



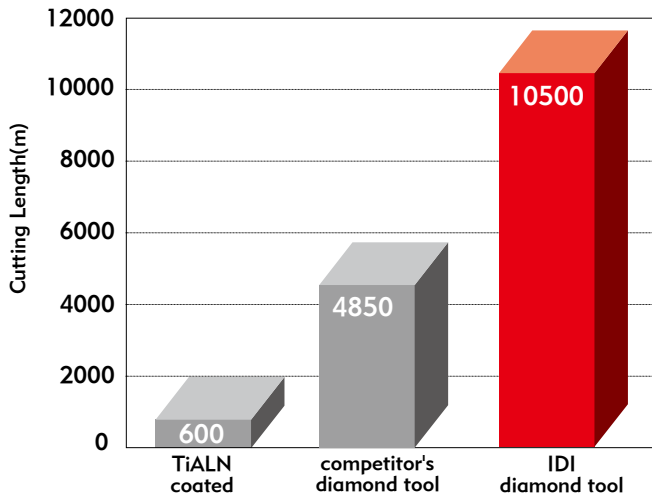
isi

ISI Precision Machinery

Diamond Coated Tools

1
2





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 Coaes (for English unit tools only)

DES12-4-20-22-33

1 2 3 4 5 6 7 8

- | | |
|--|--|
| 1 Diamond Coating | 4 Cutting Diameter Dimension Code |
| 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 Dimension Code |
| | 7 Effective Length Dimension Code |
| | 8 Overall Length Dimension Code |



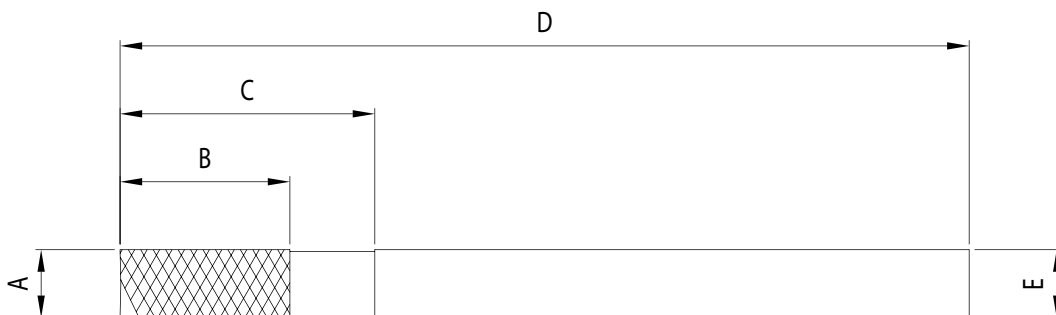
Tools for Graphite Roughing

Shank Tools

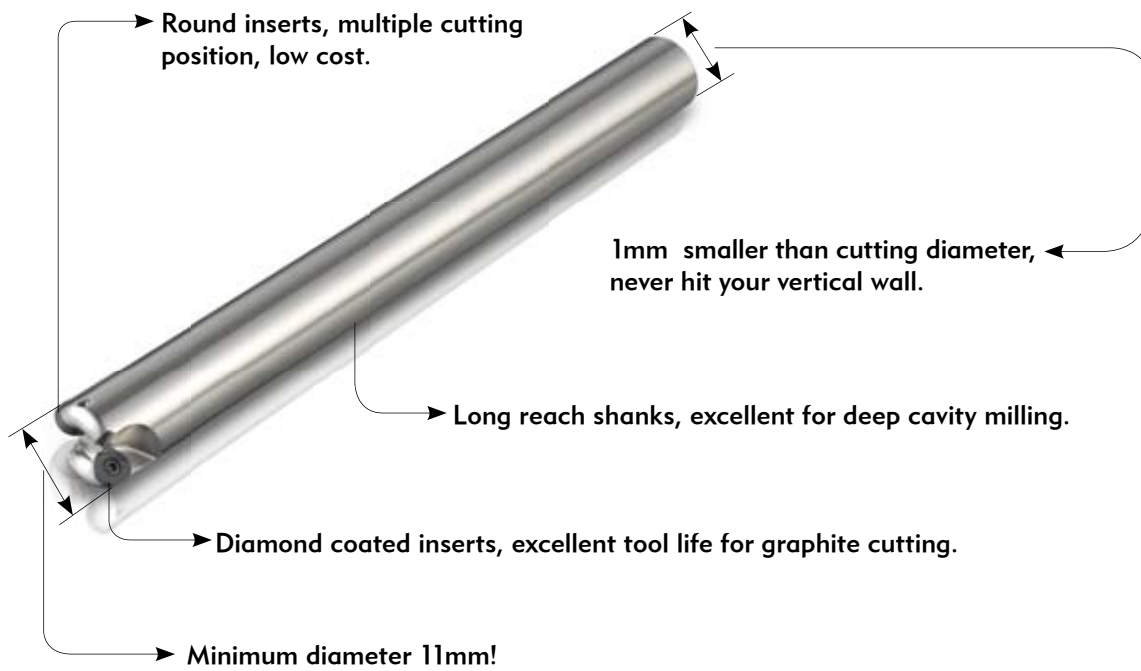
unit: inch

Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
DER08-2-14-18-31	1/8	2	3/8	5/8	2 1/2	1/8
DER11-2-16-20-32	3/16	2	1/2	3/4	3	3/16
DER12-2-20-22-31	1/4	2	3/4	1	2 1/2	1/4
DER12-2-20-22-33	1/4	2	3/4	1	4	1/4
DER14-2-23-26-33	3/8	2	1 1/8	1 1/2	4	3/8

3
4



Diamond Coated Insert Systems for Graphite Cutting

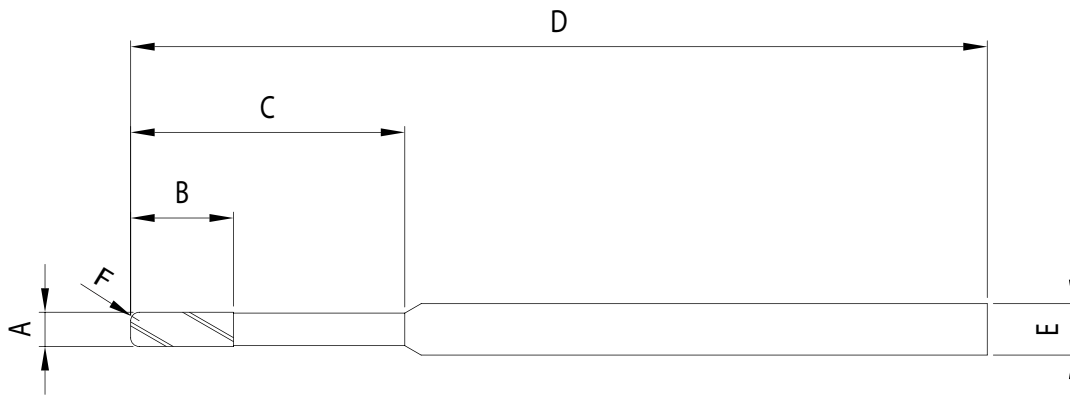


unit: mm

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

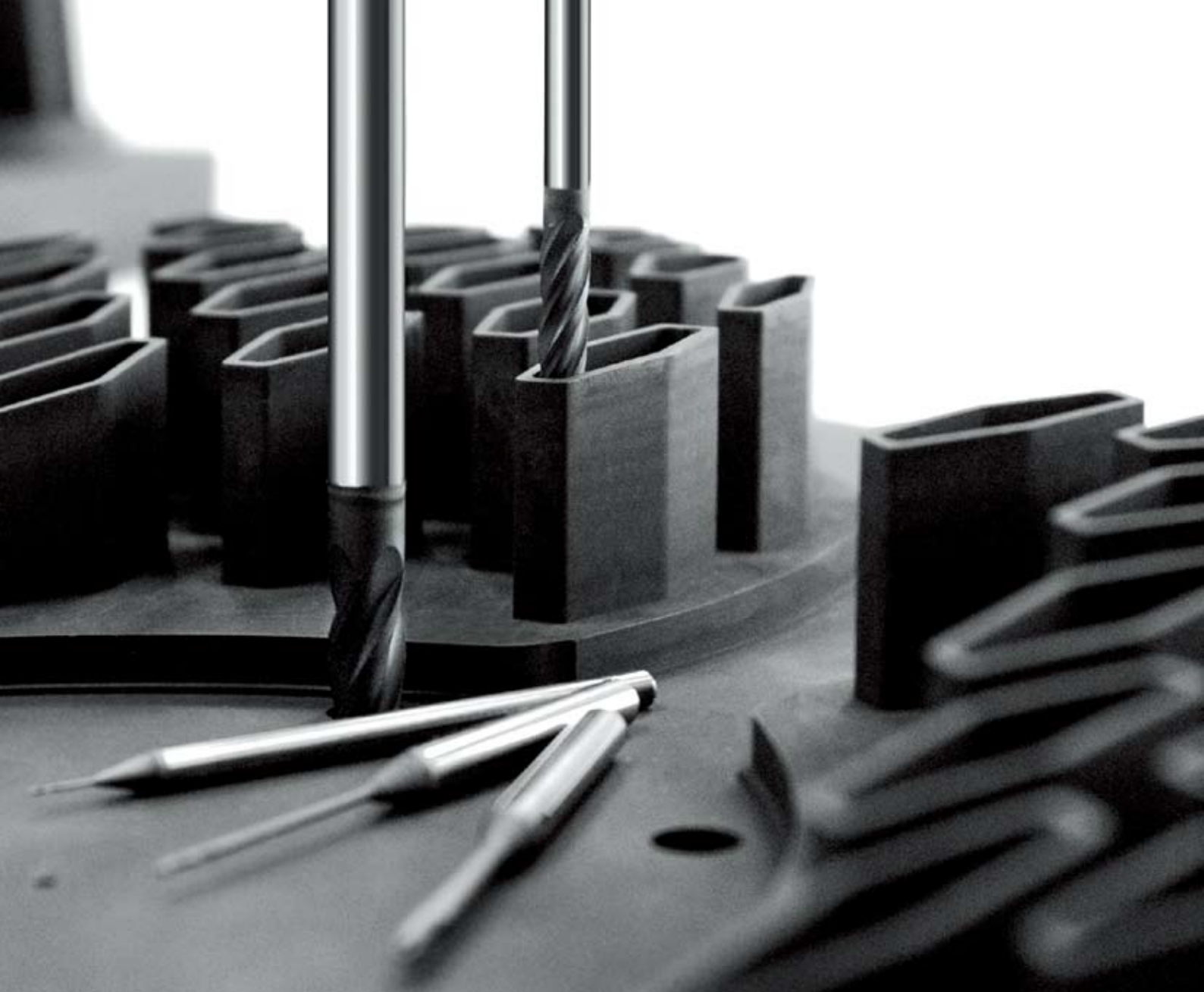
unit: inch

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
Square End 	DES02-2-04-04-30	1/64	2	3/64	3/64	2	1/8
	DES02-2-04-10-30	1/64	2	3/64	5/32	2	1/8
	DES03-2-07-07-30	1/32	2	3/32	3/32	2	1/8
	DES03-2-07-13-30	1/32	2	3/32	5/16	2	1/8
	DES03-2-07-16-30	1/32	2	3/32	1/2	2	1/8
	DES04-2-09-09-30	3/64	2	9/64	9/64	2	1/8
	DES04-2-09-13-30	3/64	2	9/64	5/16	2	1/8
	DES04-2-09-16-30	3/64	2	9/64	1/2	2	1/8
	DES04-2-09-20-30	3/64	2	9/64	3/4	2	1/8
	DES05-2-11-11-31	1/16	2	3/16	3/16	2 1/2	1/8
	DES05-2-11-14-31	1/16	2	3/16	3/8	2 1/2	1/8
	DES05-2-11-16-31	1/16	2	3/16	1/2	2 1/2	1/8
	DES05-2-11-19-31	1/16	2	3/16	13/20	2 1/2	1/8
	DES05-2-11-21-31	1/16	2	3/16	4/5	2 1/2	1/8
	DES05-2-11-22-31	1/16	2	3/16	1	2 1/2	1/8
	DES07-4-11-11-31	3/32	4	3/16	3/16	2 1/2	1/8
	DES07-4-11-14-31	3/32	4	3/16	3/8	2 1/2	1/8
	DES07-4-11-16-31	3/32	4	3/16	1/2	2 1/2	1/8
	DES07-4-11-22-31	3/32	4	3/16	1	2 1/2	1/8




unit: inch

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 	DEB02-2-04-04-30	1/64	2	3/64	3/64	2	1/8	
	DEB02-2-04-10-30	1/64	2	3/64	5/32	2	1/8	
	DEB03-2-07-07-30	1/32	2	3/32	3/32	2	1/8	
	DEB03-2-07-13-30	1/32	2	3/32	5/16	2	1/8	
	DEB03-2-07-16-30	1/32	2	3/32	1/2	2	1/8	
	DEB04-2-09-09-30	3/64	2	9/64	9/64	2	1/8	
	DEB04-2-09-13-30	3/64	2	9/64	5/16	2	1/8	
	DEB04-2-09-16-30	3/64	2	9/64	1/2	2	1/8	
	DEB04-2-09-20-30	3/64	2	9/64	3/4	2	1/8	
	DEB05-2-11-11-31	1/16	2	3/16	3/16	2 1/2	1/8	
	DEB05-2-11-14-31	1/16	2	3/16	3/8	2 1/2	1/8	
	DEB05-2-11-16-31	1/16	2	3/16	1/2	2 1/2	1/8	
	DEB05-2-11-19-31	1/16	2	3/16	13/20	2 1/2	1/8	
	DEB05-2-11-21-31	1/16	2	3/16	4/5	2 1/2	1/8	
	DEB05-2-11-22-31	1/16	2	3/16	1	2 1/2	1/8	
	DEB07-4-11-11-31	3/32	4	3/16	3/16	2 1/2	1/8	
	DEB07-4-11-14-31	3/32	4	3/16	3/8	2 1/2	1/8	
	DEB07-4-11-16-31	3/32	4	3/16	1/2	2 1/2	1/8	
DEB07-4-11-22-31	3/32	4	3/16	1	2 1/2	1/8		
Corner Radius 	DEC05-2-11-11-31	1/16	2	3/16	3/16	2 1/2	1/8	0.01
	DEC05-2-11-14-31	1/16	2	3/16	3/8	2 1/2	1/8	0.01
	DEC05-2-11-16-31	1/16	2	3/16	1/2	2 1/2	1/8	0.01
	DEC05-2-11-19-31	1/16	2	3/16	13/20	2 1/2	1/8	0.01
	DEC05-2-11-21-31	1/16	2	3/16	4/5	2 1/2	1/8	0.01
	DEC05-2-11-22-31	1/16	2	3/16	1	2 1/2	1/8	0.01
	DEC07-4-11-11-31	3/32	4	3/16	3/16	2 1/2	1/8	0.01
	DEC07-4-11-14-31	3/32	4	3/16	3/8	2 1/2	1/8	0.01
	DEC07-4-11-16-31	3/32	4	3/16	1/2	2 1/2	1/8	0.01
	DEC07-4-11-22-31	3/32	4	3/16	1	2 1/2	1/8	0.01





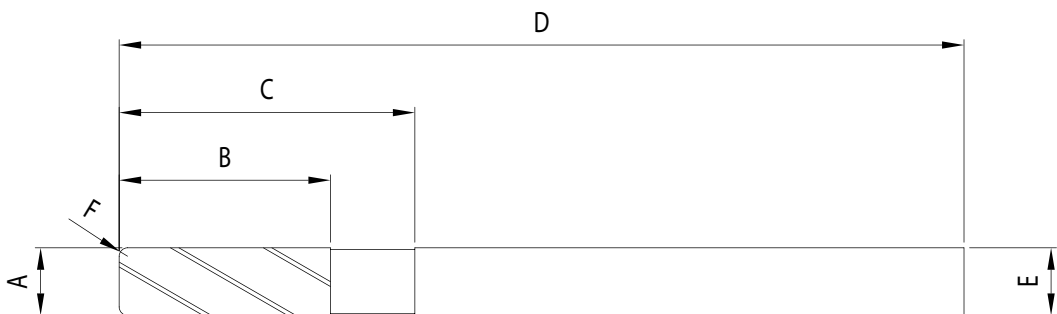
Standard Tools

unit: inch

Tool Type	Part No.	Cutting Diameter A	No. of Flutes	Flute Length B	Effective Length C	Overall Length D	Shank Diameter E
Square End 	DES08-4-14-18-32	1/8	4	3/8	5/8	3	1/8
	DES11-4-16-20-32	3/16	4	1/2	3/4	3	3/16
	DES11-4-16-20-33	3/16	4	1/2	3/4	4	3/16
	DES12-4-20-22-31	1/4	4	3/4	1	2 1/2	1/4
	DES12-4-20-22-33	1/4	4	3/4	1	4	1/4
	DES12-4-20-22-34	1/4	4	3/4	1	6	1/4
	DES14-4-23-26-33	3/8	4	1 1/8	1 1/2	4	3/8
	DES14-4-23-26-34	3/8	4	1 1/8	1 1/2	6	3/8
	DES16-4-26-29-33	1/2	4	1 1/2	1 7/8	4	1/2
	DES16-4-26-29-34	1/2	4	1 1/2	1 7/8	6	1/2

unit: inch

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 	DEB08-4-14-18-32	1/8	4	3/8	5/8	3	1/8	
	DEB11-4-16-20-32	3/16	4	1/2	3/4	3	3/16	
	DEB11-4-16-20-33	3/16	4	1/2	3/4	4	3/16	
	DEB12-4-20-22-31	1/4	4	3/4	1	2 1/2	1/4	
	DEB12-4-20-22-33	1/4	4	3/4	1	4	1/4	
	DEB12-4-20-22-34	1/4	4	3/4	1	6	1/4	
	DEB14-4-23-26-33	3/8	4	1 1/8	1 1/2	4	3/8	
	DEB14-4-23-26-34	3/8	4	1 1/8	1 1/2	6	3/8	
	DEB16-4-26-29-33	1/2	4	1 1/2	1 7/8	4	1/2	
	DEB16-4-26-29-34	1/2	4	1 1/2	1 7/8	6	1/2	
Corner Radius 	DEC08-4-14-18-32	1/8	4	3/8	5/8	3	1/8	0.015
	DEC11-4-16-20-32	3/16	4	1/2	3/4	3	3/16	0.02
	DEC11-4-16-20-33	3/16	4	1/2	3/4	4	3/16	0.02
	DEC12-4-20-22-31	1/4	4	3/4	1	2 1/2	1/4	0.02
	DEC12-4-20-22-33	1/4	4	3/4	1	4	1/4	0.02
	DEC12-4-20-22-34	1/4	4	3/4	1	6	1/4	0.02
	DEC14-4-23-26-33	3/8	4	1 1/8	1 1/2	4	3/8	0.04
	DEC14-4-23-26-34	3/8	4	1 1/8	1 1/2	6	3/8	0.04
	DEC16-4-26-29-33	1/2	4	1 1/2	1 7/8	4	1/2	0.04
	DEC16-4-26-29-34	1/2	4	1 1/2	1 7/8	6	1/2	0.04



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



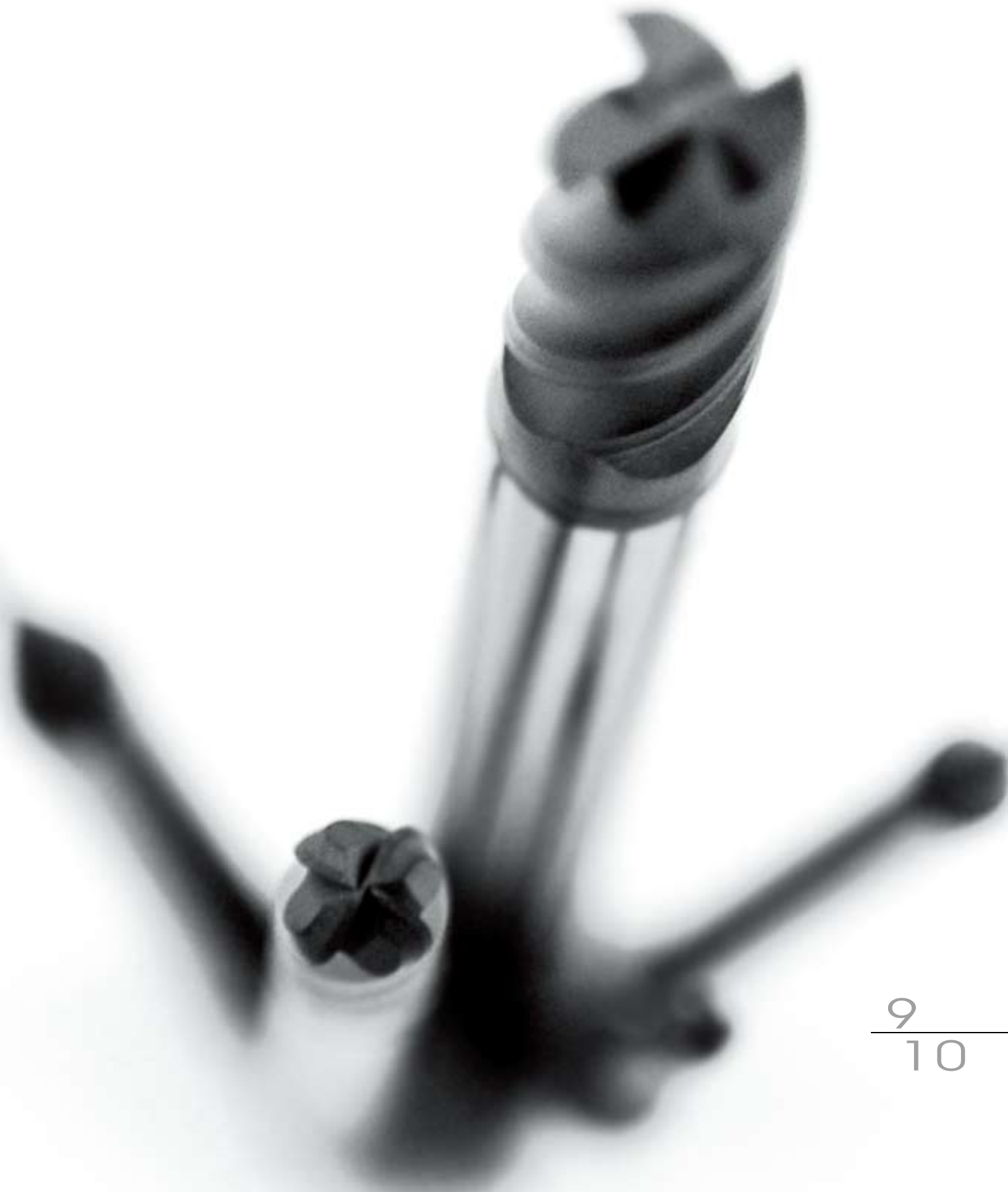
Graphite Finishing

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



isi **ISI Precision Machinery**

1594 Vernal Ave

Fremont, CA 94539

U.S.A.

Tel: +1-510-931-6615

Fax: +1-510-344-9914

Website: www.isidentals.com

E-mail: info@isidentals.com

