

Advanced
Engineering

Hitachi Tool

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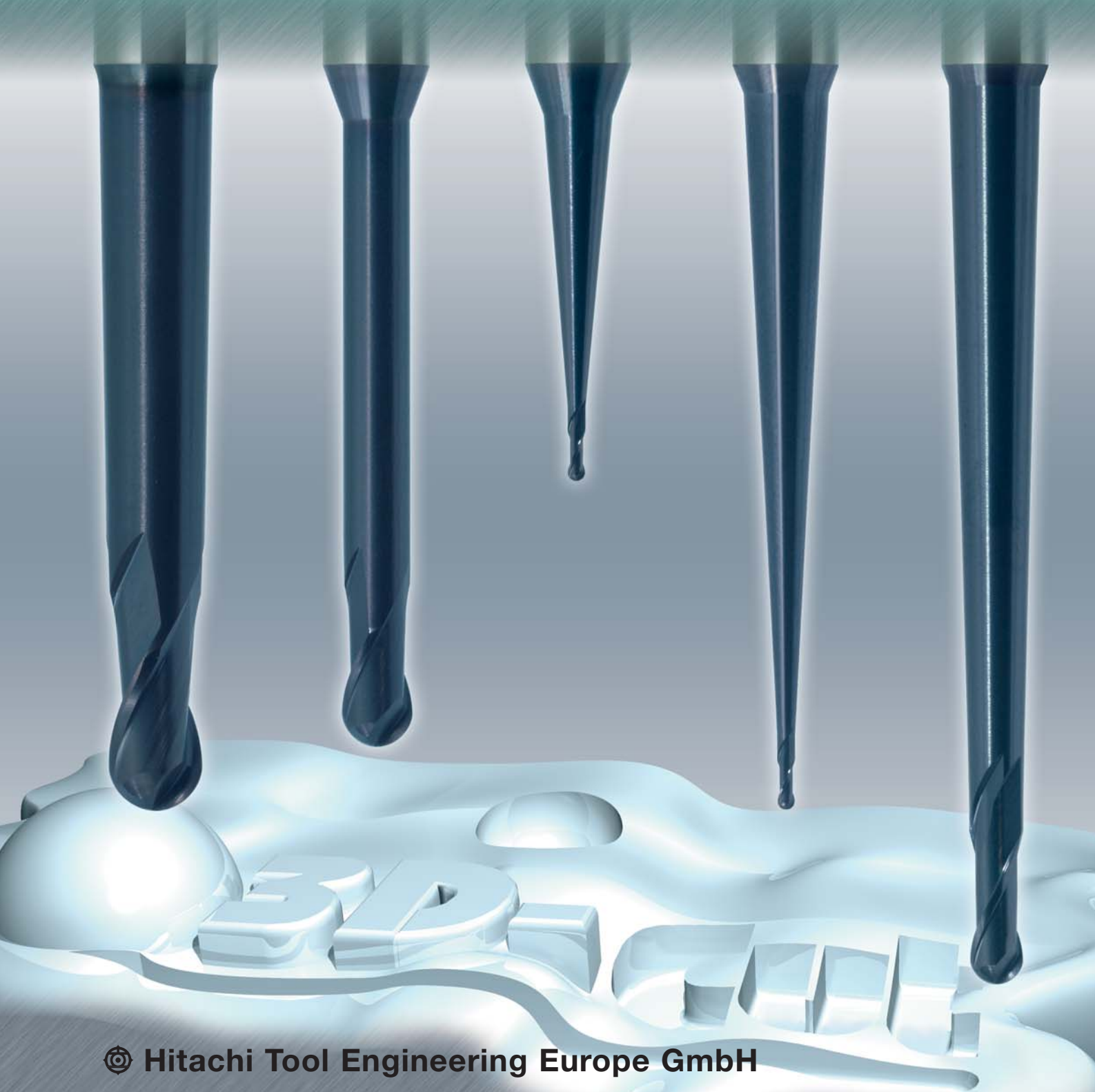
3D-Cut

No. 407

Long Carbide Ball

R 0.5 mm ~ R 8.0 mm (HSC-HPC-HHC)

Micro Grain Carbide - TiAlN Century Coated



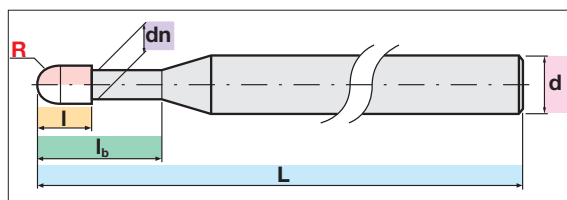
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Micro Grain Carbide – TiAlN Century Coated

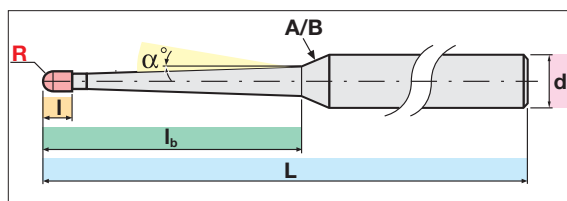
DIMENSIONS

lb	l	dn	°	L	d	Item-Code	ID Code	Typ
R 0.5								
20	2.5	-	1.5	60	6	EPBPN-2010-15	EP186	XA
20	2.5	-	5	60	6	EPBPN-2010-50	EP188	XA
40	2.5	-	3	80	6	EPBPN-2010-30	EP187	XA
R 1								
20	5	-	1.5	60	6	EPBPN-2020-15	EP189	XA
20	5	-	5	60	6	EPBPN-2020-50	EP191	XA
40	5	-	3	80	6	EPBPN-2020-30	EP190	XA
R 1.5								
30	8	-	3	70	6	EPBPN-2030-30	EP193	XA
35	4	2.8	-	100	6	BESL-2030SC	CC053	A
35	4	-	1	100	6	BESL-2030C	CC043	XA
50	8	-	1.5	90	6	EPBPN-2030-15	EP192	XA
R 2								
29.1	8	-	3	70	6	EPBPN-2040-30	EP195	XB
35	6	3.8	-	100	6	BESL-2040SC	CC054	A
35	6	-	1	100	6	BESL-2040C	CC044	XA
48.2	8	-	1.5	90	6	EPBPN-2040-15	EP194	XB
R 2.5								
40	7	4.8	-	115	6	BESL-2050SC	CC055	A
40	7	-	1	115	8	BESL-2050C	CC041	XA
40.6	10	-	3	90	8	EPBPN-2050-30	EP197	XB
60	10	-	1.5	110	8	EPBPN-2050-15	EP196	XA
R 3								
33.1	12	-	3	90	8	EPBPN-2060-30	EP199	XB
45	8	5.8	-	115	6	BESL-2060SC	CC056	A
45	8	-	1	115	8	BESL-2060C	CC042	XA
52.2	12	-	1.5	110	8	EPBPN-2060-15	EP198	XB
R 3.5								
40	14	-	3	100	10	EPBPN-2070-30	EP201	XA
45	10	6.8	-	125	8	BESL-2070SC	CC057	A
60	14	-	1.5	120	10	EPBPN-2070-15	EP200	XA
R 4								
35.1	14	-	3	100	10	EPBPN-2080-30	EP203	XB
54.2	14	-	1.5	120	10	EPBPN-2080-15	EP202	XB
55	12	7.8	-	125	8	BESL-2080SC	CC058	A
55	12	-	1	125	10	BESL-2080C	CC045	XA
R 5								
39.1	18	-	3	100	12	EPBPN-2100-30	EP205	XB
58.2	18	-	1.5	130	12	EPBPN-2100-15	EP204	XB
65	15	9.8	-	140	10	BESL-2100SC	CC059	A
65	15	-	1	140	12	BESL-2100C	CC046	XB
R 6								
63.2	22	-	3	140	16	EPBPN-2120-30	EP207	XB
75	18	11.8	-	150	12	BESL-2120SC	CC060	A
75	18	-	1	150	16	BESL-2120C	CC047	XA
80	22	-	1.5	160	16	EPBPN-2120-15	EP206	XA
R 8								
80	24	15.8	-	150	16	BESL-2160SC	CC061	A

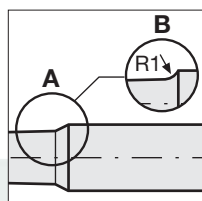
Typ A Ball Type



Typ X A/B Ball Type



Typ A/B



Micro Grain Carbide – TiAlN Century Coated



Epoch Ball Pencil Neck
EPBPN

1°30' / 3° / 5°

1 – 12 mm

4, 5



Carbide Ball Taper Neck
BESL-C

1°

3 – 12 mm

6



Carbide Ball Long Neck
BESL-SC

3 – 16 mm

7



Application and Tolerance

— Semi-Finishing
— Finishing

1.5°
3°
5°



Item	Tolerance			mm
	R	D	R	
EPBPN	0.5~6	0 / -0.01	+/- 0.01	h6

1°



BESL-C	1.5~6	0 / -0.02	+/- 0.02	h6
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90°

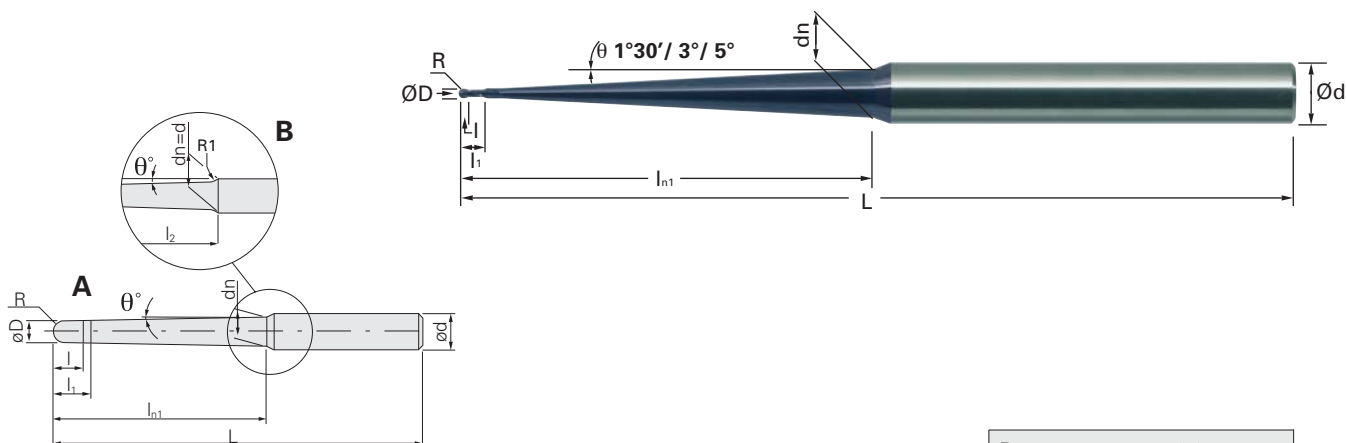
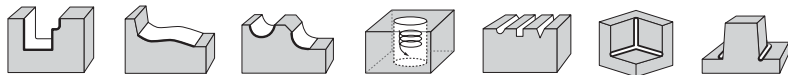


BESL-SC	1.5~8	0 / -0.02	+/- 0.02	h6
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Micro Grain Carbide – TiAlN Century Coated

EPBPN | Epoch Ball Pencil Neck

V max High Speed	▽▽▽ Finishing	HRC 65	Rib. Miniature	No. of Teeth 2
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Carbide Micro grain	C Century Coating	Rake Angle Positive
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R	± 0.01
D	0/-0.01
d	h6

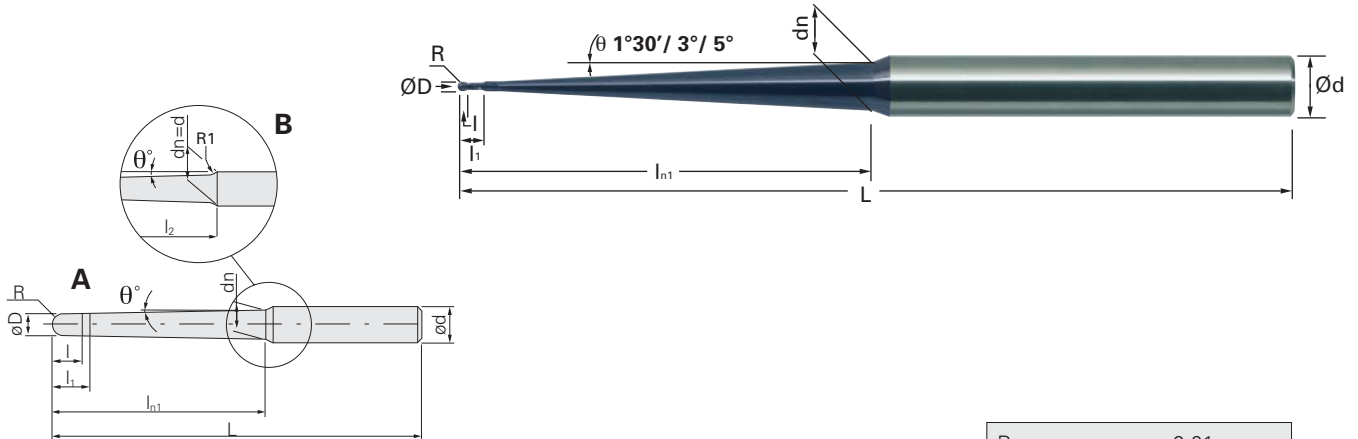
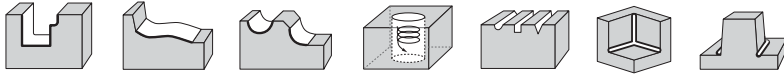
ID Code	Item No.	Stock	Z	R	ØD	θ°	I	dn	I ₁	I _{n1}	I _{n2}	I _s	L	d	Type
EP 186	EPBPN-2010-15	■	2	0.5	1	1°30'	2.5	1.8	4	20			60	6	A
EP 187	EPBPN-2010-30	■	2	0.5	1	3°	2.5	4.8	4	40			80	6	A
EP 188	EPBPN-2010-50	■	2	0.5	1	5°	2.5	3.8	4	20			60	6	A
EP 189	EPBPN-2020-15	■	2	1	2	1°30'	5	2.7	7	20			60	6	A
EP 190	EPBPN-2020-30	■	2	1	2	3°	5	5.5	7	40			80	6	A
EP 191	EPBPN-2020-50	■	2	1	2	5°	5	4.3	7	20			60	6	A
EP 192	EPBPN-2030-15	■	2	1.5	3	1°30'	8	5.1	10	50			90	6	A
EP 193	EPBPN-2030-30	■	2	1.5	3	3°	8	5.1	10	30			70	6	A
EP 194	EPBPN-2040-15	■	2	2	4	1°30'	8	6	10	48.2			90	6	B
EP 195	EPBPN-2040-30	■	2	2	4	3°	8	6	10	29.1			70	6	B
EP 196	EPBPN-2050-15	■	2	2.5	5	1°30'	10	7.5	12	60			110	8	A
EP 197	EPBPN-2050-30	■	2	2.5	5	3°	10	8	12	40.6			90	8	B
EP 198	EPBPN-2060-15	■	2	3	6	1°30'	12	8	14	52.2			110	8	B
EP 199	EPBPN-2060-30	■	2	3	6	3°	12	8	14	33.1			90	8	B
EP 200	EPBPN-2070-15	■	2	3.5	7	1°30'	14	9.3	16	60			120	10	A
EP 201	EPBPN-2070-30	■	2	3.5	7	3°	14	9.5	16	40			100	10	A

■ = Stock | Germany

Micro Grain Carbide – TiAlN Century Coated

EPBPN | Epoch Ball Pencil Neck

V max High Speed	Finishing	HRC 65	Rib. Miniature	No. of Teeth 2
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Carbide Micro Grain	C Century Coating	Rake Angle Positive
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R	± 0.01
D	0/-0.01
d	h6

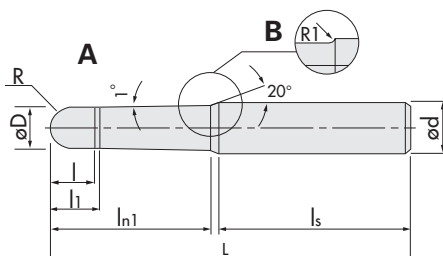
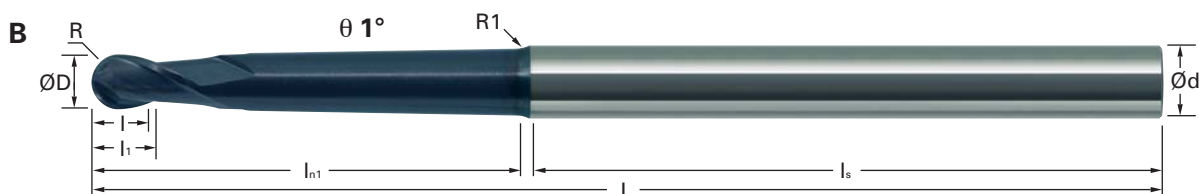
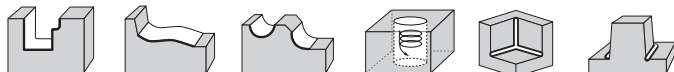
ID Code	Item No.	Stock	Z	R	ØD	θ°	I	dn	I ₁	I _{n1}	I _{n2}	I _s	L	d	Type
EP 202	EPBPN-2080-15	■	2	4	8	1°30'	14	10	16	54.2			120	10	B
EP 203	EPBPN-2080-30	■	2	4	8	3°	14	10	16	35.1			100	10	B
EP 204	EPBPN-2100-15	■	2	5	10	1°30'	18	12	20	58.2			130	12	B
EP 205	EPBPN-2100-30	■	2	5	10	3°	18	12	20	39.1			110	12	B
EP 206	EPBPN-2120-15	■	2	6	12	1°30'	22	14.9	25	80			160	16	A
EP 207	EPBPN-2120-30	■	2	6	12	3°	22	16	25	63.2			140	16	B

■ = Stock | Germany

Micro Grain Carbide – TiAlN Century Coated

BESL-C | Carbide Ball Taper Neck

V max High Speed	▽▽ Semi-Finishing	▽▽▽ Finishing	HRC 60	No. of Teeth 2
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Carbide Micro Grain	C Century Coating	Rake Angle Positive
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R	± 0.02
D	0/-0.02
d	h6

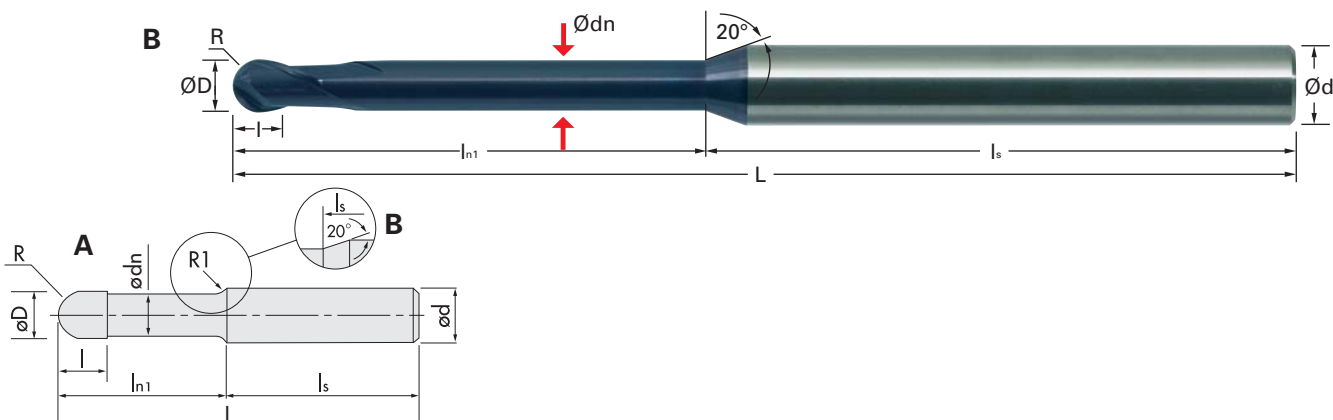
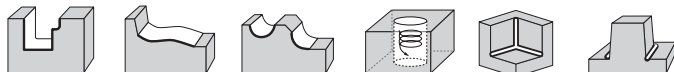
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CC 043	BESL-2030C	■	2	1.5	3	1°	4		5	35		62.3	100	6	A
CC 044	BESL-2040C	■	2	2	4	1°	6		7	35		63.6	100	6	A
CC 041	BESL-2050C	■	2	2.5	5	1°	7		8	40		72.4	115	8	A
CC 042	BESL-2060C	■	2	3	6	1°	8		9	45		68.7	115	8	A
CC 045	BESL-2080C	■	2	4	8	1°	12		13	55		69	125	10	A
CC 046	BESL-2100C	■	2	5	10	1°	15		16	65		75	140	12	B
CC 047	BESL-2120C	■	2	6	12	1°	18		19	75		72.2	150	16	A

■ = Stock | Germany

Micro Grain Carbide – TiAlN Century Coated

BESL-SC | Carbide Ball Long Neck

V max			HRC	No. of Teeth
High Speed	Semi-Finishing	Finishing	60	2



Carbide	C	Rake Angle
Micro Grain	Century Coating	Positive

R	± 0.02
D	0/-0.02
d	h6

ID Code	Item No.	Stock	Z	R	ØD	θ°	l	dn	l ₁	l _{n1}	l _{n2}	l _s	L	d	Type
CC 053	BESL-2030SC	■	2	1.5	3		4	2.8		35		65	100	6	B
CC 054	BESL-2040SC	■	2	2	4		6	3.8		35		65	100	6	B
CC 055	BESL-2050SC	■	2	2.5	5		7	4.8		40		75	115	6	B
CC 056	BESL-2060SC	■	2	3	6		8	5.8		45		70	115	6	A
CC 057	BESL-2070SC	■	2	3.5	7		10	6.8		45		80	125	8	B
CC 058	BESL-2080SC	■	2	4	8		12	7.8		55		70	125	8	A
CC 059	BESL-2100SC	■	2	5	10		15	9.8		65		75	140	10	A
CC 060	BESL-2120SC	■	2	6	12		18	11.8		75		75	150	12	A
CC 061	BESL-2160SC	■	2	8	16		24	15.8		80		70	150	16	A

■ = Stock | Germany

Product Range

Solid Carbide End Mills

Epoch21

MINIATURE

3D-Cut

CARBIDE

Indexable Milling Tools

**Indexable
Milling**

ESM Speed End Mills
EMC Power Drills

ESM SPEED

Milling Chucks

**Milling
Chucks**

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