

# High Performance

## Glass machining

### 3M™ WENDT™ Automotive Sharpening Stones for C-Edge Grinding Wheels and Monobloc Drills

- optimal designed sharpening stones for WENDT tools
- enhancement efficiency due to reduced wear of the bond per sharpening cycle
- better edge quality
- competent service from one source

English

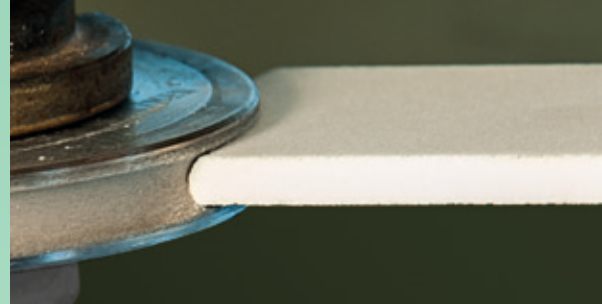


## Enhance your productivity in machining automotive glass with 3M™ WENDT™ Sharpening Stones

With our high quality vitrified bonded stones you will enhance your productivity, when grinding and drilling automotive glass - we offer the solution for every application. Improve the edge quality, extend the life time of grinding tools and benefit from our service from one source.

- By adapting the sharpening stone specification to the bonds of our grinding and drilling tools, you will experience a faster start-up, an extension of the sharpening cycle and an optimal set back of the bond. This in turn minimizes the lost of diamond layer and extends the tool life.
- Because we manufacture our high quality sharpening stones with very narrow tolerances, you will use them in automatic sharpening devices problem-free.
- The sharpening stones are produced in the usual standard dimensions, but can also be customized to your needs.
- According to the application and the required surface quality, different grinding wheels may be applied for which matching grit size and hardness of sharpening stones are required.
- We supply dedicated versions for drills.

## Application Examples



Sharpening of a C-edge grinding wheel with a WENDT™ sharpening stone



Sharpening of a monobloc drill with a WENDT™ sharpening stone

### Product benefits at a glance:

- optimal tool starting behaviour
- longer sharpening interval
- reduced layer loss per sharpening cycle
- higher tool life
- better and constant edge quality during use
- specifications matching our tools
- suitable for automatic sharpening
- applicable for all CNC machines with automated sharpening devices

### WENDT™ sharpening stones are suitable to sharpen:

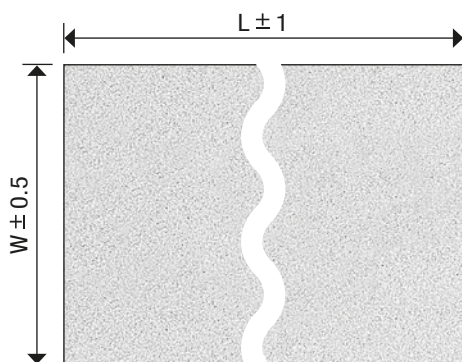
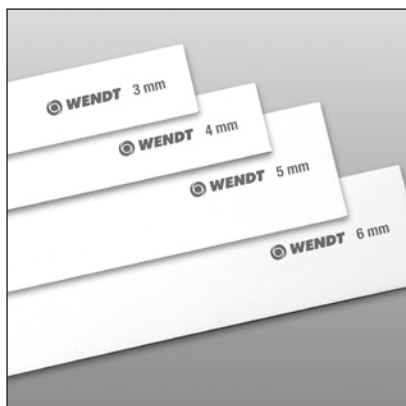
- C-edge grinding wheels metal bonded
- monobloc drills metal bonded



# 3M™ WENDT™ Sharpening Stones

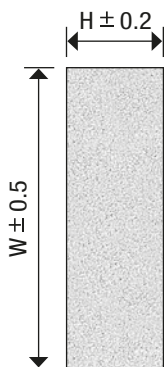
## Sharpening Stones for C-Edge Grinding Wheels

Grinding machine: Bystronic / Benteler  
Length 200 mm



Glass	L	W	H	Grit	3M ID
max. 2.0 mm	200 mm	50 mm	2.5 mm	2A150	DW100084519
max. 2.0 mm	200 mm	50 mm	2.5 mm	2A180	DW100072985
max. 2.0 mm	200 mm	50 mm	2.5 mm	2A220	DW100084543
max. 2.5 mm	200 mm	50 mm	3.0 mm	2A150	DW100060584
max. 2.5 mm	200 mm	50 mm	3.0 mm	2A180	DW100084550
max. 2.5 mm	200 mm	50 mm	3.0 mm	2A220	DW100060675
max. 3.0 mm	200 mm	50 mm	3.5 mm	2A150	DW100084568
max. 3.0 mm	200 mm	50 mm	3.5 mm	2A180	DW100072993
max. 3.0 mm	200 mm	50 mm	3.5 mm	2A220	DW100084576
max. 3.5 mm	200 mm	50 mm	4.0 mm	2A150	DW100060592
max. 3.5 mm	200 mm	50 mm	4.0 mm	2A180	DW100084584
max. 3.5 mm	200 mm	50 mm	4.0 mm	2A220	DW100060683
max. 4.5 mm	200 mm	50 mm	5.0 mm	2A150	DW100060600
max. 4.5 mm	200 mm	50 mm	5.0 mm	2A180	DW100084592
max. 4.5 mm	200 mm	50 mm	5.0 mm	2A220	DW100060659
max. 5.5 mm	200 mm	50 mm	6.0 mm	2A150	DW100060618
max. 5.5 mm	200 mm	50 mm	6.0 mm	2A180	DW100084618
max. 5.5 mm	200 mm	50 mm	6.0 mm	2A220	DW100084626

Grinding machine: Bando  
Length 150 mm

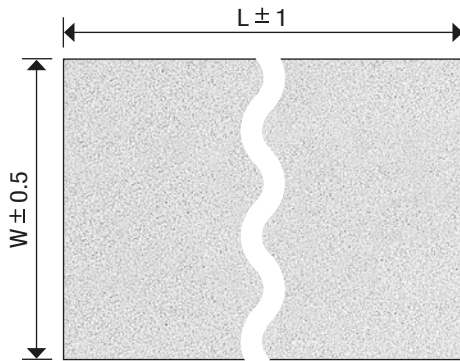
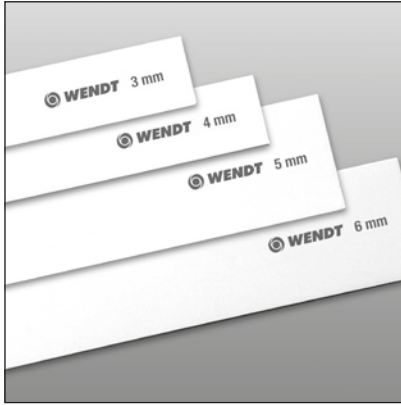


Glass	L	W	H	Grit	3M ID
max. 2.0 mm	150 mm	30 mm	2.5 mm	2A150	DW100084634
max. 2.0 mm	150 mm	30 mm	2.5 mm	2A180	DW100084642
max. 2.0 mm	150 mm	30 mm	2.5 mm	2A220	DW100084659
max. 2.5 mm	150 mm	30 mm	3.0 mm	2A150	DW100072928
max. 2.5 mm	150 mm	30 mm	3.0 mm	2A180	DW100084667
max. 2.5 mm	150 mm	30 mm	3.0 mm	2A220	DW100084675
max. 3.0 mm	150 mm	30 mm	3.5 mm	2A150	DW100084683
max. 3.0 mm	150 mm	30 mm	3.5 mm	2A180	DW100084691
max. 3.0 mm	150 mm	30 mm	3.5 mm	2A220	DW100084709
max. 3.5 mm	150 mm	30 mm	4.0 mm	2A150	DW100072936
max. 3.5 mm	150 mm	30 mm	4.0 mm	2A180	DW100084717
max. 3.5 mm	150 mm	30 mm	4.0 mm	2A220	DW100084725
max. 4.5 mm	150 mm	30 mm	5.0 mm	2A150	DW100072944
max. 4.5 mm	150 mm	30 mm	5.0 mm	2A180	DW100084733
max. 4.5 mm	150 mm	30 mm	5.0 mm	2A220	DW100084741
max. 5.5 mm	150 mm	30 mm	6.0 mm	2A150	DW100084758
max. 5.5 mm	150 mm	30 mm	6.0 mm	2A180	DW100084766
max. 5.5 mm	150 mm	30 mm	6.0 mm	2A220	DW100084774

# 3M™ WENDT™ Sharpening Stones

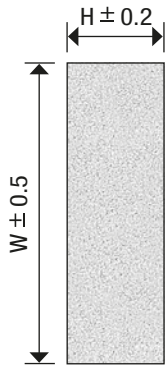
## Sharpening Stones for C-Edge Grinding Wheels

Grinding machine: Bando  
Length 180 mm



Glass	L	W	H	Grit	3M ID
max. 2.0 mm	180 mm	50 mm	2.5 mm	2A150	DW100084782
max. 2.0 mm	180 mm	50 mm	2.5 mm	2A180	DW100084790
max. 2.0 mm	180 mm	50 mm	2.5 mm	2A220	DW100084808
max. 2.5 mm	180 mm	50 mm	3.0 mm	2A150	DW100072951
max. 2.5 mm	180 mm	50 mm	3.0 mm	2A180	DW100084816
max. 2.5 mm	180 mm	50 mm	3.0 mm	2A220	DW100084824
max. 3.0 mm	180 mm	50 mm	3.5 mm	2A150	DW100084832
max. 3.0 mm	180 mm	50 mm	3.5 mm	2A180	DW100084840
max. 3.0 mm	180 mm	50 mm	3.5 mm	2A220	DW100084857
max. 3.5 mm	180 mm	50 mm	4.0 mm	2A150	DW100072969
max. 3.5 mm	180 mm	50 mm	4.0 mm	2A180	DW100084865
max. 3.5 mm	180 mm	50 mm	4.0 mm	2A220	DW100084873
max. 4.5 mm	180 mm	50 mm	5.0 mm	2A150	DW100072977
max. 4.5 mm	180 mm	50 mm	5.0 mm	2A180	DW100084881
max. 4.5 mm	180 mm	50 mm	5.0 mm	2A220	DW100084899
max. 5.5 mm	180 mm	50 mm	6.0 mm	2A150	DW100084907
max. 5.5 mm	180 mm	50 mm	6.0 mm	2A180	DW100084915
max. 5.5 mm	180 mm	50 mm	6.0 mm	2A220	DW100084923

Grinding machine: Glassline  
Length 230 mm

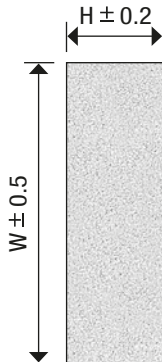
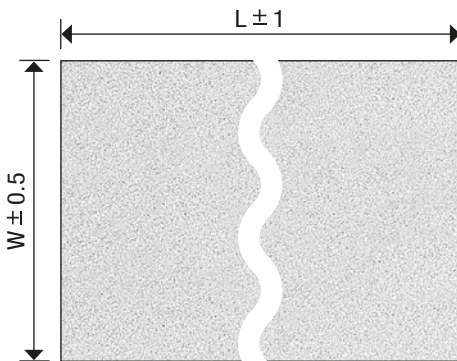
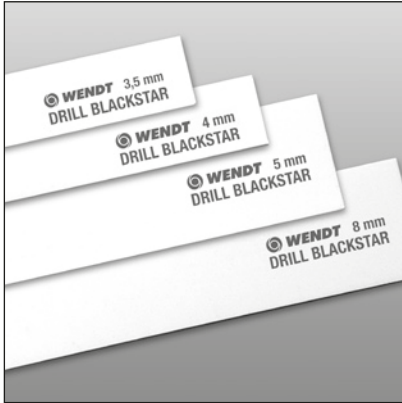


Glass	L	W	H	Grit	3M ID
max. 2.5 mm	230 mm	50 mm	3.0 mm	2A150	DW100084931
max. 2.5 mm	230 mm	50 mm	3.0 mm	2A180	DW100084949
max. 2.5 mm	230 mm	50 mm	3.0 mm	2A220	DW100084956
max. 3.5 mm	230 mm	50 mm	4.0 mm	2A150	DW100084964
max. 3.5 mm	230 mm	50 mm	4.0 mm	2A180	DW100084972
max. 3.5 mm	230 mm	50 mm	4.0 mm	2A220	DW100084980
max. 4.5 mm	230 mm	50 mm	5.0 mm	2A150	DW100084998
max. 4.5 mm	230 mm	50 mm	5.0 mm	2A180	DW100085003
max. 4.5 mm	230 mm	50 mm	5.0 mm	2A220	DW100085011
max. 5.5 mm	230 mm	50 mm	6.0 mm	2A150	DW100085029
max. 5.5 mm	230 mm	50 mm	6.0 mm	2A180	DW100085037
max. 5.5 mm	230 mm	50 mm	6.0 mm	2A220	DW100085045



## Sharpening Stones for Monobloc Drills

Drilling machine: Bystronic / Benteler  
Length 200 mm



Glass	L	W	H	Grit	3M ID
3.0-3.5 mm	200 mm	50 mm	3.5 mm	2A150	DW100085235
3.0-3.5 mm	200 mm	50 mm	3.5 mm	2A220	DW100085789
4.0 mm	200 mm	50 mm	4.0 mm	2A150	DW100085243
4.0 mm	200 mm	50 mm	4.0 mm	2A220	DW100085797
5.0 mm	200 mm	50 mm	5.0 mm	2A150	DW100085250
5.0 mm	200 mm	50 mm	5.0 mm	2A220	DW100085805
3.0-6.0 mm	200 mm	50 mm	8.0 mm	2A150	DW100072902
3.0-6.0 mm	200 mm	50 mm	8.0 mm	2A220	DW100085813
3.0-6.0 mm	200 mm	50 mm	8.0 mm	8A100	DW100072910
3.0-6.0 mm	200 mm	50 mm	10.0 mm	2A150	DW100073009
3.0-6.0 mm	200 mm	50 mm	10.0 mm	2A220	DW100085821

Drilling machine: Bando  
Length 180 mm

Glass	L	W	H	Grit	3M ID
3.0 mm	180 mm	50 mm	3.0 mm	2A150	DW100085839
3.0 mm	180 mm	50 mm	3.0 mm	2A220	DW100085847
4.0 mm	180 mm	50 mm	4.0 mm	2A150	DW100085854
4.0 mm	180 mm	50 mm	4.0 mm	2A220	DW100085862
5.0 mm	180 mm	50 mm	5.0 mm	2A150	DW100085870
5.0 mm	180 mm	50 mm	5.0 mm	2A220	DW100085888
6.0 mm	180 mm	50 mm	6.0 mm	2A150	DW100085896
6.0 mm	180 mm	50 mm	6.0 mm	2A220	DW100085904

Drilling machine: Glassline  
Length 230 mm

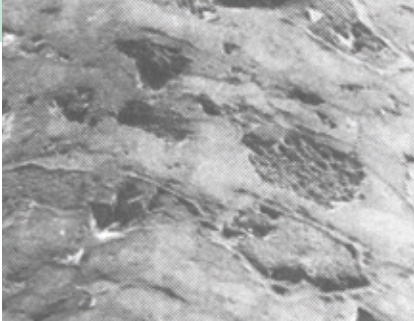
Glass	L	W	H	Grit	3M ID
3.0-6.0 mm	230 mm	50 mm	5.0 mm	2A150	DW100085912
3.0-6.0 mm	230 mm	50 mm	5.0 mm	2A220	DW100085920
3.0-6.0 mm	230 mm	50 mm	8.0 mm	2A150	DW100085938
3.0-6.0 mm	230 mm	50 mm	8.0 mm	2A220	DW100085946

Drilling machine: TAC  
Length 200 mm

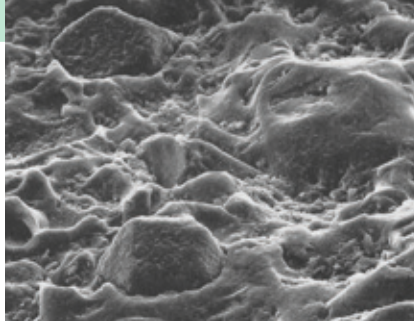
Glass	L	W	H	Grit	3M ID
3.0-6.0 mm	200 mm	50 mm	8.0 mm	2A150	DW100072902
3.0-6.0 mm	200 mm	50 mm	8.0 mm	2A220	DW100085813
3.0-6.0 mm	200 mm	50 mm	10.0 mm	2A150	DW100073009
3.0-6.0 mm	200 mm	50 mm	10.0 mm	2A220	DW100085821

# Application Recommendations and Technical Information for 3M™ WENDT™ Sharpening Stones

## 1. Before use



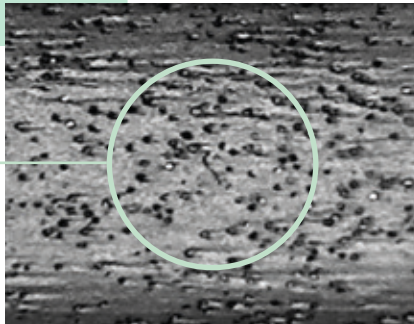
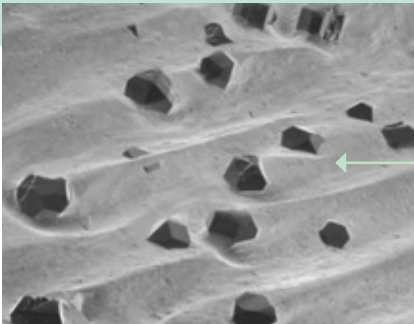
Conventional Process



EDM Process

Diamond tools need to be dressed before every use. Depending on the profiling method, the diamonds have very low grain protrusion (conventional method with silicon carbide wheels), or they are too sharp (profiling with spark erosion). Therefore WENDT sharpens all tools prior to deliver them to you.

## 2. During use



Due to the sharpening an optimal grain protrusion is created.

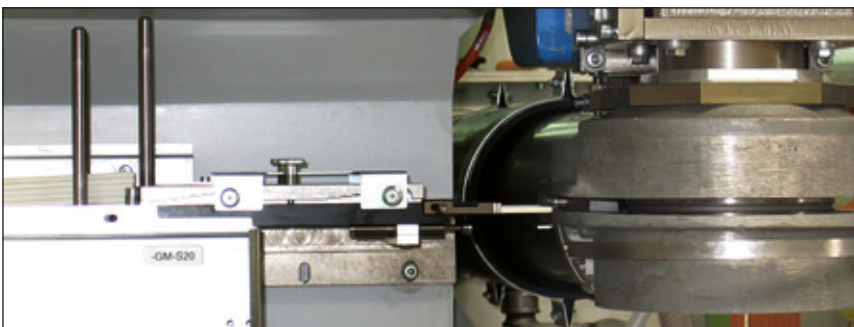
The tools have to be sharpened, when the following conditions appear:

- increased power input
- chippings on the edge

## 3. Sharpening method:

**Grinding wheels can be sharpened both manually and automated. For automotive glass machining one uses mainly CNC machines with automated sharpening devices.**

### Automatic sharpening:

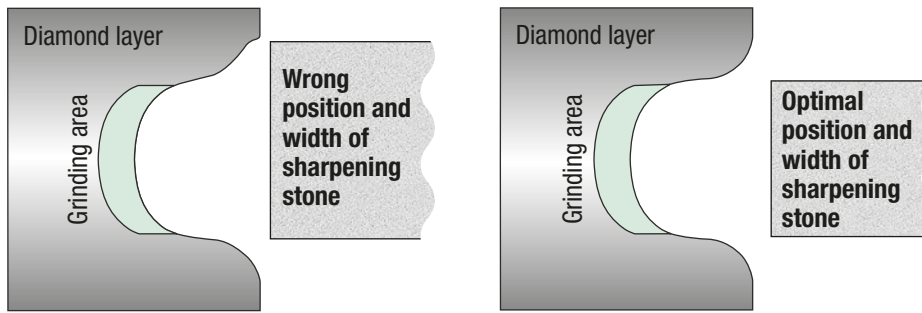


Sharpening device for grinding wheels

Multiple sharpening stones may be processed with an automatic magazine, when machining grinding wheels. One may also use single ones. To sharpen drills, the sharpening stone will be clamped as is the glass sheet.

**Important notice:**

Ensure the correct positioning height of the sharpening stone, when sharpening C-edge wheels. If positioned too low or too high, it will deform the profile or even damage the body of the diamond wheel, if the sharpening stone is working outside of the diamond layer.



**We recommend:**

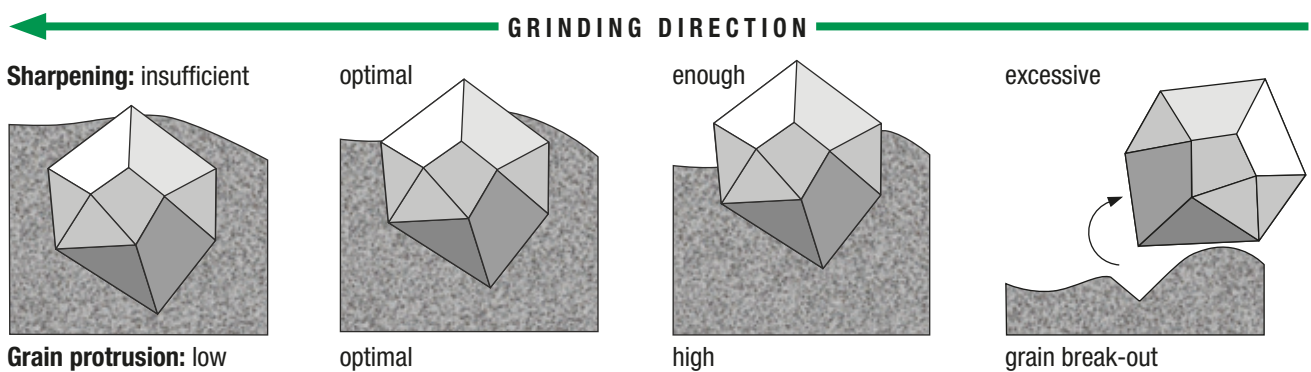
- The thickness of the sharpening stone should be 0.5 - 1.0 mm thicker than the glass thickness.
- The thickness of the sharpening stone should be at least 0.5 mm thinner than the width of the diamond layer.

**4. Right choice of sharpening stone specification:**

Sharpening recommendation for 3M™ WENDT™ C-Edge Grinding Wheels:				Sharpening recommendation for 3M™ WENDT™ Monobloc Drills:		
WENDT grinding wheel specification	2A150	2A180	2A220	WENDT monobloc drill specification	2A150	2A220
K10	—	+	++	FC192	++	—
K20	—	+	++	FC192 BLACK STAR	++	—
L11	++	+	—	FC198	—	++
E10	++	+	—	FC198 BLACK STAR	—	++
V20	++	+	—	— = not suitable		
G30	++	+	—	+ = suitable		
				++ = optimal		

**5. Recommended application data:**

Depending how intensive the sharpening is, the grain protrusion changes from minor via optimal to overdone.

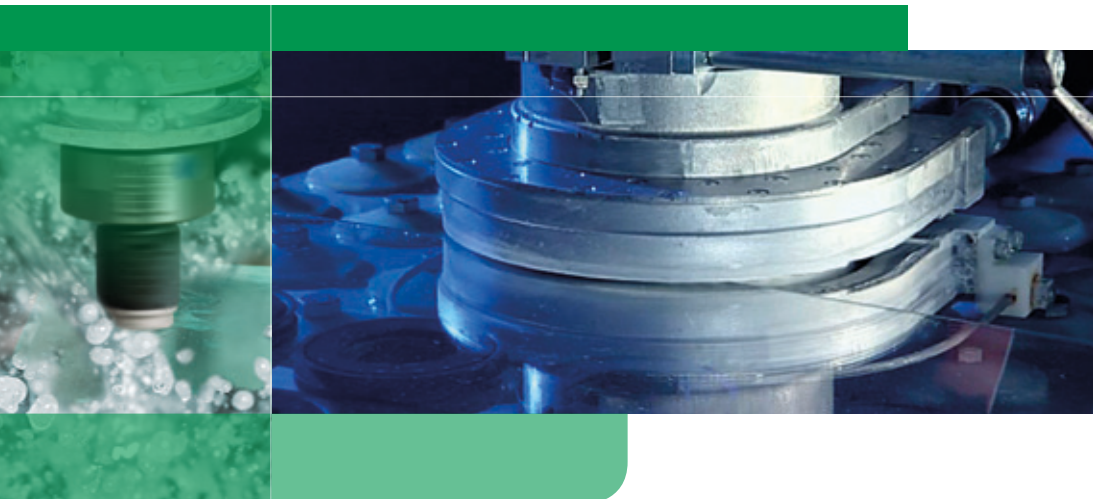


**We recommend:**

Tool	∅	Cutting speed $v_c$	Feed rate	Sharpening stone consumption per cycle	Sharpening after
Drill	5-19 mm	2.5-4.0 m/s	like drilling feed rate	Glass thickness	200-300 holes
Drill	20-30 mm	2.5-4.0 m/s	like drilling feed rate	Glass thickness	100-200 holes
Drill	> 30 mm	2.5-4.0 m/s	like drilling feed rate	Glass thickness	30-100 holes
Grinding wheels	150 - 250 mm	40-50 m/s	often pressure controlled	25 mm	120 m

**Important notice:**

Our monobloc drills in BLACK STAR version have a cushioning body, which can be damaged, when the sharpening stone is used in the wrong way. Therefore we recommend to sharpen the drill only in the workspace. We also advise to use a sharpening stone with the same thickness as the glass to be drilled.



As one of the leading manufacturers in the market, we provide entire grinding systems from a single source: Grinding and dressing tools, as well as grinding and dressing machines, for superior applications.

Combined under 3M umbrella, the well known brands WENDT, Slip Naxos and Winterthur bundle long-time know how, competence and innovation for your benefit.

Our division has its own global sales and customer service network. The international team of technical experts, as well as regional sales staff, develop customized solutions, in close cooperation with you, aiming at solving each of your individual needs.

Utilize our long-time experience and our technical knowledge. Benefit from our broad range of innovative grinding solutions, to meet the highest quality and efficiency. We are your professional system specialist for precision grinding.



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