


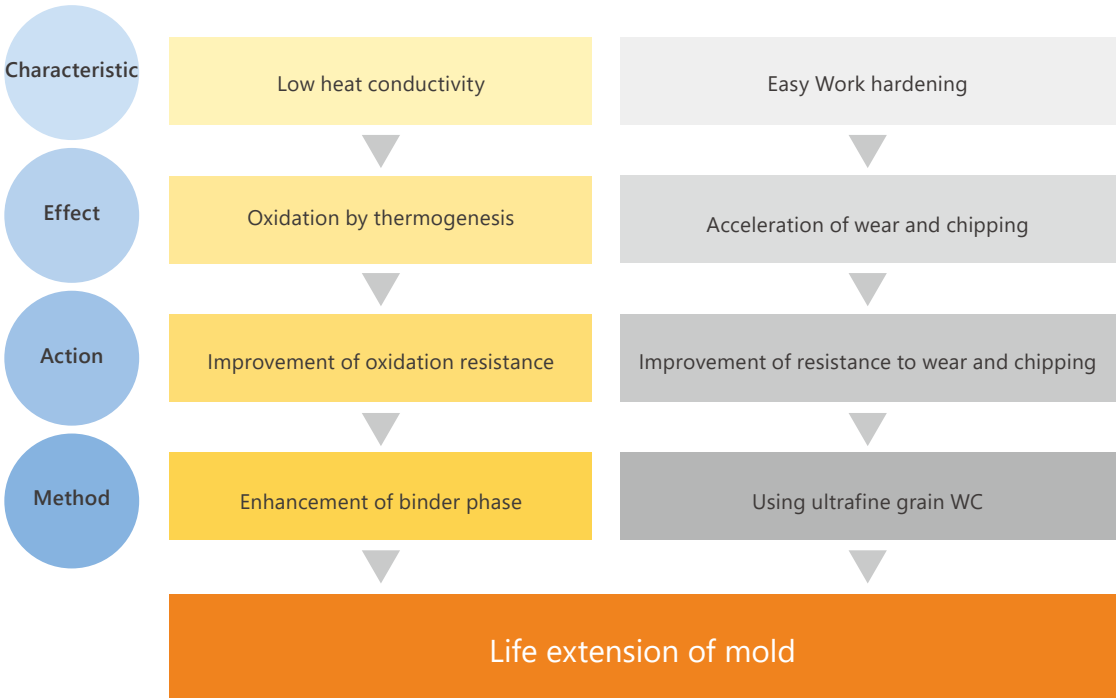


Cemented carbide for stainless-steel products - KX01

Excellent performance for press of stainless.

High wear-resistance for press of stainless or low heat conductivity parts.  
High hardness, high transverse rupture strength and sharp edge.

 Explanation	KX01 is specially designed by taking into account the characteristics of stainless steel to extend lifetime of the mold. This effect is applied to not only stainless steel but also other material such as phosphor bronze and copper beryllium alloy. This material grade is suitable for usage which requires sharper edge because it has excellent hardness and transverse rupture strength by ultrafine grain WC (under 1 μm).
 Note	Suitable material grades for thick stainless parts are WD20 or ME40 because KX01 is developed for thin stainless parts.
 Applications	For stainless steel (stamping for cable teaminals, switch panels, HDD suspensions, etc.), For hard-to-machine materials (increasing life of punches for narrow-pitch connector terminals), etc.



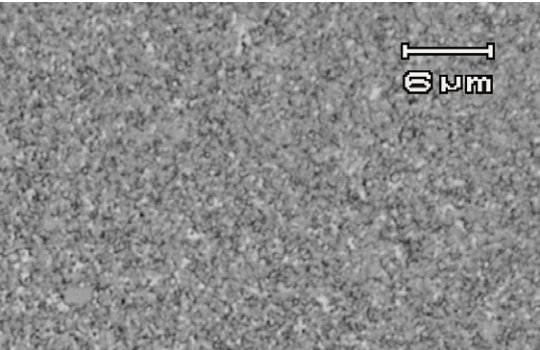
Cemented carbide for stainless-steel products - KX01

Physical property of KX01

Our grade	WC grain size [μm]	Binder phase content [%]	Density [×10 <sup>3</sup> kg/m <sup>3</sup> {g/cm <sup>3</sup> }]	Hardness HRA	TRS* [GPa]	Fracture toughness values [MPa · m <sup>1/2</sup> ]
KX01	1.0 (less than)	13	14.0	92.5	4.0	10.2
EF10	1.0 (less than)	13	14.0	92.0	4.0	10.4
KD10	1.0 (less than)	8	14.7	91.0	3.4	13.2
KD20	1.0 (less than)	13	14.2	90.0	3.7	15.5
G5	2.5 - 5.0	13	14.1	88.0	3.2	25.9

\*Value measured by the IF method. (Typical figures)

Micrographs of KX01



By metallurgical microscope (×1000)

Track record of strokes

Workpiece	Workpiece thickness	Stamping condition	Die	Punch	Performance (Stroke number)
SUS	0.10 mm	Snapping	KD10 / Equivalent to KD10	KX01	3 million
			KD10 / Equivalent to KD10	KD10 / Equivalent to KD10	600 thousand
SUS304	0.15 mm	Coining at 700 rpm	KD10 / Equivalent to KD10	KX01	18 million
			KD10 / Equivalent to KD10	KD10 / Equivalent to KD10	1 million
SUS301	0.70 mm	Snapping at 200 rpm	KX01	G5	260-350 thousand
			Conventional cemented carbide (Ultrafine-grain to fine-grain)	G5	80-180 thousand
SUS304	0.60 mm	Snapping at 230 rpm	KX01	KX01	100 thousand
			G3 / Equivalent to G3	G3 / Equivalent to G3	20 thousand