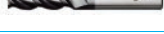
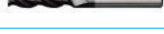


Solid Carbide End Mill **Tia/n**

ISO-Range: K30~K40 Wc=90%

Co=10% HRA=92 Dia=0.6μm

	CE-2TL	Solid Carbide 2-Flute End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.08
	CE-4TL	Solid Carbide 4-Flute End Mill	MG 10	HRC 50	35°	Tia/n	T4	P.08
	CEB-2TL	Solid Carbide 2-Flute Ball End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.09
	CEBP-2TL	Solid Carbide 2-Flute Ball End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T2	P.09
	CEB-4TL	Solid Carbide 4-Flute Ball End Mill	MG 10	HRC 50	35°	Tia/n	T4	P.10
	CEBP-4TL	Solid Carbide 4-Flute Ball End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T4	P.10
	CEL-2TL	Solid Carbide 2-Flute End Mill Long Flute	MG 10	HRC 50	35°	Tia/n	T2	P.11
	CEL-4TL	Solid Carbide 4-Flute End Mill Long Flute	MG 10	HRC 50	35°	Tia/n	T4	P.11
	CEM-4TL	Solid Carbide 4-Flute High Helix End Mill	MG 10	HRC 50	45°	Tia/n	T4	P.11
	CEM-3TL	Solid Carbide 3-Flute High Helix End Mill	MG 10	HRC 50	45°	Tia/n	T3	P.11
	CEP-2TL	Solid Carbide 2-Flute End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T2	P.12
	CEP-4TL	Solid Carbide 4-Flute End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T4	P.12
	CEO-4TL	Solid Carbide 4-Flute Roughing End Mill Fine Pitch, Round Profile	MG 10	HRC 50	40°	Tia/n	T4	P.12
	CEO-3TL	Solid Carbide 3-Flute Roughing End Mill Fine Pitch, Round Profile	MG 10	HRC 50	40°	Tia/n	T3	P.12
	CER-2TL	Solid Carbide 2-Flute Corner Radius End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.13
	CERP-2TL	Solid Carbide 2-Flute Corner Radius End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T2	P.13
	CER-4TL	Solid Carbide 4-Flute Corner Radius End Mill	MG 10	HRC 50	35°	Tia/n	T4	P.14
	CERP-4TL	Solid Carbide 4-Flute Corner Radius End Mill Long Shank	MG 10	HRC 50	35°	Tia/n	T4	P.14
	CED-2TL	Solid Carbide 2-Flute Rib Processing End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.15
	CT-2TL	Solid Carbide 2-Flute Tapered End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.16
	CTL-2TL	Solid Carbide 2-Flute Tapered End Mill Long Flute	MG 10	HRC 50	35°	Tia/n	T2	P.17
	CEDB-2TL	Solid Carbide 2-Flute Rib Processing Ball End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.18
	CTB-2TL	Solid Carbide 2-Flute Tapered Ball End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.19
	CTNB-2TL	Solid Carbide 2-Flute Tapered Neck Ball End Mill	MG 10	HRC 50	35°	Tia/n	T2	P.20

	CE-1TL	Solid Carbide 1-Flute End Mill (Aluminum, Plastic, Wood)	MG 10	HRC 50	30°	Tia'n	T1	P.20
	ACE-2DLC+	Solid Carbide 2-Flute End Mill (Aluminum, Graphite)	MG 10	55°	DLC		T2	P.21
	ACEL-3DLC+	Solid Carbide 3-Flute End Mill Long Flute (Aluminum, Graphite)	MG 10	55°	DLC		T3	P.21
	ACE-3DLC+	Solid Carbide 3-Flute End Mill (Aluminum, Graphite)	MG 10	55°	DLC		T3	P.21
	ACEB-2DLC+	Solid Carbide 2-Flute Ball End Mill (Aluminum, Copper, Graphite)	MG 10	20°	DLC		T2	P.22
	KCE-2DLC+	Solid Carbide 2-Flute End Mill (Copper, Graphite)	MG 10	20°	DLC		T2	P.22
	ACEMM-2DLC+	Solid Carbide Burnish 2-Flute End Mill (Aluminum, Graphite)	MG 10	45°	DLC		T2	P.23
	ACEMM-3DLC+	Solid Carbide Burnish 3-Flute End Mill (Aluminum, Graphite)	MG 10	45°	DLC		T3	P.23
	ACEO-3DLC+	Solid Carbide Burnish 3-Flute Roughing End Mill (Aluminum, Graphite)	MG 10	45°	DLC		T3	P.23
	MRM	Solid Carbide Machine Reamer, Straight Shank						P.24

Super Micro Grain Carbide End Mill Tia'n

ISO-Range: K40~K50 Wc=88%
Co=12% HRA=92.3 Dia=0.4μm

	HCE-2TL	Super Micro Grain Carbide 2-Flute End Mill	MG 12	HRC 60	35°	Tia'n	T2	P.25
	HCE-3TL	Super Micro Grain Carbide 3-Flute End Mill	MG 12	HRC 60	35°	Tia'n	T3	P.26
	HCE-4TL	Super Micro Grain Carbide 4-Flute End Mill	MG 12	HRC 60	35°	Tia'n	T4	P.26
	HCEB-2TL	Super Micro Grain Carbide 2-Flute Ball End Mill	MG 12	HRC 60	35°	Tia'n	T2	P.27
	HCEB-4TL	Super Micro Grain Carbide 4-Flute Ball End Mill	MG 12	HRC 60	35°	Tia'n	T4	P.27
	HCEBP-2TL	Super Micro Grain Carbide 2-Flute Ball End Mill Long Shank	MG 12	HRC 60	35°	Tia'n	T2	P.28
	HCTNB-2TL	Super Micro Grain Carbide 2-Flute Tapered Neck Ball End Mill	MG 12	HRC 60	35°	Tia'n	T2	P.28
	HCEL-2TL	Super Micro Grain Carbide 2-Flute End Mill Long Flute	MG 12	HRC 60	35°	Tia'n	T2	P.29
	HCEL-4TL	Super Micro Grain Carbide 4-Flute End Mill Long Flute	MG 12	HRC 60	35°	Tia'n	T4	P.29
	HCER-2TL	Super Micro Grain Carbide 2-Flute Corner Radius End Mill	MG 12	HRC 60	35°	Tia'n	T2	P.30
	HCER-4TL	Super Micro Grain Carbide 4-Flute Corner Radius End Mill	MG 12	HRC 60	35°	Tia'n	T4	P.30

	HCED-2TL	Super Micro Grain Carbide 2-Flute Rib Processing End Mill	MG 12	HRC 60	35°	Tia/n	T2	P.31
	HCEDB-2TL	Super Micro Grain Carbide 2-Flute Rib Processing Ball End Mill	MG 12	HRC 60	35°	Tia/n	T2	P.32
	HCEM-6TL	Super Micro Grain Carbide 6-Flute End Mill	MG 12	HRC 60	45°	Tia/n	T6	P.33
	HCEML-6TL	Super Micro Grain Carbide 6-Flute End Mill Long Flute	MG 12	HRC 60	45°	Tia/n	T6	P.33
	HCEMDR-6TL	Super Micro Grain Carbide 6-Flute Corner Radius Rib Processing End Mill Short Flute	MG 12	HRC 65	45°	Tia/n	T6	P.33
	HCEDRP-4TL	Super Micro Grain Carbide 4-Flute Corner Radius Rib Processing End Mill Short Flute Long Shank	MG 12	HRC 60	35°	Tia/n	T4	P.33
	HCT-4TL	Super Micro Grain Carbide 4-Flute Tapered End Mill	MG 12	HRC 60	30°	Tia/n	T4	P.34
	HCETR-2TL	Super Micro Grain Carbide 2-Flute Corner Radius Tapered Neck End Mill Short Flute	MG 12	HRC 60	35°	Tia/n	T2	P.35
	HCETR-4TL	Super Micro Grain Carbide 4-Flute Corner Radius Tapered Neck End Mill Short Flute	MG 12	HRC 60	35°	Tia/n	T4	P.36

Ultra Fine Micro Grain Carbide End Mill Tia/n

ISO-Range: K20~K30 Wc=91%
Co=9% HRA=93.7 Dia=0.2μm

	HHCE-2TL	Ultra Fine Micro Grain Carbide 2-Flute End Mill	MG 9	HRC 65	35°	Tia/n	T2	P.37
	HHCE-4TL	Ultra Fine Micro Grain Carbide 4-Flute End Mill	MG 9	HRC 65	35°	Tia/n	T4	P.37
	HHCEB-2TL	Ultra Fine Micro Grain Carbide 2-Flute Ball End Mill	MG 9	HRC 65	35°	Tia/n	T2	P.38
	HHCEBP-2TL	Ultra Fine Micro Grain Carbide 2-Flute Ball End Mill Long Shank	MG 9	HRC 65	35°	Tia/n	T2	P.38
	HHCEB-4TL	Ultra Fine Micro Grain Carbide 4-Flute Ball End Mill	MG 9	HRC 65	35°	Tia/n	T4	P.39
	HHCER-4TL	Ultra Fine Micro Grain Carbide 4-Flute Corner Radius End Mill	MG 9	HRC 65	35°	Tia/n	T4	P.39
	HHCEL-2TL	Ultra Fine Micro Grain Carbide 2-Flute End Mill Long Flute	MG 9	HRC 65	35°	Tia/n	T2	P.40
	HHCEL-4TL	Ultra Fine Micro Grain Carbide 4-Flute End Mill Long Flute	MG 9	HRC 65	35°	Tia/n	T4	P.40
	HHCETR-2TL	Ultra Fine Micro Grain Carbide 2-Flute Corner Radius Tapered Neck End Mill Short Flute	MG 9	HRC 65	35°	Tia/n	T2	P.41
	HHCETR-4TL	Ultra Fine Micro Grain Carbide 4-Flute Corner Radius Tapered Neck End Mill Short Flute	MG 9	HRC 65	35°	Tia/n	T4	P.42
	HHCEDRP-2TL	Ultra Fine Micro Grain Carbide 2-Flute Corner Radius Rib Processing Short Flute End Mill	MG 9	HRC 65	35°	Tia/n	T2	P.43
	HHCEDRP-4TL	Ultra Fine Micro Grain Carbide 4-Flute Corner Radius Rib Processing Short Flute End Mill	MG 9	HRC 65	35°	Tia/n	T4	P.43

HSS End Mill Tcn

SKH59 / CO8

	HS-2TC	HSS 2-Flute End Mill		P.44
	HS-4TC	HSS 4-Flute End Mill		P.45
	HSL-2TC	HSS 2-Flute End Mill Long Flute		P.46
	HSL-4TC	HSS 4-Flute End Mill Long Flute		P.46
	HSR-TC	HSS Roughing End Mill Fine Pitch, Round Profile		P.47
	HSRL-TC	HSS Roughing End Mill Long Flute Fine Pitch, Round Profile		P.47
	HSB-2TC	HSS 2-Flute Ball End Mill		P.48
	HS-3TC	HSS 3-Flute High Helix End Mill		P.48

New Product

Ultra Fine Micro Grain Carbide End Mill **SH**

ISO-Range: K20~K30 Wc=91%
Co=9% HRA=93.7 Dia=0.2μm

Super High Hardness Cutting "SH" & Super High Speed Cutting

	HHCEB-2SH	Ultra Fine Micro Grain Carbide 2-Flute Ball End Mill		P.50
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Super High Hardness Cutting "SH" & Super High Speed Cutting

	HH CER-4SH	Ultra Fine Micro Grain Carbide 4-Flute Corner Radius End Mill		P.50
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New Product

Super Micro Grain Carbide Heavy Duty End Mill **Tia/n**

ISO-Range: K40~K50 Wc=88%
Co=12% HRA=92.3 Dia=0.4μm

	UHCEM-4TL	Super Micro Grain Carbide 4-Flute Heavy Duty End Mill		P.51
	UHCEML-4TL	Super Micro Grain Carbide 4-Flute High Helix Heavy Duty End Mill Long Flute		P.51
	UHCEMLL-4TL	Super Micro Grain Carbide 4-Flute High Helix Heavy Duty End Mill Extra Long Flute		P.51
	UHCERM-4TL	Super Micro Grain Carbide 4-Flute Corner Radius High Helix Heavy Duty End Mill		P.52

New Product

Super Micro Grain Carbide Plus Heavy Duty End Mill **Tia/n**

ISO-Range: K40~K50 Wc=88%

Co=12% HRA=92.3 Dia=0.4μm



UPHCEM-4TL

Super Micro Grain Carbide 4-Flute
High Helix Plus Heavy Duty End Mill



P.53



UPHCEML-4TL

Super Micro Grain Carbide 4-Flute
High Helix Plus Heavy Duty End Mill Long Flute



P.53



UPHCEMLL-4TL

Super Micro Grain Carbide 4-Flute High Helix
Plus Heavy Duty End Mill Extra Long Flute



P.53



UPHCERM-4TL

Super Micro Grain Carbide 4-Flute Corner Radius
High Helix Plus Heavy Duty End Mill



P.54

New Product

Solide Carbide Holder



Solid Carbide Draw-Out Extension Holder

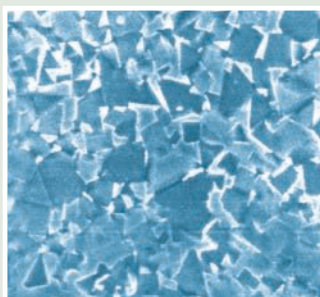
P.55



Solid Carbide Anti-Vibration Holder

P.56

Material



ISO-Range:K30~K40

Co (%) : 10

WC incl.Dopling (%) : 90

Chemical Date

Physical Data

Density (g/cm³) : 14.5

Hardness

HV30 (N/mm²) : 1610

HRA : 91.9

Transverse Rupture Strength
(N/mm²) : >3600

Metallographic Data

Porosity

<10 μm A : ≤02

>10 μm B : ○○

C : ○○

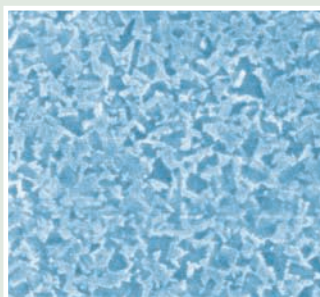
Microstructure

Tungsten Carbide α : φ 06 μm

Binding Phase β : unif.distr.

Mixed Carbide γ : —

Eta Phase η : —



ISO-Range:K30~K40

Co (%) : 12

WC incl.Dopling (%) : 88

Chemical Date

Physical Data

Density (g/cm³) : 13.9

Hardness

HV30 (N/mm²) : 1700

HRA : 92.4

Transverse Rupture Strength
(N/mm²) : >3900

Metallographic Data

Porosity

<10 μm A : ≤02

>10 μm B : ○○

C : ○○

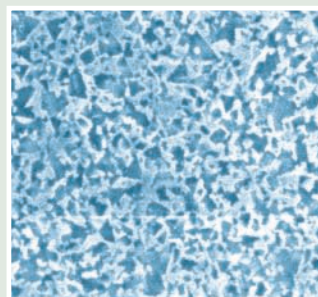
Microstructure

Tungsten Carbide α : φ 04 μm

Binding Phase β : unif.distr.

Mixed Carbide γ : —

Eta Phase η : —



ISO-Range:K30~K40

Co (%) : 9

WC incl.Dopling (%) : 91

Chemical Date

Physical Data

Density (g/cm³) : 14.3

Hardness

HV30 (N/mm²) : 1950

HRA : 93.7

Transverse Rupture Strength
(N/mm²) : >3900

Metallographic Data

Porosity

<10 μm A : ≤02

>10 μm B : ○○

C : ○○

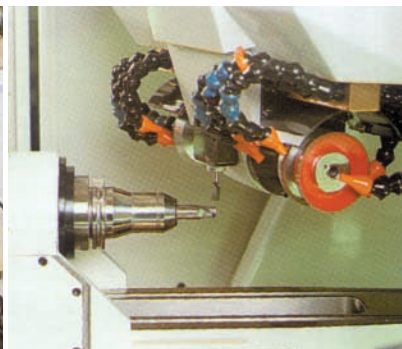
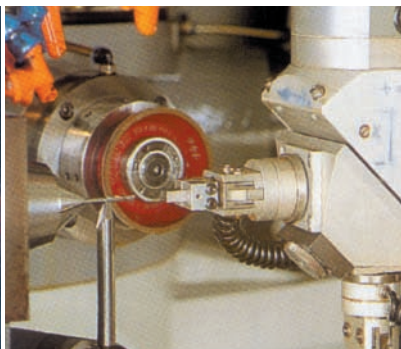
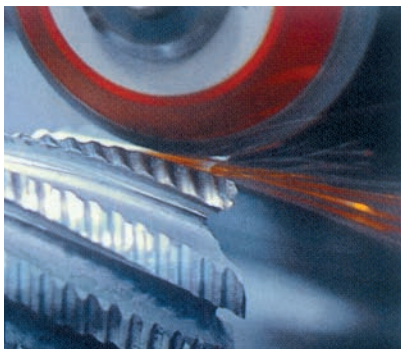
Microstructure

Tungsten Carbide α : φ 02 μm

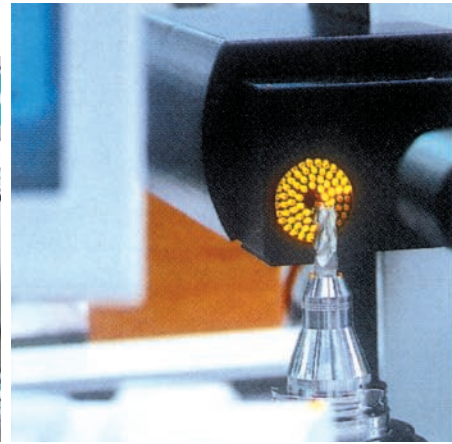
Binding Phase β : unif.distr.

Mixed Carbide γ : —

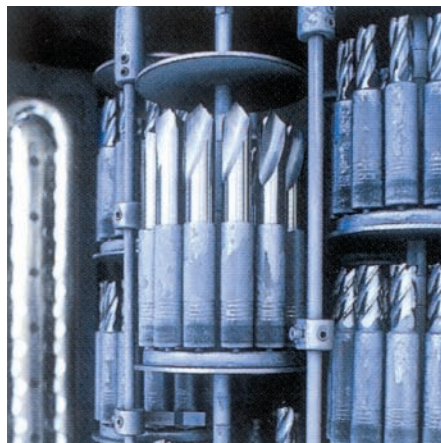
Eta Phase η : —



Inspection



Coating Processing (Tialn, Ticn, DLC, SH, AlCr₂O₃....etc)



CE-2TL

Solid Carbide 2-Flute End Mill



Material : Micro Grain-Co10+Tia/n (~50HRC)

Helix Angle : 35°

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CE-2002ATL	0.2	0.4	4	50
CE-2003ATL	0.3	0.6	4	50
CE-2004ATL	0.4	0.8	4	50
CE-2005ATL	0.5	1	4	50
CE-2006ATL	0.6	1.2	4	50
CE-2007ATL	0.7	1.4	4	50
CE-2008ATL	0.8	1.6	4	50
CE-2009ATL	0.9	1.8	4	50
CE-2010ATL	1	3	4	50
CE-2010TL	1	3	6	50
CE-2011ATL	1.1	3	4	50
CE-2012ATL	1.2	3	4	50
CE-2013ATL	1.3	3	4	50
CE-2014ATL	1.4	3	4	50
CE-2015ATL	1.5	4	4	50
CE-2015TL	1.5	4	6	50
CE-2016ATL	1.6	4	4	50
CE-2017ATL	1.7	4	4	50
CE-2018ATL	1.8	4	4	50
CE-2019ATL	1.9	4	4	50
CE-2020ATL	2	6	4	50
CE-2020TL	2	6	6	50
CE-2021ATL	2.1	6	4	50
CE-2022ATL	2.2	6	4	50
CE-2023ATL	2.3	6	4	50
CE-2024ATL	2.4	6	4	50
CE-2025ATL	2.5	8	4	50
CE-2025TL	2.5	8	6	50
CE-2026ATL	2.6	8	4	50
CE-2027ATL	2.7	8	4	50

Model No.	DIA	LOC	Shank Dia	OAL
CE-2028ATL	2.8	8	4	50
CE-2029ATL	2.9	8	4	50
CE-2030BTL	3	8	3	50
CE-2030ATL	3	8	4	50
CE-2030TL	3	8	6	50
CE-2035ATL	3.5	10	4	50
CE-2035TL	3.5	10	6	50
CE-2040ATL	4	11	4	50
CE-2040TL	4	11	6	50
CE-2045TL	4.5	13	6	50
CE-2050TL	5	13	6	50
CE-2055TL	5.5	13	6	50
CE-2060TL	6	16	6	50
CE-2065TL	6.5	16	6	60
CE-2070TL	7	16	8	60
CE-2075TL	7.5	19	8	60
CE-2080TL	8	20	8	60
CE-2085TL	8.5	20	10	75
CE-2090TL	9	20	10	75
CE-2095TL	9.5	25	10	75
CE-2100TL	10	25	10	75
CE-2105TL	10.5	25	12	75
CE-2110TL	11	30	12	75
CE-2115TL	11.5	30	12	75
CE-2120TL	12	32	12	75
CE-2140TL	14	40	16	100
CE-2160TL	16	40	16	100
CE-2180TL	18	45	20	100
CE-2200TL	20	45	20	100

CE-4TL

Solid Carbide 4-Flute End Mill



Material : Micro Grain-Co10+Tia/n (~50HRC)

Helix Angle : 35°

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CE-4010ATL	1	3	4	50
CE-4010TL	1	3	6	50
CE-4015ATL	1.5	4	4	50
CE-4015TL	1.5	4	6	50
CE-4020ATL	2	6	4	50
CE-4020TL	2	6	6	50
CE-4025ATL	2.5	8	4	50
CE-4025TL	2.5	8	6	50
CE-4030BTL	3	8	3	50
CE-4030ATL	3	8	4	50
CE-4030TL	3	8	6	50
CE-4035ATL	3.5	10	4	50
CE-4035TL	3.5	10	6	50
CE-4040ATL	4	11	4	50
CE-4040TL	4	11	6	50
CE-4045TL	4.5	13	6	50
CE-4050TL	5	13	6	50

Model No.	DIA	LOC	Shank Dia	OAL
CE-4055TL	5.5	13	6	50
CE-4060TL	6	16	6	50
CE-4065TL	6.5	16	6	50
CE-4070TL	7	16	8	60
CE-4075TL	7.5	19	8	60
CE-4080TL	8	20	8	60
CE-4085TL	8.5	20	10	75
CE-4090TL	9	20	10	75
CE-4095TL	9.5	20	10	75
CE-4100TL	10	30	10	75
CE-4105TL	10.5	30	12	75
CE-4110TL	11	30	12	75
CE-4115TL	11.5	30	12	75
CE-4120TL	12	32	12	75
CE-4160TL	16	40	16	100
CE-4200TL	20	45	20	100

CEB-2TL

Solid Carbide 2-Flute Ball End Mill

Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEB-2003ATL	0.3 (0.15R)	0.6	4	50
CEB-2004ATL	0.4 (0.2R)	0.8	4	50
CEB-2005ATL	0.5 (0.25R)	1.0	4	50
CEB-2006ATL	0.6 (0.3R)	1.2	4	50
CEB-2007ATL	0.7 (0.35R)	1.4	4	50
CEB-2008ATL	0.8 (0.4R)	1.6	4	50
CEB-2009ATL	0.9 (0.45R)	1.8	4	50
CEB-2010ATL	1 (0.5R)	2	4	50
CEB-2010TL	1 (0.5R)	2	6	50
CEB-2011ATL	1.1 (0.55R)	2.2	4	50
CEB-2012ATL	1.2 (0.6R)	2.4	4	50
CEB-2013ATL	1.3 (0.65R)	2.6	4	50
CEB-2014ATL	1.4 (0.7R)	2.8	4	50
CEB-2015ATL	1.5 (0.75R)	3	4	50
CEB-2015TL	1.5 (0.75R)	3	6	50
CEB-2016ATL	1.6 (0.8R)	3.2	4	50
CEB-2017ATL	1.7 (0.85R)	3.4	4	50
CEB-2018ATL	1.8 (0.9R)	3.6	4	50
CEB-2019ATL	1.9 (0.95R)	3.8	4	50

Model No.	DIA	LOC	Shank Dia	OAL
CEB-2020ATL	2 (1R)	4	4	50
CEB-2020TL	2 (1R)	4	6	50
CEB-2025ATL	2.5 (1.25R)	5	4	50
CEB-2030BTL	3 (1.5R)	6	3	50
CEB-2030ATL	3 (1.5R)	6	4	50
CEB-2030TL	3 (1.5R)	6	6	50
CEB-2035TL	3.5 (1.75R)	7	6	50
CEB-2040ATL	4 (2R)	8	4	50
CEB-2040TL	4 (2R)	8	6	50
CEB-2050TL	5 (2.5R)	10	6	50
CEB-2060TL	6 (3R)	12	6	50
CEB-2070TL	7 (3.5R)	14	8	60
CEB-2080TL	8 (4R)	16	8	60
CEB-2090TL	9 (4.5R)	18	10	75
CEB-2100TL	10 (5R)	20	10	75
CEB-2110TL	11 (5.5R)	22	12	75
CEB-2120TL	12 (6R)	24	12	75
CEB-2160TL	16 (8R)	32	16	100
CEB-2200TL	20 (10R)	40	20	100

CEBP-2TL

Solid Carbide 2-Flute Ball End Mill Long Shank

Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEBP-2020TL	2 (1R)	4	6	75
CEBP-2030TL	3 (1.5R)	6	6	75
CEBP-2030BTL	3 (1.5R)	6	3	75
CEBP-2040TL	4 (2R)	8	6	75
CEBP-2040ATL	4 (2R)	8	4	75
CEBP-2050TL	5 (2.5R)	10	6	75
CEBP-2060TL	6 (3R)	12	6	100
CEBP-2060TL-150	6 (3R)	12	6	150
CEBP-2080TL	8 (4R)	16	8	100
CEBP-2080TL-150	8 (4R)	16	8	150
CEBP-2100TL	10 (5R)	20	10	100
CEBP-2100TL-150	10 (5R)	20	10	150
CEBP-2100TL-200	10 (5R)	20	10	200
CEBP-2120TL	12 (6R)	24	12	100
CEBP-2120TL-150	12 (6R)	24	12	150
CEBP-2120TL-200	12 (6R)	24	12	200
CEBP-2160TL	16 (8R)	32	16	150
CEBP-2160TL-200	16 (8R)	32	16	200
CEBP-2200TL	20 (10R)	40	20	150

CEB-4TL

Solid Carbide 4-Flute Ball End Mill


Material : **Micro Grain-Co10+Tia[∞]n** (~50HRC)

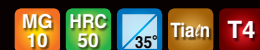
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEB-4020ATL	2 (1R)	4	4	50
CEB-4030TL	3 (1.5R)	6	6	50
CEB-4040ATL	4 (2R)	8	4	50
CEB-4040TL	4 (2R)	8	6	50
CEB-4050TL	5 (2.5R)	10	6	50
CEB-4060TL	6 (3R)	12	6	50
CEB-4070TL	7 (3.5R)	14	8	60
CEB-4080TL	8 (4R)	16	8	60
CEB-4090TL	9 (4.5R)	18	10	75
CEB-4100TL	10 (5R)	20	10	75
CEB-4110TL	11 (5.5R)	22	12	75
CEB-4120TL	12 (6R)	24	12	75
CEB-4160TL	16 (8R)	32	16	100
CEB-4200TL	20 (10R)	40	20	100

CEBP-4TL

Solid Carbide 4-Flute Ball End Mill Long Shank


Material : **Micro Grain-Co10+Tia[∞]n** (~50HRC)

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEBP-4030TL	3 (1.5R)	6	6	75
CEBP-4040TL	4 (2R)	8	6	75
CEBP-4050TL	5 (2.5R)	10	6	75
CEBP-4060TL	6 (3R)	12	6	75
CEBP-4080TL	8 (4R)	16	8	100
CEBP-4100TL	10 (5R)	20	10	100
CEBP-4120TL	12 (6R)	24	12	100
CEBP-4160TL	16 (8R)	32	16	150
CEBP-4200TL	20 (10R)	40	20	150

CEL-2TL

Solid Carbide 2-Flute End Mill Long Flute

Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEL-2010ATL	1	7	4	50
CEL-2015ATL	1.5	9	4	50
CEL-2020ATL	2	12	4	50
CEL-2030TL	3	15	6	60
CEL-2040TL	4	20	6	75
CEL-2050TL	5	25	6	75

Model No.	DIA	LOC	Shank Dia	OAL
CEL-2060TL	6	30	6	75
CEL-2080TL	8	40	8	100
CEL-2100TL	10	40	10	100
CEL-2120TL	12	50	12	100
CEL-2160TL	16	60	16	150
CEL-2200TL	20	75	20	150

CEL-4TL

Solid Carbide 4-Flute End Mill Long Flute

Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEL-4010ATL	1	7	4	50
CEL-4015ATL	1.5	9	4	50
CEL-4020ATL	2	12	4	50
CEL-4030TL	3	15	6	60
CEL-4040TL	4	20	6	75
CEL-4050TL	5	25	6	75

Model No.	DIA	LOC	Shank Dia	OAL
CEL-4060TL	6	30	6	75
CEL-4080TL	8	40	8	100
CEL-4100TL	10	40	10	100
CEL-4120TL	12	50	12	100
CEL-4160TL	16	60	16	150
CEL-4200TL	20	75	20	150

CEM-4TL

Solid Carbide 4-Flute High Helix End Mill

Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEM-4010ATL	1	3	4	50
CEM-4015ATL	1.5	4	4	50
CEM-4020ATL	2	6	4	50
CEM-4025ATL	2.5	8	4	50
CEM-4030TL	3	8	6	50
CEM-4040TL	4	11	6	50
CEM-4050TL	5	13	6	50

Model No.	DIA	LOC	Shank Dia	OAL
CEM-4060TL	6	16	6	50
CEM-4080TL	8	20	8	60
CEM-4100TL	10	30	10	75
CEM-4120TL	12	32	12	75
CEM-4160TL	16	40	16	100
CEM-4200TL	20	45	20	100

CEM-3TL

Solid Carbide 3-Flute High Helix End Mill

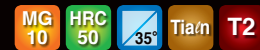
Material : **Micro Grain-Co10+Tia/n** (~50HRC)Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEM-3030TL	3	8	6	50
CEM-3040TL	4	11	6	50
CEM-3050TL	5	13	6	50
CEM-3060TL	6	16	6	50

Model No.	DIA	LOC	Shank Dia	OAL
CEM-3080TL	8	20	8	60
CEM-3100TL	10	30	10	75
CEM-3120TL	12	32	12	75

CEP-2TL Solid Carbide 2-Flute End Mill Long Shank



Material : **Micro Grain-Co10+Tia/n (~50HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEP-2030BTL	3	8	3	75
CEP-2040ATL	4	11	4	75
CEP-2060TL	6	16	6	100
CEP-2080TL	8	20	8	100
CEP-2080TL-150	8	20	8	150

Model No.	DIA	LOC	Shank Dia	OAL
CEP-2100TL	10	25	10	100
CEP-2100TL-150	10	25	10	150
CEP-2120TL	12	32	12	100
CEP-2120TL-150	12	32	12	150

CEP-4TL Solid Carbide 4-Flute End Mill Long Shank



Material : **Micro Grain-Co10+Tia/n (~50HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEP-4030BTL	3	8	3	75
CEP-4040ATL	4	11	4	75
CEP-4060TL	6	15	6	100
CEP-4080TL	8	20	8	100
CEP-4080TL-150	8	20	8	150

Model No.	DIA	LOC	Shank Dia	OAL
CEP-4100TL	10	30	10	100
CEP-4100TL-150	10	30	10	150
CEP-4120TL	12	32	12	100
CEP-4120TL-150	12	32	12	150

CEO-4TL Solid Carbide 4-Flute Roughing End Mill

Fine Pitch, Round Profile



Material : **Micro Grain-Co10+Tia/n (~50HRC)**
Helix Angle : **40°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEO-4060TL	6	16	6	50
CEO-4080TL	8	19	8	60
CEO-4100TL	10	25	10	75

Model No.	DIA	LOC	Shank Dia	OAL
CEO-4120TL	12	30	12	75
CEO-4160TL	16	35	16	100
CEO-4200TL	20	45	20	100

CEO-3TL Solid Carbide 3-Flute Roughing End Mill

Fine Pitch, Round Profile



Material : **Micro Grain-Co10+Tia/n (~50HRC)**
Helix Angle : **40°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CEO-3060TL	6	16	6	50
CEO-3080TL	8	19	8	60
CEO-3100TL	10	25	10	75

Model No.	DIA	LOC	Shank Dia	OAL
CEO-3120TL	12	30	12	75
CEO-3160TL	16	35	16	100
CEO-3200TL	20	45	20	100

CER-2TL Solid Carbide 2-Flute Corner Radius End MillMaterial : **Micro Grain-Co10+Tia/n (~50HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CER2010-02ATL	1	0.2R	3	4	50
CER2015-02ATL	1.5	0.2R	4	4	50
CER2020-02ATL	2	0.2R	6	4	50
CER2020-05ATL	2	0.5R	6	4	50
CER2025-02ATL	2.5	0.2R	8	4	50
CER2030-02BTL	3	0.2R	8	3	50
CER2030-05BTL	3	0.5R	8	3	50
CER2030-10BTL	3	1R	8	3	50
CER2040-02ATL	4	0.2R	10	4	50
CER2040-05ATL	4	0.5R	10	4	50
CER2040-10ATL	4	1R	10	4	50
CER2040-15ATL	4	1.5R	10	4	50
CER2050-02TL	5	0.2R	13	6	50
CER2050-05TL	5	0.5R	13	6	50
CER2050-10TL	5	1R	13	6	50
CER2060-02TL	6	0.2R	15	6	50
CER2060-05TL	6	0.5R	15	6	50
CER2060-10TL	6	1R	15	6	50

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CER2060-15TL	6	1.5R	15	6	50
CER2060-20TL	6	2R	15	6	50
CER2080-05TL	8	0.5R	20	8	60
CER2080-10TL	8	1R	20	8	60
CER2080-15TL	8	1.5R	20	8	60
CER2080-20TL	8	2R	20	8	60
CER2080-30TL	8	3R	20	8	60
CER2100-05TL	10	0.5R	25	10	75
CER2100-10TL	10	1R	25	10	75
CER2100-15TL	10	1.5R	25	10	75
CER2100-20TL	10	2R	25	10	75
CER2100-30TL	10	3R	25	10	75
CER2120-05TL	12	0.5R	30	12	75
CER2120-10TL	12	1R	30	12	75
CER2120-15TL	12	1.5R	30	12	75
CER2120-20TL	12	2R	30	12	75
CER2120-30TL	12	3R	30	12	75

CERP-2TL Solid Carbide 2-Flute Corner Radius End Mill Long ShankMaterial : **Micro Grain-Co10+Tia/n (~50HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CERP2030-03BTL	3	0.3R	8	3	75
CERP2030-05BTL	3	0.5R	8	3	75
CERP2030-10BTL	3	1R	8	3	75
CERP2040-03ATL	4	0.3R	10	4	75
CERP2040-05ATL	4	0.5R	10	4	75
CERP2040-10ATL	4	1R	10	4	75
CERP2040-15ATL	4	1.5R	10	4	75
CERP2060-03TL	6	0.3R	15	6	100
CERP2060-05TL	6	0.5R	15	6	100
CERP2060-10TL	6	1R	15	6	100
CERP2060-15TL	6	1.5R	15	6	100
CERP2060-20TL	6	2R	15	6	100
CERP2080-05TL	8	0.5R	20	8	100
CERP2080-10TL	8	1R	20	8	100

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CERP2080-15TL	8	1.5R	20	8	100
CERP2080-20TL	8	2R	20	8	100
CERP2080-30TL	8	3R	20	8	100
CERP2100-05TL	10	0.5R	25	10	100
CERP2100-10TL	10	1R	25	10	100
CERP2100-15TL	10	1.5R	25	10	100
CERP2100-20TL	10	2R	25	10	100
CERP2100-30TL	10	3R	25	10	100
CERP2120-05TL	12	0.5R	30	12	100
CERP2120-10TL	12	1R	30	12	100
CERP2120-15TL	12	1.5R	30	12	100
CERP2120-20TL	12	2R	30	12	100
CERP2120-30TL	12	3R	30	12	100

CER-4TL Solid Carbide 4-Flute Corner Radius End Mill


Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CER4030-03BTL	3	0.3R	8	3	50
CER4030-05BTL	3	0.5R	8	3	50
CER4030-10BTL	3	1R	8	3	50
CER4040-03ATL	4	0.2R	10	4	50
CER4040-05ATL	4	0.5R	10	4	50
CER4040-10ATL	4	1R	10	4	50
CER4040-15ATL	4	1.5R	10	4	50
CER4050-02TL	5	0.2R	13	6	50
CER4050-05TL	5	0.5R	13	6	50
CER4050-10TL	5	1R	13	6	50
CER4060-02TL	6	0.2R	15	6	50
CER4060-05TL	6	0.5R	15	6	50
CER4060-10TL	6	1R	15	6	50
CER4060-15TL	6	1.5R	15	6	50
CER4060-20TL	6	2R	15	6	50

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CER4080-05TL	8	0.5R	20	8	60
CER4080-10TL	8	1R	20	8	60
CER4080-15TL	8	1.5R	20	8	60
CER4080-20TL	8	2R	20	8	60
CER4080-30TL	8	3R	20	8	60
CER4100-05TL	10	0.5R	25	10	75
CER4100-10TL	10	1R	25	10	75
CER4100-15TL	10	1.5R	25	10	75
CER4100-20TL	10	2R	25	10	75
CER4100-30TL	10	3R	25	10	75
CER4120-05TL	12	0.5R	30	12	75
CER4120-10TL	12	1R	30	12	75
CER4120-15TL	12	1.5R	30	12	75
CER4120-20TL	12	2R	30	12	75
CER4120-30TL	12	3R	30	12	75

CERP-4TL Solid Carbide 4-Flute Corner Radius End Mill Long Shank


Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CERP4030-03BTL	3	0.3R	8	3	75
CERP4030-05BTL	3	0.5R	8	3	75
CERP4030-10BTL	3	1R	8	3	75
CERP4040-03ATL	4	0.3R	10	4	75
CERP4040-05ATL	4	0.5R	10	4	75
CERP4040-10ATL	4	1R	10	4	75
CERP4040-15ATL	4	1.5R	10	4	75
CERP4060-03TL	6	0.3R	15	6	100
CERP4060-05TL	6	0.5R	15	6	100
CERP4060-10TL	6	1R	15	6	100
CERP4060-15TL	6	1.5R	15	6	100
CERP4060-20TL	6	2R	15	6	100
CERP4080-05TL	8	0.5R	20	8	100
CERP4080-10TL	8	1R	20	8	100

Model No.	DIA	Corner	LOC	Shank Dia	OAL
CERP4080-15TL	8	1.5R	20	8	100
CERP4080-20TL	8	2R	20	8	100
CERP4080-30TL	8	3R	20	8	100
CERP4100-05TL	10	0.5R	25	10	100
CERP4100-10TL	10	1R	25	10	100
CERP4100-15TL	10	1.5R	25	10	100
CERP4100-20TL	10	2R	25	10	100
CERP4100-30TL	10	3R	25	10	100
CERP4120-05TL	12	0.5R	30	12	100
CERP4120-10TL	12	1R	30	12	100
CERP4120-15TL	12	1.5R	30	12	100
CERP4120-20TL	12	2R	30	12	100
CERP4120-30TL	12	3R	30	12	100

CED-2TL Solid Carbide 2-Flute Rib Processing End MillMaterial : **Micro Grain-Co10+Tia/n (~50HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Effective Length	Shank Dia	OAL
CED2003-1ATL	0.3	0.6	1	4	50
CED2003-2ATL	0.3	0.6	2	4	50
CED2003-3ATL	0.3	0.6	3	4	50
CED2004-2ATL	0.4	0.7	2	4	50
CED2004-4ATL	0.4	0.7	4	4	50
CED2004-6ATL	0.4	0.7	6	4	50
CED2005-2ATL	0.5	0.75	2	4	50
CED2005-4ATL	0.5	0.75	4	4	50
CED2005-6ATL	0.5	0.75	6	4	50
CED2006-2ATL	0.6	0.9	2	4	50
CED2006-4ATL	0.6	0.9	4	4	50
CED2006-6ATL	0.6	0.9	6	4	50
CED2007-4ATL	0.7	1.1	4	4	50
CED2007-6ATL	0.7	1.1	6	4	50
CED2008-4ATL	0.8	1.2	4	4	50
CED2008-6ATL	0.8	1.2	6	4	50
CED2008-8ATL	0.8	1.2	8	4	50
CED2009-6ATL	0.9	1.4	6	4	50
CED2009-8ATL	0.9	1.4	8	4	50
CED2009-10ATL	0.9	1.4	10	4	50
CED2010-6ATL	1.0	1.5	6	4	50
CED2010-8ATL	1.0	1.5	8	4	50
CED2010-10ATL	1.0	1.5	10	4	50
CED2010-12ATL	1.0	1.5	12	4	50
CED2012-6ATL	1.2	1.8	6	4	50
CED2012-8ATL	1.2	1.8	8	4	50
CED2012-10ATL	1.2	1.8	10	4	50
CED2012-12ATL	1.2	1.8	12	4	50
CED2014-6ATL	1.4	2.1	6	4	50
CED2014-10ATL	1.4	2.1	10	4	50
CED2014-16ATL	1.4	2.1	16	4	50
CED2015-6ATL	1.5	2.3	6	4	50
CED2015-8ATL	1.5	2.3	8	4	50
CED2015-10ATL	1.5	2.3	10	4	50

Model No.	DIA	LOC	Effective Length	Shank Dia	OAL
CED2015-12ATL	1.5	2.3	12	4	50
CED2015-14ATL	1.5	2.3	14	4	50
CED2015-16ATL	1.5	2.3	16	4	50
CED2015-18ATL	1.5	2.3	18	4	50
CED2015-20ATL	1.5	2.3	20	4	50
CED2016-6ATL	1.6	2.4	6	4	50
CED2016-8ATL	1.6	2.4	8	4	50
CED2016-10ATL	1.6	2.4	10	4	50
CED2016-12ATL	1.6	2.4	12	4	50
CED2016-14ATL	1.6	2.4	14	4	50
CED2016-16ATL	1.6	2.4	16	4	50
CED2016-18ATL	1.6	2.4	18	4	50
CED2018-8ATL	1.8	2.7	8	4	50
CED2018-14ATL	1.8	2.7	14	4	50
CED2018-20ATL	1.8	2.7	20	4	50
CED2020-6ATL	2.0	3	6	4	50
CED2020-8ATL	2.0	3	8	4	50
CED2020-10ATL	2.0	3	10	4	50
CED2020-12ATL	2.0	3	12	4	50
CED2020-14ATL	2.0	3	14	4	50
CED2020-16ATL	2.0	3	16	4	50
CED2020-18ATL	2.0	3	18	4	50
CED2020-20ATL	2.0	3	20	4	50
CED2025-8ATL	2.5	4	8	4	50
CED2025-10ATL	2.5	4	10	4	50
CED2025-12ATL	2.5	4	12	4	50
CED2025-16ATL	2.5	4	16	4	50
CED2025-20ATL	2.5	4	20	4	50
CED2030-8TL	3.0	4.5	8	6	50
CED2030-10TL	3.0	4.5	10	6	50
CED2030-12TL	3.0	4.5	12	6	50
CED2030-16TL	3.0	4.5	16	6	60
CED2030-20TL	3.0	4.5	20	6	60
CED2030-25TL	3.0	6	25	6	75

CT-2TL

Solid Carbide 2-Flute Tapered End Mill


Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	Front End Dia	Flute Length	Leaging Angel	Rear End Dia	Shank Dia	OAL	Model No.	Front End Dia	Flute Length	Leaging Angel	Rear End Dia	Shank Dia	OAL
CT2010-005ATL	1.0	4	30'	1.07	4	50	CT2040-005TL	4	15	30'	4.26	6	50
CT2010-010ATL	1.0	4	1°	1.14	4	50	CT2040-010TL	4	15	1°	4.52	6	50
CT2010-015ATL	1.0	4	1° 30'	1.21	4	50	CT2040-015TL	4	15	1° 30'	4.79	6	50
CT2010-020ATL	1.0	4	2°	1.28	4	50	CT2040-020TL	4	15	2°	5.04	6	50
CT2010-025ATL	1.0	4	2° 30'	1.35	4	50	CT2040-025TL	4	15	2° 30'	5.31	6	50
CT2010-030ATL	1.0	4	3°	1.42	4	50	CT2040-030TL	4	15	3°	5.57	6	50
CT2010-050ATL	1.0	4	5°	1.70	4	50	CT2040-050TL	4	15	5°	6.62	8	60
CT2010-070ATL	1.0	4	7°	1.98	4	50	CT2040-070TL	4	15	7°	7.68	8	60
CT2010-100ATL	1.0	4	10°	2.41	4	50	CT2050-005TL	5	20	30'	5.34	6	60
CT2015-005ATL	1.5	5	30'	1.59	4	50	CT2050-010TL	5	20	1°	5.70	6	60
CT2015-010ATL	1.5	5	1°	1.67	4	50	CT2050-015TL	5	20	1° 30'	6.04	8	60
CT2015-015ATL	1.5	5	1° 30'	1.76	4	50	CT2050-020TL	5	20	2°	6.39	8	60
CT2015-020ATL	1.5	5	2°	1.85	4	50	CT2050-025TL	5	20	2° 30'	6.74	8	60
CT2015-025ATL	1.5	5	2° 30'	1.93	4	50	CT2050-030TL	5	20	3°	7.10	8	60
CT2015-030ATL	1.5	5	3°	2.02	4	50	CT2050-050TL	5	20	5°	8.50	10	75
CT2015-050ATL	1.5	5	5°	2.37	4	50	CT2050-070TL	5	20	7°	9.91	10	75
CT2015-070ATL	1.5	5	7°	2.73	4	50	CT2060-005TL	6	20	30'	6.35	8	60
CT2015-100ATL	1.5	5	10°	3.26	4	50	CT2060-010TL	6	20	1°	6.70	8	60
CT2020-005ATL	2.0	6	30'	2.10	4	50	CT2060-015TL	6	20	1° 30'	7.05	8	60
CT2020-010ATL	2.0	6	1°	2.21	4	50	CT2060-020TL	6	20	2°	7.40	8	60
CT2020-015ATL	2.0	6	1° 30'	2.31	4	50	CT2060-025TL	6	20	2° 30'	7.75	8	60
CT2020-020ATL	2.0	6	2°	2.41	4	50	CT2060-030TL	6	20	3°	8.10	8	60
CT2020-025ATL	2.0	6	2° 30'	2.52	4	50	CT2060-050TL	6	20	5°	9.50	10	75
CT2020-030ATL	2.0	6	3°	2.62	4	50	CT2060-070TL	6	20	7°	10.91	12	75
CT2020-050ATL	2.0	6	5°	3.05	4	50	CT2080-005TL	8	25	30'	8.44	10	75
CT2020-070ATL	2.0	6	7°	3.47	4	50	CT2080-010TL	8	25	1°	8.87	10	75
CT2020-100ATL	2.0	6	10°	4.11	4	50	CT2080-015TL	8	25	1° 30'	9.31	10	75
CT2025-005ATL	2.5	8	30'	2.64	4	50	CT2080-020TL	8	25	2°	9.74	10	75
CT2025-010ATL	2.5	8	1°	2.78	4	50	CT2080-025TL	8	25	2° 30'	10.18	12	75
CT2025-015ATL	2.5	8	1° 30'	2.91	4	50	CT2080-030TL	8	25	3°	10.62	12	75
CT2025-020ATL	2.5	8	2°	3.05	4	50	CT2080-050TL	8	25	5°	12.37	12	100
CT2025-025ATL	2.5	8	2° 30'	3.20	4	50	CT2100-005TL	10	35	30'	10.61	12	100
CT2025-030ATL	2.5	8	3°	3.33	4	50	CT2100-010TL	10	35	1°	11.22	12	100
CT2025-050ATL	2.5	8	5°	3.90	4	50	CT2100-015TL	10	35	1° 30'	11.83	12	100
CT2025-070TL	2.5	8	7°	4.46	6	50	CT2100-020TL	10	35	2°	12.44	12	100
CT2025-100TL	2.5	8	10°	5.32	6	50	CT2100-025TL	10	35	2° 30'	13.06	16	100
CT2030-005TL	3.0	10	30'	3.17	6	50	CT2100-030TL	10	35	3°	13.67	16	100
CT2030-010TL	3.0	10	1°	3.35	6	50	CT2100-050TL	10	35	5°	16.12	16	100
CT2030-015TL	3.0	10	1° 30'	3.52	6	50							
CT2030-020TL	3.0	10	2°	3.69	6	50							
CT2030-025TL	3.0	10	2° 30'	3.87	6	50							
CT2030-030TL	3.0	10	3°	4.05	6	50							
CT2030-050TL	3.0	10	5	4.75	6	50							
CT2030-070TL	3.0	10	7°	5.46	6	50							
CT2030-100TL	3.0	10	10°	6.53	8	60							

CTL-2TL

Solid Carbide 2-Flute Tapered End Mill Long Flute

Material : **Micro Grain-Co10+Tia/n (~50HRC)**Helix Angle : **35°**

Unit : mm

Model No.	Front End Dia	Flute Length	Leaging Angel	Rear End Dia	Shank Dia	OAL	Model No.	Front End Dia	Flute Length	Leaging Angel	Rear End Dia	Shank Dia	OAL
CTL2010-005ATL	1.0	10	30'	1.17	4	50	CTL2030-005TL	3.0	20	30'	3.35	6	60
CTL2010-010ATL	1.0	10	1°	1.35	4	50	CTL2030-010TL	3.0	20	1°	3.70	6	60
CTL2010-015ATL	1.0	10	1° 30'	1.52	4	50	CTL2030-015TL	3.0	20	1° 30'	4.05	6	60
CTL2010-020ATL	1.0	10	2°	1.70	4	50	CTL2030-020TL	3.0	20	2°	4.39	6	60
CTL2010-025ATL	1.0	10	2° 30'	1.87	4	50	CTL2030-025TL	3.0	20	2° 30'	4.65	6	60
CTL2010-030ATL	1.0	10	3°	2.05	4	50	CTL2030-030TL	3.0	20	3°	5.1	6	60
CTL2010-050ATL	1.0	10	5°	2.74	4	50	CTL2030-050TL	3.0	20	5°	6.5	8	60
CTL2010-070ATL	1.0	10	7°	3.44	4	50	CTL2040-005TL	4	25	30'	4.44	6	60
CTL2015-005ATL	1.5	10	30'	1.67	4	50	CTL2040-010TL	4	25	1°	4.88	6	60
CTL2015-010ATL	1.5	10	1°	1.85	4	50	CTL2040-015TL	4	25	1° 30'	5.13	6	60
CTL2015-015ATL	1.5	10	1° 30'	2.02	4	50	CTL2040-020TL	4	25	2°	5.75	6	60
CTL2015-020ATL	1.5	10	2°	2.2	4	50	CTL2040-025TL	4	25	2° 30'	6.19	8	60
CTL2015-025ATL	1.5	10	2° 30'	2.37	4	50	CTL2040-030TL	4	25	3°	6.62	8	60
CTL2015-030ATL	1.5	10	3°	2.55	4	50	CTL2040-050TL	4	25	5°	8.38	10	75
CTL2015-050ATL	1.5	10	5°	3.24	4	50	CTL2050-005TL	5	30	30'	5.52	8	75
CTL2015-070ATL	1.5	10	7°	3.94	4	50	CTL2050-010TL	5	30	1°	6.05	8	75
CTL2020-005ATL	2.0	13	30'	2.22	4	50	CTL2050-015TL	5	30	1° 30'	6.57	8	75
CTL2020-010ATL	2.0	13	1°	2.45	4	50	CTL2050-020TL	5	30	2°	7.09	8	75
CTL2020-015ATL	2.0	13	1° 30'	2.68	4	50	CTL2050-025TL	5	30	2° 30'	7.62	8	75
CTL2020-020ATL	2.0	13	2°	2.90	4	50	CTL2050-030TL	5	30	3°	8.14	10	75
CTL2020-025ATL	2.0	13	2° 30'	3.13	4	50	CTL2050-050TL	5	30	5°	10.25	10	75
CTL2020-030ATL	2.0	13	3°	3.36	4	50	CTL2060-005TL	6	35	30'	6.61	8	75
CTL2020-050TL	2.0	13	5°	4.27	6	50	CTL2060-010TL	6	35	1°	7.22	8	75
CTL2020-070TL	2.0	13	7°	5.17	6	50	CTL2060-015TL	6	35	1° 30'	7.83	8	75
CTL2025-005ATL	2.5	15	30'	2.76	4	50	CTL2060-020TL	6	35	2°	8.44	10	75
CTL2025-010ATL	2.5	15	1°	3.03	4	50	CTL2060-025TL	6	35	2° 30'	9.05	10	100
CTL2025-015ATL	2.5	15	1° 30'	3.29	4	50	CTL2060-030TL	6	35	3°	9.67	10	100
CTL2025-020ATL	2.5	15	2°	3.56	4	50	CTL2060-050TL	6	35	5°	12.12	12	100
CTL2025-025ATL	2.5	15	2° 30'	3.81	4	50							
CTL2025-030TL	2.5	15	3°	4.07	6	50							
CTL2025-050TL	2.5	15	5°	5.13	6	50							

CEDB-2TL

Solid Carbide 2-Flute Rib Processing Ball End Mill


Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	R	DIA	LOC	Effective Length	Shank Dia	OAL
CEDB2005-2ATL	0.25R	0.5	0.75	2	4	50
CEDB2005-4ATL	0.25R	0.5	0.75	4	4	50
CEDB2005-6ATL	0.25R	0.5	0.75	6	4	50
CEDB2006-4ATL	0.3R	0.6	0.9	4	4	50
CEDB2006-6ATL	0.3R	0.6	0.9	6	4	50
CEDB2008-4ATL	0.4R	0.8	1.2	4	4	50
CEDB2008-6ATL	0.4R	0.8	1.2	6	4	50
CEDB2008-8ATL	0.4R	0.8	1.2	8	4	50
CEDB2010-6ATL	0.5R	1.0	1.5	6	4	50
CEDB2010-8ATL	0.5R	1.0	1.5	8	4	50
CEDB2010-10ATL	0.5R	1.0	1.5	10	4	50
CEDB2010-12ATL	0.5R	1.0	1.5	12	4	50
CEDB2012-8ATL	0.6R	1.2	1.8	8	4	50
CEDB2012-12ATL	0.6R	1.2	1.8	12	4	50
CEDB2014-6ATL	0.7R	1.4	2.1	6	4	50
CEDB2014-10ATL	0.7R	1.4	2.1	10	4	50
CEDB2014-16ATL	0.7R	1.4	2.1	16	4	50
CEDB2015-8ATL	0.75R	1.5	2.3	8	4	50
CEDB2015-12ATL	0.75R	1.5	2.3	12	4	50
CEDB2015-16ATL	0.75R	1.5	2.3	16	4	50
CEDB2015-20ATL	0.75R	1.5	2.3	20	4	50
CEDB2016-8ATL	0.8R	1.6	2.4	8	4	50
CEDB2016-12ATL	0.8R	1.6	2.4	12	4	50
CEDB2016-16ATL	0.8R	1.6	2.4	16	4	50
CEDB2016-20ATL	0.8R	1.6	2.4	20	4	50
CEDB2018-8ATL	0.9R	1.8	2.7	8	4	50
CEDB2018-14ATL	0.9R	1.8	2.7	14	4	50
CEDB2018-20ATL	0.9R	1.8	2.7	20	4	50
CEDB2020-4ATL	1R	2.0	3	4	4	50
CEDB2020-6ATL	1R	2.0	3	6	4	50
CEDB2020-8ATL	1R	2.0	3	8	4	50
CEDB2020-10ATL	1R	2.0	3	10	4	50
CEDB2020-12ATL	1R	2.0	3	12	4	50
CEDB2020-16ATL	1R	2.0	3	16	4	50
CEDB2020-20ATL	1R	2.0	3	20	4	50
CEDB2030-10ATL	1.5R	3.0	4.5	10	6	50
CEDB2030-16ATL	1.5R	3.0	4.5	16	6	60
CEDB2030-20ATL	1.5R	3.0	4.5	20	6	60
CEDB2030-25ATL	1.5R	3.0	4.5	25	6	75

CTB-2TL

Solid Carbide 2-Flute Tapered Ball End Mill

Material : **Micro Grain-Co10+Tia_n (~50HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	Flute Length	Taper Angel	Rear End Dia	Shank Dia	OAL
CTB2010-005ATL	1 (0.5R)	10	30'	1.17	4	50
CTB2010-010ATL	1 (0.5R)	10	1°	1.35	4	50
CTB2010-015ATL	1 (0.5R)	10	1° 30'	1.52	4	50
CTB2010-020ATL	1 (0.5R)	10	2°	1.70	4	50
CTB2010-030ATL	1 (0.5R)	10	3°	1.87	4	50
CTB2010-040ATL	1 (0.5R)	10	4°	2.05	4	50
CTB2010-050ATL	1 (0.5R)	10	5°	2.74	4	50
CTB2010-070ATL	1 (0.5R)	10	7°	3.44	4	50
CTB2010-100ATL	1 (0.5R)	10	10°	4.51	4	50
CTB2015-005ATL	1.5 (0.75R)	10	30'	1.67	4	50
CTB2015-010ATL	1.5 (0.75R)	10	1°	1.85	4	50
CTB2015-015ATL	1.5 (0.75R)	10	1° 30'	2.02	4	50
CTB2015-020ATL	1.5 (0.75R)	10	2°	2.20	4	50
CTB2015-030ATL	1.5 (0.75R)	10	3°	2.37	4	50
CTB2015-040ATL	1.5 (0.75R)	10	4°	2.55	4	50
CTB2015-050ATL	1.5 (0.75R)	10	5°	3.24	4	50
CTB2015-070ATL	1.5 (0.75R)	13	7°	3.94	4	50
CTB2015-100ATL	1.5 (0.75R)	13	10°	5.02	6	50
CTB2020-005ATL	2 (1R)	13	30'	2.22	4	50
CTB2020-010ATL	2 (1R)	13	1°	2.45	4	50
CTB2020-015ATL	2 (1R)	13	1° 30'	2.68	4	50
CTB2020-020ATL	2 (1R)	13	2°	2.90	4	50
CTB2020-030ATL	2 (1R)	13	3°	3.13	4	50
CTB2020-040ATL	2 (1R)	13	4°	3.36	4	50
CTB2020-050TL	2 (1R)	13	5°	4.27	6	50
CTB2020-070TL	2 (1R)	13	7°	5.17	6	50
CTB2020-100TL	2 (1R)	13	10°	6.56	8	60
CTB2025-005ATL	2.5 (1.25R)	15	30'	2.76	4	50
CTB2025-010ATL	2.5 (1.25R)	15	1°	3.03	4	50
CTB2025-015ATL	2.5 (1.25R)	15	1° 30'	3.29	4	50
CTB2025-020ATL	2.5 (1.25R)	15	2°	3.56	4	50
CTB2025-030ATL	2.5 (1.25R)	15	3°	3.81	4	50
CTB2025-040ATL	2.5 (1.25R)	15	4°	4.07	6	50
CTB2025-050ATL	2.5 (1.25R)	15	5°	5.13	6	50
CTB2025-070ATL	2.5 (1.25R)	15	7°	6.17	6	60
CTB2025-100ATL	2.5 (1.25R)	15	10°	7.77	8	60
CTB2030-005ATL	3 (1.5R)	20	30'	3.34	4	50
CTB2030-010ATL	3 (1.5R)	20	1°	3.60	4	50
CTB2030-015ATL	3 (1.5R)	20	1° 30'	4.04	6	60
CTB2030-020ATL	3 (1.5R)	20	2°	4.39	6	60
CTB2030-030ATL	3 (1.5R)	20	3°	5.08	6	60
CTB2030-040ATL	3 (1.5R)	20	4°	5.78	6	60
CTB2030-050ATL	3 (1.5R)	20	5°	6.48	8	60
CTB2030-070ATL	3 (1.5R)	20	7°	7.90	8	60
CTB2030-100ATL	3 (1.5R)	20	10°	10.04	10	75

CTNB-2TL

Solid Carbide 2-Flute Tapered Neck Ball End Mill



Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **30°**

Unit : mm

Model No.	DIA	LOC	Leaging Angle	Shank Dia	OAL
CTNB2010-010 ATL	1 (0.5R)	2	1°	6	75
CTNB2015-010 ATL	1.5 (0.75R)	3	1°	6	75
CTNB2020-010 ATL	2 (1R)	4	1°	6	75
CTNB2020-050 ATL	2 (1R)	12	5°	8	100
CTNB2030-010 ATL	3 (1.5R)	6	1°	6	75
CTNB2030-050 ATL	3 (1.5R)	8	5°	8	100
CTNB2040-010 ATL	4 (4R)	8	1°	6	75
CTNB2040-050 ATL	4 (4R)	10	5°	8	100
CTNB2060-050 ATL	6 (3R)	12	5°	10	100
CTNB2060-030 ATL	6 (3R)	16	3°	12	150
CTNB2080-050 ATL	8 (4R)	16	5°	12	100
CTNB2080-030 ATL	8 (4R)	20	3°	12	150

CE-1TL

Solid Carbide 1-Flute End Mill

(Aluminum, Plastic, Wood)



Material : **Micro Grain-Co10+Tia/n (~50HRC)**

Helix Angle : **30°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
CE-10100BTL	1	4	3	50
CE-10150BTL	1.5	6	3	50
CE-10200TL	2	8	2	50
CE-10201TL	2	8	2	60
CE-10202TL	2	8	3	50
CE-10250TL	2.5	8	3	50
CE-10251TL	2.5	8	3	60
CE-10300BTL	3	10	3	50
CE-10301BTL	3	10	3	60
CE-10302BTL	3	10	6	80
CE-10310TL	3.17	12.7	6.35	60
CE-10400ATL	4	12	4	60
CE-10401ATL	4	20	4	70
CE-10402ATL	4	30	4	80

Model No.	DIA	LOC	Shank Dia	OAL
CE-10403TL	4	12	6	60
CE-10470TL	4.765	15.9	6.35	70
CE-10500CTL	5	16	5	70
CE-10501CTL	5	30	5	80
CE-10600CTL	6	16	6	60
CE-10601TL	6	25	6	75
CE-10602TL	6	30	6	75
CE-10604TL	6	38	6	100
CE-10630TL	6.35	15.8	6.35	70
CE-10800TL	8	22	8	75
CE-10801TL	8	38	8	100
CE-11000TL	10	30	10	80
CE-11200TL	12	30	12	100

ACE-2DLC+Solid Carbide 2-Flute End Mill
(Aluminum, Graphite)**MG**
10**55°****DLC****T2**Material : **Micro Grain-Co10+DLC**Helix Angle : **55°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACE-2010ADLC+	1	3	4	50
ACE-2015ADLC+	1.5	4	4	50
ACE-2020ADLC+	2	6	4	50
ACE-2030DLC+	3	9	6	50
ACE-2040DLC+	4	12	6	50
ACE-2050DLC+	5	15	6	50

Model No.	DIA	LOC	Shank Dia	OAL
ACE-2060DLC+	6	15	6	50
ACE-2080DLC+	8	20	8	60
ACE-2100DLC+	10	30	10	75
ACE-2120DLC+	12	32	12	75
ACE-2160DLC+	16	45	16	100
ACE-2200DLC+	20	45	20	100

ACEL-3DLC+Solid Carbide 3-Flute End Mill Long Flute
(Aluminum, Graphite)**MG**
10**55°****DLC****T3**Material : **Micro Grain-Co10+DLC**Helix Angle : **55°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACEL-3030DLC+	3	12	6	60
ACEL-3040DLC+	4	16	6	60
ACEL-3050DLC+	5	20	6	60
ACEL-3060DLC+	6	25	6	75
ACEL-3080DLC+	8	32	8	75

Model No.	DIA	LOC	Shank Dia	OAL
ACEL-3100DLC+	10	45	10	100
ACEL-3120DLC+	12	45	12	100
ACEL-3160DLC+	16	65	16	150
ACEL-3200DLC+	20	75	20	150

ACE-3DLC+Solid Carbide 3-Flute End Mill
(Aluminum, Graphite)**MG**
10**55°****DLC****T3**Material : **Micro Grain-Co10+DLC**Helix Angle : **55°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACE-3010ADLC+	1	3	4	50
ACE-3015ADLC+	1.5	4	4	50
ACE-3020ADLC+	2	6	4	50
ACE-3030DLC+	3	9	6	50
ACE-3040DLC+	4	12	6	50
ACE-3050DLC+	5	15	6	50

Model No.	DIA	LOC	Shank Dia	OAL
ACE-3060DLC+	6	18	6	50
ACE-3080DLC+	8	20	8	60
ACE-3100DLC+	10	30	10	75
ACE-3120DLC+	12	32	12	75
ACE-3160DLC+	16	45	16	100
ACE-3200DLC+	20	45	20	100

ACEB-2DLC+

Solid Carbide 2-Flute Ball End Mill
(Aluminum, Copper, Graphite)

MG
10

20°

DLC

T2



Material : **Micro Grain-Co10+DLC**

Helix Angle : **20°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACEB-2010ADLC+	1 (0.5R)	2	4	50
ACEB-2015ADLC+	1.5 (0.75R)	3	4	50
ACEB-2020ADLC+	2 (1R)	4	4	50
ACEB-2025ADLC+	2.5 (1.25R)	5	4	50
ACEB-2030BDLC+	3 (1.5R)	6	3	50
ACEB-2030DLC+	3 (1.5R)	6	6	50
ACEB-2040ADLC+	4 (2R)	8	4	50

Model No.	DIA	LOC	Shank Dia	OAL
ACEB-2040DLC+	4 (2R)	8	6	50
ACEB-2050DLC+	5 (2.5R)	10	6	50
ACEB-2060DLC+	6 (3R)	12	6	50
ACEB-2080DLC+	8 (4R)	16	8	60
ACEB-2100DLC+	10 (5R)	20	10	75
ACEB-2120DLC+	12 (6R)	24	12	75

KCE-2DLC+

Solid Carbide 2-Flute End Mill
(Copper, Graphite)

MG
10

20°

DLC

T2



Material : **Micro Grain-Co10+DLC**

Helix Angle : **20°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
KCE-2010ADLC+	1	3	4	50
KCE-2015ADLC+	1.5	4	4	50
KCE-2020ADLC+	2	6	4	50
KCE-2025ADLC+	2.5	8	4	50
KCE-2030BDLC+	3	9	3	50
KCE-2030DLC+	3	9	6	50
KCE-2040ADLC+	4	12	4	50
KCE-2040DLC+	4	12	6	50

Model No.	DIA	LOC	Shank Dia	OAL
KCE-2050DLC+	5	15	6	50
KCE-2060DLC+	6	15	6	50
KCE-2080DLC+	8	20	8	60
KCE-2100DLC+	10	30	10	75
KCE-2120DLC+	12	32	12	75
KCE-2160DLC+	16	45	16	100
KCE-2200DLC+	20	45	20	100

ACEMM-2DLC+ Solid Carbide Burnish 2-Flute End Mill
(Aluminum, Graphite)**MG**
10**45°****DLC****T2**Material : **Micro Grain-Co10+DLC**Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACEMM-2005ADLC+	0.5	1.5	4	50
ACEMM-2006ADLC+	0.6	1.5	4	50
ACEMM-2008ADLC+	0.8	2	4	50
ACEMM-2010DLC+	1	3	6	50
ACEMM-2012DLC+	1.2	4	6	50
ACEMM-2015DLC+	1.5	4	6	50
ACEMM-2018DLC+	1.8	5	6	50
ACEMM-2020DLC+	2	6	6	50

Model No.	DIA	LOC	Shank Dia	OAL
ACEMM-2030DLC+	3	8	6	50
ACEMM-2040DLC+	4	10	6	50
ACEMM-2050DLC+	5	13	6	50
ACEMM-2060DLC+	6	15	6	50
ACEMM-2080DLC+	8	20	8	60
ACEMM-2100DLC+	10	25	10	75
ACEMM-2120DLC+	12	30	12	75

ACEMM-3DLC+ Solid Carbide Burnish 3-Flute End Mill
(Aluminum)**MG**
10**45°****DLC****T3**Material : **Micro Grain-Co10+DLC**Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACEMM-3010ADLC+	1	3	4	50
ACEMM-3012ADLC+	1.2	4	4	50
ACEMM-3015ADLC+	1.5	4	4	50
ACEMM-3018ADLC+	1.8	5	4	50
ACEMM-3020ADLC+	2	6	4	50
ACEMM-3030DLC+	3	8	6	50

Model No.	DIA	LOC	Shank Dia	OAL
ACEMM-3040DLC+	4	10	6	50
ACEMM-3050DLC+	5	13	6	50
ACEMM-3060DLC+	6	15	6	50
ACEMM-3080DLC+	8	20	8	60
ACEMM-3100DLC+	10	25	10	75
ACEMM-3120DLC+	12	30	12	75

ACEO-3DLC+ Solid Carbide Burnish 3-Flute Roughing End Mill
(Aluminum)**MG**
10**45°****DLC****T3**Material : **Micro Grain-Co10+DLC**Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
ACEO-3040DLC+	4	8	6	50
ACEO-3050DLC+	5	13	6	50
ACEO-3060DLC+	6	15	6	50
ACEO-3065DLC+	6.5	16	8	60
ACEO-3070DLC+	7	16	8	60
ACEO-3075DLC+	7.5	20	8	60
ACEO-3080DLC+	8	20	8	60
ACEO-3085DLC+	8.5	20	10	75
ACEO-3090DLC+	9	20	10	75
ACEO-3095DLC+	9.5	22	10	75
ACEO-3100DLC+	10	25	10	75

Model No.	DIA	LOC	Shank Dia	OAL
ACEO-3110DLC+	11	30	12	75
ACEO-3120DLC+	12	30	12	75
ACEO-3130DLC+	13	30	14	75
ACEO-3140DLC+	14	32	16	75
ACEO-3150DLC+	15	32	16	75
ACEO-3160DLC+	16	35	16	100
ACEO-3170DLC+	17	35	20	100
ACEO-3180DLC+	18	35	20	100
ACEO-3200DLC+	20	45	20	100
ACEO-3250DLC+	25	50	25	105

MRM

Solid Carbide Machine Reamer, Straight Shank



Material : Super Micro Grain (~50HRC)

Unit : mm

Model No.	DIA	LOC	T	Shank Dia	OAL
MRM-001	1	6	4	1	34
MRM-011	1.1	7	4	1	36
MRM-012	1.2	7	4	1	38
MRM-012	1.3	7	4	1	38
MRM-014	1.4	8	4	1	40
MRM-015	1.5	8	4	1.5	40
MRM-016	1.6	9	4	1.5	43
MRM-017	1.7	9	4	1.5	43
MRM-018	1.8	10	4	1.5	46
MRM-019	1.9	10	4	1.5	46
MRM-020	2	11	4	2	49
MRM-021	2.1	11	4	2	49
MRM-022	2.2	12	4	2	53
MRM-022	2.3	12	4	2	53
MRM-024	2.4	14	4	2	57
MRM-025	2.5	14	4	2.5	57
MRM-026	2.6	14	4	2.5	57
MRM-027	2.7	15	4	2.5	61
MRM-028	2.8	15	4	2.5	61
MRM-029	2.9	15	4	2.5	61
MRM-030	3	15	4	3	61
MRM-031	3.1	16	4	3	65
MRM-032	3.2	16	4	3	65
MRM-032	3.3	16	4	3	65
MRM-034	3.4	18	4	3	70
MRM-035	3.5	18	4	3.5	70
MRM-036	3.6	18	4	3.5	70
MRM-037	3.7	18	4	3.5	70
MRM-038	3.8	19	4	3.5	75
MRM-039	3.9	19	4	3.5	75
MRM-040	4	19	4	4	75
MRM-041	4.1	19	4	4	75
MRM-042	4.2	19	4	4	75
MRM-043	4.3	21	4	4	80
MRM-044	4.4	21	4	4	80
MRM-045	4.5	21	4	4.5	80
MRM-046	4.6	21	4	4.5	80

Model No.	DIA	LOC	T	Shank Dia	OAL
MRM-047	4.7	21	4	4.5	80
MRM-048	4.8	23	4	4.5	86
MRM-049	4.9	23	4	4.5	86
MRM-050	5	23	4	5	86
MRM-051	5.1	23	4	5	86
MRM-052	5.2	23	4	5	86
MRM-052	5.3	23	4	5	86
MRM-054	5.4	26	4	5	93
MRM-055	5.5	26	4	5.5	93
MRM-056	5.6	26	4	5.5	93
MRM-057	5.7	26	4	5.5	93
MRM-058	5.8	26	4	5.5	93
MRM-059	5.9	26	4	5.5	93
MRM-060	6	26	4	6	93
MRM-061	6.1	28	4	6	101
MRM-062	6.2	28	4	6	101
MRM-062	6.3	28	4	6	101
MRM-064	6.4	28	4	6	101
MRM-065	6.5	28	4	6.5	101
MRM-066	6.6	28	4	6.5	101
MRM-067	6.7	31	4	6.5	101
MRM-068	6.8	31	4	6.5	101
MRM-069	6.9	31	4	6.5	101
MRM-070	7	31	6	7	109
MRM-071	7.1	31	6	7	109
MRM-072	7.2	31	6	7	109
MRM-072	7.3	31	6	7	109
MRM-074	7.4	31	6	7	109
MRM-075	7.5	31	6	7.5	109
MRM-076	7.6	33	6	7.5	117
MRM-077	7.7	33	6	7.5	117
MRM-078	7.8	33	6	7.5	117
MRM-079	7.9	33	6	7.5	117
MRM-080	8	33	6	8	117
MRM-081	8.1	33	6	8	117
MRM-082	8.2	33	6	8	117
MRM-083	8.3	33	6	8	117

Model No.	DIA	LOC	T	Shank Dia	OAL
MRM-084	8.4	33	6	8	117
MRM-085	8.5	33	6	8.5	117
MRM-086	8.6	36	6	8.5	125
MRM-087	8.7	36	6	8.5	125
MRM-088	8.8	36	6	8.5	125
MRM-089	8.9	36	6	8.5	125
MRM-090	9	36	6	9	125
MRM-091	9.1	36	6	9	125
MRM-092	9.2	36	6	9	125
MRM-092	9.3	36	6	9	125
MRM-094	9.4	36	6	9	125
MRM-095	9.5	36	6	9	125
MRM-096	9.6	38	6	9	133
MRM-097	9.7	38	6	9	133
MRM-098	9.8	38	6	9	133
MRM-099	9.9	38	6	9	133
MRM-100	10	38	6	10	133
MRM-101	10.1	38	6	10	133
MRM-102	10.2	38	6	10	133
MRM-102	10.3	38	6	10	133
MRM-104	10.4	38	6	10	133
MRM-105	10.5	38	6	10	133
MRM-106	10.6	38	6	10	133
MRM-107	10.7	41	6	10	142
MRM-108	10.8	41	6	10	142
MRM-109	10.9	41	6	10	142
MRM-110	11	41	6	10	142
MRM-111	11.1	41	6	10	142
MRM-112	11.2	41	6	10	142
MRM-112	11.3	41	6	10	142
MRM-114	11.4	41	6	10	142
MRM-115	11.5	41	6	10	142
MRM-116	11.6	41	6	10	142
MRM-117	11.7	41	6	10	142
MRM-118	11.8	41	6	10	142
MRM-119	11.9	44	6	10	151
MRM-120	12	44	6	10	151

HCE-2TL

Super Micro Grain Carbide 2-Flute End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCE-2002ATL	0.2	0.4	4	50
HCE-2003ATL	0.3	0.6	4	50
HCE-2004ATL	0.4	0.7	4	50
HCE-2005ATL	0.5	0.8	4	50
HCE-2006ATL	0.6	0.9	4	50
HCE-2007ATL	0.7	1.4	4	50
HCE-2008ATL	0.8	1.6	4	50
HCE-2009ATL	0.9	1.8	4	50
HCE-2010ATL	1	3	4	50
HCE-2010TL	1	3	6	50
HCE-2015ATL	1.5	4	4	50
HCE-2015TL	1.5	4	6	50
HCE-2020ATL	2	6	4	50
HCE-2020TL	2	6	6	50
HCE-2025ATL	2.5	8	4	50
HCE-2025TL	2.5	8	6	50
HCE-2030BTL	3	8	3	50
HCE-2030TL	3	8	4	50
HCE-2035TL	3.5	10	6	50
HCE-2040ATL	4	11	4	50
HCE-2040TL	4	11	6	50
HCE-2045TL	4.5	13	6	50
HCE-2050TL	5	13	6	50
HCE-2055TL	5.5	13	6	50
HCE-2060TL	6	16	6	50
HCE-2070TL	7	16	8	60
HCE-2080TL	8	21	8	60
HCE-2090TL	9	25	10	75
HCE-2100TL	10	26	10	75
HCE-2110TL	11	28	12	75
HCE-2120TL	12	30	12	75
HCE-2160TL	16	33	16	75
HCE-2200TL	20	50	20	100

HCE-3TL

Super Micro Grain Carbide 3-Flute End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCE-3020TL	2	4	6	50
HCE-3025TL	2.5	5	6	50
HCE-3030TL	3	6	6	50
HCE-3035TL	3.5	8	6	50
HCE-3040TL	4	8	6	50
HCE-3045TL	4.5	10	6	50
HCE-3050TL	5	10	6	50
HCE-3055TL	5.5	13	6	50
HCE-3060TL	6	13	6	60
HCE-3065TL	6.5	16	8	60
HCE-3070TL	7	16	8	60
HCE-3075TL	7.5	16	8	60

Model No.	DIA	LOC	Shank Dia	OAL
HCE-3080TL	8	19	8	60
HCE-3085TL	8.5	19	10	75
HCE-3090TL	9	19	10	75
HCE-3095TL	9.5	19	10	75
HCE-3100TL	10	22	10	75
HCE-3110TL	11	22	12	75
HCE-3120TL	12	26	12	100
HCE-3130TL	13	26	14	100
HCE-3140TL	14	26	14	100
HCE-3150TL	15	26	16	100
HCE-3160TL	16	30	16	100
HCE-3200TL	20	32	20	100

HCE-4TL

Super Micro Grain Carbide 4-Flute End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCE-4010ATL	1	3	4	50
HCE-4010TL	1	3	6	50
HCE-4015ATL	1.5	4	4	50
HCE-4015TL	1.5	4	6	50
HCE-4020ATL	2	6	4	50
HCE-4020TL	2	6	6	50
HCE-4025ATL	2.5	8	4	50
HCE-4025TL	2.5	8	6	50
HCE-4030ATL	3	8	4	50
HCE-4030TL	3	8	6	50
HCE-4035ATL	3.5	8	4	50
HCE-4040ATL	4	11	4	50
HCE-4040TL	4	11	6	50
HCE-4045TL	4.5	13	6	50
HCE-4050TL	5	13	6	50

Model No.	DIA	LOC	Shank Dia	OAL
HCE-4055TL	5.5	13	6	50
HCE-4060TL	6	16	6	50
HCE-4065TL	6.5	16	8	60
HCE-4070TL	7	17	8	60
HCE-4080TL	8	21	8	60
HCE-4085TL	8.5	26	10	75
HCE-4090TL	9	26	10	75
HCE-4095TL	9.5	26	10	75
HCE-4100TL	10	30	10	75
HCE-4110TL	11	30	12	75
HCE-4120TL	12	32	12	75
HCE-4160TL	16	46	16	100
HCE-4200TL	20	46	20	100
HCE-4250TL	25	50	25	100

HCEB-2TL

Super Micro Grain Carbide 2-Flute Ball End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCEB-2003ATL	0.3 (0.15R)	0.6	4	50
HCEB-2004ATL	0.4 (0.2R)	0.7	4	50
HCEB-2005ATL	0.5 (0.25R)	0.8	4	50
HCEB-2006ATL	0.6 (0.3R)	0.9	4	50
HCEB-2007ATL	0.7 (0.35R)	1.4	4	50
HCEB-2008ATL	0.8 (0.4R)	1.6	4	50
HCEB-2009ATL	0.9 (0.45R)	1.8	4	50
HCEB-2010ATL	1 (0.5R)	2	4	50
HCEB-2010TL	1 (0.5R)	2	6	50
HCEB-2015ATL	1.5 (0.75R)	3	4	50
HCEB-2015TL	1.5 (0.75R)	3	6	50
HCEB-2020ATL	2 (1R)	4	4	50
HCEB-2020TL	2 (1R)	4	6	50
HCEB-2025ATL	2.5 (1.25R)	5	4	50
HCEB-2025TL	2.5 (1.25R)	5	6	50

Model No.	DIA	LOC	Shank Dia	OAL
HCEB-2030ATL	3 (1.5R)	6	4	50
HCEB-2030BTL	3 (1.5R)	6	3	50
HCEB-2030TL	3 (1.5R)	6	6	50
HCEB-2035ATL	3.5 (1.75R)	7	4	50
HCEB-2040ATL	4 (2R)	8	4	50
HCEB-2040TL	4 (2R)	8	6	50
HCEB-2050TL	5 (2.5R)	10	6	50
HCEB-2060TL	6 (3R)	12	6	50
HCEB-2070TL	7 (3.5R)	14	8	60
HCEB-2080TL	8 (4R)	16	8	60
HCEB-2090TL	9 (4.5R)	18	10	75
HCEB-2100TL	10 (5R)	20	10	75
HCEB-2120TL	12 (6R)	24	12	75
HCEB-2160TL	16 (8R)	32	16	100
HCEB-2200TL	20 (10R)	40	20	150

HCEB-4TL

Super Micro Grain Carbide 4-Flute Ball End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCEB-4010ATL	1 (0.5R)	2	4	50
HCEB-4020ATL	2 (1R)	4	4	50
HCEB-4025ATL	2.5 (1.25R)	5	4	50
HCEB-4030ATL	3 (1.5R)	6	4	50
HCEB-4040ATL	4 (2R)	8	4	50
HCEB-4045TL	4.5 (2.25R)	9	6	50
HCEB-4050TL	5 (2.5R)	10	6	50

Model No.	DIA	LOC	Shank Dia	OAL
HCEB-4060TL	6 (3R)	12	6	50
HCEB-4070TL	7 (3.5R)	14	8	60
HCEB-4080TL	8 (4R)	16	8	60
HCEB-4100TL	10 (5R)	20	10	75
HCEB-4120TL	12 (6R)	24	12	75
HCEB-4140TL	14 (7R)	28	14	100
HCEB-4160TL	16 (8R)	32	16	100

HCEBP-2TL Super Micro Grain Carbide 2-Flute Ball End Mill Long Shank



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCEBP-2010TL	1 (0.5R)	2	6	75
HCEBP-2015TL	1.5 (0.75R)	3	6	75
HCEBP-2020TL	2 (1R)	4	6	75
HCEBP-2030TL	3 (1.5R)	6	6	75
HCEBP-2040TL	4 (2R)	8	6	75
HCEBP-2050TL	5 (2.5R)	10	6	75
HCEBP-2060TL	6 (3R)	12	6	75
HCEBP-2060TL-100	6 (3R)	12	6	100
HCEBP-2080TL	8 (4R)	16	8	100
HCEBP-2100TL	10 (5R)	20	10	100
HCEBP-2100TL-150	10 (5R)	20	10	150
HCEBP-2120TL	12 (6R)	24	12	100
HCEBP-2120TL-150	12 (6R)	24	12	150

HCTNB-2TL Super Micro Grain Carbide 2-Flute Tapered Neck Ball End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Taper Angel	Neck Lenght	Shank Dia	OAL
HCTNB2010-15TL	1 (0.5R)	2	1° 30'	20	6	75
HCTNB2020-10TL	2 (1R)	4	1°	25	6	75
HCTNB2020-15TL	2 (1R)	3	1° 30'	60	6	100
HCTNB2020-20TL	2 (1R)	3	2°	57	6	100
HCTNB2030-10TL	3 (1.5R)	6	1°	30	6	75
HCTNB2030-15TL	3 (1.5R)	4	1° 30'	57	6	100
HCTNB2030-20TL	3 (1.5R)	4	2°	43	6	100
HCTNB2040-05TL	4 (2R)	5	30'	60	6	100
HCTNB2040-10TL	4 (2R)	5	1°	57	6	100
HCTNB2040-20TL	4 (2R)	5	2°	29	6	100
HCTNB2040-25TL	4 (2R)	7	2° 30'	45	8	150
HCTNB2060-30TL	6 (3R)	10	3°	38	10	150
HCTNB2080-30TL	8 (4R)	13	3°	38	12	150
HCTNB2100-40TL	10 (5R)	16	4°	42	16	150

HCEL-2TL

Super Micro Grain Carbide 2-Flute End Mill Long Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCEL-2010ATL	1	5	4	50
HCEL-2015ATL	1.5	6	4	50
HCEL-2020TL	2	8	6	50
HCEL-2025TL	2.5	10	6	50
HCEL-2030TL	3	12	6	60
HCEL-2035TL	3.5	14	6	60
HCEL-2040TL	4	16	6	60
HCEL-2045TL	4.5	16	6	60
HCEL-2050TL	5	20	6	60
HCEL-2055TL	5.5	20	6	60

Model No.	DIA	LOC	Shank Dia	OAL
HCEL-2060TL	6	25	6	75
HCEL-2070TL	7	26	8	75
HCEL-2080TL	8	26	8	75
HCEL-2080TL-100	8	36	8	100
HCEL-2100TL	10	40	10	100
HCEL-2110TL	11	40	12	100
HCEL-2120TL	12	46	12	100
HCEL-2140TL	14	46	14	100
HCEL-2150TL	15	46	16	100
HCEL-2160TL	16	46	16	100

HCEL-4TL

Super Micro Grain Carbide 4-Flute End Mill Long Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HCEL-4010ATL	1	5	4	50
HCEL-4015ATL	1.5	6	4	50
HCEL-4020ATL	2	9	4	50
HCEL-4025ATL	2.5	10	4	50
HCEL-4030TL	3	12	6	50
HCEL-4035TL	3.5	14	6	50
HCEL-4040TL	4	16	6	60
HCEL-4045TL	4.5	18	6	60

Model No.	DIA	LOC	Shank Dia	OAL
HCEL-4050TL	5	25	6	75
HCEL-4060TL	6	25	6	75
HCEL-4080TL	8	35	8	100
HCEL-4100TL	10	40	10	100
HCEL-4120TL	12	45	12	100
HCEL-4160TL	16	65	16	150
HCEL-4200TL	20	75	20	150
HCEL-4250TL	25	80	25	150

HCER-2TL

Super Micro Grain Carbide 2-Flute Corner Radius End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

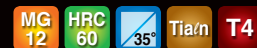
Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HCER2010-02ATL	1	0.2R	2	4	50
HCER2010-03ATL	1	0.3R	2	4	50
HCER2015-02ATL	1.5	0.2R	3	4	50
HCER2015-03ATL	1.5	0.3R	3	4	50
HCER2020-02ATL	2	0.2R	5	4	50
HCER2020-03ATL	2	0.3R	5	4	50
HCER2020-05ATL	2	0.5R	5	4	50
HCER2030-02ATL	3	0.2R	8	4	50
HCER2030-03ATL	3	0.3R	8	4	50
HCER2030-05ATL	3	0.5R	8	4	50
HCER2040-02ATL	4	0.2R	10	4	50
HCER2040-03ATL	4	0.3R	10	4	50
HCER2040-05ATL	4	0.5R	10	4	50
HCER2040-10ATL	4	1R	10	4	50
HCER2050-03TL	5	0.3R	13	6	50
HCER2050-05TL	5	0.5R	13	6	50
HCER2050-10TL	5	1R	13	6	50
HCER2050-02TL	6	0.2R	16	6	50

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HCER2060-03TL	6	0.3R	16	6	50
HCER2060-05TL	6	0.5R	16	6	50
HCER2060-10TL	6	1R	16	6	50
HCER2060-20TL	6	2R	16	6	50
HCER2080-03TL	8	0.3R	20	8	75
HCER2080-05TL	8	0.5R	20	8	75
HCER2080-10TL	8	1R	20	8	75
HCER2080-20TL	8	2R	20	8	75
HCER2100-05TL	10	0.5R	25	10	75
HCER2100-10TL	10	1R	25	10	75
HCER2100-15TL	10	1.5R	25	10	75
HCER2100-20TL	10	2R	25	10	75
HCER2100-30TL	10	3R	25	10	75
HCER2120-05TL	12	0.5R	30	12	75
HCER2120-10TL	12	1R	30	12	75
HCER2120-15TL	12	1.5R	30	12	75
HCER2120-20TL	12	2R	30	12	75
HCER2120-30TL	12	3R	30	12	75

HCER-4TL

Super Micro Grain Carbide 4-Flute Corner Radius End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HCER4030-03BTL	3	0.3R	8	3	50
HCER4030-05BTL	3	0.5R	8	3	50
HCER4030-10BTL	3	1R	8	3	50
HCER4040-02BTL	4	0.2R	10	4	50
HCER4040-03ATL	4	0.3R	10	4	50
HCER4040-05ATL	4	0.5R	10	4	50
HCER4040-10ATL	4	1R	10	4	50
HCER4060-02TL	6	0.2R	16	6	50
HCER4060-03TL	6	0.3R	16	6	50
HCER4060-05TL	6	0.5R	16	6	50
HCER4060-10TL	6	1R	16	6	50
HCER4060-20TL	6	2R	16	6	50
HCER4080-03TL	8	0.3R	20	8	75

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HCER4080-05TL	8	0.5R	20	8	75
HCER4080-10TL	8	1R	20	8	75
HCER4080-20TL	8	2R	20	8	75
HCER4100-05TL	10	0.5R	25	10	75
HCER4100-10TL	10	1R	25	10	75
HCER4100-15TL	10	1.5R	25	10	75
HCER4100-20TL	10	2R	25	10	75
HCER4100-30TL	10	3R	25	10	75
HCER4120-05TL	12	0.5R	30	12	75
HCER4120-10TL	12	1R	30	12	75
HCER4120-15TL	12	1.5R	30	12	75
HCER4120-20TL	12	2R	30	12	75
HCER4120-30TL	12	3R	30	12	75

HCED-2TL

Super Micro Grain Carbide 2-Flute
Rib Processing End Mill

MG
12

HRC
60

35°

Tia/n

T2



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Effective Length	Shank Dia	OAL
HCED2005-2ATL	0.5	0.75	2	4	50
HCED2005-4ATL	0.5	0.75	4	4	50
HCED2005-6ATL	0.5	0.75	6	4	50
HCED2010-6ATL	1	1.5	6	4	50
HCED2010-8ATL	1	1.5	8	4	50
HCED2010-10ATL	1	1.5	10	4	50
HCED2010-12ATL	1	1.5	12	4	50
HCED2015-6ATL	1.5	2.3	6	4	50
HCED2015-8ATL	1.5	2.3	8	4	50
HCED2015-10ATL	1.5	2.3	10	4	50
HCED2015-12ATL	1.5	2.3	12	4	50
HCED2015-16ATL	1.5	2.3	16	4	50
HCED2015-20ATL	1.5	2.3	20	4	50
HCED2020-6ATL	2	3	6	4	50
HCED2020-8ATL	2	3	8	4	50
HCED2020-10ATL	2	3	10	4	50
HCED2020-12ATL	2	3	12	4	50
HCED2020-16ATL	2	3	16	4	50
HCED2020-20ATL	2	3	20	4	50
HCED2025-8ATL	2.5	4	8	4	50
HCED2025-12ATL	2.5	4	12	4	50
HCED2025-16ATL	2.5	4	16	4	50
HCED2025-20ATL	2.5	4	20	4	50
HCED2030-10TL	3	4.5	10	6	50
HCED2030-12TL	3	4.5	12	6	50
HCED2030-16TL	3	4.5	16	6	60
HCED2030-20TL	3	4.5	20	6	60
HCED2030-25TL	3	4.5	25	6	75
HCED2040-12TL	4	6	12	6	50
HCED2040-16TL	4	6	16	6	60
HCED2040-20TL	4	6	20	6	75
HCED2040-25TL	4	6	25	6	75
HCED2040-30TL	4	6	30	6	75
HCED2040-35TL	4	6	35	6	75

HCEDB-2TL

Super Micro Grain Carbide 2-Flute
Rib Processing Ball End Mill



Material : **SuperMicro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Effective Length	Shank Dia	OAL
HCEDB2005-2ATL	0.5 (0.25R)	0.75	2	4	50
HCEDB2005-4ATL	0.5 (0.25R)	0.75	4	4	50
HCEDB2005-6ATL	0.5 (0.25R)	0.75	6	4	50
HCEDB2006-2ATL	0.6 (0.3R)	0.9	2	4	50
HCEDB2006-4ATL	0.6 (0.3R)	0.9	4	4	50
HCEDB2006-6ATL	0.6 (0.3R)	0.9	6	4	50
HCEDB2008-4ATL	0.8 (0.4R)	1.2	4	4	50
HCEDB2008-6ATL	0.8 (0.4R)	1.2	6	4	50
HCEDB2008-8ATL	0.8 (0.4R)	1.2	8	4	50
HCEDB2010-6ATL	1 (0.5R)	1.5	6	4	50
HCEDB2010-8ATL	1 (0.5R)	1.5	8	4	50
HCEDB2010-10ATL	1 (0.5R)	1.5	10	4	50
HCEDB2010-12ATL	1 (0.5R)	1.5	12	4	50
HCEDB2015-6ATL	1.5 (0.75R)	2.3	6	4	50
HCEDB2015-8ATL	1.5 (0.75R)	2.3	8	4	50
HCEDB2015-10ATL	1.5 (0.75R)	2.3	10	4	50
HCEDB2015-12ATL	1.5 (0.75R)	2.3	12	4	50
HCEDB2020-8ATL	2 (1R)	3	8	4	50
HCEDB2020-10ATL	2 (1R)	3	10	4	50
HCEDB2020-12ATL	2 (1R)	3	12	4	50
HCEDB2020-16ATL	2 (1R)	3	16	4	50
HCEDB2020-20ATL	2 (1R)	3	20	4	50
HCEDB2030-10TL	3 (1.5R)	4.5	10	6	50
HCEDB2030-12TL	3 (1.5R)	4.5	12	6	50
HCEDB2030-16TL	3 (1.5R)	4.5	16	6	60
HCEDB2030-20TL	3 (1.5R)	4.5	20	6	60
HCEDB2030-25TL	3 (1.5R)	4.5	25	6	75
HCEDB2040-12TL	4 (2R)	6	12	6	50
HCEDB2040-16TL	4 (2R)	6	16	6	60
HCEDB2040-20TL	4 (2R)	6	20	6	75
HCEDB2040-25TL	4 (2R)	6	25	6	75
HCEDB2040-30TL	4 (2R)	6	30	6	75

HCEM-6TL

Super Micro Grain Carbide 6-Flute End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	T
HCEM-6060TL	6	15	6	50	6
HCEM-6080TL	8	20	8	60	6
HCEM-6100TL	10	30	10	75	6

Model No.	DIA	LOC	Shank Dia	OAL	T
HCEM-6120TL	12	32	12	75	6
HCEM-6160TL	16	40	16	100	6
HCEM-8200TL	20	45	20	100	8

HCEML-6TL

Super Micro Grain Carbide 6-Flute End Mill Long Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	T
HCEML-6060TL	6	25	6	75	6
HCEML-6080TL	8	30	8	75	6
HCEML-6100TL	10	40	10	100	6

Model No.	DIA	LOC	Shank Dia	OAL	T
HCEML-6120TL	12	45	12	100	6
HCEML-6160TL	16	65	16	150	6
HCEML-8200TL	20	75	20	150	8

HCEMDR-6TL

Super Micro Grain Carbide 6-Flute Corner Radius Rib Processing End Mill Short Flute



Material : **Super Micro Grain-Co12+Tia/n (~65HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HCEMDR6060TL	6	0.2R	8	15	6	60
HCEMDR6080TL	8	0.2R	12	18	8	60
HCEMDR6100TL	10	0.3R	15	25	10	75

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HCEMDR6120TL	12	0.5R	18	30	12	75
HCEMDR6160TL	16	0.5R	25	35	16	100
HCEMDR6200TL	20	0.5R	30	40	20	100

HCEDRP-4TL

Super Micro Grain Carbide 4-Flute Corner Radius Rib Processing End Mill Short Flute Long Shank



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HCEDRP4060-03TL	6	0.3R	7	16	5.90	6	75
HCEDRP4060-05TL	6	0.5R	7	16	5.90	6	75
HCEDRP4060-10TL	6	1R	7	16	5.90	6	75
HCEDRP4080-03TL	8	0.3R	9	20	7.85	8	100
HCEDRP4080-05TL	8	0.5R	9	20	7.85	8	100
HCEDRP4080-10TL	8	1R	9	20	7.85	8	100
HCEDRP4100-05TL	10	0.5R	10	25	9.80	10	100

Model No.	DIA	R	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HCEDRP4100-10TL	10	1R	10	25	9.80	10	100
HCEDRP4100-15TL	10	1.5R	10	25	9.80	10	100
HCEDRP4100-20TL	10	2R	10	25	9.80	10	100
HCEDRP4120-05TL	12	0.5R	12	30	11.75	12	100
HCEDRP4120-10TL	12	1R	12	30	11.75	12	100
HCEDRP4120-15TL	12	1.5R	12	30	11.75	12	100
HCEDRP4120-20TL	12	2R	12	30	11.75	12	100

HCT-4TL

Super Micro Grain Carbide 4-Flute Tapered End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **30°**

Unit : mm

Model No.	Front End Dia	Flute Length	Leaging Angel	Rear End Dia	Shank Dia	OAL
HCT4005-405ATL	0.5	4	30'	0.57	4	50
HCT4005-410ATL	0.5	4	1°	0.64	4	50
HCT4005-415ATL	0.5	4	1° 30'	0.71	4	50
HCT4005-420ATL	0.5	4	2°	0.78	4	50
HCT4005-430ATL	0.5	4	3°	0.92	4	50
HCT4005-605ATL	0.5	6	30'	0.60	4	50
HCT4005-610ATL	0.5	6	1°	0.71	4	50
HCT4005-615ATL	0.5	6	1° 30'	0.81	4	50
HCT4005-620ATL	0.5	6	2°	0.92	4	50
HCT4005-630ATL	0.6	6	3°	1.13	4	50
HCT4006-405ATL	0.6	4	30'	0.67	4	50
HCT4006-410ATL	0.6	4	1°	0.74	4	50
HCT4006-415ATL	0.6	4	1° 30'	0.81	4	50
HCT4006-420ATL	0.6	4	2°	0.88	4	50
HCT4006-430ATL	0.6	4	3°	1.02	4	50
HCT4006-605ATL	0.6	6	30'	0.70	4	50
HCT4006-610ATL	0.6	6	1°	0.81	4	50
HCT4006-615ATL	0.6	6	1° 30'	0.91	4	50
HCT4006-620ATL	0.6	6	2°	1.02	4	50
HCT4006-630ATL	0.6	6	3°	1.23	4	50
HCT4007-405ATL	0.7	4	30'	0.77	4	50
HCT4007-410ATL	0.7	4	1°	0.84	4	50
HCT4007-415ATL	0.7	4	1° 30'	0.91	4	50
HCT4007-420ATL	0.7	4	2°	0.98	4	50
HCT4007-430ATL	0.7	4	3°	1.12	4	50
HCT4007-605ATL	0.7	6	30'	0.80	4	50
HCT4007-610ATL	0.7	6	1°	0.91	4	50
HCT4007-615ATL	0.7	6	1° 30'	1.01	4	50
HCT4007-620ATL	0.7	6	2°	1.12	4	50
HCT4007-630ATL	0.7	6	3°	1.33	4	50
HCT4008-605ATL	0.8	6	30'	0.90	4	50
HCT4008-610ATL	0.8	6	1°	1.01	4	50
HCT4008-615ATL	0.8	6	1° 30'	1.11	4	50
HCT4008-620ATL	0.8	6	2°	1.22	4	50
HCT4008-630ATL	0.8	6	3°	1.43	4	50
HCT4008-1005ATL	0.8	10	30'	0.97	4	50
HCT4008-1010ATL	0.8	10	1°	1.15	4	50
HCT4008-1015ATL	0.8	10	1° 30'	1.32	4	50
HCT4008-1020ATL	0.8	10	2°	1.50	4	50
HCT4008-1030ATL	0.8	10	3°	1.85	4	50
HCT4009-605ATL	0.9	6	30'	1.00	4	50
HCT4009-610ATL	0.9	6	1°	1.11	4	50
HCT4009-615ATL	0.9	6	1° 30'	1.21	4	50
HCT4009-620ATL	0.9	6	2°	1.32	4	50
HCT4009-630ATL	0.9	6	3°	1.53	4	50
HCT4009-1005ATL	0.9	10	30'	1.07	4	50
HCT4009-1010ATL	0.9	10	1°	1.25	4	50
HCT4009-1015ATL	0.9	10	1° 30'	1.42	4	50
HCT4009-1020ATL	0.9	10	2°	1.60	4	50
HCT4009-1030ATL	0.9	10	3°	1.95	4	50

HCETR-2TL

Super Micro Grain Carbide 2-Flute Corner Radius
Tapered Neck End Mill Short Flute

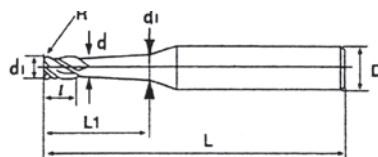
MG
12

HRC
60

35°

Tia/n

T2



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

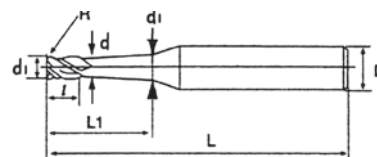
Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HCETR2010-02ATL	1	0.2R	1	3	0.97	4	50
HCETR2015-02ATL	1.5	0.2R	1.5	4.5	1.46	4	50
HCETR2015-03ATL	1.5	0.3R	1.5	4.5	1.46	4	50
HCETR2020-02ATL	2	0.2R	2	6	1.95	4	50
HCETR2020-03ATL	2	0.3R	2	6	1.95	4	50
HCETR2020-05ATL	2	0.5R	2	6	1.95	4	50
HCETR2030-02TL	3	0.2R	3	9	2.95	6	50
HCETR2030-03TL	3	0.3R	3	9	2.95	6	50
HCETR2030-05TL	3	0.5R	3	9	2.95	6	50
HCETR2030-10TL	3	1R	3	9	2.95	6	50
HCETR2040-02TL	4	0.2R	4	12	3.90	6	50
HCETR2040-03TL	4	0.3R	4	12	3.90	6	50
HCETR2040-05TL	4	0.5R	4	12	3.90	6	50
HCETR2040-10TL	4	1R	4	12	5.90	6	50
HCETR2060-02TL	6	0.2R	6	18	3.90	6	50
HCETR2060-03TL	6	0.3R	6	18	5.90	6	50
HCETR2060-05TL	6	0.5R	6	18	5.90	6	50
HCETR2060-10TL	6	1R	6	18	5.90	6	50
HCETR2060-20TL	6	2R	6	18	5.90	6	50
HCETR2080-05TL	8	0.5R	8	20	7.85	8	60
HCETR2080-10TL	8	1R	8	20	7.85	8	60
HCETR2080-20TL	8	2R	8	20	7.85	8	60
HCETR2100-05TL	10	0.5R	10	25	9.80	10	75
HCETR2100-10TL	10	1R	10	25	9.80	10	75
HCETR2100-15TL	10	1.5R	10	25	9.80	10	75
HCETR2100-20TL	10	2R	10	25	9.80	10	75
HCETR2100-30TL	10	3R	10	25	9.80	10	75

HCETR-4TL

Super Micro Grain Carbide 4-Flute Corner Radius
Tapered Neck End Mill Short Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HCETR4020-02ATL	2	0.2R	2	6	1.95	4	50
HCETR4020-03ATL	2	0.3R	2	6	1.95	4	50
HCETR4020-05ATL	2	0.5R	2	6	1.95	4	50
HCETR4030-02TL	3	0.2R	3	9	2.95	6	50
HCETR4030-03TL	3	0.3R	3	9	2.95	6	50
HCETR4030-05TL	3	0.5R	3	9	2.95	6	50
HCETR4030-10TL	3	1R	3	9	2.95	6	50
HCETR4040-02TL	4	0.2R	4	12	3.90	6	50
HCETR4040-03TL	4	0.3R	4	12	3.90	6	50
HCETR4040-05TL	4	0.5R	4	12	3.90	6	50
HCETR4040-10TL	4	1R	4	12	5.90	6	50
HCETR4060-02TL	6	0.2R	6	18	3.90	6	50
HCETR4060-03TL	6	0.3R	6	18	5.90	6	50
HCETR4060-05TL	6	0.5R	6	18	5.90	6	50
HCETR4060-10TL	6	1R	6	18	5.90	6	50
HCETR4060-20TL	6	2R	6	18	5.90	6	50
HCETR4080-05TL	8	0.5R	8	20	7.85	8	60
HCETR4080-10TL	8	1R	8	20	7.85	8	60
HCETR4080-20TL	8	2R	8	20	7.85	8	60
HCETR4100-05TL	10	0.5R	10	25	9.80	10	75
HCETR4100-10TL	10	1R	10	25	9.80	10	75
HCETR4100-15TL	10	1.5R	10	25	9.80	10	75
HCETR4100-20TL	10	2R	10	25	9.80	10	75
HCETR4100-30TL	10	3R	10	25	9.80	10	75

HHCE-2TL

Ultra Fine Micro Grain Carbide 2-Flute End Mill

Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HHCE-2002ATL	0.2	0.4	4	50
HHCE-2003ATL	0.3	0.6	4	50
HHCE-2004ATL	0.4	0.8	4	50
HHCE-2005ATL	0.5	1.1	4	50
HHCE-2006ATL	0.6	1.2	4	50
HHCE-2007ATL	0.7	1.4	4	50
HHCE-2008ATL	0.8	1.6	4	50
HHCE-2009ATL	0.9	1.8	4	50
HHCE-2010ATL	1	2.5	4	50
HHCE-2015ATL	1.5	3	4	50
HHCE-2020ATL	2	5	4	50
HHCE-2025ATL	2.5	6	4	50
HHCE-2030ATL	3	7.5	4	50
HHCE-2035ATL	3.5	8	4	50
HHCE-2040ATL	4	9	4	50
HHCE-2045TL	4.5	10	6	50
HHCE-2050TL	5	11	6	50
HHCE-2055TL	5.5	12	6	50

Model No.	DIA	LOC	Shank Dia	OAL
HHCE-2060TL	6	13	6	60
HHCE-2065TL	6.5	14	8	60
HHCE-2070TL	7	14	8	60
HHCE-2075TL	7.5	16	8	60
HHCE-2080TL	8	16	8	60
HHCE-2085TL	8.5	18	10	75
HHCE-2090TL	9	18	10	75
HHCE-2095TL	9.5	22	10	75
HHCE-2100TL	10	22	10	75
HHCE-2105TL	10.5	24	12	75
HHCE-2110TL	11	24	12	75
HHCE-2115TL	11.5	24	12	75
HHCE-2120TL	12	26	12	75
HHCE-2140TL	14	30	16	75
HHCE-2150TL	15	30	16	75
HHCE-2160TL	16	33	16	75
HHCE-2200TL	20	45	20	100

HHCE-4TL

Ultra Fine Micro Grain Carbide 4-Flute End Mill

Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HHCE-4010ATL	1	2.5	4	50
HHCE-4015ATL	1.5	3	4	50
HHCE-4020ATL	2	5	4	50
HHCE-4025ATL	2.5	6	4	50
HHCE-4030ATL	3	7.5	4	50
HHCE-4035ATL	3.5	8	4	50
HHCE-4040ATL	4	10	4	50
HHCE-4045TL	4.5	10	6	50
HHCE-4050TL	5	12	6	50
HHCE-4055TL	5.5	12.5	6	60

Model No.	DIA	LOC	Shank Dia	OAL
HHCE-4060TL	6	15	6	60
HHCE-4070TL	7	20	8	60
HHCE-4080TL	8	20	8	60
HHCE-4100TL	10	25	10	75
HHCE-4120TL	12	30	12	75
HHCE-4140TL	14	30	16	80
HHCE-4160TL	16	45	16	100
HHCE-4200TL	20	50	20	100
HHCE-4250TL	25	55	25	100

HHCEB-2TL

Ultra Fine Micro Grain Carbide 2-Flute Ball End Mill



Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	Model No.	DIA	LOC	Shank Dia	OAL
HHCEB-2003ATL	0.3 (0.15R)	0.6	4	50	HHCEB-2030ATL	3 (1.5R)	5	4	50
HHCEB-2004ATL	0.4 (0.2R)	0.8	4	50	HHCEB-2030TL	3 (1.5R)	5	6	50
HHCEB-2005ATL	0.5 (0.25R)	1.0	4	50	HHCEB-2040ATL	4 (2R)	6	4	50
HHCEB-2006ATL	0.6 (0.3R)	1.2	4	50	HHCEB-2040TL	4 (2R)	6	6	50
HHCEB-2007ATL	0.7 (0.35R)	1.4	4	50	HHCEB-2050TL	5 (2.5R)	8	6	60
HHCEB-2008ATL	0.8 (0.4R)	1.6	4	50	HHCEB-2060TL	6 (3R)	9	6	60
HHCEB-2010ATL	1 (0.5R)	1.5	4	50	HHCEB-2070TL	7 (3.5R)	14	8	60
HHCEB-2015ATL	1.5 (0.75R)	2.5	4	50	HHCEB-2080TL	8 (4R)	16	8	60
HHCEB-2020ATL	2 (1R)	3	4	50	HHCEB-2090TL	9 (4.5R)	18	10	75
HHCEB-2025ATL	2.5 (1.25R)	4	4	50	HHCEB-2100TL	10 (5R)	20	10	75
HHCEB-2030BTL	3 (1.5R)	5	3	50	HHCEB-2120TL	12 (6R)	24	12	75

HHCEBP-2TL

Ultra Fine Micro Grain Carbide 2-Flute Ball End Mill Long Shank



Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	Model No.	DIA	LOC	Shank Dia	OAL
HHCEBP-2020TL	2 (1R)	4	6	75	HHCEBP-2060TL	6 (3R)	9	6	100
HHCEBP-2030TL	3 (1.5R)	5	6	75	HHCEBP-2080TL	8 (4R)	16	8	100
HHCEBP-2040TL	4 (2R)	6	6	75	HHCEBP-2100TL	10 (5R)	20	10	100
HHCEBP-2050TL	5 (2.5R)	8	6	75	HHCEBP-2120TL	12 (6R)	24	12	100

HHCEB-4TL

Ultra Fine Micro Grain Carbide 4-Flute Ball End Mill

Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HHCEB-4010ATL	1 (0.5R)	2	4	50
HHCEB-4015ATL	1.5 (0.75R)	3	4	50
HHCEB-4020ATL	2 (1R)	4	4	50
HHCEB-4030BTL	3 (1.5R)	5.5	3	50
HHCEB-4030ATL	3 (1.5R)	5.5	4	50
HHCEB-4040ATL	4 (2R)	6	4	50

Model No.	DIA	LOC	Shank Dia	OAL
HHCEB-4040TL	4 (2R)	6	6	50
HHCEB-4050TL	5 (2.5R)	9	6	50
HHCEB-4060TL	6 (3R)	9	6	60
HHCEB-4080TL	8 (4R)	16	8	75
HHCEB-4100TL	10 (5R)	20	10	75
HHCEB-4120TL	12 (6R)	24	12	75

HHCER-4TL

Ultra Fine Micro Grain Carbide 4-Flute Corner Radius End Mill

Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HHCER-4030-02BTL	3	0.2R	8	3	50
HHCER-4030-05BTL	3	0.5R	8	3	50
HHCER-4030-10BTL	3	1R	8	3	50
HHCER-4040-02BTL	4	0.2R	11	4	50
HHCER-4040-05ATL	4	0.5R	11	4	50
HHCER-4040-10ATL	4	1R	11	4	50
HHCER-4060-03TL	6	0.3R	16	6	75
HHCER-4060-05TL	6	0.5R	16	6	75
HHCER-4060-10TL	6	1R	16	6	75

Model No.	DIA	Corner	LOC	Shank Dia	OAL
HHCER-4060-20TL	6	2R	16	6	75
HHCER-4080-05TL	8	0.5R	20	8	75
HHCER-4080-10TL	8	1R	20	8	75
HHCER-4080-20TL	8	2R	20	8	75
HHCER-4100-05TL	10	0.5R	25	10	75
HHCER-4100-10TL	10	1R	25	10	75
HHCER-4100-15TL	10	1.5R	25	10	75
HHCER-4100-20TL	10	2R	25	10	75
HHCER-4100-30TL	10	3R	25	10	75

HHCEL-2TL

Ultra Fine Micro Grain Carbide 2-Flute End Mill Long Flute



Material : **Ultra Fine Micro Grain-Co9+Tia'n (~65HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HHCEL-2010ATL	1	4	4	50
HHCEL-2015ATL	1.5	6	4	50
HHCEL-2020ATL	2	8	4	50
HHCEL-2030TL	3	11	6	60
HHCEL-2040TL	4	14	6	60
HHCEL-2045TL	4.5	16	6	60
HHCEL-2050TL	5	18	6	60
HHCEL-2055TL	5.5	20	6	60
HHCEL-2060TL	6	25	6	75
HHCEL-2065TL	6.5	25	8	75
HHCEL-2070TL	7	25	8	75
HHCEL-2075TL	7.5	25	8	75
HHCEL-2080TL	8	25	8	75

Model No.	DIA	LOC	Shank Dia	OAL
HHCEL-2080TL-100	8	35	8	100
HHCEL-2085TL	8.5	35	10	100
HHCEL-2090TL	9	35	10	100
HHCEL-2095TL	9.5	40	10	100
HHCEL-2100TL	10	40	10	100
HHCEL-2105TL	10.5	40	12	100
HHCEL-2110TL	11	40	12	100
HHCEL-2115TL	11.5	45	12	100
HHCEL-2120TL	12	45	12	100
HHCEL-2140TL	14	45	16	100
HHCEL-2150TL	15	45	16	100
HHCEL-2160TL	16	45	16	100

HHCEL-4TL

Ultra Fine Micro Grain Carbide 4-Flute End Mill Long Flute



Material : **Ultra Fine Micro Grain-Co9+Tia'n (~65HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HHCEL-4010ATL	1	4	4	50
HHCEL-4015ATL	1.5	6	4	50
HHCEL-4020ATL	2	8	4	50
HHCEL-4030TL	3	12	6	60
HHCEL-4040TL	4	16	6	60
HHCEL-4050TL	5	20	6	75
HHCEL-4060TL	6	25	6	75
HHCEL-4070TL	7	30	8	75

Model No.	DIA	LOC	Shank Dia	OAL
HHCEL-4080TL	8	30	8	75
HHCEL-4100TL	10	40	10	100
HHCEL-4120TL	12	45	12	100
HHCEL-4140TL	14	45	16	100
HHCEL-4160TL	16	65	16	150
HHCEL-4200TL	20	75	20	150
HHCEL-4250TL	25	80	25	150

HHCETR-2TLUltra Fine Micro Grain Carbide 2-Flute
Corner Radius Tapered Neck End Mill Short Flute**MG**
9**HRC**
65**35°****Tia/n****T2**Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HHCETR2010-02ATL	1	0.2R	1	3	4	50
HHCETR2015-02ATL	1.5	0.2R	1.5	4.5	4	50
HHCETR2015-03ATL	1.5	0.2R	1.5	4.5	4	50
HHCETR2020-02ATL	2	0.2R	2	6	4	50
HHCETR2020-03ATL	2	0.3R	2	6	4	50
HHCETR2020-05ATL	2	0.5R	2	6	4	50
HHCETR2030-02TL	3	0.2R	3	9	6	50
HHCETR2030-03TL	3	0.3R	3	9	6	50
HHCETR2030-05TL	3	0.5R	3	9	6	50
HHCETR2030-10TL	3	1R	3	9	6	50
HHCETR2040-02TL	4	0.2R	4	12	6	50
HHCETR2040-03TL	4	0.3R	4	12	6	50
HHCETR2040-05TL	4	0.5R	4	12	6	50
HHCETR2040-10TL	4	1R	4	12	6	50
HHCETR2050-03TL	5	0.3R	5	15	6	50
HHCETR2050-05TL	5	0.5R	5	15	6	50
HHCETR2050-10TL	5	1R	6	18	6	50
HHCETR2060-02TL	6	0.2R	6	18	6	50
HHCETR2060-03TL	6	0.3R	6	18	6	50
HHCETR2060-05TL	6	0.5R	6	18	6	50
HHCETR2060-10TL	6	1R	6	18	6	50
HHCETR2060-20TL	6	2R	6	18	6	50
HHCETR2080-03TL	8	0.3R	8	20	8	60
HHCETR2080-05TL	8	0.5R	8	20	8	60
HHCETR2080-10TL	8	1R	8	20	8	60
HHCETR2080-20TL	8	2R	8	20	8	60
HHCETR2100-05TL	10	0.5R	10	25	10	75
HHCETR2100-10TL	10	1R	10	25	10	75
HHCETR2100-15TL	10	1.5R	10	25	10	75
HHCETR2100-20TL	10	2R	10	25	10	75
HHCETR2100-30TL	10	3R	10	25	10	75
HHCETR2120-05TL	12	0.5R	12	30	12	75
HHCETR2120-10TL	12	1R	12	30	12	75
HHCETR2120-15TL	12	1.5R	12	30	12	75
HHCETR2120-20TL	12	2R	12	30	12	75
HHCETR2120-30TL	12	3R	12	30	12	75

HHCETR-4TL

Ultra Fine Micro Grain Carbide 4-Flute
Corner Radius Tapered Neck End Mill Short Flute



Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**

Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HHCE4020-02ATL	2	0.2R	2	6	4	50
HHCE4020-03ATL	2	0.3R	2	6	4	50
HHCE4020-05ATL	2	0.5R	2	6	4	50
HHCE4030-02TL	3	0.2R	3	9	6	50
HHCE4030-03TL	3	0.3R	3	9	6	50
HHCE4030-05TL	3	0.5R	3	9	6	50
HHCE4030-10TL	3	1R	3	9	6	50
HHCE4040-02TL	4	0.2R	4	12	6	50
HHCE4040-03TL	4	0.3R	4	12	6	50
HHCE4040-05TL	4	0.5R	4	12	6	50
HHCE4040-10TL	4	1R	4	12	6	50
HHCE4050-03TL	5	0.3R	5	15	6	50
HHCE4050-05TL	5	0.5R	5	15	6	50
HHCE4050-10TL	5	1R	6	18	6	50
HHCE4060-02TL	6	0.2R	6	18	6	50
HHCE4060-03TL	6	0.3R	6	18	6	50
HHCE4060-05TL	6	0.5R	6	18	6	50
HHCE4060-10TL	6	1R	6	18	6	50
HHCE4060-20TL	6	2R	6	18	6	50
HHCE4080-03TL	8	0.3R	8	20	8	60
HHCE4080-05TL	8	0.5R	8	20	8	60
HHCE4080-10TL	8	1R	8	20	8	60
HHCE4080-20TL	8	2R	8	20	8	60
HHCE4100-05TL	10	0.5R	10	25	10	75
HHCE4100-10TL	10	1R	10	25	10	75
HHCE4100-15TL	10	1.5R	10	25	10	75
HHCE4100-20TL	10	2R	10	25	10	75
HHCE4100-30TL	10	3R	10	25	10	75
HHCE4120-05TL	12	0.5R	12	30	12	75
HHCE4120-10TL	12	1R	12	30	12	75
HHCE4120-15TL	12	1.5R	12	30	12	75
HHCE4120-20TL	12	2R	12	30	12	75
HHCE4120-30TL	12	3R	12	30	12	75

HHCEDRP-2TLUltra Fine Micro Grain Carbide 2-Flute
Corner Radius Rib Processing Short Flute End Mill**MG**
9**HRC**
65**35°****Tia/n****T2**Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HHCEDRP2060-0218TL	6	0.2R	9	18	6	75
HHCEDRP2060-0318TL	6	0.3R	9	18	6	75
HHCEDRP2060-0518TL	6	0.5R	9	18	6	75
HHCEDRP2060-1018TL	6	1R	9	18	6	75
HHCEDRP2060-2018TL	6	2R	9	18	6	75
HHCEDRP2080-0320TL	8	0.3R	12	20	8	100
HHCEDRP2080-0520TL	8	0.5R	12	20	8	100
HHCEDRP2080-1020TL	8	1R	12	20	8	100
HHCEDRP2080-2020TL	8	2R	12	20	8	100
HHCEDRP2100-0525TL	10	0.5R	15	25	10	100
HHCEDRP2100-1025TL	10	1R	15	25	10	100
HHCEDRP2100-1525TL	10	1.5R	15	25	10	100
HHCEDRP2100-2025TL	10	2R	15	25	10	100
HHCEDRP2100-3025TL	10	3R	15	25	10	100
HHCEDRP2120-0530TL	12	0.5R	18	30	12	100
HHCEDRP2120-0530TL	12	1R	18	30	12	100
HHCEDRP2120-0530TL	12	1.5R	18	30	12	100
HHCEDRP2120-0530TL	12	2R	18	30	12	100
HHCEDRP2120-0530TL	12	3R	18	30	12	100

HHCEDRP-4TLUltra Fine Micro Grain Carbide 4-Flute
Corner Radius Rib Processing Short Flute End Mill**MG**
9**HRC**
65**35°****Tia/n****T4**Material : **Ultra Fine Micro Grain-Co9+Tia/n (~65HRC)**Helix Angle : **35°**

Unit : mm

Model No.	DIA	R	LOC	Effective Length	Shank Dia	OAL
HHCEDRP4060-0218TL	6	0.2R	9	18	6	75
HHCEDRP4060-0318TL	6	0.3R	9	18	6	75
HHCEDRP4060-0518TL	6	0.5R	9	18	6	75
HHCEDRP4060-1018TL	6	1R	9	18	6	75
HHCEDRP4060-2018TL	6	2R	9	18	6	75
HHCEDRP4080-0320TL	8	0.3R	12	20	8	100
HHCEDRP4080-0520TL	8	0.5R	12	20	8	100
HHCEDRP4080-1020TL	8	1R	12	20	8	100
HHCEDRP4080-2020TL	8	2R	12	20	8	100
HHCEDRP4100-0525TL	10	0.5R	15	25	10	100
HHCEDRP4100-1025TL	10	1R	15	25	10	100
HHCEDRP4100-1525TL	10	1.5R	15	25	10	100
HHCEDRP4100-2025TL	10	2R	15	25	10	100
HHCEDRP4100-3025TL	10	3R	15	25	10	100
HHCEDRP4120-0530TL	12	0.5R	18	30	12	100
HHCEDRP4120-0530TL	12	1R	18	30	12	100
HHCEDRP4120-0530TL	12	1.5R	18	30	12	100
HHCEDRP4120-0530TL	12	2R	18	30	12	100
HHCEDRP4120-0530TL	12	3R	18	30	12	100

HS-2TC

HSS 2-Flute End Mill



Material : HSS-Co8+TiCN (~30HRC)

Helix Angle : 30°

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HS-2010TC	1	3	6	50
HS-2015TC	1.5	4.5	6	50
HS-2020TC	2	7	6	50
HS-2025TC	2.5	7	6	50
HS-2030TC	3	9	6	50
HS-2035TC	3.5	12	8	60
HS-2040TC	4	12	8	60
HS-2045TC	4.5	15	8	60
HS-2050TC	5	15	8	60
HS-2055TC	5.5	15	8	60
HS-2060TC	6	15	8	60
HS-2060ATC	6	15	6	60
HS-2065TC	6.5	20	10	65
HS-2070TC	7	20	10	65
HS-2075TC	7.5	20	10	65
HS-2080TC	8	20	10	65
HS-2080ATC	8	20	8	65
HS-2085TC	8.5	25	10	75
HS-2090TC	9	25	10	75
HS-2095TC	9.5	25	10	75
HS-2100TC	10	25	10	75
HS-2110TC	11	30	12	80
HS-2120TC	12	30	12	80
HS-2130TC	13	35	12	90
HS-2140TC	14	35	16	90
HS-2150TC	15	40	16	95

Model No.	DIA	LOC	Shank Dia	OAL
HS-2160TC	16	40	16	95
HS-2170TC	17	40	20	105
HS-2180TC	18	40	20	105
HS-2190TC	19	45	20	110
HS-2200TC	20	45	20	110
HS-2210TC	21	45	20	110
HS-2220TC	22	45	20	110
HS-2230TC	23	50	25	120
HS-2240TC	24	50	25	120
HS-2250TC	25	50	25	120
HS-2260TC	26	50	25	120
HS-2270TC	27	55	25	125
HS-2280TC	28	55	25	125
HS-2290TC	29	55	25	125
HS-2300TC	30	55	25	125
HS-2310TC	31	60	32	145
HS-2320TC	32	60	32	145
HS-2330TC	33	60	32	145
HS-2340TC	34	60	32	145
HS-2350TC	35	60	32	145
HS-2360TC	36	60	32	145
HS-2370TC	37	65	32	150
HS-2380TC	38	65	32	150
HS-2390TC	39	65	32	150
HS-2400TC	40	65	32	150
HS-2420TC	42	65	32	150

HS-4TC

HSS 4-Flute End Mill

Material : **HSS-Co8+TiCN (~30HRC)**Helix Angle : **30°**

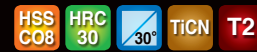
Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HS-4020TC	2	7	6	50
HS-4025TC	2.5	7	6	50
HS-4030TC	3	9	6	50
HS-4035TC	3.5	12	8	60
HS-4040TC	4	12	8	60
HS-4045TC	4.5	15	8	60
HS-4050TC	5	15	8	60
HS-4055TC	5.5	15	8	60
HS-4060TC	6	15	8	60
HS-4065TC	6.5	20	10	65
HS-4070TC	7	20	10	65
HS-4075TC	7.5	20	10	65
HS-4080TC	8	20	10	65
HS-4085TC	8.5	25	10	75
HS-4090TC	9	25	10	75
HS-4095TC	9.5	25	10	75
HS-4100TC	10	25	10	75
HS-4110TC	11	30	12	80
HS-4120TC	12	30	12	80
HS-4130TC	13	35	12	90
HS-4140TC	14	35	16	90
HS-4150TC	15	40	16	95
HS-4160TC	16	40	16	95
HS-4170TC	17	40	20	105

Model No.	DIA	LOC	Shank Dia	OAL
HS-4180TC	18	40	20	105
HS-4190TC	19	45	20	110
HS-4200TC	20	45	20	110
HS-4210TC	21	45	20	110
HS-4220TC	22	45	20	110
HS-4230TC	23	50	25	120
HS-4240TC	24	50	25	120
HS-4250TC	25	50	25	120
HS-4260TC	26	50	25	120
HS-4270TC	27	55	25	125
HS-4280TC	28	55	25	125
HS-4290TC	29	55	25	125
HS-4300TC	30	55	25	125
HS-4310TC	31	60	32	145
HS-4320TC	32	60	32	145
HS-4330TC	33	60	32	145
HS-4340TC	34	60	32	145
HS-4350TC	35	60	32	145
HS-4360TC	36	60	32	145
HS-4370TC	37	65	32	150
HS-4380TC	38	65	32	150
HS-4390TC	39	65	32	150
HS-4400TC	40	65	32	150
HS-4420TC	42	65	32	150

HSL-2TC

HSS 2-Flute End Mill Long Flute



Material : HSS-Co8+TiCN (~30HRC)

Helix Angle : 30°

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HSL-2020TC	2	10	6	60
HSL-2030TC	3	15	6	60
HSL-2040TC	4	20	8	60
HSL-2050TC	5	25	8	65
HSL-2060TC	6	25	8	65
HSL-2060ATC	6	25	6	65
HSL-2070TC	7	35	10	80
HSL-2080TC	8	35	10	80
HSL-2090TC	9	45	10	95
HSL-2100TC	10	45	10	95
HSL-2110TC	11	55	12	105
HSL-2120TC	12	55	12	105
HSL-2130TC	13	55	12	110
HSL-2140TC	14	55	16	110
HSL-2150TC	15	65	16	120
HSL-2160TC	16	65	16	120
HSL-2170TC	17	65	20	130
HSL-2180TC	18	65	20	130
HSL-2190TC	19	75	20	140
HSL-2200TC	20	75	20	140

Model No.	DIA	LOC	Shank Dia	OAL
HSL-2210TC	21	75	20	140
HSL-2220TC	22	75	20	140
HSL-2230TC	23	90	25	160
HSL-2240TC	24	90	25	160
HSL-2250TC	25	90	25	160
HSL-2260TC	26	90	25	160
HSL-2270TC	27	90	25	160
HSL-2280TC	28	90	25	160
HSL-2290TC	29	90	25	160
HSL-2300TC	30	90	25	160
HSL-2310TC	31	105	32	190
HSL-2320TC	32	105	32	190
HSL-2330TC	33	105	32	190
HSL-2340TC	34	105	32	190
HSL-2350TC	35	105	32	190
HSL-2360TC	36	105	32	190
HSL-2370TC	37	125	32	210
HSL-2380TC	38	125	32	210
HSL-2390TC	39	125	32	210
HSL-2400TC	40	125	32	210

HSL-4TC

HSS 4-Flute End Mill Long Flute



Material : HSS-Co8+TiCN (~30HRC)

Helix Angle : 30°

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HSL-4030TC	3	15	6	60
HSL-4040TC	4	20	8	60
HSL-4050TC	5	25	8	65
HSL-4060TC	6	25	8	65
HSL-4070TC	7	35	10	80
HSL-4080TC	8	35	10	80
HSL-4090TC	9	45	10	95
HSL-4100TC	10	45	10	95
HSL-4110TC	11	55	12	105
HSL-4120TC	12	55	12	105
HSL-4130TC	13	55	12	110
HSL-4140TC	14	55	16	110
HSL-4150TC	15	65	16	120
HSL-4160TC	16	65	16	120
HSL-4170TC	17	65	20	130
HSL-4180TC	18	65	20	130
HSL-4190TC	19	75	20	140
HSL-4200TC	20	75	20	140
HSL-4210TC	21	75	20	140

Model No.	DIA	LOC	Shank Dia	OAL
HSL-4220TC	22	75	20	140
HSL-4230TC	23	90	25	160
HSL-4240TC	24	90	25	160
HSL-4250TC	25	90	25	160
HSL-4260TC	26	90	25	160
HSL-4270TC	27	90	25	160
HSL-4280TC	28	90	25	160
HSL-4290TC	29	90	25	160
HSL-4300TC	30	90	25	160
HSL-4310TC	31	105	32	190
HSL-4320TC	32	105	32	190
HSL-4330TC	33	105	32	190
HSL-4340TC	34	105	32	190
HSL-4350TC	35	105	32	190
HSL-4360TC	36	105	32	190
HSL-4370TC	37	125	32	210
HSL-4380TC	38	125	32	210
HSL-4390TC	39	125	32	210
HSL-4400TC	40	125	32	210

HSR-TCHSS Roughing End Mill
Fine Pitch, Round ProfileMaterial : **HSS-Co8+TiCN (~30HRC)**Helix Angle : **30°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	T
HSR-4060TC	6	15	8	60	4
HSR-4070TC	7	20	10	65	4
HSR-4080TC	8	20	10	65	4
HSR-4090TC	9	25	10	75	4
HSR-4100TC	10	25	10	75	4
HSR-4110TC	11	30	12	80	4
HSR-4120TC	12	30	12	80	4
HSR-4130TC	13	35	12	90	4
HSR-4140TC	14	35	16	90	4
HSR-4150TC	15	40	16	95	4

Model No.	DIA	LOC	Shank Dia	OAL	T
HSR-4160TC	16	40	16	95	4
HSR-4180TC	18	40	20	105	4
HSR-4200TC	20	45	20	110	4
HSR-5220TC	22	45	20	110	5
HSR-5250TC	25	50	25	120	5
HSR-5280TC	28	55	25	120	5
HSR-5300TC	30	55	25	125	5
HSR-6320TC	32	60	32	145	6
HSR-6350TC	35	60	32	145	6
HSR-6400TC	40	65	32	150	6

HSRL-TCHSS Roughing End Mill Long Flute
Fine Pitch, Round ProfileMaterial : **HSS-Co8+TiCN (~30HRC)**Helix Angle : **30°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL	T
HSRL-4060TC	6	24	8	68	4
HSRL-4080TC	8	35	10	80	4
HSRL-4100TC	10	45	10	95	4
HSRL-4120TC	12	55	12	105	4
HSRL-4140TC	14	55	16	110	4
HSRL-4160TC	16	65	16	120	4
HSRL-4180TC	18	65	20	125	4
HSRL-4200TC	20	75	20	140	4

Model No.	DIA	LOC	Shank Dia	OAL	T
HSRL-5220TC	22	75	20	140	5
HSRL-5250TC	25	90	25	160	5
HSRL-5280TC	28	90	25	160	5
HSRL-5300TC	30	90	25	160	5
HSRL-6320TC	32	105	32	190	6
HSRL-6350TC	35	105	32	190	6
HSRL-6400TC	40	125	32	210	6

HSB-2TC

HSS 2-Flute Ball End Mill


Material : **HSS-Co8+TiCN (~30HRC)**

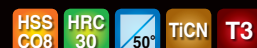
Helix Angle : **30°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HSB-2020TC	2 (1R)	4	6	55
HSB-2030TC	3 (1.5R)	6	6	70
HSB-2040TC	4 (2R)	8	6	70
HSB-2050TC	5 (2.5R)	10	6	80
HSB-2060TC	6 (3R)	12	6	90
HSB-2070TC	7 (3.5R)	14	6	90
HSB-2080TC	8 (4R)	16	8	100
HSB-2090TC	9 (4.5R)	18	8	100
HSB-2100TC	10 (5R)	20	10	100
HSB-2110TC	11 (5.5R)	22	10	100
HSB-2120TC	12 (6R)	24	12	110
HSB-2130TC	13 (6.5R)	26	12	110
HSB-2140TC	14 (7R)	28	12	110
HSB-2150TC	15 (7.5R)	30	16	110
HSB-2160TC	16 (8R)	32	16	140
HSB-2180TC	18 (9R)	36	16	150
HSB-2200TC	20 (10R)	40	20	160
HSB-2250TC	25 (12.5R)	50	25	180

HS-3TC

HSS 3-Flute High Helix End Mill


Material : **HSS-Co8+TiCN (~30HRC)**

Helix Angle : **50°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
HS-3060TC	6	15	8	60
HS-3070TC	7	20	10	65
HS-3080TC	8	20	10	65
HS-3090TC	9	25	10	75
HS-3100TC	10	25	10	75
HS-3110TC	11	30	12	80
HS-3120TC	12	30	12	80
HS-3130TC	13	35	12	90
HS-3140TC	14	35	16	90
HS-3150TC	15	40	16	95
HS-3160TC	16	40	16	95
HS-3160TC	17	40	20	105
HS-3180TC	18	40	20	105
HS-3190TC	19	45	20	110
HS-3200TC	20	50	20	110
HS-3250TC	25	50	25	120
HS-3300TC	30	55	25	125



NEW PRODUCT



Super High Hardness Cutting "SH" & Super High Speed Cutting

HHCEB-2SH

Ultra Fine Micro Grain Carbide 2-Flute
Ball End Mill



Material : Ultra Fine Micro Grain-Co9+SH (~65HRC)

Helix Angle : 5°

Unit : mm

Model No.	DIA	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HHCEB-2010SH	1 (0.5R)	1	2.5	0.96	6	50
HHCEB-2015SH	1.5 (0.75R)	1.5	4	1.46	6	50
HHCEB-2020SH	2 (1R)	2	6	1.96	6	50
HHCEB-2025SH	2.5 (1.25R)	2.5	7	2.46	6	50
HHCEB-2030SH	3 (1.5R)	3	8	2.96	6	50
HHCEB-2040ASH	4 (2R)	4	8	3.96	4	50
HHCEB-2040SH	4 (2R)	4	8	3.96	6	50
HHCEB-2050SH	5 (2.5R)	5	12	4.96	6	50
HHCEB-2060SH	3 (3R)	3	13	5.96	6	50
HHCEB-2080SH	8 (4R)	8	16	7.9	8	60
HHCEB-2100SH	10 (5R)	10	20	9.9	10	75
HHCEB-2120SH	12 (6R)	12	24	11.9	12	75

Super High Hardness Cutting "SH" & Super High Speed Cutting

HHCER-4SH

Ultra Fine Micro Grain Carbide 4-Flute
Corner Radius End Mill



Material : Ultra Fine Micro Grain-Co9+SH (~65HRC)

Helix Angle : 0°

Unit : mm

Model No.	DIA x (Corner)	LOC	Effective Length	Neck Dia	Shank Dia	OAL
HHCER4020-03SH	2 x (0.3R)	0.8	5	1.8	6	60
HHCER4020-05SH	2 x (0.5R)	0.8	5	1.8	6	60
HHCER4030-07SH	3 x (0.75R)	1.2	7.5	2.7	6	60
HHCER4040-10SH	3 x (1R)	1.2	7.5	2.7	6	60
HHCER4040-05SH	4 x (0.5R)	1.6	10	3.6	6	75
HHCER4040-05SH	4 x (1R)	1.6	10	3.6	6	75
HHCER4050-10ASH	5 x (1R)	2	12	4.5	6	75
HHCER4050-12SH	5 x (1.2R)	2	12	4.5	6	75
HHCER4060-10SH	6 x (1R)	2.5	13	5.4	6	100
HHCER4060-15SH	6 x (1.5R)	2.5	13	5.4	6	100
HHCER4080-10SH	8 x (1R)	3.5	16	7.2	6	100
HHCER4080-20SH	8 x (2R)	3.5	16	7.2	8	100
HHCER4090-20SH	9 x (2R)	4	-	-	8	100
HHCER4100-10SH	10 x (1R)	4	20	9	10	100
HHCER4100-20SH	10 x (2R)	4	20	9	10	100
HHCER4120-10SH	12 x (1R)	5	24	11	12	100
HHCER4120-20SH	12 x (2R)	5	24	11	12	100
HHCER4120-30SH	12 x (3R)	5	24	11	12	100

UHCEM-4TL

Super Micro Grain Carbide 4-Flute Heavy Duty End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UHCEM-4030TL	3	8	6	60
UHCEM-4040TL	4	11	6	60
UHCEM-4050TL	5	13	6	60
UHCEM-4060TL	6	13	6	60
UHCEM-4080TL	8	19	8	60

Model No.	DIA	LOC	Shank Dia	OAL
UHCEM-4100TL	10	22	10	75
UHCEM-4120TL	12	26	12	100
UHCEM-4160TL	16	35	16	100
UHCEM-4200TL	20	40	20	100

UHCEML-4TL

Super Micro Grain Carbide 4-Flute
High Helix Heavy Duty End Mill Long Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **45°**

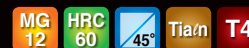
Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UHCEML-4030TL	3	12	6	60
UHCEML-4040TL	4	16	6	60
UHCEML-4050TL	5	18	6	60
UHCEML-4060TL	6	20	6	60
UHCEML-4080TL	8	25	8	75

Model No.	DIA	LOC	Shank Dia	OAL
UHCEML-4100TL	10	30	10	80
UHCEML-4120TL	12	35	12	100
UHCEML-4160TL	16	45	16	110
UHCEML-4200TL	20	50	20	125

UHCEMLL-4TL

Super Micro Grain Carbide 4-Flute
High Helix Heavy Duty End Mill Extra Long Flute



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**

Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UHCEMLL-4030TL	3	15	6	60
UHCEMLL-4040TL	4	20	6	60
UHCEMLL-4050TL	5	22	6	60
UHCEMLL-4060TL	6	25	6	75
UHCEMLL-4080TL	8	30	8	75

Model No.	DIA	LOC	Shank Dia	OAL
UHCEMLL-4100TL	10	35	10	80
UHCEMLL-4120TL	12	40	12	100
UHCEMLL-4160TL	16	55	16	110
UHCEMLL-4200TL	20	60	20	125

UHCERM-4TL

Super Micro Grain Carbide 4-Flute Corner Radius
High Helix Heavy Duty End Mill



Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA x (Corner)	LOC	Shank Dia	OAL
UHCERM4030-02TL	3 x (0.2R)	8	6	60
UHCERM4020-05TL	3 x (0.5R)	8	6	60
UHCERM4040-02TL	4 x (0.2R)	11	6	60
UHCERM4040-05TL	4 x (0.5R)	11	6	60
UHCERM4040-10TL	4 x (1R)	11	6	60
UHCERM4050-02TL	5 x (0.2R)	13	6	60
UHCERM4050-05TL	5 x (0.5R)	13	6	60
UHCERM4050-10TL	5 x (1R)	13	6	60
UHCERM4060-03TL	6 x (0.3R)	13	6	60
UHCERM4060-05TL	6 x (0.5R)	13	6	60
UHCERM4060-10TL	6 x (1R)	13	6	60
UHCERM4080-03TL	8 x (0.3R)	19	8	60
UHCERM4080-05TL	8 x (0.5R)	19	8	60
UHCERM4080-10TL	8 x (1R)	19	8	60
UHCERM4080-15TL	8 x (1.5R)	19	8	60
UHCERM4080-20TL	8 x (2R)	19	8	60
UHCERM4100-03TL	10 x (0.3R)	22	10	75
UHCERM4100-05TL	10 x (0.5R)	22	10	75

Model No.	DIA x (Corner)	LOC	Shank Dia	OAL
UHCERM4100-10TL	10 x (1R)	22	10	75
UHCERM4100-15TL	10 x (1.5R)	22	10	75
UHCERM4100-20TL	10 x (2R)	22	10	75
UHCERM4100-30TL	10 x (3R)	22	10	75
UHCERM4120-05TL	12 x (0.5R)	26	12	100
UHCERM4120-10TL	12 x (1R)	26	12	100
UHCERM4120-15TL	12 x (1.5R)	26	12	100
UHCERM4120-20TL	12 x (2R)	26	12	100
UHCERM4120-30TL	12 x (3R)	26	12	100
UHCERM4160-10TL	16 x (1R)	32	16	100
UHCERM4160-15TL	16 x (1.5R)	35	16	100
UHCERM4160-20TL	16 x (2R)	35	16	100
UHCERM4160-30TL	16 x (3R)	35	16	100
UHCERM4200-10TL	20 x (1R)	40	20	100
UHCERM4200-15TL	20 x (1.5R)	40	20	100
UHCERM4200-20TL	20 x (2R)	40	20	100
UHCERM4200-30TL	20 x (3R)	40	20	100

UPHCEM-4TLSuper Micro Grain Carbide 4-Flute
High Helix Plus Heavy Duty End MillMaterial : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEM-4060TL	6	13	6	60
UPHCEM-4080TL	8	19	8	60
UPHCEM-4100TL	10	22	10	75
UPHCEM-4120TL	12	26	12	100

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEM-4160TL	16	35	16	100
UPHCEM-4200TL	20	40	20	100
UPHCEM-4250TL	25	50	25	110

UPHCEML-4TLSuper Micro Grain Carbide 4-Flute
High Helix Plus Heavy Duty End Mill Long FluteMaterial : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEML-4060TL	6	20	6	60
UPHCEML-4080TL	8	25	8	75
UPHCEML-4100TL	10	30	10	80
UPHCEML-4120TL	12	35	12	100

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEML-4160TL	16	45	16	110
UPHCEML-4200TL	20	50	20	125
UPHCEML-4250TL	25	60	25	125

UPHCEMLL-4TLSuper Micro Grain Carbide 4-Flute High Helix
Plus Heavy Duty End Mill Extra Long FluteMaterial : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEMLL-4060TL	6	25	6	75
UPHCEMLL-4080TL	8	30	8	75
UPHCEMLL-4100TL	10	35	10	80
UPHCEMLL-4120TL	12	40	12	100

Model No.	DIA	LOC	Shank Dia	OAL
UPHCEMLL-4160TL	16	55	16	110
UPHCEMLL-4200TL	20	60	20	125
UPHCEMLL-4250TL	25	80	25	160

UPHCERM-4TL

Super Micro Grain Carbide 4-Flute Corner Radius
High Helix Plus Heavy Duty End Mill



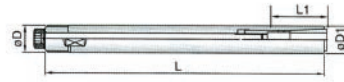
Material : **Super Micro Grain-Co12+Tia/n (~60HRC)**
Helix Angle : **45°**

Unit : mm

Model No.	DIA x (Corner)	LOC	Shank Dia	OAL
UPHCERM4060-03TL	6 x (0.3R)	13	6	60
UPHCERM4060-05TL	6 x (0.5R)	13	6	60
UPHCERM4060-10TL	6 x (1R)	13	6	60
UPHCERM4080-03TL	8 x (0.3R)	19	8	60
UPHCERM4080-05TL	8 x (0.5R)	19	8	60
UPHCERM4080-10TL	8 x (1R)	19	8	60
UPHCERM4080-15TL	8 x (1.5R)	19	8	60
UPHCERM4080-20TL	8 x (2R)	19	8	60
UPHCERM4100-03TL	10 x (0.3R)	22	10	75
UPHCERM4100-05TL	10 x (0.5R)	22	10	75
UPHCERM4100-10TL	10 x (1R)	22	10	75
UPHCERM4100-15TL	10 x (1.5R)	22	10	75
UPHCERM4100-20TL	10 x (2R)	22	10	75
UPHCERM4100-30TL	10 x (3R)	22	10	75

Model No.	DIA x (Corner)	LOC	Shank Dia	OAL
UPHCERM4100-05TL	12 x (0.5R)	26	12	100
UPHCERM4120-10TL	12 x (1R)	26	12	100
UPHCERM4120-15TL	12 x (1.5R)	26	12	100
UPHCERM4120-20TL	12 x (2R)	26	12	100
UPHCERM4120-30TL	12 x (3R)	26	12	100
UPHCERM4160-30TL	16 x (1R)	35	16	100
UPHCERM4160-30TL	16 x (1.5R)	35	16	100
UPHCERM4160-30TL	16 x (2R)	35	16	100
UPHCERM4160-30TL	16 x (3R)	35	16	100
UPHCERM4200-10TL	20 x (1R)	40	20	100
UPHCERM4200-15TL	20 x (1.5R)	40	20	100
UPHCERM4200-20TL	20 x (2R)	40	20	100
UPHCERM4200-30TL	20 x (3R)	40	20	100

Solid Carbide Draw-Out Extension Holder



Unit : mm

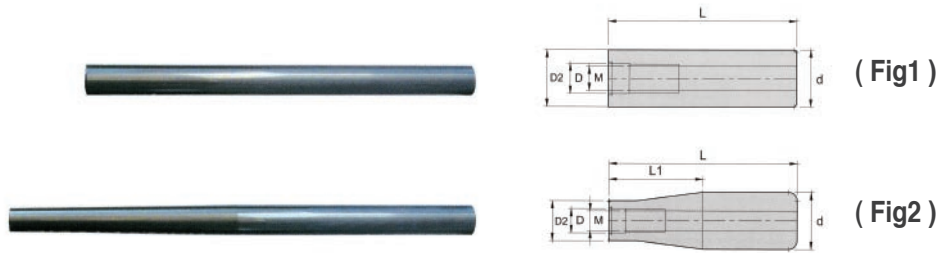
Model No.	Specification					Range	Collet	Fig
	D	D1	θ	L1	L2			
CE08A-DC4-100	8	8	-	100	-	3 ~ 4	DC4	1
CE10A-DC4-150	10	10	-	150	-			1
CE10-DC4-150	10	9.3	0.5°	150	45			2
CE12-DC4-150	12	10	1	150	60			2
CE16-DC4-200	16	10	1.8°	200	100			2
CE12A-DC6-150	12	12	-	150	-	3 ~ 6	DC6	1
CE16-DC6-150	16	12.5	1.7°	150	60			2
CE16-DC6-200	16	12.5	1.2°	200	90			2
CE20-DC6-200	20	12.8	1.9°	250	100			2
CE20A-UC10-150	20	20	-	150	-	3 ~ 10	UC10	1
CE20A-UC10-200	20	20	-	200	-			1
CE25-UC10-250	25	23	0.5°	250	120			2
CE25-UC10-300	25	23	0.5°	300	120			2

Collet

Unit : mm

Model No.	Size	Collet
DC4-3	3	DC4
DC4-4	4	
DC6-3	3	DC6
DC6-4	4	
DC6-6	6	
UC10-3	3	UC10
UC10-4	4	
UC10-6	6	
UC10-8	8	
UC10-10	10	

Solid Carbide Anti-Vibration Holder



Unit : mm

Model No.	Specification							Fig
	d	D2	D	M	L	L1	θ	
CE06-060-M3	6	6	3.5	3	60	-	-	1
CE06-120-M3					120			
CE08-060-M4	8	8	4.5	4	60	-	-	1
CE08-100-M4					100			
CE08-120-M4					120			
CE08-150-M4	10	7.8			150	60	1°	2
CE10-075-M5	10	10	5.5	5	75	-	-	1
CE10-100-M5					100			
CE10-150-M5					150			
CE12-150-M5	12	9.8			150	60	1.2°	2
CE20-200-M5	20	9.8			300	135	1.9°	2
CE12-075-M6	12	12	6.5	6	75		-	1
CE12-100-M6					100			
CE12-150-M6					150			
CE12-200-M6					200			
CE16-150-M6	16	11.8	6.5	6	150	70	1.65°	2
CE16-200-M6					200	90	1.3°	
CE16-250-M6					250	115	1°	
CE20-300-M6					300	135	1.7°	
CE16-100-M8	16	16	8.5	8	100	-	-	1
CE16-150-M8					150			
CE16-200-M8					200			
CE16-250-M8					250			
CE20-200-M8	20	15.5	8.5	8	200	90	1.3°	2
CE20-250-M8					250	115	1°	
CE20-300-M8					300	135	0.85°	
CE20-100-M10	20	20	10.5	10	100	-	-	1
CE20-150-M10					150			
CE20-200-M10					200			
CE20-250-M10					250			
CE20-300-M10					300			
CE25-200-M10	25	19.8	10.5	10	200	90	1.6°	2
CE25-250-M10					250	115	1.25°	
CE25-300-M10					300	135	1.1°	