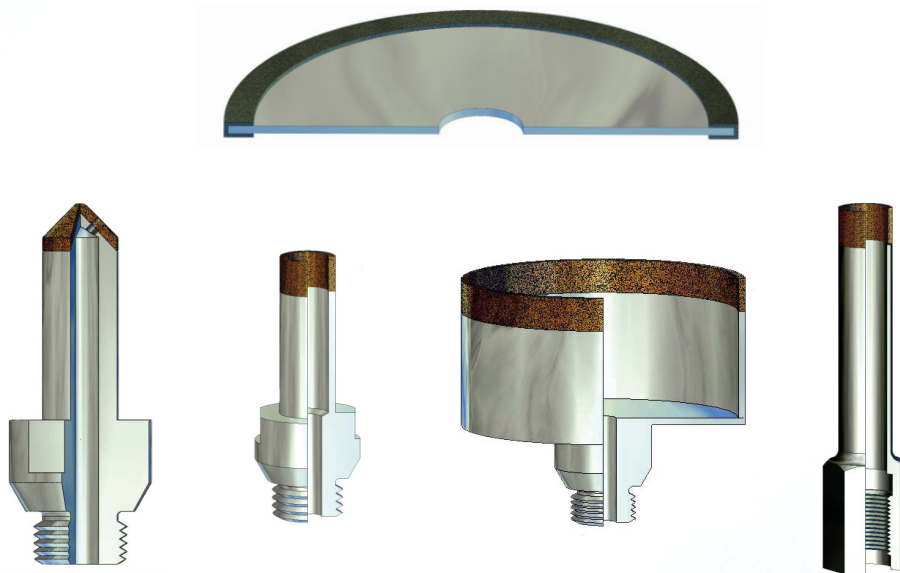


90 YEARS
1929-2019



Diamond Tools for Glass and Ceramic Process

Price List EG09/2020

**The QR-Codes lead you directly to our
Online-Shop!**



All prices are per piece, ex works.

Corporate History

Top quality at reasonable prices

Since 1929, this philosophy has determined our range of products and services.
To celebrate our 90th anniversary, we would like to invite you to a journey through time.

During his training in a glass factory, the later co-founder Theodor Felix Kraus came into contact with glazier diamonds for the first time and learned how to repair them. The First World War forced him to interrupt his training, but after his time as a soldier in France and Russia, his way led him first to Sweden and back to France where he acquired further knowledge and techniques in the production of diamond tools. Upon his return to Germany, Theodor Felix Kraus was already considered a specialist in the field.

On October 1st, 1929, Theodor Felix Kraus and the businessman Willy Winter founded the Kraus & Winter company at Lindenstraße 5 in Hamburg. The entry into the commercial register took place only 8 days later on 9th October 1929. The first target groups were glass, laboratory and natural stone companies and supplied with the first diamond tools. In 1935, less than 10 years later, the partner Willy Winter retired and Theodor Felix Kraus continued the company as sole owner.

In 1938, the company moved to Hamburg-Lokstedt Lottestraße 9-11 in order to meet increased customer demands and broadening capacity. Over the years, production was expanded into more and more areas.

In 1956 the office was moved to its present location in Hamburg-Lemsahl, and extended in by an annex.

His son Felix-Gunter Kraus joined the company at a young age during his apprenticeship. As a result, the range of diamond tools for all areas was supplemented by his devices for optical glass processing. Thus the field of ophthalmic optics also became potential customers.

Theodor Felix Kraus died in 1974. His son took over the company in the same year and led it safely into the new age.

After 90 years of experience, our company still relies on sound know-how in the manufacture of diamond and later CBN tools, intensive research and development work, state-of-the-art production methods, as well as a team of motivated and qualified employees and recognizes them as an essential basis for consistently high quality, forward-looking production optimization and innovation in our company.

By using the latest technology in our company, such as CAD workstations, ERP systems for monitoring order, production and delivery processing, as well as careful final inspections, we can guarantee you on-time delivery and the highest quality standard, even for custom-made products.

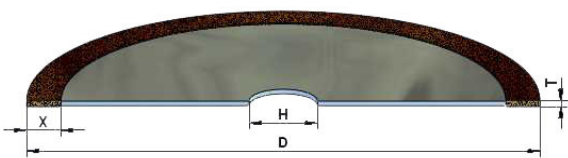
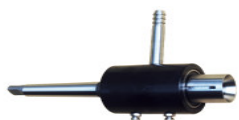
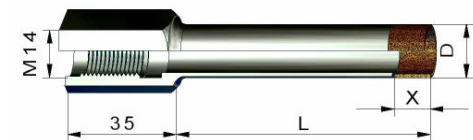
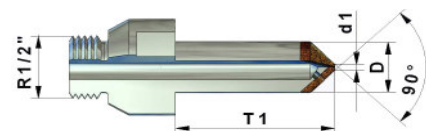
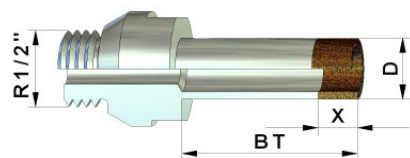
Armed with these prerequisites, we look forward to a future far beyond 2019.

Be a part of our advancement.
We will be happy to advise you.

**KRAUS & WINTER
90 YEARS
DIAMOND TOOLS**

Table of Contents

Further information regarding Diamond Core Drills and Countersink	Page 4
Standard Grit Size for Diamond and CBN (Bornitride)	Page 5
Conversion table of cut speed/diametre (m/s) on rotations by minute (RPM)	Page 6
Operating conditions for Diamond Wheels and Cutting Discs	Page 7
Diamond Core Drills Type 219	Page 9
Diamond Reamer Type 221	Page 11
Diamond Core Drills Type SKS for Ceramics and fine Stone	Page 13
Water Rinsing Cases Type 218	Page 15
Diamond Discs Type 1A1R0	Page 17
Writing Diamond Type 38 / 39	Page 19



Operating conditions for Diamond Core Drills for Glass Process

Bronze Bond

Mainly bronze bond is used for diamond hollow drills. Grit and concentration is matched to the respective application. The optimum rotational speed for the drilling with diamond hollow drills is 1,5 – 2.5 m/sec.

If the rotational speed is too low, too less of the binding material between the diamond grit will be removed. Consequently the drill goes blunt and has to be resharpened with a sharpening stone. If the rotational speed is too high the diamond grit will be torn out off the binding material.

Ø mm	U/min.
3-5	9.000
6-10	4500
11-20	2500
21-25	2000
26-35	1250
36-50	1000
51-100	600
101-150	300

Water Pressure

The diamond core drills need an inside water cooling. An outside cooling is not enough. When drilling deep holes the drill needs to be lifted in prperiodical intervals to allow clearing of the drill.

The water pressure depends on the diametre of the drill and has to be adjusted correspondingly to achieve an optimal result. Along with increasing diametre a counterpressure to the feed direction is created if no pressure adjustment is made.

Ø mm	Water Pressure in Bar
2-5	5-3
6-10	3-2
11-20	2-1
21-40	1-0,5
41-120	0,5-0,2

Standard Grit Size for Diamond and CBN (Bornitride)

In the following grain table we not only have the FEPA but also the US-mesh designation, mesh opening in micron (μ) and conventional grain designations listed. You can then perform conversion yourself.

Diamond Standard FEPA		CBN Standard FEPA		US-Standard (US Mesh)		Mesh Size μ	Grit Size Siliziumcarbide Corundum
narrow	wide	narrow	wide	narrow	wide		
D1181 D1001	D1182	-	-	16/18 18/20	16/20	1180-1000 1000-850	20
D851 D711	D852	-	-	20/25 25/30	20/30	850-710 710-600	24 30
D601 D501	D602	B501	-	30/35 35/40	30/40	600-500 500-425	36 40
D427 D356	D427	B426 B356	B427	40/45 45/50	40/50	425-355 355-300	46 50
D301	-	B301	-	50/60	-	300-250	60
D251 D213	D252	B251 B213	B252	60/70 70/80	-	250-212 212-180	70 80
D181	-	B181	-	80/100	-	180-150	90
D151	-	B151	-	100/120	-	150-125	100
D126	--	B126	-	120/140	-	125-106	120
D107	-	B107	-	140/170	-	106-90	150
D91	-	B91	-	170/200	-	90-75	180
D76	-	B76	-	200/230	-	75-63	200
D64	-	B64	-	230/270	-	63-53	220
D54	-	B54	-	270/325	-	53-45	250
D46	-	B46	-	325/400	-	45-38	280
D35	-	-	-	400/500	-	40-32	320
D30	-	B30	-	450/550	-	32-25	340
D25	-	-	-	600	-	30-20	380
D20	-	-	-	-	-	25-15	-
D15	-	B15	-	1200	-	20-10	600
D10	-	-	-	-	-	15-8	-
D7	-	-	-	2400	-	12-6	1000
D6	-	-	-	-	-	8-4	-
D3	-	-	-	6000	-	4-2	-
D1	-	-	-	8000	-	2-1	-

Operating conditions for Diamond Wheels and Cutting Discs

The cutting speed has great influence on the cutting performance, lifetime and polish quality for diamond grinding wheels.

We therefor recommend employing the grinding wheels with our prescribed cutting speed. The lower values apply to the bigger, and the higher values to the smaller contact area.

We listed our recommended grinding speeds for the equivalent grinding procedure along with a conversion table of cutting speed to rate of rotation.

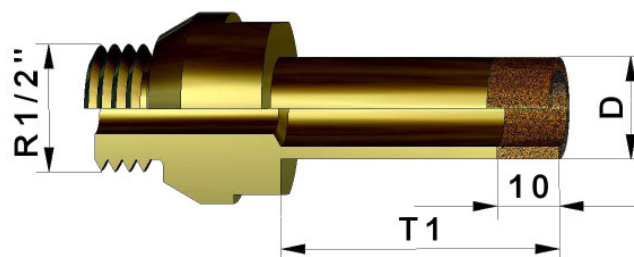
Diamond Wheel for Glass / Ceramics	Resin Bond wet m/s	Metal Bond wet m/s
Tool Grinding	25-30	12-20
inside Grinding	10-20	10-18
Flat Grinding	25-35	20-30
External cylindrical Grinding	25-35	20-30
Deep pass Grinding	20-30	80-140

Conversion table of cut speed / diameter (m/s) on rotations by minute (RPM)

D	8 m/s	12 m/s	15 m/s	18 m/s	20 m/s	22 m/s	28 m/s	30 m/s
5	30560	45800	57300	68800	76400	84000	-	-
10	15280	22930	28650	34380	38200	42000	53500	57300
15	10170	15300	19100	22900	25500	28000	35650	38200
25	6130	9200	11460	13800	15300	16850	21400	23000
50	3050	4580	5730	6870	7650	8400	10700	11450
75	2040	3060	3820	4580	5100	5600	7150	7650
100	1530	2290	2870	3440	3825	4200	5350	5730
125	1220	1830	2290	2750	3050	3355	4280	4600
150	1020	1530	1910	2290	2550	2800	3570	3800
200	765	1145	1430	1720	1910	2120	2675	2875
250	610	920	1150	1380	1525	1685	2140	2300
300	510	765	950	1145	1275	1400	1780	1900
350	440	655	820	980	1090	1200	1530	1640
400	380	570	715	860	960	1050	1340	1450
450	340	510	635	760	850	930	1190	1270
500	305	460	570	690	765	840	1070	1145
600	255	385	480	575	640	700	890	955

D	40 m/s	50 m/s	60 m/s	70 m/s	80 m/s	90 m/s	100 m/s	110 m/s
5	-	-	-	-	-	-	-	-
10	76500	95500	-	-	-	-	-	-
15	50800	63800	76400	-	-	-	-	-
25	30600	38200	45840	53520	61120	68730	76400	82000
50	15300	19100	22920	26760	30560	34360	38200	42000
75	10160	15280	15280	17840	20360	22920	25480	28000
100	7620	9550	11460	13380	15280	17180	19100	21000
125	6120	7640	9180	10700	12220	13760	15280	16800
150	5080	6380	7640	8920	10180	11460	12740	14000
200	3820	4775	5730	6690	7640	8590	9550	10510
250	3060	3820	4590	5350	6110	6880	7640	8400
300	2540	3180	3820	4460	5090	5730	6370	7000
350	2180	2730	3270	3820	4370	4910	5460	6000
400	1910	2390	2870	3340	3820	4300	4780	5250
450	1700	2120	2450	2970	3390	3820	4240	4670
500	1530	1910	2290	2670	3060	3440	3820	4200
600	1280	1590	1910	2230	2550	2870	3180	3500

Diamond Core Drills for Glass Type 216 / 216N / 219 with Shank R 1/2"



Standard Diamond Core Drills Type 219 with Brass/Steel Body

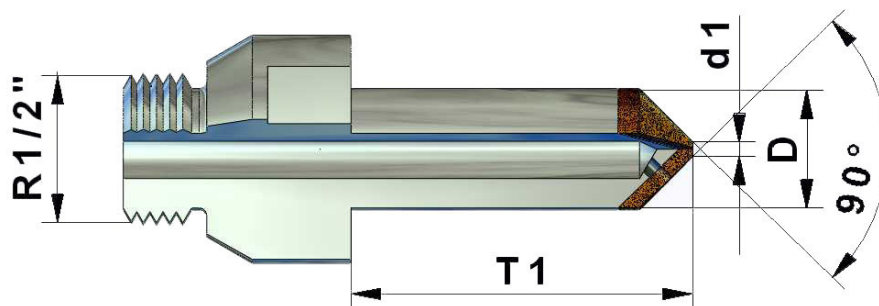
The diamond core drills in small dimensions the body is complete made of brass. The bigger dimension is made of steel und the shank made of brass.

Art.No.	Ø	Price €
219003	3	32,00
219004	4	32,00
219005	5	23,00
219006	6	23,00
219007	7	25,20
219008	8	25,20
219009	9	28,00
219010	10	28,00
219011	11	29,20
219012	12	29,20
219013	13	31,00
219014	14	31,00
219015	15	33,00
219016	16	33,00
219017	17	35,00
219018	18	35,00
219019	19	37,20
219020	20	37,20
219021	21	39,20
219022	22	39,20
219023	23	41,30
219024	24	41,30
219025	25	44,80
219026	26	44,80
219027	27	47,00
219028	28	47,00
219029	29	50,00
219030	30	50,00
219031	31	51,50
219032	32	51,50
219033	33	53,20
219034	34	53,20
219035	35	56,20
219036	36	56,20

Art.No.	Ø	Price €
219037	37	58,80
219038	38	58,80
219039	39	63,00
219040	40	63,00
219041	41	64,50
219042	42	64,50
219043	43	67,00
219044	44	67,00
219045	45	69,00
219046	46	69,00
219047	47	72,00
219048	48	72,00
219049	49	75,60
219050	50	75,60
219052	52	77,00
219054	54	81,00
219056	56	86,00
219058	58	88,00
219060	60	93,00
219065	65	105,00
219070	70	110,00
219075	75	120,00
219080	80	126,00
219085	85	134,00
219090	90	141,00
219095	95	151,00
219100	100	155,00
219110	110	194,00
219120	120	214,00
219130	130	232,00
219140	140	250,00
219150	150	270,00
219160	160	292,00
219170	170	320,00

The Standard Shank is R 1/2". Other Shanks are possible, please enquire!

Diamond Countersink 90° for Glass / Ceramics Type 221 Bronze Bond

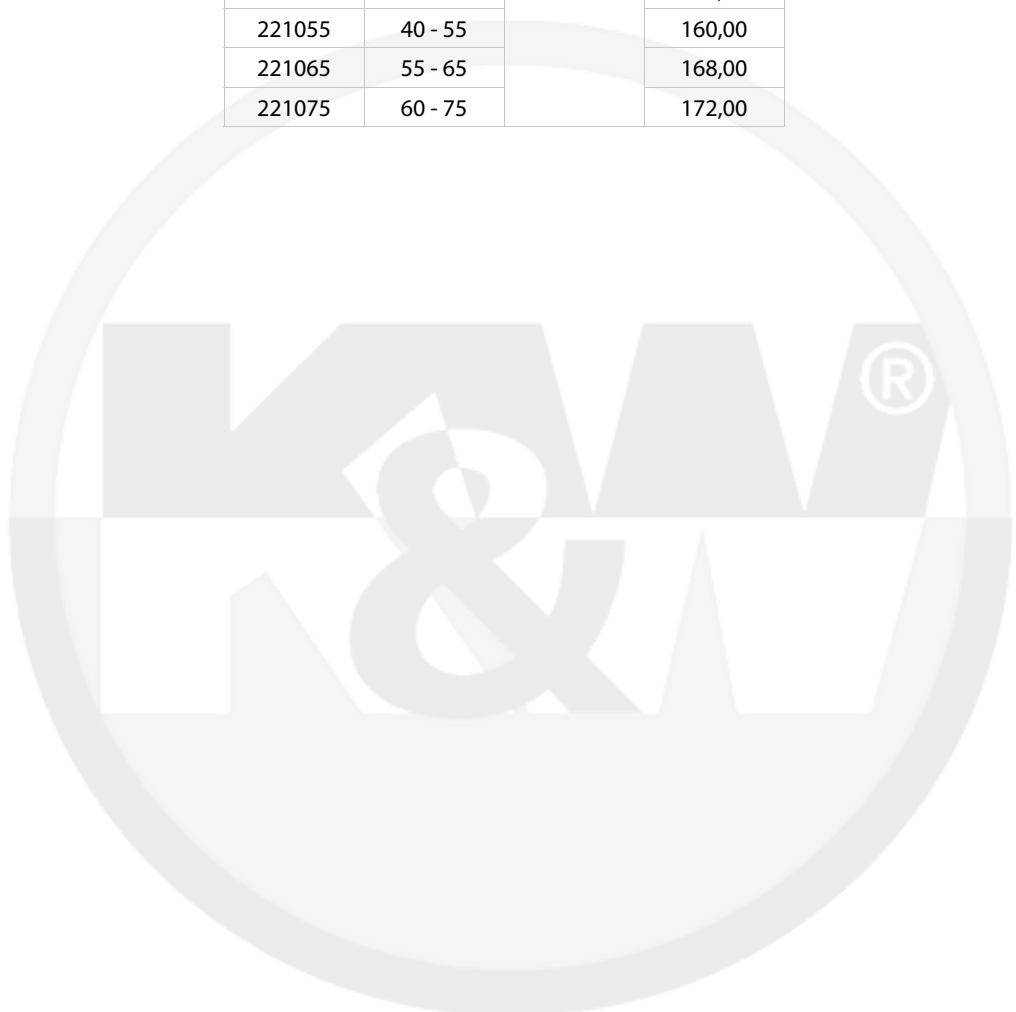


Diamond Countersink 90° Type 221

Several holes in the layer the diamond countersinks ensures that the grinding area is directly and continually cooled. This positioning ensures a tension-free counter sinking as well a soft grinded surface.

The standard shank for this diamond countersink is R 1/2"

Art.No.	d1-D	T1	Price €
221015	1 - 15	40	53,00
221025	1 - 25		62,00
221135	1 - 35		85,00
221145	1 - 45		94,00
221165	1 - 65		120,00
221045	20 - 45		134,00
221055	40 - 55		160,00
221065	55 - 65		168,00
221075	60 - 75		172,00



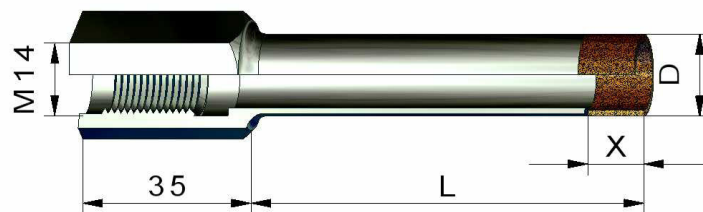
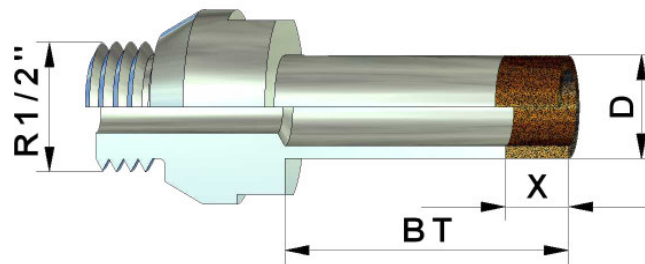
Diamond Core Drills for Ceramic

Shank R 1/2" oder M14

Type SKS



On ordering please indicate shank Type R 1/2" or M14 inner thread!

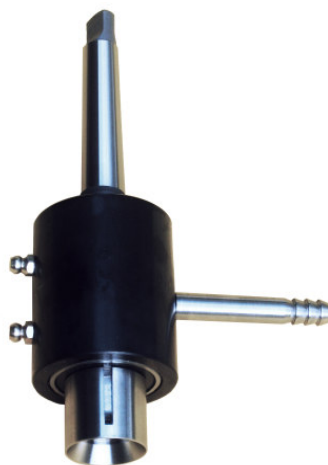


Diamond Core Drills Type 219 SKS for Ceramic / Fine Stone, wet

This special diamond drills are for drilling ceramics and fine stones tiles. The standard shanks are R 1/2" or M14 inner thread. The standard drilling depth is 60 mm. Other shank and drilling depth are possible on demand.

Art.No.	Ø	Price €
SKS219005	5	35,00
SKS219006	6	36,00
SKS219008	8	38,00
SKS219010	10	41,00
SKS219012	12	46,00
SKS219014	14	50,00
SKS219015	15	52,00
SKS219016	16	54,00
SKS219018	18	57,00
SKS219020	20	59,00
SKS219022	22	63,00
SKS219024	24	65,00
SKS219025	25	67,00
SKS219028	28	69,00
SKS219030	30	73,00
SKS219032	32	76,00
SKS219035	35	79,00
SKS219040	40	88,00
SKS219045	45	95,00
SKS219050	50	108,00
SKS219055	55	118,00
SKS219060	60	133,00
SKS219065	65	145,00

Water Rinsing Cases for Diamond Core Drills Type 218



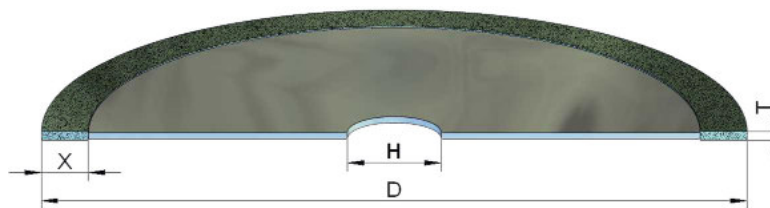
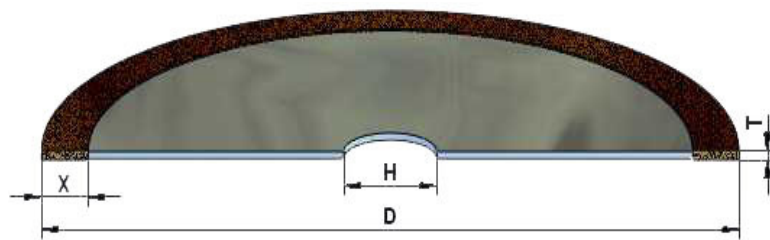
Water Rinsing Cases Type 218 for Diamond Core Drills with Shank R1/2"

This water rinsing cases Art. Nr. 218221-3 had an inside cone B16. Plug in the corresponding connection cone from your drilling machines and put instade of the drilling chuck in the machines.

Art.No.		Price €
218220	Spindle hardened and grinded, Shank 12 mm	172,00
218221	Spindle hardened and grinded, Shank MK1	172,00
218222	Spindle hardened and grinded, Shank MK2	172,00
218223	Spindle hardened and grinded, Shank MK3	172,00



Diamond Discs Type 1A1R0 with Bronze or Resin Bond Layer



Diamond Discs Type 1A1R0 with Bronze Bond Layer

This diamond disc is bronze bonded and suitable for cutting glass or ceramics. Fast and clean cutting is achieved through the combination of concentration, grit size and bond hardness. It is possible to make a radius on the layer. It is possible to produce all diameters with the cutting widths listed.

Ø D	Cutting Width T min. - max.	Layer X	Hole H	Grit	Material
100	0,3 - 1,0	5 + 10	Please quote!	Please quote!	Please quote!
125	0,3 - 2,0				
150	0,4 - 1,0				
175	0,6 - 3,0				
200	0,6 - 2,5				
250	0,8 - 3,5				
300	1,0 - 3,0				
350	1,0 - 2,5	10			
400	1,5 - 3,0				

Diamond Discs Type 1A1R0 with Resin Bond Layer

The resin bonded diamond discs are suitable for fine cuts in glass and ceramic. The resin bond produces clean and virtually break-out-free cuts.

It is possible to produce all diameters with the cutting widths listed .

Ø D	Cutting Width T min.- max.	Layer X	Hole H	Grit	Material
100	0,4 - 2,0	5	Please quote!	Please quote!	Please quote!
150	0,5 - 2,0	6			
175	1,0 - 2,0	5			
200	0,7 - 2,0	7			
250	0,8 - 2,0	7 + 9			
300	1,0 - 3,0	9			
350	1,0 - 2,5				
400	1,2 - 5,0				
450	1,8 - 2,0				
500	1,8 - 3,0				

Writing Diamond Tools

Type 38 / 39



38



39



Writing Diamond in Wooden Handle Type 38

Zolltarifnummern: 8205 51 00

The writing diamonds are fitted into a wooden handle and fixed with a metall clamp to avoid breakage of the wood through sideward load. The Art.No. 381 comes with a small pyramid diamond top. All other sizes 3 – 7 comes with a cone grinded diamond top, with the precision to draw even the finest lines.

Our writing diamonds are made from environmentally friendly and sustainable pure material and are fully recyclable.

Art.No.	Description	Diamond Top	Price €
381	Writing Diamond Gr. 1	Pyramide	12,80
383	Writing Diamond Gr. 3	Cone	20,30
385	Writing Diamond Gr. 5		27,80
387	Writing Diamond Gr. 7		33,30

Writing Diamond in Ball Point Pen Type 39

Zolltarifnummern: 8205 51 00

The writing diamond Type 39 is fitted in a metal ballpoint pen holder. The Art.No. 391 comes with a small pyramid diamond top. The size 3 comes with a cone grinded diamond top, with the precision to draw even the finest lines

Art.No.	Description	Diamond Top	Price €
391	Writing Diamond Gr. 1	Pyramide	12,80
393	Writing Diamond Gr. 3	Cone	20,30

Note

Since 90 Years Production of Diamond Tools



KRAUS & WINTER SARENWEG 108-110 22397 HAMBURG GERMANY
Tel. +49 (0)40 525917-20 Fax +49 (0)40 525917-38

Internet: www.kraus-und-winter.de Email: info@kraus-und-winter.de

