counter opening times

Monday to Friday 8.30 am - 5.00 pm

South Africa Bohle Glass Equipment (Pty) Ltd.

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