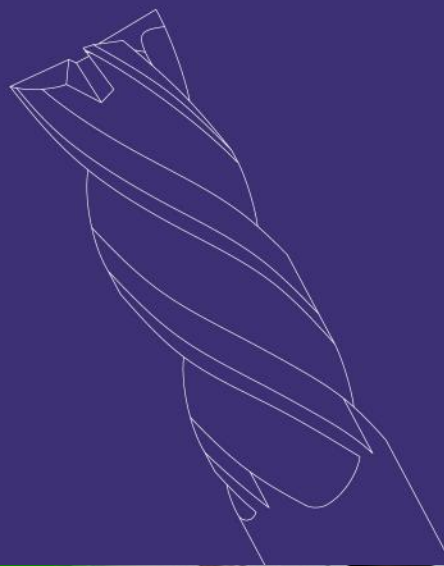


# HPC MILLING CUTTER



ZNL s.r.o.



**CARBIDE SQUARE DOUBLE CORE  
VARIABLE HELIX END MILL  
(CHAMFERED EDGE)**



The special forming groove design allows the tool to hold more chip space under the same rigidity, enabling large cutting depth groove milling to adapt to various efficient processing conditions.

Unequal tooth structure effectively suppresses cutting vibration during efficient machining.

**$\alpha 1 \neq \alpha 2$**

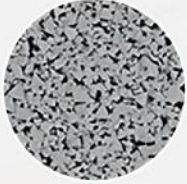
The unequal spiral structure greatly improves the vibration resistance of the tool and effectively extends tool life before chipping.

**Application Scope**

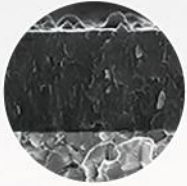
- High vibration resistance structure, suitable for mold cavity milling, no need to slow down when processing corners with large cutting parameters;
- High-toughness base material and high-rigidity structure enable large depth of cut ( $a_p=d$ ) slot milling;
- The application of a new generation of coating technology can meet the efficient and universal processing of various steel materials under dry cutting and water cooling conditions.

# CARBIDE SQUARE DOUBLE CORE VARIABLE HELIX END MILL (CHAMFERED EDGE)

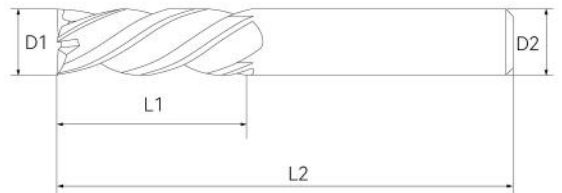
## Substrate Coating



Select substrates with better versatility and wear resistance, high bending strength, and meet the needs of efficient processing.



The coating grade with lower friction coefficient is especially suitable for the processing of viscous materials such as carbon steel, mild steel and stainless steel.



Order NO.	Dimensions/mm					Flute
	D1	L1	D2	L2	C	
HPC-S4-032	3	8	6	50	0.15	4
HPC-S4-041	4	10	6	50	0.15	4
HPC-S4-051	5	12	6	50	0.15	4
HPC-S4-060	6	15	6	50	0.15	4
HPC-S4-080	8	20	8	60	0.2	4
HPC-S4-100	10	25	10	75	0.2	4
HPC-S4-120	12	30	12	75	0.3	4
HPC-S4-160	16	40	16	100	0.35	4
HPC-S4-200	20	40	20	100	0.35	4

Unit: mm

- The design of unequal spiral Angle greatly improves the anti-vibration performance of the tool and obtains good surface quality.
- Most suitable for stainless steel, heat resistant alloy and alloy and other difficult cutting materials processing.

## Trial Form for Processed Materials

■ Most Suitable □ Suitable

		Processed Material									
Carbon Steel	Alloy Steel	Pre-hardened Steel, Hardened Steel				Stainless Steel	Cast Iron Nodular Iron	Copper Alloy	Aluminium Alloy	Titanium Alloy	Heat-resisting Alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
■	■					■				■	■

# CARBIDE SQUARE DOUBLE CORE VARIABLE HELIX END MILL (CHAMFERED EDGE)

## HPC Series End Mill Cutting Parameters

PROCESSED MATERIAL	CARBON STEEL, ALLOY STEEL		STAINLESS STEEL		HEAT RESISTANT ALLOY, TITANIUM ALLOY	
Diameter (mm)	Rotational Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Rotational Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Rotational Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
4	6400	690	3700	160	3055	90
5	5800	710	3000	190	2470	90
6	5300	750	2700	200	2470	120
8	3900	700	2000	210	1820	130
10	3100	640	1600	210	1430	130
12	2600	600	1300	170	1235	110
16	1900	520	1000	150	935	90
20	1500	445	800	140	740	90
Maximum Depth						

- The above table is the standard value of side milling processing. When cutting grooves, the speed should be 80% to 100% of the above table, and the feed speed should be 60% to 80% as the standard value.
- When cutting stainless steel alloy and heat-resistant alloy, it is recommended to use water-soluble cutting fluid.
- Please use high-rigidity and high-precision machine tools and tool handles.
- Adjust the speed and feed speed according to the cutting depth and machine rigidity.
- Recommended milling.
- Make the hanging length of the tool as short as possible without interference.
- The table above is based on the recommended value when  $L/DC \leq 4$ . When  $L/DC > 4$ , please reduce the speed and feed speed by 70% compared with the same period last year.

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