

# GOmill PRO APPLICATION DATA **METRIC**



Material Group					KCU20		Recommended Feed per Tooth (Fz=mm/th) is for Side Milling (A). For Slotting (B) Reduce Fz by 20%														
	Side Milling		Slotting		Cutting Speed Vc		D1 - Diameter														
	ap	ae	ap	Min	Max		mm	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
			m/min																		
P	P0	Ap1Max	0.4xD	1xD	150	200	Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.101	0.108	0.114	0.124	
	P1	Ap1Max	0.4xD	1xD	150	200	Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.101	0.108	0.114	0.124	
	P2	Ap1Max	0.4xD	1xD	140	190	Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.101	0.108	0.114	0.124	
	P3	Ap1Max	0.4xD	1xD	120	160	Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.087	0.095	0.101	0.114	
	P4	Ap1Max	0.4xD	0.75xD	90	150	Fz	0.010	0.016	0.021	0.027	0.033	0.045	0.054	0.062	0.070	0.077	0.083	0.088	0.098	
	P5	Ap1Max	0.4xD	1xD	60	100	Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.070	0.076	0.081	0.091	
M	P6	Ap1Max	0.4xD	0.75xD	50	75	Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.057	0.061	0.065	0.071	
	M1	Ap1Max	0.4xD	1xD	90	115	Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.087	0.095	0.101	0.114	
	M2	Ap1Max	0.4xD	1xD	60	80	Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.070	0.076	0.081	0.091	
K	M3	Ap1Max	0.4xD	1xD	60	70	Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.057	0.061	0.065	0.071	
	K1	Ap1Max	0.4xD	1xD	120	150	Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.101	0.108	0.114	0.124	
	K2	Ap1Max	0.4xD	1xD	110	140	Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.087	0.095	0.101	0.114	
S	K3	Ap1Max	0.4xD	1xD	110	130	Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.070	0.076	0.081	0.091	
	S1	Ap1Max	0.4xD	0.3XD	50	90	Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.087	0.095	0.101	0.114	
	S2	Ap1Max	0.4xD	0.3XD	25	50	Fz	0.006	0.009	0.013	0.016	0.019	0.026	0.032	0.037	0.042	0.046	0.050	0.054	0.061	
	S3	Ap1Max	0.4xD	1xD	25	40	Fz	0.006	0.009	0.013	0.016	0.019	0.026	0.032	0.037	0.042	0.046	0.050	0.054	0.061	
H	S4	Ap1Max	0.4xD	1xD	50	60	Fz	0.007	0.011	0.016	0.021	0.026	0.037	0.045	0.052	0.058	0.064	0.069	0.074	0.084	
	H1	Ap1Max	0.4xD	0.75xD	80	140	Fz	0.010	0.016	0.021	0.027	0.033	0.045	0.054	0.062	0.070	0.077	0.083	0.088	0.098	
	H2	Ap1Max	0.4xD	0.5xD	70	120	Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.057	0.061	0.065	0.071	

**NOTE:**

Those guidelines may require variations to achieve optimum results.

Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on diameters greater than 12mm.

For better surface finish reduce feed per tooth.

Side milling applications - for longest reach (L3) tools, reduce Ae by 30%.

Slot milling applications - for longest reach (L3) tools, reduce Ae by 30%.

Sharp corner tools do not recommended for slotting application.

Looking for speeds and feeds? Visit [kenametalnovo.com](http://kenametalnovo.com) to get cutting data specific to your application!



# GOmill PRO APPLICATION DATA - Adjustment Factor Table **METRIC**

Adjustment Factor Table for Feed and Speed Calculation.

	Ae/D	2%	4%	5%	8%	10%	12%	20%	30%	40%	50%	100%
<b>Speed Factor</b>	Kv	2.1 - 3.6	1.6 - 3	1.6 - 2.5	1.6	1.4	1.38	1.3	1.2	1.1	1	1
<b>Feed Factor</b>	KFz	3.58	2.56	2.3	1.84	1.67	1.54	1.25	1.09	1.02	1	0.9
<b>phi [°]</b>		16.26	23.07	25.84	32.86	36.87	40.54	53.13	66.42	78.46	90.00	180.00

**NOTE:**

These calculations are for roughing / semi-finishing cuts when used with the recommended base fz.

For light finishing cuts requiring improved surface quality it is recommended to reduce the base fz approximately 50% and then apply these factors.

For an Ae/D ratio of 5% or less there is range given for speed factor Kv, which allows the user to either be more conservative at the lower value or more aggressive with the higher value.

This can also be considered based on machinability of the material, from difficult to free cutting.

To calculate application specific cutting data, please use above Kv coefficient for adaptation of cutting speed and KFz for feed respectively.

$$Vc\ new = Vc * Kv$$

$$Fz\ new = Fz * KFz$$

**Calculation Example:**

Application:

D1= 14.0mm  
 Material Group P5  
 Ae= 20% of D  
 Vc= 80 m/min  
 Fz= 0.063 mm/th  
 Kv= 1.30  
 KFz= 1.25

Cutting data recommendation:

Adjustment coefficient:

**Final cutting data recommendation:**

Vc new= 80 \* 1.30 = 104  
 Fz new= 0.06328 \* 1.25 = 0.0791


# GOmill PRO APPLICATION DATA - Long **METRIC**



GOmill PRO - Ball Nose



GOmill PRO - Square End

Material Group		Recommended Feed per Tooth (Fz=mm/th) is for Side Milling (A). No Slotting operations recommended.																	
		KCU20 Cutting Speed Vc				D1 - Diameter													
		Side Milling		m/min															
		ap	ae	Min	Max		mm	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	18.0	20.0	25.0
P	P0	Ap1Max	0.2xD	150	200		Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.108	0.114	0.124
	P1	Ap1Max	0.2xD	150	200		Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.108	0.114	0.124
	P2	Ap1Max	0.2xD	140	190		Fz	0.014	0.021	0.028	0.036	0.044	0.060	0.072	0.083	0.092	0.108	0.114	0.124
	P3	Ap1Max	0.2xD	120	160		Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.095	0.101	0.114
	P4	Ap1Max	0.2xD	90	150		Fz	0.010	0.016	0.021	0.027	0.033	0.045	0.054	0.062	0.070	0.083	0.088	0.098
	P5	Ap1Max	0.2xD	60	100		Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.076	0.081	0.091
M	P6	Ap1Max	0.15xD	50	75		Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.061	0.065	0.071
	M1	Ap1Max	0.2xD	90	115		Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.095	0.101	0.114
	M2	Ap1Max	0.2xD	60	80		Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.076	0.081	0.091
K	M3	Ap1Max	0.2xD	60	70		Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.061	0.065	0.071
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	K2	Ap1Max	0.2xD	110	140		Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.095	0.101	0.114
S	K3	Ap1Max	0.2xD	110	130		Fz	0.009	0.014	0.019	0.024	0.029	0.040	0.048	0.056	0.063	0.076	0.081	0.091
	S1	Ap1Max	0.1xD	50	90		Fz	0.011	0.017	0.023	0.030	0.036	0.050	0.061	0.070	0.079	0.095	0.101	0.114
	S2	Ap1Max	0.1xD	25	50		Fz	0.006	0.009	0.013	0.016	0.019	0.026	0.032	0.037	0.042	0.050	0.054	0.061
	S3	Ap1Max	0.1xD	25	40		Fz	0.006	0.009	0.013	0.016	0.019	0.026	0.032	0.037	0.042	0.050	0.054	0.061
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H	H1	Ap1Max	0.15xD	80	140		Fz	0.010	0.016	0.021	0.027	0.033	0.045	0.054	0.062	0.070	0.083	0.088	0.098
	H2	Ap1Max	0.15xD	70	120		Fz	0.008	0.012	0.016	0.020	0.025	0.034	0.040	0.047	0.052	0.061	0.065	0.071

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