

5 Flutes UT COAT



Size $\phi 3 \sim \phi 12$

CXLRS

Super MG

UT COAT

$42^\circ \sim 45^\circ$

R

± 0.01

± 0.015

Shank Dia
0/-0.005

Variable Pitch

Variable Helix

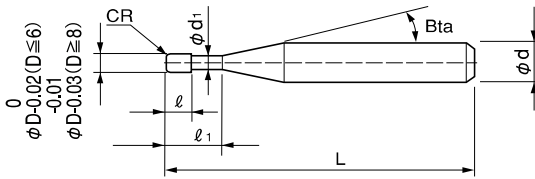
$\phi 3 \sim \phi 6$ $\phi 8 \sim \phi 12$

Material Applications (★ Highly Recommended ● Recommended ○ Suggested)

Work Material																	
Carbon Steels S45C S55C	Alloy Steels SK / SCM SUS	Prehardened Steels NAK HPM	Hardened Steels					Cast Iron	Aluminum Alloys	Graphite	Copper	Plastics	Glass Filled Plastics	Titanium Alloys	Heat Resistant Alloys	Cemented Carbide	Hard Brittle (Non-Metallic) Materials
			~ 50HRC	~ 55HRC	~ 60HRC	~ 65HRC	~ 70HRC										
●	●	●	●	●				○	○		●			○	○		

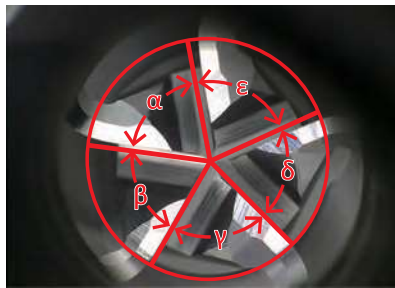
Features

Broad application range from Carbon Steels to Hardened Steels (55HRC).
Variable pitch, variable helix and positive rake angle design offers highly efficient side milling.
Seamless Corner Radius design reduces cutting resistance.



The shank taper angle shown is not an exact value and to avoid contact with the work piece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the work piece.

Variable Pitch



$$\alpha \neq \beta \neq \gamma \neq \delta \neq \epsilon$$

Seamless Corner Radius



Variable Helix



$$\beta_1 \neq \beta_2$$

- φ3mm Shank V Series
- UDC-PCD Series
- CBN Series
- Square
- Long Neck Square
- Radius
- Long Neck Radius
- Taper Neck Radius
- Ball / Long Shank Ball
- Long Neck Ball
- Taper Neck Ball
- Taper
- Barrel
- Spiral V Cutter
- Drill
- Technical Data

Total 30 models

Unit (mm)

Model Number	Outside Diameter ϕD	Corner Radius CR	Effective Length ℓ_1	Length of Cut ℓ	Neck Diameter ϕd_1	Shank Taper Angle Bta	Overall Length L	Shank Diameter ϕd	Suggested Retail Price ¥
CXLRS 5030-05-09	3	R0.5	9	6	2.95	16°	50	6	10,800
CXLRS 5030-05-12			12				50		10,800
CXLRS 5040-05-12	4	R0.5	12	8	3.85	16°	60	6	11,600
CXLRS 5040-05-16			16				60		11,600
CXLRS 5040-10-12		R1	12				60		11,600
CXLRS 5040-10-16			16				60		11,600
CXLRS 5060-05-18	6	R0.5	18	12	5.85	—	70	6	13,400
CXLRS 5060-05-24			24				70		13,400
CXLRS 5060-10-18		R1	18				70		13,400
CXLRS 5060-10-24			24				70		13,400
CXLRS 5080-05-24	8	R0.5	24	16	7.8	—	70	8	16,700
CXLRS 5080-05-32			32				70		16,700
CXLRS 5080-10-24		R1	24				70		16,700
CXLRS 5080-10-32			32				70		16,700
CXLRS 5100-05-30	10	R0.5	30	20	9.8	—	80	10	22,000
CXLRS 5100-05-40			40				80		22,000
CXLRS 5100-10-30		R1	30				80		22,000
CXLRS 5100-10-40			40				80		22,000
CXLRS 5100-15-30		R1.5	30				80		22,000
CXLRS 5100-15-40			40				80		22,000
CXLRS 5100-20-30		R2	30				80		22,000
CXLRS 5100-20-40			40				80		22,000
CXLRS 5120-05-36	12	R0.5	36	24	11.8	—	80	12	27,700
CXLRS 5120-05-48			48				100		27,700
CXLRS 5120-10-36		R1	36				80		27,700
CXLRS 5120-10-48			48				100		27,700
CXLRS 5120-15-36		R1.5	36				80		27,700
CXLRS 5120-15-48			48				100		27,700
CXLRS 5120-20-36		R2	36				80		27,700
CXLRS 5120-20-48			48				100		27,700

5 Flutes

φ3mm Shank V Series

UDC-PCD Series

CBN Series

Square
Square
Long Neck Square

Radius
Long Neck Radius
Taper Neck Radius

Ball / Long Shank Ball
Long Neck Ball
Taper Neck Ball

Taper
Taper

Barrel

Spiral V Cutter

Drill

Technical Data

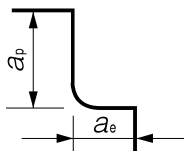
Milling Conditions for CXLRS

WORK MATERIAL			CARBON STEELS S45C / S50C Annealed Materials (~225HB)				ALLOY STEELS SK / SCM Annealed Materials (225~325HB)				PREHARDENED STEELS HPM / NAK (30~45HRC)				HARDENED STEELS SKD / SKT / STAVAX (45~55HRC)			
Model Number	Outside Diameter (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
5030	3	9	20,000	6,000	6	0.24	20,000	6,000	6	0.24	20,000	6,400	6	0.09	20,000	12,000	6	0.05
		12	20,000	6,000	6	0.19	20,000	6,000	6	0.19	20,000	6,400	6	0.07	20,000	12,000	6	0.04
5040	4	12	18,200	5,460	8	0.32	18,200	5,460	8	0.32	15,900	4,770	8	0.12	15,000	11,500	8	0.05
		16	18,200	5,460	8	0.26	18,200	5,460	8	0.26	15,900	4,770	8	0.1	15,000	11,500	8	0.04
5060	6	18	12,200	5,100	12	0.48	12,200	5,100	12	0.48	12,000	5,000	12	0.18	10,000	7,600	12	0.1
		24	12,200	5,100	12	0.38	12,200	5,100	12	0.38	12,000	5,000	12	0.14	10,000	7,600	12	0.08
5080	8	24	9,100	4,550	16	0.64	9,100	4,550	16	0.64	9,000	4,500	16	0.32	7,600	5,600	16	0.15
		32	9,100	4,550	16	0.51	9,100	4,550	16	0.51	9,000	4,500	16	0.26	7,600	5,600	16	0.12
5100	10	30	7,300	3,650	20	0.8	7,300	3,650	20	0.8	7,300	3,650	20	0.4	6,000	4,500	20	0.22
		40	7,300	3,650	20	0.64	7,300	3,650	20	0.64	7,300	3,650	20	0.32	6,000	4,500	20	0.176
5120	12	36	6,100	3,050	24	0.96	6,100	3,050	24	0.96	6,100	3,050	24	0.48	5,000	3,800	24	0.25
		48	6,100	3,050	24	0.77	6,100	3,050	24	0.77	6,100	3,050	24	0.38	5,000	3,800	24	0.2

Note:

- Please be sure to use water soluble coolant.
- These milling parameters are for reference only. For best result, fine parameter adjustments may be required, depending on the milling shape / application / machine and so on.
- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- WARNING: Because of high material removal rate, you must pay attention to your chip and coolant management.

Side Milling



- φ3mm Shark V Series
- UDC-PCD Series
- CBN Series
- Square
- Long Neck Square
- Radius
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Roughing Example : CXLRS $\phi 6 \times CR0.5 \times EL24$

RAMAX (32HRC)



Size : 500 x 500 mm
Coolant : Air Blow
Milling Method : Vortex (Trochoid)



Spindle Speed : 14,000 min⁻¹
Feed Rate : 7,000 mm/min
 a_p : 12 mm
 a_e : 0.5 mm

CXLRS
Roughing Video



5 Flutes

$\phi 3$ mm Shank
V Series

UDC-PCD
Series

CBN
Series

Square
Square

Long Neck
Square

Radius

Radius
Long Neck
Radius

Taper Neck
Radius

Ball / Long
Shank Ball

Ball
Long Neck
Ball

Taper Neck
Ball

Taper
Taper

Barrel

Spiral
V Cutter

Drill

Technical Data