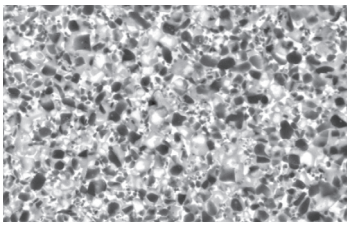
Cermet grades

Solution for turning application of steel

CN1500

- For continuous machining of cold/hot forged steel and Sintered ferrous alloy at high speed and low depth of cut
- Excellent wear resistance and crater resistance
- Improved surface roughness acquired by optimized cutting edges



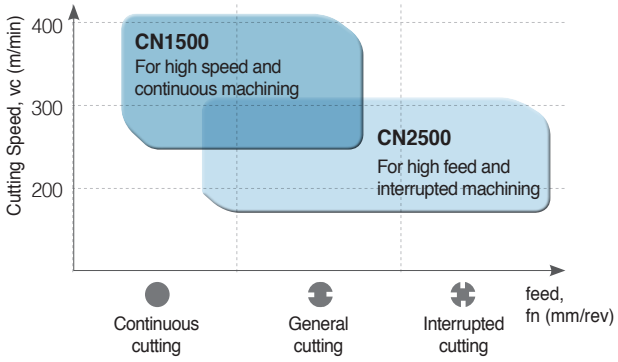
CN2500

- For high interrupted machining of cold/hot forged steel and Sintered ferrous alloy at high feed and high depth of cut
- Excellent resistance against chipping, fracture and thermal crack
- Improved surface roughness acquired by optimized cutting edges

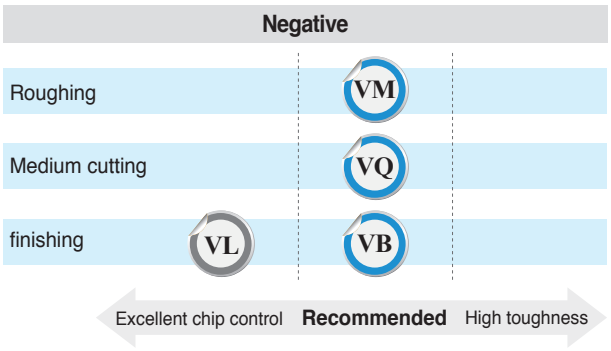
Recommended cutting condition

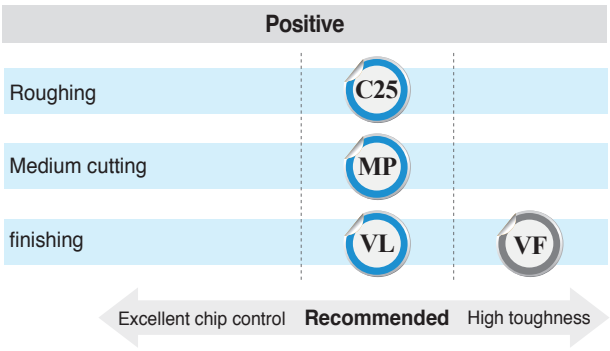
Division	Workpiece	Grade	Recommended cutting speed (m/min)		
			Minimum	Recommended	Maximum
Turning	SM10C, SS440	**CN1500**	150	**270**	400
		CN2500	130	**240**	350
	SM45C	**CN1500**	150	**250**	350
		CN2500	130	**220**	300
	SCM440, Sintered fe ferrous alloy	**CN1500**	120	**220**	300
		CN2500	100	**200**	250

Grades line up



Chip breakers line up





Selection system of cermet grades

Workpiece		Machining types	Recommended grade	Recommended cutting speed (m/min)	ISO	Application range
P	Steel	Continuous cutting	CN1500	250 (150 ~ 350)	P10	CN1500
		Interrupted cutting	CN2500	220 (130 ~ 300)	P20	CN2500
					P30	

Cermet grades

Features

- High hardness substrate ensures long tool life in high speed milling
- High toughness cutting edge ensures long tool life even in high impact machining
- Chemically stable substrate provides excellent surface finish of the workpiece

Selection system of cermet grades

Workpiece		Machining types	Grade	Recommended cutting speed (m/min)	ISO	Application range
P	Steel	Continuous cutting	CN2000	250 (200 ~ 300)	P20	CN2000
		Interrupted cutting	CN30	150 (100 ~ 200)	P30	CN30

The features of cermet grades

Cermet Grade	ISO	Features
CN2000	P20 ~ P30	• Universal grade from finishing to roughing of steel • Functionally Gradient Material
CN30	P25 ~ P35	• For milling of steel • Cermet with high toughness

The physical properties of cermet grades

Workpiece	Grade	Hardness(Hv)	TRS(kgf/mm^2)	SG(g·cm^{-3})
P	CN2000	< 1800	210 <	6.8~7.0
	CN30	< 1500	240 <	7.0~7.3

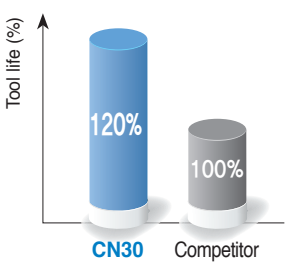
Application examples (CN30)

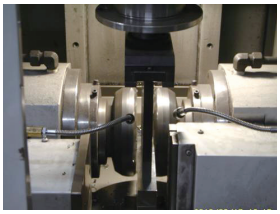
P Carbon steel (SM45C)

■ **Cutting condition** vc (m/min) = 120~150, fz (mm/t) = 0.07~0.13
ap (mm) = 2.0, dry

■ **Designation** **Insert** : SDCN42MT (CN30)
Cutter : ADN4315R

■ **Test result**





P Mold steel (KP4M)

■ **Cutting condition** vc (m/min) = 230, fz (mm/t) = 0.1~0.15
ap (mm) = 1.0, dry

■ **Designation** **Insert** : SDCN42MT (CN30)
Cutter : ADN4315R

■ **Test result**