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ISI Precision Machinery



Diamond Coated Tools

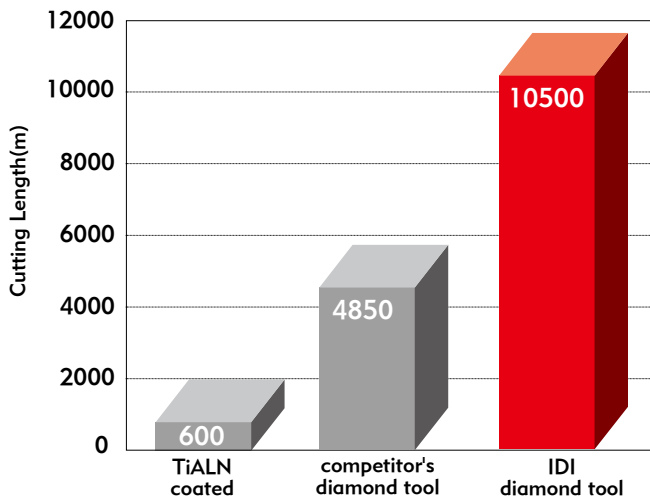
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Application:

Graphite milling:

for semiconductor industry, die and mold industry..., etc.

Composite materials:

CFRP (carbon fiber reinforced plastics), Glass fiber plastics, PEEK, PBI..., etc. (contact us for this application)

Ceramics in green state machining

Cutting condition:

Tool: R3 ball nose endmill

Vc=220m/min.

Pitch=0.08mm

Graphite: POCO EDM200

Application: Graphite electrode Z level finishing

Note: Tool life depends on machine tool, tool holder, graphite hardness and surface quality requirement..., etc. The above data may not fit all cases.



Competitor's diamond tool:
after 4850m cutting length



IDI diamond tool:
after 10500m cutting length

Diamond Coated Tools Codes (for Metric unit tools only)

DMS6-4-20-25-60
 1 2 3 4 5 6 7 8

- | | |
|--|---------------------------|
| 1 Diamond Coating | 4 Cutting Diameter |
| 2 M:Metric
E:English | 5 No. of Flutes |
| 3 S:Square End
B:Ball Nose
C:Corner Radius
R:Roughing Tool | 6 Flute Length |
| | 7 Effective Length |
| | 8 Overall Length |

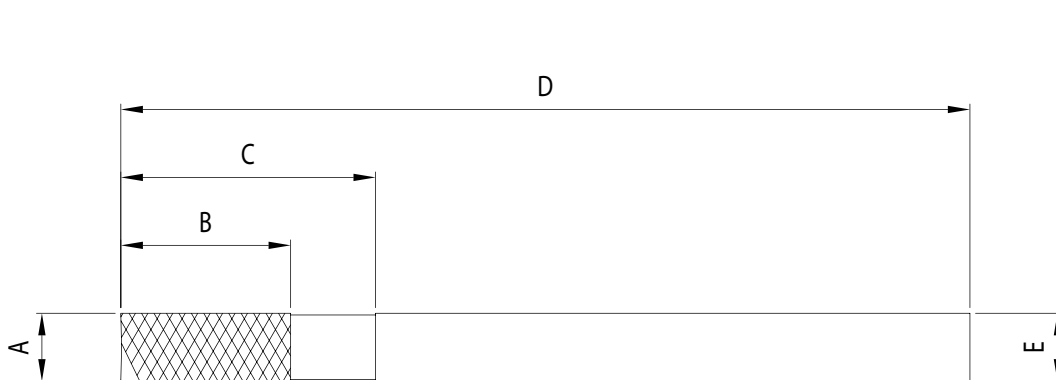


Tools for Graphite Roughing

Shank Tools

unit:mm

Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
DMR3-2-9-14-50	3	2	9	14	50	3
DMR4-2-12-17-75	4	2	12	17	75	4
DMR6-2-18-23-60	6	2	18	23	60	6
DMR6-2-18-23-100	6	2	18	23	100	6
DMR8-2-24-35-100	8	2	24	35	100	8



Diamond Coated Insert Systems for Graphite Cutting

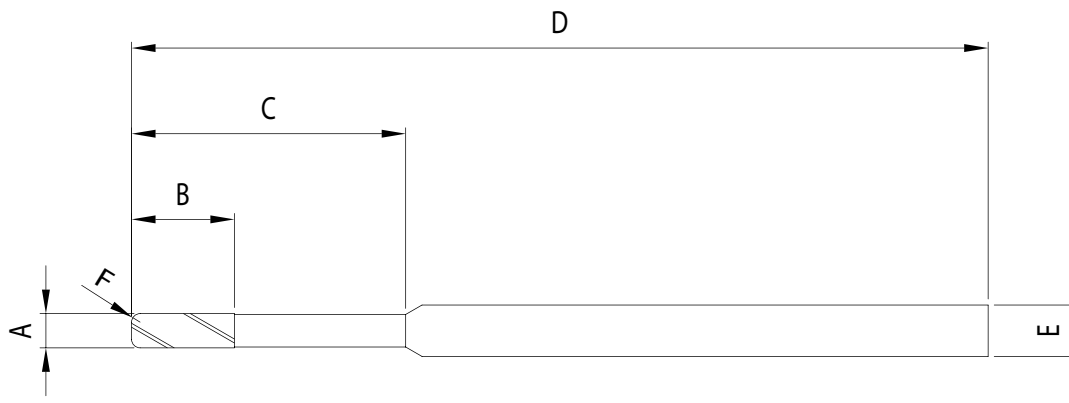


unit:mm

Part No.	Cutting Diameter (mm)	Shank Diameter (mm)	Overall Length (mm)	No. of Flutes	Insert Type
T-D11R2.5-S10-L125	D11R2.5	10	125	2	RDHX0501
T-D13R2.5-S12-L150	D13R2.5	12	150	2	RDHX0501
T-D17R4-S16-L200	D17R4	16	200	2	RDHX0802
T-D21R4-S20-L200	D21R4	20	200	2	RDHX0802
T-D26R4-S25-L250	D26R4	25	250	3	RDHX0802


Part No.	Photos
RDHX0501	
RDHX0802	
SEHT1204	







Mini Tools

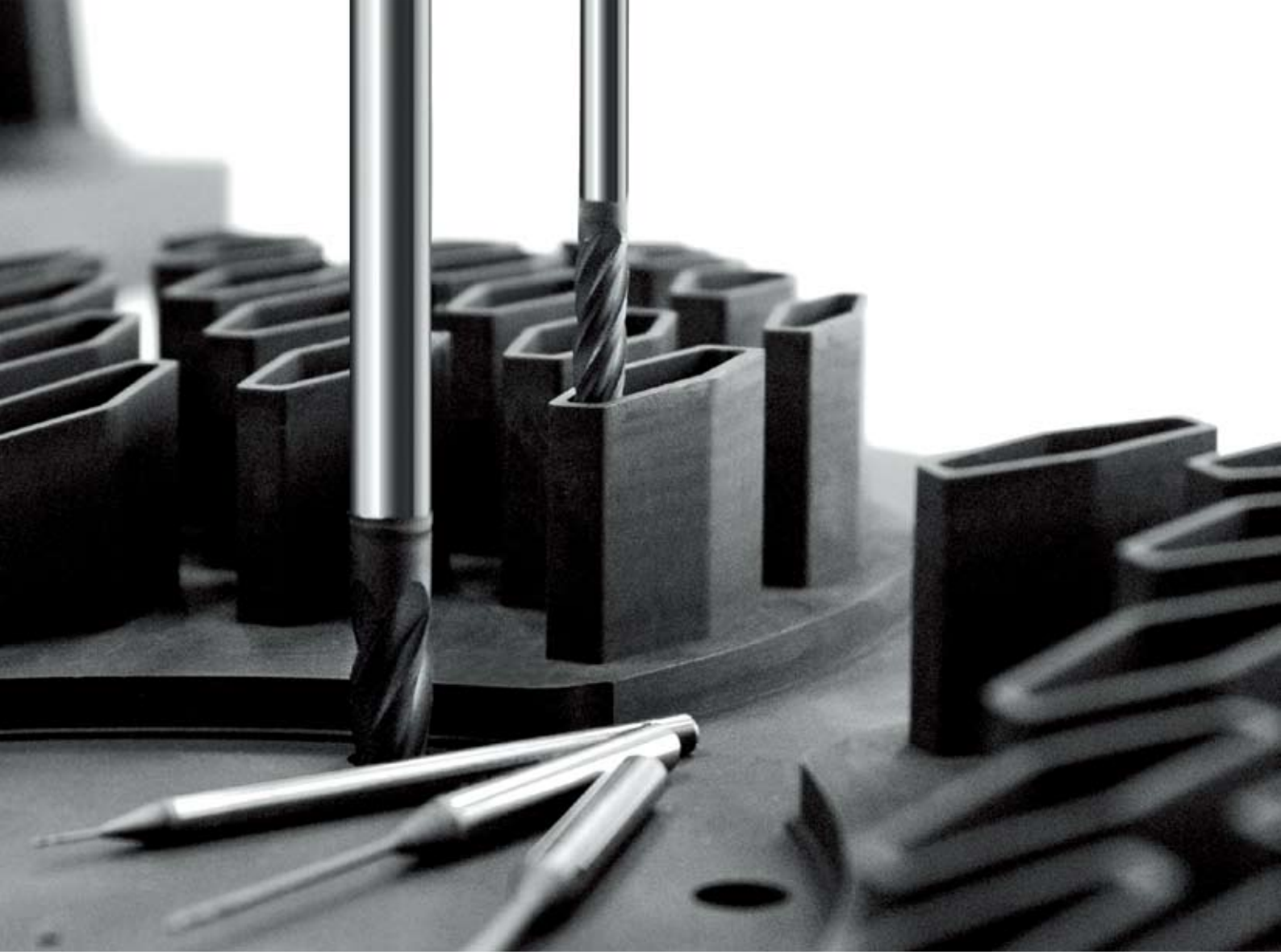
unit:mm

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
Square End 	DMS02-2-0.3-0.3-40	0.2	2	0.3	0.3	40	3
	DMS03-2-0.45-0.45-40	0.3	2	0.45	0.45	40	3
	DMS04-2-0.6-0.6-40	0.4	2	0.6	0.6	40	3
	DMS05-2-1.5-1.5-40	0.5	2	1.5	1.5	40	3
	DMS05-2-1.5-4-40	0.5	2	1.5	4	40	3
	DMS06-2-1.8-1.8-40	0.6	2	1.8	1.8	40	3
	DMS06-2-1.8-5-40	0.6	2	1.8	5	40	3
	DMS08-2-2.4-2.4-40	0.8	2	2.4	2.4	40	3
	DMS08-2-2.4-7-40	0.8	2	2.4	7	40	3
	DMS1-2-3-3-50	1	2	3	3	50	3
	DMS1-2-3-6-50	1	2	3	6	50	3
	DMS1-2-3-10-50	1	2	3	10	50	3
	DMS1-2-3-16-50	1	2	3	16	50	3
	DMS1-2-3-20-50	1	2	3	20	50	3
	DMS2-4-6-6-50	2	4	6	6	50	3
	DMS2-4-6-10-50	2	4	6	10	50	3
	DMS2-4-6-16-50	2	4	6	16	50	3
	DMS2-4-6-20-50	2	4	6	20	50	3




unit: mm

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E	Corner Radius F
Ball Nose 	DMB02-2-0.2-0.2-40	0.2	2	0.2	0.2	40	3	
	DMB03-2-0.3-0.3-40	0.3	2	0.3	0.3	40	3	
	DMB04-2-0.4-0.4-40	0.4	2	0.4	0.4	40	3	
	DMB05-2-0.5-1.5-40	0.5	2	0.5	1.5	40	3	
	DMB05-2-0.5-4-40	0.5	2	0.5	4	40	3	
	DMB06-2-0.6-1.8-40	0.6	2	0.6	1.8	40	3	
	DMB06-2-0.6-5-40	0.6	2	0.6	5	40	3	
	DMB08-2-0.8-2.4-40	0.8	2	0.8	2.4	40	3	
	DMB08-2-0.8-7-40	0.8	2	0.8	7	40	3	
	DMB1-2-3-3-50	1	2	3	3	50	3	
	DMB1-2-3-6-50	1	2	3	6	50	3	
	DMB1-2-3-10-50	1	2	3	10	50	3	
	DMB1-2-3-16-50	1	2	3	16	50	3	
	DMB1-2-3-20-50	1	2	3	20	50	3	
	DMB2-4-6-6-50	2	4	6	6	50	3	
	DMB2-4-6-10-50	2	4	6	10	50	3	
	DMB2-4-6-16-50	2	4	6	16	50	3	
	DMB2-4-6-20-50	2	4	6	20	50	3	
	Corner Radius 	DMC1-2-3-3-50	1	2	3	3	50	3
DMC1-2-3-6-50		1	2	3	6	50	3	0.2
DMC1-2-3-10-50		1	2	3	10	50	3	0.2
DMC1-2-3-16-50		1	2	3	16	50	3	0.2
DMC1-2-3-20-50		1	2	3	20	50	3	0.2
DMC2-4-6-6-50		2	4	6	6	50	3	0.5
DMC2-4-6-10-50		2	4	6	10	50	3	0.5
DMC2-4-6-16-50		2	4	6	16	50	3	0.5
DMC2-4-6-20-50		2	4	6	20	50	3	0.5





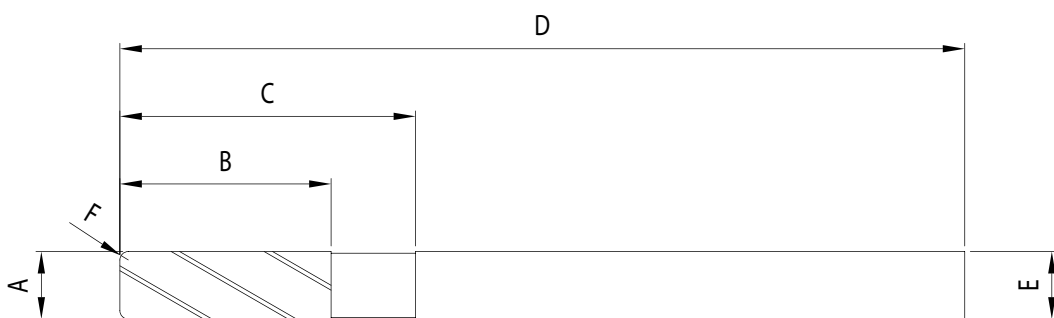
Standard Tools

unit: mm

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
Square End 	DMS3-4-12-15-75	3	4	12	15	75	3
	DMS4-4-15-20-75	4	4	15	20	75	4
	DMS4-4-15-20-100	4	4	15	20	100	4
	DMS6-4-20-25-60	6	4	20	25	60	6
	DMS6-4-20-25-100	6	4	20	25	100	6
	DMS6-4-20-25-150	6	4	20	25	150	6
	DMS8-4-25-35-100	8	4	25	35	100	8
	DMS8-4-25-35-150	8	4	25	35	150	8
	DMS10-4-25-35-100	10	4	25	35	100	10
	DMS10-4-25-35-150	10	4	25	35	150	10
	DMS12-4-25-35-100	12	4	25	35	100	12
	DMS12-4-25-35-150	12	4	25	35	150	12

unit: mm

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E	Corner Radius F
Ball Nose 	DMB3-4-12-15-75	3	4	12	15	75	3	
	DMB4-4-15-20-75	4	4	15	20	75	4	
	DMB4-4-15-20-100	4	4	15	20	100	4	
	DMB6-4-20-25-60	6	4	20	25	60	6	
	DMB6-4-20-25-100	6	4	20	25	100	6	
	DMB6-4-20-25-150	6	4	20	25	150	6	
	DMB8-4-25-35-100	8	4	25	35	100	8	
	DMB8-4-25-35-150	8	4	25	35	150	8	
	DMB10-4-25-35-100	10	4	25	35	100	10	
	DMB10-4-25-35-150	10	4	25	35	150	10	
	DMB12-4-25-35-100	12	4	25	35	100	12	
	DMB12-4-25-35-150	12	4	25	35	150	12	
Corner Radius 	DMC3-4-12-15-75	3	4	12	15	75	3	0.5
	DMC4-4-15-20-75	4	4	15	20	75	4	0.5
	DMC4-4-15-20-100	4	4	15	20	100	4	0.5
	DMC6-4-20-25-60	6	4	20	25	60	6	0.5
	DMC6-4-20-25-100	6	4	20	25	100	6	0.5
	DMC6-4-20-25-150	6	4	20	25	150	6	0.5
	DMC8-4-25-35-100	8	4	25	35	100	8	0.5
	DMC8-4-25-35-150	8	4	25	35	150	8	0.5
	DMC10-4-25-35-100	10	4	25	35	100	10	1
	DMC10-4-25-35-150	10	4	25	35	150	10	1
	DMC12-4-25-35-100	12	4	25	35	100	12	1
	DMC12-4-25-35-150	12	4	25	35	150	12	1



Customer Examples

Graphite Roughing:

Tool: D13R2.5 RDHX0501 diamond coated milling inserts
Spindle speed: 5000 rpm
Feedrate: 4000mm/min.
Graphite: POCO EDM200
ap=0.5mm, **ae**=7mm
Tool life: 3-4 hours/day, two inserts last about 40 work days



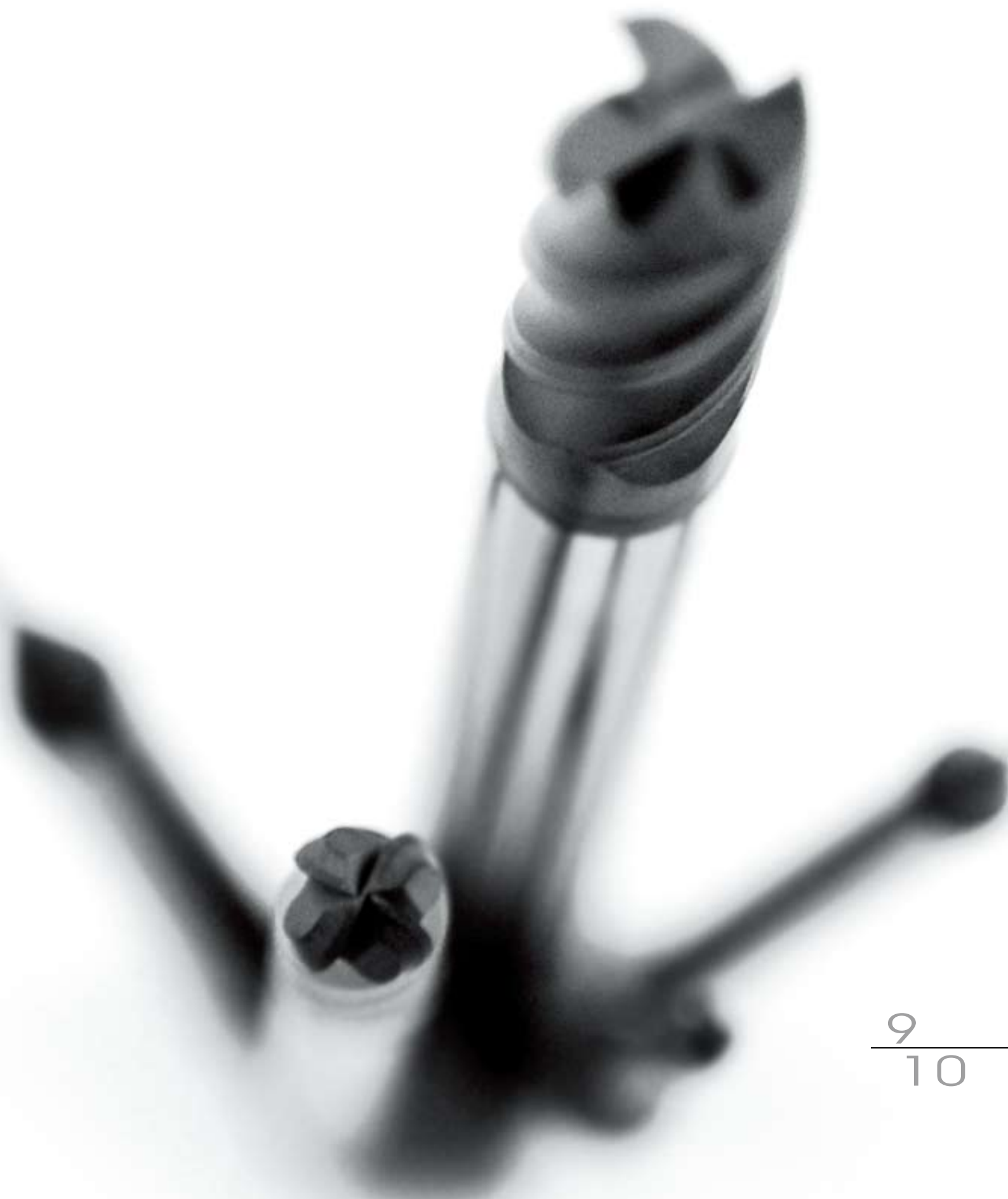
Graphite Finishing

Tool: DMB4-4-15-20-75 4mm ball nose end mill
Spindle speed: 6000 rpm
Feedrate: 2400mm/min.
Graphite: for semiconductor use, Shore's hardness over 70
ae=0.1mm
Tool life: over 15 times of TiALN coated tools



Ceramic Finishing

Tool: DMB1-2-3-16-50 1mm ball nose end mill
Spindle speed: 25000 rpm
Feedrate: 500mm/min.
Ceramic: Zirconia for dental use
Tool life: over 50 times of TiALN coated tools



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