



- List 78013 - PHOENIX® PSE: SA/FA
- List 78011 - PHOENIX® PSE: ss
- List 78012 - PHOENIX® PSE: Bore
- List 78010 - PHOENIX® PSE: Bore
- List 52601 - PHOENIX® PSE: ASF
- List 78016 - PHOENIX® PSE: SF

Work Material	Tensile Strength - Hardness	Insert Size ZDKT07...				Insert Size ZD T11...							
		Side Milling		Face Milling		Side Milling		Face Milling		Side Milling		Face Milling	
		Aa: 0.236" • Ar: 0.15D		Aa: 0.031" • Ar: 1.0D		Aa: 0.394" • Ar: 0.2D		Aa: 0.118" • Ar: 1.0D		Aa: 0.551" • Ar: 0.2D		Aa: 0.197" • Ar: 1.0D	
		Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)	Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)	Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)	Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)	Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)	Milling Speed Vc (SFM)	Feed Per Tooth fz (in/t)
P Mild Steels, Carbon Steels (1010, 1018) Carbon Steels, Alloy Steels (1050, 4140) Die Steels (H13, D2)	~180 HB	590 (330 - 820)	0.004 (.001-.005)	590 (330 - 820)	0.003 (.001-.004)	590 (330 - 820)	0.010 (.008 - .020)	590 (330 - 820)	0.005 (.002 - .008)	590 (330 - 820)	0.012 (.008 - .024)	590 (330 - 820)	0.006 (.002 - .010)
	~280 HB	590 (330 - 820)	0.003 (.001-.004)	590 (330 - 820)	0.003 (.001-.004)	590 (330 - 820)	0.008 (.006 - .016)	590 (330 - 820)	0.004 (.002 - .008)	590 (330 - 820)	0.010 (.006 - .020)	590 (330 - 820)	0.005 (.002 - .008)
	~280 HB	460 (260 - 590)	0.003 (.001-.004)	460 (260 - 590)	0.003 (.001-.004)	495 (260 - 655)	0.008 (.006 - .016)	495 (260 - 655)	0.004 (.002 - .007)	495 (260 - 655)	0.010 (.006 - .020)	495 (260 - 655)	0.005 (.002 - .008)
M Stainless Steels(Dry) (304SS, 420SS) Stainless Steels(Wet) (304SS, 420SS)	~250 HB	460 (260 - 590)	0.002 (.001-.003)	460 (260 - 590)	0.002 (.001-.004)	495 (260 - 655)	0.007 (.006 - .016)	495 (260 - 655)	0.004 (.004 - .007)	495 (260 - 655)	0.008 (.006 - .018)	495 (260 - 655)	0.005 (.004 - .008)
	~250 HB	260 (195 - 330)	0.002 (.001-.003)	260 (195 - 330)	0.002 (.001-.004)	260 (195 - 395)	0.007 (.006 - .016)	260 (195 - 395)	0.004 (.004 - .007)	260 (195 - 395)	0.008 (.006 - .018)	260 (195 - 395)	0.005 (.004 - .008)
K Cast Iron (FC250) Ductile Cast Iron (60-40-18)	~350 N/mm ²	590 (330 - 985)	0.004 (.001-.005)	590 (330 - 985)	0.004 (.001-.005)	590 (330 - 985)	0.010 (.006 - .020)	590 (330 - 985)	0.005 (.002 - .008)	590 (330 - 985)	0.012 (.008 - .024)	590 (330 - 985)	0.006 (.002 - .010)
	~800 N/mm ²	590 (330 - 820)	0.003 (.001-.004)	590 (330 - 820)	0.002 (.001-.003)	590 (330 - 820)	0.006 (.004 - .016)	590 (330 - 820)	0.005 (.002 - .008)	590 (330 - 820)	0.008 (.006 - .020)	590 (330 - 820)	0.006 (.002 - .010)
N Aluminum Alloys (6061, 7075)	~13% Si	985 (655 - 4920)	0.006 (.001-.012)	985 (655 - 4920)	0.005 (.001-.008)	985 (655 - 4920)	0.012 (.008-.020)	985 (655 - 4920)	0.006 (.004 - .010)	985 (655 - 4920)	0.014 (.008 - .024)	985 (655 - 4920)	0.007 (.004 - .012)
S Heat Resistant Alloys (Inconel 718) Titanium Alloy (Ti-6Al-4V)	-	115 (85 - 195)	0.003 (.001-.004)	115 (85 - 195)	0.002 (.001-.003)	115 (85 - 195)	0.006 (.004 - .012)	115 (85 - 195)	0.004 (.002 - .006)	115 (85 - 195)	0.008 (.004 - .012)	115 (85 - 195)	0.004 (.002 - .006)
	-	150 (115 - 230)	0.003 (.001-.004)	150 (115 - 230)	0.003 (.001-.004)	130 (100 - 395)	0.007 (.004 - .014)	130 (100 - 395)	0.004 (.004 - .010)	130 (100 - 395)	0.009 (.004 - .014)	130 (100 - 395)	0.004 (.004 - .010)
H Pre-hardened Steel (P20, Stavax) Die Cast Steels (A2, S7) Hardened Steels (D2)	40 - 43 HRC	330 (130 - 495)	0.003 (.001-.005)	330 (130 - 495)	0.002 (.001-.003)	330 (130 - 495)	0.007 (.004 - .012)	330 (130 - 495)	0.004 (.003 - .008)	330 (130 - 495)	0.008 (.004 - .014)	330 (130 - 495)	0.005 (.003 - .010)
	43 - 48 HRC	260 (130 - 330)	0.002 (.001-.003)	260 (130 - 330)	0.002 (.001-.003)	260 (130 - 395)	0.005 (.003 - .008)	260 (130 - 395)	0.003 (.002 - .006)	260 (130 - 395)	0.006 (.003 - .010)	260 (130 - 395)	0.004 (.002 - .008)
	50 - 55 HRC	195 (130 - 230)	0.002 (.001-.003)	195 (130 - 230)	0.002 (.001-.003)	195 (130 - 295)	0.004 (.002 - .008)	195 (130 - 295)	0.002 (.002 - .004)	195 (130 - 295)	0.005 (.002 - .008)	195 (130 - 295)	0.003 (.002 - .005)

Maximum Ramping Angle (E) & Helical Angle (P)

Insert Size	ZDKT07...				ZD_T11...				ZDKT15...			
	Dia. (inch)	Ramping Angle	Helical Milling (inch)	Helical Angle	Ramping Angle	Helical Milling (inch)	Helical Angle	Ramping Angle	Helical Milling (inch)	Helical Angle		
D1	E	D ₀ Min.	D ₀ Max.	P	E	D ₀ Min.	D ₀ Max.	P	E	D ₀ Min.	D ₀ Max.	P
0.375	6.0°	0.514	0.711	4.5°	-	-	-	-	-	-	-	-
0.500	4.5°	0.724	0.961	2.2°	-	-	-	-	-	-	-	-
0.625	2.8°	0.974	1.211	1.1°	10.8°	0.935	1.187	9.5°	-	-	-	-
0.750	2.1°	1.224	1.461	0.8°	9.8°	1.185	1.437	7.0°	-	-	-	-
1.000	1.6°	1.724	1.961	0.5°	7.4°	1.685	1.927	4.4°	9.5°	1.488	1.921	7.4°
1.250	-	-	-	-	4.8°	2.158	2.437	3.2°	6.8°	1.988	2.421	5.0°
1.500	-	-	-	-	2.9°	2.685	2.937	2.2°	5.1°	2.488	2.921	3.2°
2.000	-	-	-	-	2.1°	3.685	3.937	1.6°	2.4°	3.488	3.921	2.4°
2.500	-	-	-	-	1.8°	4.685	4.937	1.4°	2.3°	4.488	4.921	1.4°
3.000	-	-	-	-	1.4°	5.685	5.937	1.0°	2.0°	5.488	5.921	1.3°
4.000	-	-	-	-	-	-	-	-	1.4°	7.488	7.921	1.0°
5.000	-	-	-	-	-	-	-	-	0.8°	9.488	9.921	0.8°
6.000	-	-	-	-	-	-	-	-	0.7°	11.488	11.921	0.6°

