



Diamond tools

- for ceramics processing
- for ultrasonic applications
- for dental surgery
- for aerospace
- for engineering and toolmaking



Company history

Mr. Klaus Schott was the grandson of the well-known Dr. Otto Schott. Already as a young boy, Klaus Schott had relations to the glass industry because of his family. His father, his brothers and he himself were all employed by the internationally known company of Schott Glaswerke AG. It was during this period that he acquired fundamental knowledge and gualifications in the field of glass processing.

• 1975

In 1975, Klaus Schott founded his own independent enterprise in the town of Stadtoldendorf and supplied the glass industry with diamond tools. Beside the trade with the above mentioned tools, he also manufactured his own products in order to supply his nationwide customers in the glass industry with tools for their requirements.

• 2000

In the year 2000, Mr Burghard Lein, a member of staff of many years standing, became the second shareholder and director of the enterprise. After this, the sole proprietorship enterprise was converted to a limited liability company with its domicile in Stadtoldendorf, it is now called SCHOTT Diamantwerkzeuge GmbH.

• 2005

In 2005, Mr Burghard Lein took over the company as the sole shareholder and managing director after the sudden and tragic death of the company founder Klaus Schott.

• 2007

In 2007, because of the increasing demand for our products, the company was moved to two large production facilities in the neighbourhood within the township of Stadtoldendorf. This enabled us to manufacture tools in series production on a limited scale in addition to the single manufacture of electro-plated and sintered diamond tools.

• 2008

In 2008, a third large building in the neighbourhood was acquired to become an additional production site. In the meantime, the area of the production site and the number of staff had more than doubled. The company of SCHOTT Diamantwerkzeuge manufactures top quality tools, usually according to the specifications of our customers.

These are for the processing of glass, ceramics, stone, metals and plastic, but also for the optical industry. This means that we usually don't offer pre-manufactured products but tools manufactured according to the specifications and the demand of our customers, dependent on the

- kind of the materials to be processed
- machines employed for the processing
- kind and consistence of the coolants bevolame
- manufacture targets

For these employments, we manufacture diamond tools which are made to measure. They feature the best possible quality and also have a very good price-performance ratio.

• 2009

In spite of the global economic crisis, the company of SCHOTT Diamantwerkzeuge managed to follow its successful course of growth. New sales areas were established and supplied with our products. These countries include Italy, Switzerland, France, Belgium, The Netherlands, Israel, China, India, Japan and the USA.

2010 until today

We run a number of research projects in close cooperation with technical high schools and universities. The aim of these projects is the permanent increase and improvement of processing methods with our tools, mainly in the field of new materials and compound materials and also the application of ultrasonic for dental and medical technology. In these areas, new findings are of utmost importance.

• 2012-2017

In the meantime, the third company building had been fully equipped. The application technologies are permanently updated and extended. Also, the first tool shop systems have been installed, their operations fully satisfy its users.

• 2018/2019

In 2018, we extended our sales network to the south of Germany and Austria. Patents were applied for and granted. In the field of ultrasonic-suitable diamond tools the manufacture was extended, and a new range of products was developed. The production line for the manufacture of resin-bonded materials was extended.

Certificate





TÜV certificate



Development, production and sales of diamond coated tools

The certificate is valid from 2019-08-19 until 2022-08-18.

TÜV Rheinland Cert GmbH Am Grauen Stein · 51105 Köln



Table of contents

Page	Contents
2	Company history
3	TÜV certificate
6	Table of grain sizes
7	Bonding systems
8	Galvanically coated mounted points for dental surgery
10	Thread mounted points
10	Mounted points 1A1W
11	HM – GVD
13	Galvanically interspersed diamond hollow drills
14	Galvanically interspersed milling cutters
15	Technological feasibility of galvanically interspersed tools
16	Cup wheels 6A9
16	Circumference grinding wheels 1A1
17	Cutting wheels
18 - 20	Flexible diamond tools
21	ToolShop system
22 - 25	Accessories







Table of grain sizes

FEPA-Code	Mesh-Code	μm
D3		2 - 4
D5		4 - 6
D7		6 - 8
D9		8 - 10
D10		8 - 12
D12		8 - 16
D15		10 - 20
D20		15 - 25
D25		20 - 30
D30		20 - 40
D35		30 - 40
D46	325 / 400	
D54	270 / 325	
D64	230 / 270	
D76	200 / 230	

FEPA-Code	Mesh-Code	μm
D91	170 / 200	
D107	140 / 170	
D126	120 / 140	
D151	100 / 120	
D181	80 / 100	
D213	70 / 80	
D251	60 / 70	
D301	50 / 60	
D356	45 / 50	
D426	40 / 45	
D501	35 / 40	
D601	30 / 35	
D711	25 / 30	
D851	20 / 25	
D1001	18 / 20	
D1181	16 / 18	

.

Grain					
Diamond CBN					
Diamond					
Metal bonding, sintered					
Diamond CBN					
Diamond					
Diamond & CBN					
Diamond & CBN					

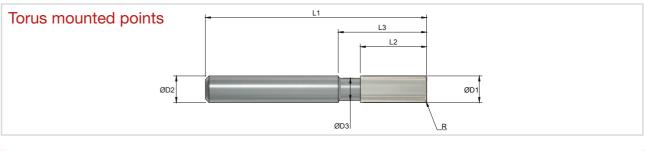
N – grain is suitable	 for easy cutting (glass, carbon, ceramics)
S – grain is suitable	 for grinding and drilling of glass and ceramics
H – grain is suitable	 for profile grinding of hard ceramics for highly strained drill bits and routers and also ultrasonic-supported tools

Single-coated	Diamond & CBN
Multiple coating	Diamond & CBN
Electroplated interspersed	Diamond & CBN

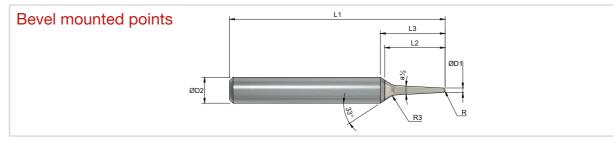
Bonding systems
Application
 Tool grinding
 Glass processing / Optics
 Glass processing
 Optics manufacture
 Profile grinding wheels
 Ceramics processing
Ceramics processing

Diamond tools for dental surgery, ultrasonic applications and engineering

Galvanically coated mounted points for dental surgery



	Examples for dimensions::							
	Ø D1 in mm	R	L2 in mm	L3 in mm	L1 in mm	Ø D3 in mm	Ø D2 h6	
	Outside diameter	Radius		- 5			Diameter shaft	Grain size
	4	0,5	10	20	50	3,5	6	D126
1	6	0,5	15	20	50	5	6	D126



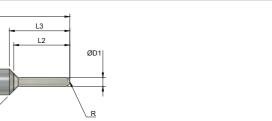
Examples for dimensions::							
Ø D1 in mm	R	L2 in mm	L3 in mm	L1 in mm	a ½	Ø D2 h6	
Outside diameter	 Badillis 		. 0	Total length	Angle	Diameter shaft	Grain size
1	0,5	14	15	50	3°	6	D91
1,2	0,6	14	15	50	2°	6	D91
1,2	0,6	14	15	50	2°	6	D126
1,3	0,65	14	15	50	2°	6	D91
1,3	0,65	14	15	50	2°	6	D126

Spherical mounted points	L1
ØD2	

Examples for dimensions::							
Ø D1 in mm	R	L2 in mm	L3 in mm	L1 in mm		Ø D2 h6	
Outside diameter	Radius		- 0	Total length		Diameter shaft	Grain size
1	0,5	11,5	12,5	50		6	D76
1,5	0,75	11,5	12,5	50		6	D91
2	1	13	14	50		6	D126
3	1,5	15	16	50		6	D126

Further dimensions and grain sizes available according to customer's demands and to technical feasibility

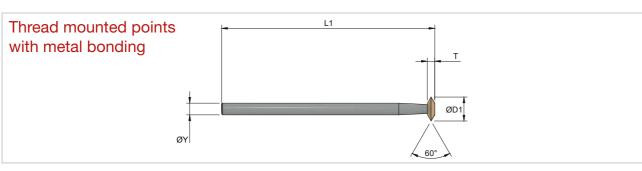
 $\langle \gamma \rangle$



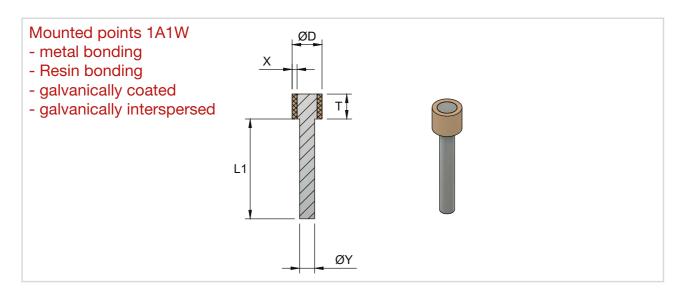
 $\langle \langle \rangle$

Mounted points

Diamond tools for ultrasonic applications



		Ø D1 in mm	T in mm	L1 in mm	Ø Y in mm
Thread	Inclination	Outside diameter	Crown depth	Total length	Diameter of shaft
M4	0,7	3,2	1,2	42,7	Ø 2,35
M5	0,8	4	1,2	42,7	Ø 2,35
M6	1	4,8	1,5	42,7	Ø 2,35
M8	1,25	6,4	1,4	45	Ø 4
M10	1,5	8,1	1,7	65	Ø 6,5
M12	1,75	9,5	1,9	80	Ø 10
M14	2	10,1	2,2	80	Ø 10
M16	2	13,5	2,2	80	Ø 10
M20	2,5	17,5	2,7	80	Ø 12



Ø D in mm	Ø Y in mm	L1 in mm	T in mm	X in mm
Outside diameter	Diameter of shaft	Length of shaft	Crown depth	Wall thickness
According to demand				





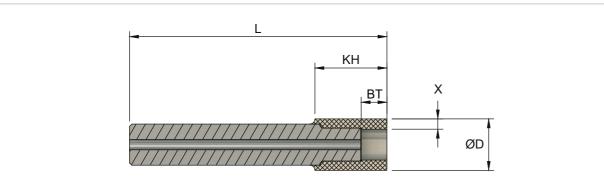
HM-GVD - tools

Diamond hollow drills galvanically interspersed

HM-GVD A new generation of diamond tools

The advantages of the new tool generation:

- Direct connection of the fully coated diamond crown on the hard metal shaft
- h5 diameter tolerances of the shafts
- No soldered connection required
- No thermal strain during the production process
- Excellent circular runout tolerances
- Greatest possible stiffness, even with long shafts
- Best possible grinding results even on difficult to process ceramics
- More abrasion because of higher feed rate and optimized infeed
- Optimal coolant flow also during deep processing
- Applicable in all common tool holders
- Applicable for conventional processes and also ultrasonic applications
- Patented manufacturing processes



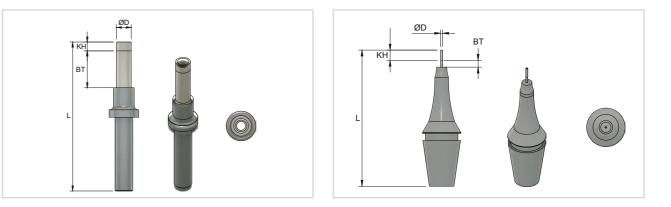
Selection of the grain quality on page 6

HM-GVD - tools:

Possible manufacturing dimensions for nickel-bonded diamond tools

Hard metal shaft (tolerance h5 according to DIN ISO 268-2):	Maximum length HM shaft:	Maximum crown depth:	Possible submergence:
5.00 - 24.00	max. 100 mm - max. 240 mm	8.00 mm - 20.00 mm	5.00 mm - 15.00 mm

Further dimensions on demand



Selection of grain quality on page 6

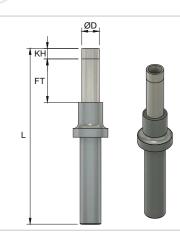
	Ø D in mm	X in mm	KH in mm
Connection / shaft	Outside diameter	Wall thickness	Crown depth
	0,3 - 0,39	0,1	2
	0,4 - 0,59	0,11	2
	0,6 - 0,69	0,16	3
	0,7 - 0,79	0,2	3
	0,8 - 0,89	0,25	3
	0,9 - 1,09	0,3	3
	1,1 - 1,19	0,3	4
	1,2 - 1,29	0,3	4
	1,3 - 1,79	0,3	4
	1,8 - 2,59	0,35	4
ER11	2,6 - 2,79	0,35	4
ER16 ER20	2,8 - 3,99	0,4	6
ER25	4,0 - 4,79	0,4	8
Clamping shaft (h6)	4,8 - 5,19	0,5	8
()	5,2 - 6,19	0,5	8
	6,2 - 6,79	0,5	8
	6,8 - 7,39	0,5	8
	7,4 - 8,19	0,6	8
	8,2 - 9,49	0,6	10
	9,5 - 10,99	0,6	10
	11,0 - 13,99	0,6	10
	14,0 - 14,99	0,6	10
	15,0 - 15,99	0,6	10
	16,0 - 16,99	0,6	10
	17,0 - 17,99	0,6	10
	18,0 - 18,99	0,6	10
	19,0 - 19,99	0,6	10
	20,00	0,6	10

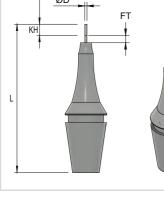
 $\langle \rangle$

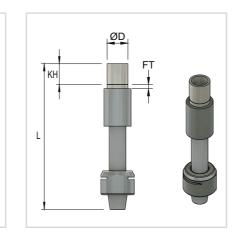
BT in mm	L in mm	L in mm
Drilling depth	Standard total length	Maximum total length
1	10	16
1	13	25
3	15	25
3	20	30
3	20	30
3	20	30
4	30	35
4	30	40
4	30	80
6	30	85
6	30	90
6	30	90
25	45	95
30	45	95
30	50	100
32	55	100
32	55	110
35	55	110
40	60	120
40	60	130
50	70	140
50	70	140
50	70	180
50	70	200
50	70	200
50	70	200
50	70	200
50	70	200



Milling cutters - galvanically interspersed







Technical feasibility of galvanically interspersed tools and list of possible basic bodies of the standard range of products

Selection of gra	in quality on page	e 6				
	Ø D in mm	X in mm	KH in mm	FT in mm	L in mm	L in mm
Connection / shaft	Outside diameter	Wall thickness	Crown depth	Milling depth	Standard total length	Maximum total length
	0,3 - 0,39	0,1	2	1	10	16
	0,4 - 0,59	0,15	2	1	13	25
	0,6 - 0,69	0,2	3	3	15	25
	0,7 - 0,79	0,2	3	3	20	30
	0,8 - 0,89	0,3	3	3	20	25
	0,9 - 1,09	0,35	3	3	20	25
	1,1 - 1,19	0,4	4	4	30	30
	1,2 - 1,29	0,4	4	4	30	40
	1,3 - 1,39	0,4	4	4	30	45
	1,4 - 1,49	0,4	4	4	30	50
	1,5 - 1,59	0,4	4	4	30	55
	1,6 - 1,79	0,4	4	4	30	60
ER11	1,8 - 2,59	0,5	4	6	30	70
ER16 ER20	2,6 - 2,79	0,5	4	6	30	80
ER20 ER25	2,8 - 2,99	0,6	6	6	30	80
Clamping shaft	3,0 - 3,99	0,6	6	6	30	90
(h6)	4,0 - 4,79	0,8	8	10	40	100
	4,8 - 5,09	1	8	10	40	100
	5,1 - 6,19	1	8	10	40	110
	6,2 - 6,79	1	8	15	45	110
	6,8 - 7,39	1	8	15	45	120
	7,4 - 8,19	1	8	18	50	120
	8,2 - 9,49	1	10	20	50	120
	9,5 - 10,99	1	10	20	50	130
	11,0 - 13,99	1	10	25	55	140
	14,0 - 14,99	1	10	25	55	140
	15,0 - 15,99	1	10	25	55	180
	16,0 - 16,99	1	10	25	55	200
	17,0 - 17,99	1	10	25	55	200
	18,0 - 18,99	1	10	25	55	200

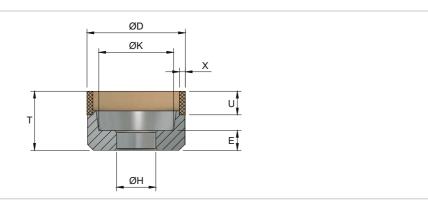
19,0 - 19,99

20,00

Wall thickness	Maximum diamond grain size	Inside diameter	Maximum diamond grain size
	Minimum D25		Minimum D25
0,10 - 0,14 mm	D35	Ø di 0,10 mm	D35
0,15 - 0,20 mm	D46	Ød i 0,20 mm	D64
0,21 - 0,25 mm	D54	Ø di 0,30 mm	D76
0,26 - 0,29 mm	D64	Ø di 0,40 mm	D91
0,30 - 0,35 mm	D91	Ø di 0,50 mm	D107
0,36 - 0,50 mm	D126	Ø di 0,60 mm	D126
0,51 - 0,70 mm	D151		

ER – fitting	Stainless steel clamping shaft	Hard metal clamping shaft	Cup wheels	Circumference discs
ER11		Hard metal clamping shaft (h5)	6A9 Ø 24 mm	1A1 Ø 30 mm
ER16		Hard metal clamping shaft (h6)	6A9 Ø 35 mm	1A1 Ø 50 mm
ER20		Hard metal clamping shaft (g6)	6A9 Ø 50 mm	
ER25				

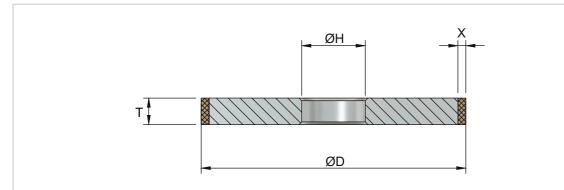
Cup wheels 6A9



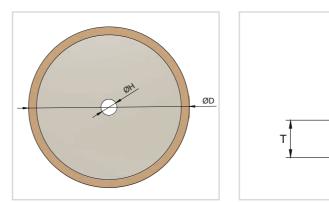
Available with metal- or resin bonding

Ø H in mm	Ø D in mm	X in mm	U in mm	E in mm	K in mm	T in mm
Mounting hole	Outside diameter		Crown depth	Web height		Total height
14H7, 20H7, others according to demand and technical feasibility	24, 35, 50, further dimensions on demand	According to demand and technical feasibility	•	demand and	demand and	According to demand and technical feasibility

Circumference grinding discs 1A1

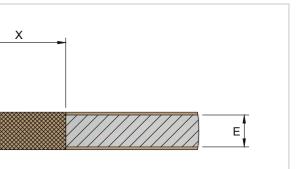


Available with metal- or resin bonding					
Ø H in mm	Ø D in mm	X in mm	T in mm		
Mounting hole	Outside diameter	Wall thickness	Width		
According to demand and technical feasibility	20 – 200	1-5, others on demand	5 / 10, others on demand		



Available	with metal-	or resin bor	nding			Availab
H in mm	X in mm	T in mm	Ø D in mm	E in mm		H in mn
Ø Bor	Layer height	Thickness	Outside diameter	Carrier thickness		Ø Bor
		0,4		0,3		
		0,5	•	0,4		
		0,6	50	0,5		
		0,8	•	0,7		
		1	•	0,9		
		0,5		0,4		
		0,6	64	0,5		Accor ding to deman
		0,8		0,7		
		1		0,9		
		0,5	75	0,4		
Accor-		0,6		0,5		-
ding to demand	5	0,8		0,7		
uemanu		1		0,9		
		0,4		0,3		
		0,6		0,5		
		0,8	100	0,7		
		1	100	0,9		
		1,2		1,1		
	1,5		1,4			
		0,8		0,65		
		1	125	0,8		
		1,2	120	0,9		
		1,5	•	1,1		

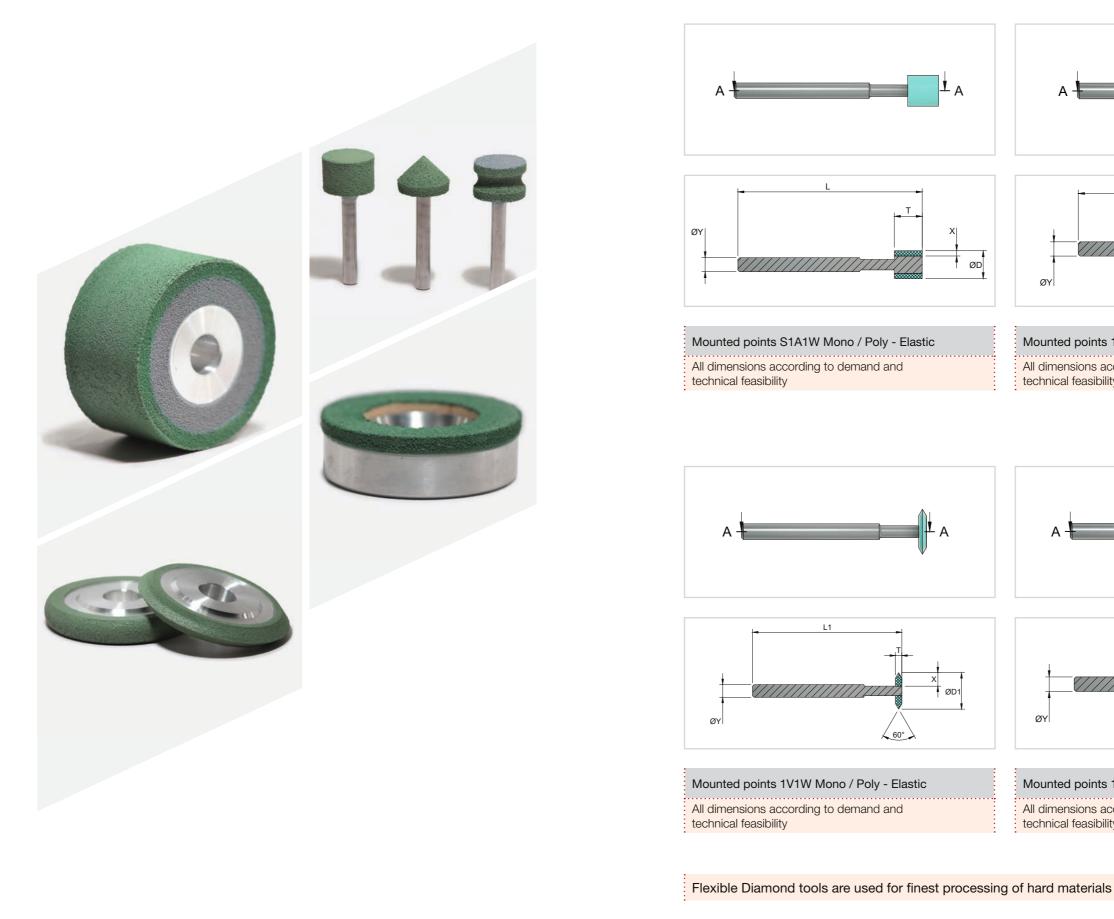
Cutting wheels 1A1R



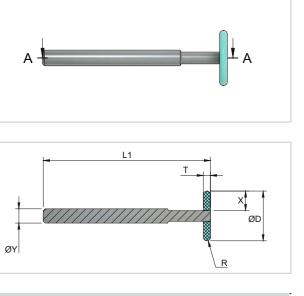
ble with metal- or resin bonding							
nm	X in mm	T in mm	Ø D in mm	E in mm			
	Layer height	Thickness	Outside diameter	Carrier thickness			
		0,8		0,65			
		0,9	150	0,7			
		1	150	0,8			
		1,5		1,1			
		1		0,8			
		1,2	200	0,9			
		1,5		1,1			
or-	10	1,8		1,4			
to and	10	1	250	0,75			
		1,2		0,8			
		1,5		1,1			
		1,8		1,6			
		1,2		0,8			
		1,5	300	1,1			
		1,8	300	1,4			
		2		1,6			

Flexible Diamond Tools

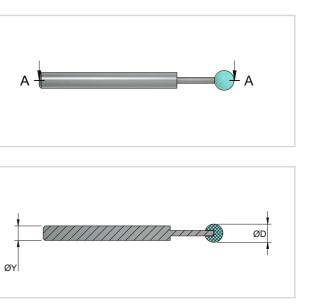


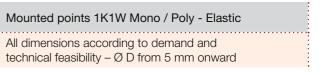


Flexible Diamond Tools









Flexible Diamond Tools



Circumference grinding discs 1A1 Mono - Elastic

Ø H in mm	Ø D in mm	X in mm	T in mm
Mounting hole:	Outside diameter	Wall thickness	Width
On request	75		10 - 50
	100	On request	
	150		
	200		



Circumference grinding c	discs 1A1 Poly - Elastic					
Ø H in mm	Ø D in mm	X in mm	T in mm			
Mounting hole:	Outside diameter	Wall thickness	Width			
	75					
	100	On request	10 - 40			
On request	150	On request	10 - 40			
	200					

For interested customers, SCHOTT Diamantwerkzeuge GmbH offers the opportunity for a simple and efficient tool management and storage by means of a so-called ToolShop system.

This system consists of a PC with a touchscreen function (incl. software for storage management), a hand scanner for the reading of the barcodes employed and also, according to demand, one or more tool cabinets.

The advantages for you:

- Simple and quick tool management
- Simple and quick tool selection
- Efficient and clearly structured tool storage
- Permanently available tools
- Low administration effort for you
- Reduced storage effort
- Low-cost administration
- simple and quickly learnable application (quickly usable for all members of staff)
- space-saving because the entire hardware and software are contained in the touchscreen device (except for the scanner)
- automated ordering system by e-Mail directly by the system (upon short fall of the fixed minimum stock)
- Short delivery times for repeat orders of fixed minimum order quatities (which we store for you - buffer storage)
- Installation of the complete system by us
- System support by us or by the German system developers
- Installation and training in your premises by us



• 1 PC with touchscreen function incl. software for storage management

- 1 hand scanner for barcode or QR code reading
- 1 or more tool cabinets (according to demand)

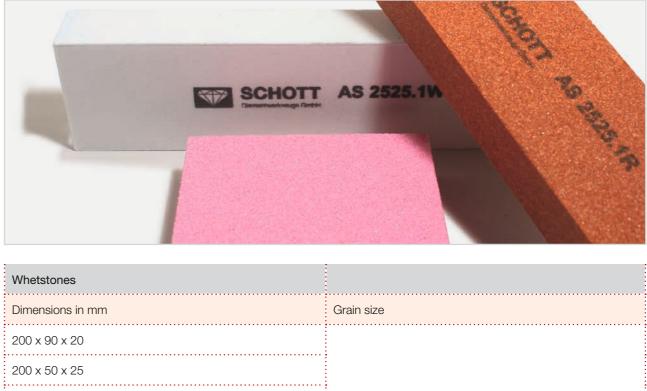
Available with and without spiral groove

ToolShop system



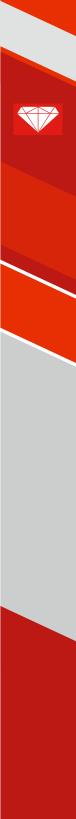






Whetstones				
Dimensions in mm	Grain size			
200 x 90 x 20				
200 x 50 x 25				
200 x 30 x 4	On request			
200 x 30 x 3				
90 x 70 x 20				
Further dimensions on demand				

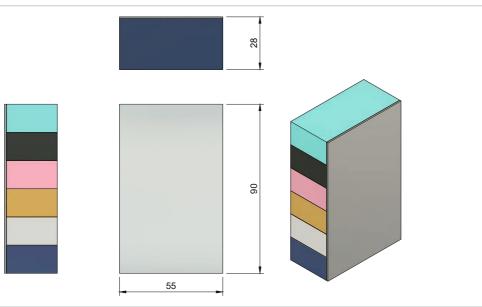
Whetstones



Hand pads







Hand pads		
Dimensions in mm	Colour	Grain size in mesh
90 x 55 x 28	Green	60
90 x 55 x 28	Black	120
90 x 55 x 28	Red	200
90 x 55 x 28	Yellow	400
90 x 55 x 28	White	500
90 x 55 x 28	Blue	1500



Flushing bushes for diamond drills	
Connection on the machine side	Connec
^{1/2} " 20 thread IG	
SDS - Plus (1/2" 20 thread)	
^{5/8} " 16 thread IG	
M18 x 2,5 IG	
M16 x 2,0 IG	R 1⁄2" IG
M14 x 2,0 IG	
B16 (cone on the inside)	
13mm trunnion	
MK2 (cone on the outside)	

Further connections on request

Flushing bushes

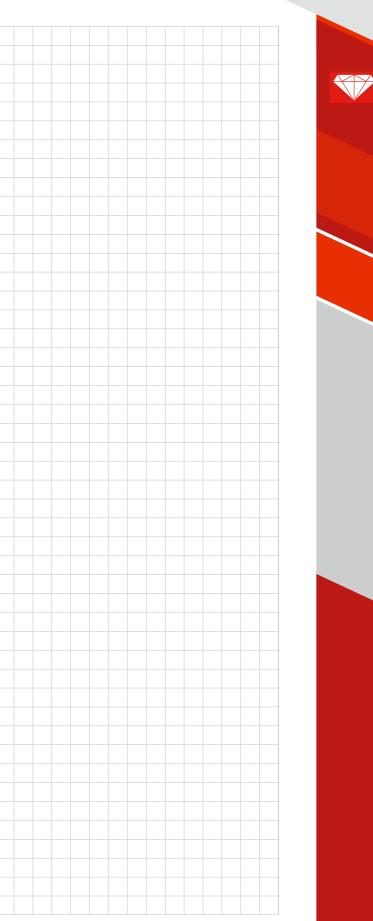
ection on the tool side

IG and on request

 $\overleftarrow{}$

												 	_					
												 _	_					 -
												 					 	 _
													_			-		 -
				 														-
																		_
																		 -
												 					 	 -
																	\vdash	
													-					
												 						 -

<u> </u>										
-										



Notes





SCHOTT Diamantwerkzeuge GmbH

Yorck-Str. $6 \cdot 37627$ Stadtoldendorf \cdot Germany Fon.: +49 (0) 5532 - 501996-0 \cdot Fax +49 (0) 5532 - 501996-30 office@schott-diamantwerkzeuge.de www.schott-diamantwerkzeuge.de

Office America:

Jandrik & Lukas America LLC. 711 Dartmouth Lane · Buffalo Grove, IL 60089 · USA Fon: +1 773 2 139059 · Fax: +1 773 7 84 52 59 erb@jandrikandlukas.com

Office Asia:

Jandrik & Lukas Asia Pte Ltd Woodlands Post Office Box 049 Fon: +65 6367 2125 · Fax: +65 6367 2126 diamondtools@jnlasia.com





Service Hotline: +49 (0) 5532 - 501996-0