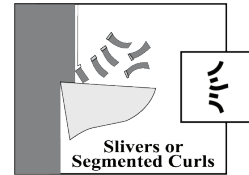
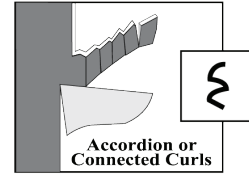
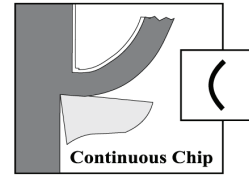




		Tool Group					
Material Group No.	Chip Class	SOLID CARBIDE COOLANT FED		CARBIDE TIP COOLANT FED			OTHER COOLANT FED
		High Penetration Spiral Flute	Straight Flute	High Performance Spiral Flute	Spiral Flute Heavy Duty	Straight Flute	PM Cobalt
		TiN TiAlN		TiN			TiAlN
		M	N	P	Q	R	T
1	()	(11-12) 500-650	(6) 200-400	(8-9) a 250-425	(6-7) a 200-400	(6-7) 200-400	○
2	()	(11-12) 500-650	(6-7) 350-550	(8-9) 300-500	(6-7) 200-400	(6-7) 300-500	○
3	()	(9-11) 400-550	(4-5) 225-300	(5-7) 250-450	(5-7) 225-425	(4-5) 200-400	○
4	()	(9-11) 500-650	(4-5) 175-250	(5-7) 200-400	(5-7) 200-300	(4-5) 200-300	○
5	()	(9-10) 300-400	(4-6) 200-300	(6-8) 225-325	(6-8) 200-260	(5-7) 225-300	(7-9) 75-110
6	()	(9) 275-350	(4-6) 150-250	(6-7) a 225-275	(6-7) a 200-260	(4-6) 190-250	(7-9) 60-100
7	()	(8-10) 290-390	○	(5-7) a 180-250	○	○	(7-9) 100-130
8	()	(6-8) 150-250	(2-3) 110-150	(4-6) 150-200	(3-4) 100-150	(2-3) 100-150	(6-8) 60-100
9	()	(5-7) 120-225	(2-3) 80-135	(4-6) 135-185	(1-2) 70-100	(2-3) 100-150	(5-7) 50-90
10	()	(1-2) 50-100	○	(1-2) b 45-90	(1-2) b 60-90	○	○
11	()	(4-6) 130-200	(2-3) 120-180	(2-3) 120-170	(2-3) 100-160	(2-3) 70-125	(4-5) 60-90
12	()	(4-6) 100-150	(1-2) 80-120	(2-3) a 80-120	(2-3) a 60-100	○	(4-5) 50-85
13	()	(4-6) 90-150	○	(1-2) a 40-60	○	○	○
14	()	(4-6) 90-150	(1-2) 60-100	(2-3) 50-110	(2-3) 50-100	(1-2) 60-120	○
15	()	(2-3) 70-130	○	(2) 60-90	(2) 60-90	○	(2-3) 30-75
16	()	(2-3) 40-80	○	(1-2) 40-80	(1-2) b 40-80	○	(2) 25-60
17	()	○	(4-5) 150-225	○	○	(4-5) 125-200	○

Most Appropriate Occasionally Appropriate Do Not Use



SFM = Surface Feet per Minute
 $RPM = \frac{SFM \times 3.82}{Tool \ \varnothing \text{ Decimal (Inch)}}$
 $IPR = FM* \times Tool \ \varnothing$
 Use 4 place inch decimal diameter
 $IPM = \text{Inch per Minute Penetration}$
 $IPM = RPM \times IPR$

(Feed Curve)	FM*
(1)	0.004
(2)	0.006
(3)	0.008
(4)	0.010
(5)	0.012
(6)	0.014
(7)	0.016
(8)	0.018
(9)	0.020
(10)	0.024
(11)	0.028
(12)	0.035
(13)	0.045

*FM is the proportionate Feed Multiplier
 ie.: $\frac{.0040 \text{ IPR}}{.3346'' \varnothing} = \frac{.012 \text{ IPR}}{1.000'' \varnothing} = \frac{.012 \text{ FM}^*}{1.000'' \varnothing}$

Notes
 a. 1 to 2 x Ø deep holes only.
 b. Use more aggressive points.

(Feed Curve) Notes SFM - Surface Feet per Minute