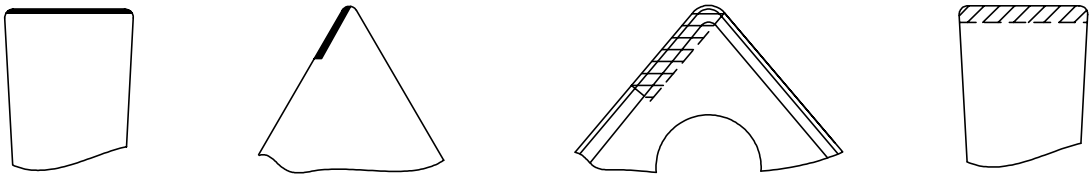
Insert Heat and Wear Zones



Grooving | Threading & Finishing | Roughing | Steel Grooving

Feeds .0005 to .003 IPR
[1](Group 10 and 23 Grades)

Feed Rates over .005 IPR
[2](Group 56 Grades)

[1] Threading, Grooving and Finishing operations generate considerable heat at the cutting edge. The Inserts often cut through abrasive, work hardened surfaces. Carbide Grades for these applications need to have high heat and wear resistant edges.

[2] Steel Cutting Inserts have to absorb and dissipate the large volume of heat that develops behind the cutting edge where the chips start to curl. Cratering can occur in this area due to high cutting forces. Steel Grades have additives and/or coatings to provide crater resistance. These Grades generally have less heat and wear resistant cutting edges than the Grades used in finishing applications. The edges on Steel Cutting Inserts are usually honed to prevent chipping.

Carbide Groups					
Carbide Groups		**Uncoated**	**TIN Coated**	**TiALN Coated**	**Applications**
10	Tough, Chip Resistant C1 Micrograin Grades	*C10*	*110*	***310***	***C10*** C1 - High wear & chip resistance at very low speeds in most materials
					110 C1-C2/C5 - Increased tool life, reduced chipping from built-up edge
					310 C1-C2/C5 - Face Grooving - Small Diameter Threading and Grooving
23	Heat & Wear Resistant C2-C3 Micrograin Grades	***C23***	*123*	***323***	***C23*** C2-C3 - Non-Ferrous applications - ***C23J*** has polished chipbreakers
					123 C2-C3/C6 - TIN coating adds lubricity reducing edge build-up & chipping
					323 C2-C3/C7 - Heat & wear resistance in Threading, Grooving & Finishing
56	C5-C6 Crater Resistant Steel Cutting Grades	C56 non stock	*156*	***356***	***C56*** C5-C6 - Uncoated Special Order only - use coated Grades 356 or 156
					156 C5-C6 - For use where edge build-up is a problem with Grade 356
					356 C5-C6 - Steel Cutting Grade - moderate speeds, higher feeds than 323
PRIMARY GRADES - **1st choice for best results**					*COMPLIMENTARY GRADES* - **For specific applications**

Horizon Carbide - Standard Grade Application Ranges			
Wear Resistant Grades for Cast Iron and Non-Ferrous Materials plus Threading, Grooving and Finishing Applications			
C1 (K40 - K30)	**C2 (K25 - K20)**	**C3 (K15 - K10)**	**C4 (K05-K01)**
	323 - 323F - 323G		
	123		
	C23 - C23J		
310 *Threading & Grooving*			
110 *Threading & Grooving*			
C10 *Threading & Grooving*		**HCC** *Ceramet - Special Order*	
← **Increasing Toughness - Shock & Impact Resistance**		**Increasing Hardness - Heat & Wear Resistance** →	
Crater Resistant Grades for Steel & Stainless plus Wear Resistant Grades for Threading, Grooving and Finishing			
C5 (P50 - P35)	**C6 (P30 - P20)**	**C7 (P15 - P10)**	**C8 (P05 - P01)**
	323 - 323F - 323G *Threading, Grooving & Finishing*		
	123 *Threading & Grooving*		
	356		
	156		
310 *Threading & Grooving*			
110 *Threading & Grooving*		**HCC** *Ceramet - Special Order*	