



4 Flutes UTCOAT



Size $\phi 1 \sim \phi 12$

CXERS



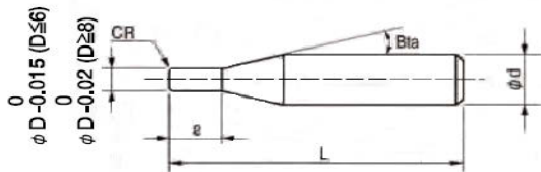
$\phi 1 \sim \phi 3$ $\phi 4 \sim \phi 6$ $\phi 8 \sim \phi 12$

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

- Variable Division & Variable Helix design minimizes vibration and chattering.
- Selected carbide material with high toughness & high chip resistance.
- Excellent wear-resistance for the wide range of milling applications, from highly efficient milling to finishing.
- Low friction coating resulting in excellent chip evacuation and resistance to wear.
- Decreasing cutting resistance and offering stable milling by the original corner R design.



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.

Total 56 models

Unit (mm)

Model Number	Outside Diameter ϕD	Corner Radius CR	Length of Cut ℓ	Shank Taper Angle B_{ta}	Overall Length L	Shank Diameter ϕd	Nett Promotional Price £
CXERS 4010-01-025	1	RO.1	2.5	16°	50	4	£26.71
CXERS 4010-02-025		RO.2			50	4	£26.71
CXERS 4010-03-025		RO.3			50	4	£28.47
CXERS 4015-01-0375	1.5	RO.1	3.75	16°	50	4	£26.71
CXERS 4015-02-0375		RO.2			50	4	£26.71
CXERS 4015-03-0375		RO.3			50	4	£28.47
CXERS 4020-01-050	2	RO.1	5	16°	50	4	£25.03
CXERS 4020-02-050		RO.2			50	4	£25.03
CXERS 4020-03-050		RO.3			50	4	£26.71
CXERS 4020-05-050		RO.5			50	4	£26.71
CXERS 4025-03-0625	2.5	RO.3	6.25	16°	50	4	£26.71
CXERS 4025-05-0625		RO.5			50	4	£26.71
CXERS 4030-02-075	3	RO.2	7.5	16°	60	6	£28.70
CXERS 4030-03-075		RO.3			60	6	£30.65
CXERS 4030-05-075		RO.5			60	6	£30.65

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Unit (mm)

Model Number	Outside Diameter ϕD	Corner Radius CR	Length of Cut ℓ	Shank Taper Angle Bta	Overall Length L	Shank Diameter ϕd	Nett Promotional Price £
CXERS 4040-02-100	4	RO.2	10	16°	60	6	£30.15
CXERS 4040-03-100		RO.3			60	6	£32.17
CXERS 4040-04-100		RO.4			60	6	£32.17
CXERS 4040-05-100		RO.5			60	6	£32.17
CXERS 4040-10-100		R1			60	6	£32.17
CXERS 4050-02-125	5	RO.2	12.5	16°	60	6	£32.37
CXERS 4050-03-125		RO.3			60	6	£34.60
CXERS 4050-04-125		RO.4			60	6	£34.60
CXERS 4050-05-125		RO.5			60	6	£34.60
CXERS 4050-10-125		R1			60	6	£34.60
CXERS 4060-02-150	6	RO.2	15	—	60	6	£33.79
CXERS 4060-03-150		RO.3			60	6	£33.79
CXERS 4060-04-150		RO.4			60	6	£37.03
CXERS 4060-05-150		RO.5			60	6	£37.03
CXERS 4060-10-150		R1			60	6	£37.03
CXERS 4060-12-150		R1.2			60	6	£37.03
CXERS 4080-02-200	8	RO.2	20	—	70	8	£42.90
CXERS 4080-03-200		RO.3			70	8	£42.90
CXERS 4080-04-200		RO.4			70	8	£46.13
CXERS 4080-05-200		RO.5			70	8	£46.13
CXERS 4080-10-200		R1			70	8	£46.13
CXERS 4080-12-200		R1.2			70	8	£46.13
CXERS 4080-15-200		R1.5			70	8	£46.13
CXERS 4080-20-200		R2			70	8	£46.13
CXERS 4100-02-250		10			RO.2	25	—
CXERS 4100-03-250	RO.3		80	10	£51.19		
CXERS 4100-04-250	RO.4		80	10	£54.63		
CXERS 4100-05-250	RO.5		80	10	£54.63		
CXERS 4100-10-250	R1		80	10	£54.63		
CXERS 4100-12-250	R1.2		80	10	£54.63		
CXERS 4100-15-250	R1.5		80	10	£54.63		
CXERS 4100-20-250	R2		80	10	£54.63		
CXERS 4120-02-300	12		RO.2	30	—		
CXERS 4120-03-300		RO.3	100			12	£78.10
CXERS 4120-04-300		RO.4	100			12	£78.10
CXERS 4120-05-300		RO.5	100			12	£78.10
CXERS 4120-10-300		R1	100			12	£78.10
CXERS 4120-12-300		R1.2	100			12	£78.10
CXERS 4120-15-300		R1.5	100			12	£78.10
CXERS 4120-20-300		R2	100			12	£78.10
CXERS 4120-30-300		R3	100			12	£78.10

4 Flutes



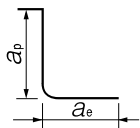
4 Flutes UTCOAT

Milling Conditions for CXERS

◆Side Milling

WORK MATERIAL		CARBON STEELS S45C / S50C Annealed Materials (~225HB)				ALLOY STEELS SK / SCM Annealed Materials (225~325HB)				STAINLESS STEELS SUS304 ※Use water soluble or oil coolant.			
Model Number	Outside Diameter (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)
4010	1	21,600	490	2.5	0.1	21,600	360	2.5	0.1	17,400	250	2.5	0.1
4015	1.5	16,200	610	3.75	0.15	16,200	450	3.75	0.15	15,960	270	3.75	0.15
4020	2	13,200	740	5	0.2	13,200	550	5	0.2	14,640	280	5	0.2
4025	2.5	11,400	840	6.25	0.25	11,400	640	6.25	0.25	13,200	390	6.25	0.25
4030	3	10,200	960	7.5	0.3	10,200	720	7.5	0.3	12,000	510	7.5	0.3
4040	4	8,640	1,350	10	0.8	8,040	1,000	10	0.8	9,000	730	10	0.4
4050	5	7,200	1,500	12.5	1	6,480	1,100	12.5	1	6,480	810	12.5	0.5
4060	6	6,000	1,600	15	1.2	5,400	1,200	15	1.2	5,400	810	15	0.6
4080	8	3,600	1,300	20	1.6	3,480	1,050	20	1.6	3,480	720	20	0.8
4010	10	1,920	1,000	25	2	1,800	900	25	2	1,800	580	25	1
4012	12	1,440	800	30	2.4	1,440	750	30	2.4	1,440	540	30	1.2
Milling Amount (mm)		a_p : All Flute a_e : 0.1D ($\phi D < 4$) a_e : 0.2D ($\phi D \geq 4$)				a_p : All Flute a_e : 0.1D ($\phi D < 4$) a_e : 0.2D ($\phi D \geq 4$)				a_p : All Flute a_e : 0.1D			

Side Milling





Milling Conditions for CXERS

4 Flutes

WORK MATERIAL		PREHARDENED STEELS HPM / NAK (30~45HRC)				HARDENED STEELS SKD / SKT / STAVAX (45~55HRC)			
Model Number	Outside Diameter (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)
4010	1	15,480	250	2.5	0.1	12,900	180	2.5	0.05
4015	1.5	12,600	310	3.75	0.15	9,300	280	3.75	0.075
4020	2	11,220	360	5	0.2	7,600	390	5	0.1
4025	2.5	9,960	430	6.25	0.25	6,500	510	6.25	0.125
4030	3	8,880	500	7.5	0.3	5,900	500	7.5	0.3
4040	4	7,080	650	10	0.8	4,700	520	10	0.4
4050	5	5,760	680	12.5	1	3,850	530	12.5	0.5
4060	6	4,800	680	15	1.2	3,200	540	15	0.6
4080	8	3,000	600	20	1.6	2,000	500	20	0.8
4010	10	1,800	430	25	2	1,200	450	25	1
4012	12	1,200	320	30	2.4	960	420	30	1.2
Milling Amount (mm)		a_p : All Flute a_e : 0.1D ($\phi D < 4$) a_e : 0.2D ($\phi D \geq 4$)				a_p : All Flute a_e : 0.1D			

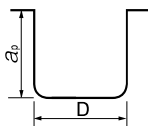


Milling Conditions for CXERS

◆Slotting

WORK MATERIAL		CARBON STEELS S45C / S50C Annealed Materials (~225HB)			ALLOY STEELS SK / SCM Annealed Materials (225~325HB)			STAINLESS STEELS SUS304 ※Use water soluble or oil coolant.		
Model Number	Outside Diameter (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)
4010	1	21,600	160	1	21,600	160	1	17,400	170	0.5
4015	1.5	16,200	250	1.5	16,200	220	1.5	15,960	190	0.75
4020	2	13,200	360	2	13,200	250	2	14,640	200	1
4025	2.5	11,400	430	2.5	11,400	280	2.5	13,200	240	1.25
4030	3	10,200	480	3	10,200	320	3	12,000	280	1.5
4040	4	8,640	650	4	8,040	450	4	9,000	400	2
4050	5	7,200	700	5	6,480	500	5	6,480	460	2.5
4060	6	6,000	700	6	5,400	500	6	5,400	460	3
4080	8	3,600	500	8	3,480	360	8	3,480	340	4
4100	10	1,920	380	10	1,800	270	10	1,800	220	5
4120	12	1,440	300	12	1,440	210	12	1,440	180	6
Milling Amount (mm)		$a_p: 1D$			$a_p: 1D$			$a_p: 0.5D$		

Slotting



D : Outside Diameter (mm)

Note:

- Decrease both spindle speed and feed rate proportionally in case of chattering.
- These milling parameters are calculated based on the shortest overhang length. Longer overhangs may require an adjustment to the milling parameters.
- Reduce the milling amount and feed rate in accordance with required milling precision.
- Every coolant offers stable milling.
- Recommend water soluble or oil coolant for Stainless Steels and Copper.



Milling Conditions for CXERS

4 Flutes

WORK MATERIAL		PREHARDENED STEELS HPM / NAK (30~45HRC)			HARDENED STEELS SKD / SKT / STAVAX (45~55HRC)		
Model Number	Outside Diameter (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)
4010	1	15,480	100	1	12,900	50	0.3
4015	1.5	12,600	140	1.5	10,500	100	0.45
4020	2	11,220	170	2	9,350	150	0.6
4025	2.5	9,960	210	2.5	8,300	240	0.75
4030	3	8,880	250	3	7,400	360	1.5
4040	4	7,080	390	4	5,900	380	2
4050	5	5,760	440	5	4,800	410	2.5
4060	6	4,800	440	6	4,000	440	3
4080	8	3,000	340	8	2,500	340	4
4100	10	1,800	220	10	1,500	240	5
4120	12	1,200	180	12	1,200	220	6
Milling Amount (mm)		$a_p : 1D$			$a_p : 0.5D$		

