Z = Number of teeth

d_{eff} = effective cutting edge Ø

n = Revolutions $$n = \frac{v_c \cdot 1000}{d \cdot \pi} \text{ (1/min) (RPM)}$$

v_c = Cutting speed $$v_c = \frac{d \cdot \pi \cdot n}{1000} \text{ (m/min) / .3048 = sfm}$$

f_z = Feed/tooth $$f_z = \frac{V_f}{Z \cdot n} \text{ (mm) / 25.4 = inch}$$

v_f = Feed rate $$V_f = f_z \cdot Z \cdot n \text{ (mm/min) / 25.4 = inch/min}$$

Q = Material removal rate $$Q = \frac{a_e \cdot a_p \cdot V_f}{1000} \text{ } (cm^3/min) *.06102376 = inch^3/min$$

The effective cutting diameter d_{eff} must be calculated to obtain the correct RPM and the cutting feed.
The effective cutting diameter is calculated using the following values and formula.
a_p = depth of cut
Ds = cutter diameter
K_D = from Correction value chart
$d_{eff} = K_D + (Ds - 63)$

Correction value

a_p [mm]	K_D [mm]
0.1	40.0
0.2	42.8
0.3	45
0.4	46.6
0.5	48.2
0.6	49.6
0.7	50.8
0.8	52.0
0.9	53.2
1.0	54.4
1.1	55.4
1.2	56.4
1.3	57.2
1.4	58.2
1.5	59.0
1.6	59.8
1.7	60.2
1.8	60.8
1.9	61.2
2.0	62.0
2.1	63.0

CUTTING DATA System DAH62

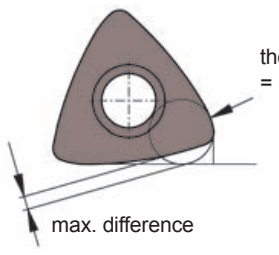
ISO	Material	Hardness HB	feed / tooth		Cutting speed	
			f_z (inch)	f_z (mm)	v_c (ft/min)	v_c (m/min)
P	unalloyed steel	125	.039 - .087	1.0 - 2.2	590 - 920	180 - 280
	unalloyed steel	190	.039 - .087	1.0 - 2.2	590 - 920	180 - 280
	low alloyed steel	200	.039 - .079	1.0 - 2.0	560 - 855	170 - 260
	low alloyed steel	300	.039 - .079	1.0 - 2.0	560 - 790	170 - 240
	high alloyed steel	200	.032 - .063	0.8 - 1.6	490 - 720	150 - 220
M	Stainless steel martenistic	240	.032 - .079	0.8 - 2.0	395 - 720	120 - 220
	Stainless steel austenitic	180	.024 - .063	0.6 - 1.6	330 - 525	100 - 160
K	Malleable cast iron ferritic	130	.032 - .087	0.8 - 2.2	525 - 790	160 - 240
	Malleable cast iron perlitic	230	.028 - .071	0.7 - 1.8	490 - 720	150 - 220
	Spheroidal graphite cast iron ferritic/perlitic	180	.028 - .071	0.7 - 1.8	490 - 720	150 - 220
	Spheroidal graphite cast iron perlitic	260	.028 - .071	0.7 - 1.8	460 - 720	140 - 220
	Grey cast iron	160	.032 - .098	0.8 - 2.5	590 - 920	180 - 280
N	Al-alloys	90	.059 - .118	1.5 - 3.0	3280 - 4920	1000 - 1500

Diving angle

Ø (mm)	Diving angle
63	0.5°
80	0.3°
100	0.2°
125	0.2°

Programming radius and difference

r_{th} (inch)	max. difference (inch)
.116" (2.94 mm)	.051" (1.3 mm)



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