



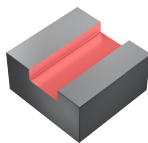
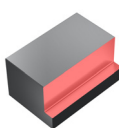
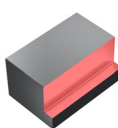
Cutting speed recommendations

Versatile - CoroMill® Dura 1-2 x D assortment

increase +20% f_z for end mills with shorter length 1,5 x D

reduce -50% feedrate f_z for IK337 end mill (-50%)

increase +30% f_z for Z3 and Z2 end mill $a_{p,max}=1 \times D$

													
					$a_e = 1.0 \times DC$			$a_e = 0.5 \times DC$			$a_e = 0.1 \times DC$		
					$a_p = 0.5 \times DC$			$a_p = 1.0 \times DC$			$a_p = 1.5 \times DC$		
ISO	MC No.	CMC	Material	HB	f_z	v_c m/min	v_c feet/min	f_z	v_c m/min	v_c feet/min	f_z	v_c m/min	v_c feet/min
P	P1.2.Z.AN	01.2	Unalloyed steel	190	F01	145	475	F04	175	574	F06	290	951
	P2.2.Z.AN	02.2	Low-alloyed steel	240	F01	110	361	F04	135	443	F06	230	754
	P3.0.Z.HT	03.21	High alloyed steel	380	F02	80	262	F05	100	328	F06	200	656
M	P5.0.Z.AN	05.11	Ferritic/martensitic stainless steel	200	F02	80	262	F05	90	295	F04	150	492
	M1.0.Z.AQ	05.21	Austenitic stainless steel	200	F01	70	230	F04	80	262	F06	120	393
	M3.2.Z.AQ	05.51	Duplex (austenitic/ferritic) stainless steel	260	F02	60	197	F05	70	230	F04	90	295
K	K1.1.C.NS	07.2	Malleable cast iron	200	F01	150	492	F04	180	590	F06	250	820
	K2.1.C.UT	08.2	Grey cast iron	180	F01	150	492	F04	180	590	F06	250	820
	K3.2.C.UT	09.2	Nodular cast iron	215	F01	160	525	F04	190	623	F06	270	885
N	N1.2.Z.AG	30.12	Aluminium based alloys	100	F03	680	2230	F03	835	2738	F09	950	3115
	N1.3.C.UT	30.21	Aluminium based alloys	75	F03	230	754	F03	305	1000	F09	410	1344
	N1.4.C.NS	30.42	Aluminium based alloys	130	F03	100	328	F03	130	426	F09	195	639
	N3.2.C.UT	33.2	Copper and copper alloys	90	F03	130	426	F03	170	557	F09	245	803
S	S2.0.Z.AG	20.22	Iron based superalloys	350	F02	25	82	F05	30	98	F07	40	131
	S4.2.Z.AN	23.22	Nickel based super alloys	320	F02	40	131	F05	50	164	F07	70	230

Feed recommendations

mm/tooth

inch/tooth

DC	1.000	2.000	3.000	4.000	6.000	6.350	8.000	9.525	10.000	12.000	12.700	14.000	15.875	16.000	19.050	20.000	25.000	25.400
f_z	0.039	0.079	0.157	0.236	0.250	0.315	0.375	0.394	0.472	0.500	0.551	0.625	0.630	0.750	0.787	0.984	1.000	
F01	0.008	0.012	0.016	0.021	0.029	0.030	0.037	0.044	0.046	0.054	0.057	0.062	0.070	0.071	0.083	0.087	0.108	0.110
	.0003	.0005	.0006	.0008	.0011	.0012	.0015	.0017	.0018	.0021	.0022	.0025	.0028	.0028	.0033	.0034	.0043	.0043
F02	0.008	0.011	0.015	0.018	0.025	0.026	0.032	0.037	0.038	0.045	0.047	0.052	0.058	0.058	0.069	0.072	0.089	0.090
	.0003	.0004	.0006	.0007	.0010	.0010	.0012	.0014	.0015	.0018	.0019	.0020	.0023	.0023	.0027	.0028	.0035	.0035
F03	0.020	0.027	0.033	0.040	0.053	0.055	0.066	0.076	0.079	0.092	0.097	0.105	0.118	0.118	0.138	0.145	0.177	0.180
	.0008	.0010	.0013	.0016	.0021	.0022	.0026	.0030	.0031	.0036	.0038	.0041	.0046	.0047	.0054	.0057	.0070	.0071
F04	0.020	0.025	0.029	0.034	0.044	0.045	0.053	0.060	0.062	0.072	0.075	0.081	0.090	0.091	0.105	0.110	0.133	0.135
	.0008	.0010	.0012	.0013	.0017	.0018	.0021	.0024	.0025	.0028	.0030	.0032	.0035	.0036	.0041	.0043	.0052	.0053
F05	0.020	0.023	0.027	0.030	0.037	0.039	0.044	0.050	0.051	0.058	0.061	0.065	0.072	0.072	0.083	0.086	0.104	0.105
	.0008	.0009	.0011	.0012	.0015	.0015	.0017	.0020	.0020	.0023	.0024	.0026	.0028	.0028	.0033	.0034	.0041	.0041
F06	0.022	0.028	0.035	0.041	0.054	0.057	0.067	0.077	0.080	0.093	0.098	0.106	0.118	0.119	0.139	0.145	0.177	0.180
	.0009	.0011	.0014	.0016	.0021	.0022	.0027	.0030	.0032	.0037	.0038	.0042	.0047	.0047	.0055	.0057	.0070	.0071
F07	0.020	0.025	0.031	0.036	0.047	0.049	0.057	0.065	0.068	0.079	0.082	0.089	0.099	0.100	0.116	0.121	0.148	0.150
	.0008	.0010	.0012	.0014	.0018	.0019	.0023	.0026	.0027	.0031	.0032	.0035	.0039	.0039	.0046	.0048	.0058	.0059
F08	0.030	0.038	0.046	0.053	0.069	0.072	0.085	0.096	0.100	0.116	0.121	0.131	0.146	0.147	0.171	0.178	0.217	0.220
	.0012	.0015	.0018	.0021	.0027	.0028	.0033	.0038	.0039	.0046	.0048	.0052	.0057	.0058	.0067	.0070	.0085	.0087

For optimized cutting data see CoroPlus® ToolGuide.



Cutting speed recommendations

Versatile - CoroMill® Dura solid carbide end mills 3-4 x D assortment

ENG

																				
					1K354-XC/XD				1K357-XD				1K365-XC/XD				1K377-XD			
					$a_p = 3.0 \times DC$				$a_p = 3.0 \times DC$				$a_p = 3.5 \times DC$				$a_p = 4.0 \times DC$			
ISO	MC No.	CMC	Material	HB	a_e	f_z	v_c m/min	v_c feet/min	a_e	f_z	v_c m/min	v_c feet/min	a_e	f_z	v_c m/min	v_c feet/min	a_e	f_z	v_c m/min	v_c feet/min
P	P1.2.Z.AN	01.2	Unalloyed steel	190	0.15xDC	F01	250	820	0.10xDC	F01	275	902	0.07xDC	F04	303	992	0.05xDC	F07	333	1091
	P2.2.Z.AN	02.2	Low-alloyed steel	240	0.15xDC	F01	240	787	0.10xDC	F02	264	866	0.07xDC	F04	290	952	0.05xDC	F07	319	1048
	P3.0.Z.HT	03.21	High alloyed steel	320	0.15xDC	F02	140	459	0.10xDC	F02	154	505	0.07xDC	F05	169	555	0.05xDC	F02	186	611
M	P5.0.Z.AN	05.11	Ferritic/martensitic stainless steel	200	0.15xDC	F02	120	393	0.10xDC	F02	132	433	0.07xDC	F05	145	476	0.05xDC	F08	160	524
	M1.0.Z.AQ	05.21	Austenitic stainless steel	200	0.15xDC	F02	150	492	0.10xDC	F02	165	541	0.07xDC	F05	182	595	0.05xDC	F08	200	655
	M3.2.Z.AQ	05.51	Duplex (austenitic/ferritic) stainless steel	260	0.15xDC	F02	130	426	0.10xDC	F02	143	469	0.07xDC	F05	157	516	0.05xDC	F08	173	567
K	K1.1.C.NS	07.2	Malleable cast iron	200	0.15xDC	F01	235	770	0.10xDC	F01	259	848	0.07xDC	F04	284	932	0.05xDC	F07	313	1026
	K2.1.C.UT	08.2	Grey cast iron	180	0.15xDC	F01	240	787	0.10xDC	F01	264	866	0.07xDC	F04	290	952	0.05xDC	F07	319	1048
	K3.2.C.UT	09.2	Nodular cast iron	215	0.15xDC	F01	245	803	0.10xDC	F01	270	884	0.07xDC	F04	296	972	0.05xDC	F07	326	1069
N	N1.2.Z.AG	30.12	Aluminium based alloys	100	0.15xDC	F04	950	3115	0.10xDC	F04	1140	3738	0.07xDC	F06	1140	3738	0.05xDC	F03	1140	3738
	N1.3.C.UT	30.21	Aluminium based alloys	75	0.15xDC	F04	410	1344	0.10xDC	F04	492	1613	0.07xDC	F06	492	1613	0.05xDC	F03	492	1613
	N1.4.C.NS	30.42	Aluminium based alloys	130	0.15xDC	F04	195	639	0.10xDC	F04	234	767	0.07xDC	F06	234	767	0.05xDC	F03	234	767
	N3.2.C.UT	33.2	Copper and copper alloys	90	0.15xDC	F04	245	803	0.10xDC	F04	294	964	0.07xDC	F06	294	964	0.05xDC	F03	294	964
S	S2.0.Z.AG	20.22	Nickel based superalloys	350	0.05xDC	F03	55	180	0.05xDC	F03	55	180	0.05xDC	F03	55	180	0.05xDC	F08	55	180
	S4.2.Z.AN	23.22	Titanium based alloys	320	0.05xDC	F03	120	393	0.05xDC	F03	120	393	0.05xDC	F03	120	393	0.05xDC	F08	120	393

					Finishing			
					all			
					$a_p = 2.0 - 4.0 \times DC$			
ISO	MC No.	CMC	Material	HB	a_e mm	f_z mm	v_c m/min	v_c feet/min
P	P1.2.Z.AN	01.2	Unalloyed steel	190	0.10(0.05-0.2)	0.03	366	1200
	P2.2.Z.AN	02.2	Low-alloyed steel	240	0.10(0.05-0.2)	0.03	351	1152
	P3.0.Z.HT	03.21	High alloyed steel	320	0.10(0.05-0.2)	0.03	205	672
M	P5.0.Z.AN	05.11	Ferritic/martensitic stainless steel	200	0.10(0.05-0.2)	0.03	176	576
	M1.0.Z.AQ	05.21	Austenitic stainless steel	200	0.10(0.05-0.2)	0.03	220	720
	M3.2.Z.AQ	05.51	Duplex (austenitic/ferritic) stainless steel	260	0.10(0.05-0.2)	0.03	190	624
K	K1.1.C.NS	07.2	Malleable cast iron	200	0.10(0.05-0.2)	0.03	344	1128
	K2.1.C.UT	08.2	Grey cast iron	180	0.10(0.05-0.2)	0.03	351	1152
	K3.2.C.UT	09.2	Nodular cast iron	215	0.10(0.05-0.2)	0.03	359	1176
N	N1.2.Z.AG	30.12	Aluminium based alloys	100	0.10(0.05-0.2)	0.03	1140	3738
	N1.3.C.UT	30.21	Aluminium based alloys	75	0.10(0.05-0.2)	0.03	492	1613
	N1.4.C.NS	30.42	Aluminium based alloys	130	0.10(0.05-0.2)	0.03	234	767
	N3.2.C.UT	33.2	Copper and copper alloys	90	0.10(0.05-0.2)	0.03	294	964
S	S2.0.Z.AG	20.22	Nickel based superalloys	350	0.10(0.05-0.2)	0.03	50	164
	S4.2.Z.AN	23.22	Titanium based alloys	320	0.10(0.05-0.2)	0.03	105	344

Feed recommendations

mm/tooth

inch/tooth

DC	2.000	3.000	4.000	6.000	6.350	8.000	9.525	10.000	12.000	12.700	14.000	15.875	16.000	19.050	20.000	25.000	25.400
f_z	0.079	0.118	0.157	0.236	0.250	0.315	0.375	0.394	0.472	0.500	0.551	0.625	0.630	0.750	0.787	0.984	1.000
F01	0.010	0.015	0.020	0.030	0.032	0.040	0.048	0.050	0.060	0.064	0.070	0.079	0.080	0.095	0.100	0.125	0.127
	.0004	.0006	.0008	.0012	.0013	.0016	.0019	.0020	.0024	.0025	.0028	.0031	.0031	.0038	.0039	.0049	.0050
F02	0.008	0.012	0.015	0.023	0.024	0.031	0.036	0.038	0.046	0.049	0.054	0.061	0.061	0.073	0.076	0.095	0.097
	.0003	.0005	.0006	.0009	.0010	.0012	.0014	.0015	.0018	.0019	.0021	.0024	.0024	.0029	.0030	.0038	.0038
F03	0.010	0.014	0.019	0.028	0.030	0.037	0.044	0.046	0.055	0.058	0.064	0.073	0.073	0.087	0.092	0.114	0.116
	.0004	.0006	.0007	.0011	.0012	.0015	.0017	.0018	.0022	.0023	.0025	.0029	.0029	.0034	.0036	.0045	.0046
F04	0.013	0.020	0.027	0.040	0.042	0.053	0.063	0.067	0.080	0.085	0.093	0.106	0.106	0.127	0.133	0.166	0.169
	.0005	.0008	.0011	.0016	.0017	.0021	.0025	.0026	.0031	.0033	.0037	.0042	.0042	.0050	.0052	.0065	.0067
F05	0.011	0.017	0.023	0.035	0.037	0.047	0.056	0.059	0.071	0.075	0.082	0.094	0.094	0.112	0.118	0.148	0.150
	.0004	.0007	.0009	.0014	.0015	.0018	.0022	.0023	.0028	.0029	.0032	.0037	.0037	.0044	.0046	.0058	.0059
F06	0.021	0.028	0.036	0.050	0.053	0.064	0.075	0.079	0.093	0.098	0.108	0.121	0.122	0.144	0.151	0.187	0.190
	.0008	.0011	.0014	.0020	.0021	.0025	.0030	.0031	.0037	.0039	.0042	.0048	.0048	.0057	.0059	.0074	.0075
F07	0.014	0.016	0.018	0.021	0.022	0.024	0.027	0.028	0.031	0.032	0.034	0.037	0.037	0.043	0.044	0.052	0.053
	.0006	.0006	.0007	.0008	.0008	.0010	.0011	.0011	.0012	.0013	.0013	.0015	.0015	.0017	.0017	.0021	.0021
F08	0.003	0.005	0.007	0.010	0.011	0.013	0.016	0.017	0.020	0.021	0.023	0.026	0.026	0.032	0.033	0.041	0.042
	.0001	.0002	.0003	.0004	.0004	.0005	.0006	.0007	.0008	.0008	.0009	.0010	.0010	.0012	.0013	.0016	.0017

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