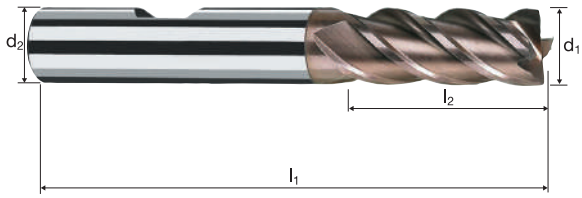
Cylindrical end mills

Smooth-edged, normal version

HSS-E Co8	λ 40° γ 15°
90°	



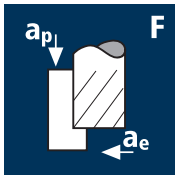
Roughing

Finishing

Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless	Ti Titanium	GG(G) Aluminium Copper

Example: **Order-N°.** Coating **U** Article-N°. **0110** ø-Code **100**

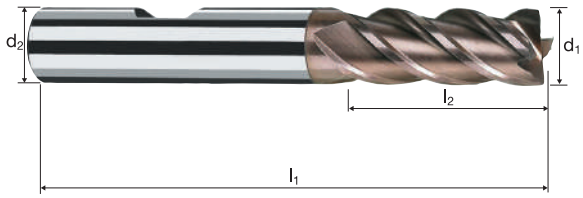
Ø Code	d_1 k8	d_2 h6	l_1	l_2	l_4	α	z	UNICUT-4X U0110
100	1.00	6.00	49	5.00	12.48	3.0°	4	●
120	1.50	6.00	50	6.00	12.99	3.0°	4	●
140	2.00	6.00	51	7.00	13.61	2.5°	4	●
160	2.50	6.00	52	8.00	15.50	2.0°	4	●
180	3.00	6.00	52	8.00	15.50	2.0°	4	●
200	3.50	6.00	54	10.00	17.50	1.5°	4	●
220	4.00	6.00	55	11.00	18.50	1.5°	4	●
240	4.50	6.00	55	11.00	18.50	1.0°	4	●
260	5.00	6.00	57	13.00	20.50	1.0°	4	●
280	5.50	6.00	57	13.00	20.50	1.0°	4	●
300	6.00	6.00	57	13.00	-	0.0°	4	●
342	7.00	10.00	66	16.00	25.50	1.5°	4	●
391	8.00	8.00	63	19.00	-	0.0°	4	●
420	9.00	10.00	69	19.00	28.50	0.5°	4	●
450	10.00	10.00	72	22.00	-	0.0°	4	●
470	11.00	12.00	79	22.00	33.50	0.5°	4	●
501	12.00	12.00	83	26.00	-	0.0°	4	●
570	14.00	12.00	83	26.00	-	0.0°	4	●
581	15.00	12.00	83	26.00	-	0.0°	4	●
610	16.00	16.00	92	32.00	-	0.0°	4	●
640	18.00	16.00	92	32.00	-	0.0°	4	●

Application	Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min-1]	v_f [mm/min]
	Steel < 850 N/mm²	2.00	4	65	0.005	3.000	0.050	10345	205
		4.00	4	65	0.010	6.000	0.100	5175	205
		5.00	4	65	0.015	7.500	0.150	4140	250
		6.00	4	65	0.015	9.000	0.150	3450	205
		8.00	4	65	0.025	12.000	0.200	2585	260
		10.00	4	65	0.030	15.000	0.250	2070	250
		12.00	4	65	0.035	18.000	0.300	1725	240
		16.00	4	65	0.045	24.000	0.400	1295	235
	Steel 850 - 1100 N/mm²	2.00	4	54	0.005	3.000	0.050	8595	170
		4.00	4	54	0.010	6.000	0.100	4295	170
		5.00	4	54	0.015	7.500	0.150	3440	205
		6.00	4	54	0.015	9.000	0.150	2865	170
		8.00	4	54	0.025	12.000	0.200	2150	215
		10.00	4	54	0.030	15.000	0.250	1720	205
		12.00	4	54	0.035	18.000	0.300	1430	200
		16.00	4	54	0.045	24.000	0.400	1075	195
	Steel 1100 - 1300 N/mm²	2.00	4	42	0.005	3.000	0.050	6685	135
		4.00	4	42	0.010	6.000	0.100	3340	135
		5.00	4	42	0.015	7.500	0.150	2675	160
		6.00	4	42	0.015	9.000	0.150	2230	135
		8.00	4	42	0.025	12.000	0.200	1670	165
		10.00	4	42	0.030	15.000	0.250	1335	160
		12.00	4	42	0.035	18.000	0.300	1115	155
		16.00	4	42	0.045	24.000	0.400	835	150
	Cold work tool steel (12% Cr), high alloyed [1.2379]	2.00	4	30	0.005	3.000	0.050	4775	95
		4.00	4	30	0.010	6.000	0.100	2385	95
		5.00	4	30	0.015	7.500	0.150	1910	115
		6.00	4	30	0.015	9.000	0.150	1590	95
		8.00	4	30	0.025	12.000	0.200	1195	120
		10.00	4	30	0.030	15.000	0.250	955	115
		12.00	4	30	0.035	18.000	0.300	795	110
		16.00	4	30	0.045	24.000	0.400	595	105
	Cast iron (lamellar / spheroidal)	2.00	4	50	0.005	3.000	0.050	7960	160
		4.00	4	50	0.010	6.000	0.100	3980	160
		5.00	4	50	0.015	7.500	0.150	3185	190
		6.00	4	50	0.015	9.000	0.150	2655	160
		8.00	4	50	0.025	12.000	0.200	1990	200
		10.00	4	50	0.030	15.000	0.250	1590	190
		12.00	4	50	0.035	18.000	0.300	1325	185
		16.00	4	50	0.045	24.000	0.400	995	180
	Inox normal [Cr-Ni/1.4301] [Cr-Ni-Mo/1.4571]	2.00	4	26	0.005	3.000	0.050	4140	85
		4.00	4	26	0.010	6.000	0.100	2070	85
		5.00	4	26	0.015	7.500	0.150	1655	100
		6.00	4	26	0.015	9.000	0.150	1380	85
		8.00	4	26	0.025	12.000	0.200	1035	105
		10.00	4	26	0.030	15.000	0.250	830	100
		12.00	4	26	0.035	18.000	0.300	690	95
		16.00	4	26	0.045	24.000	0.400	515	95
	Unalloyed copper	2.00	4	80	0.005	3.000	0.050	12730	255
		4.00	4	80	0.010	6.000	0.100	6365	255
		5.00	4	80	0.015	7.500	0.150	5095	305
		6.00	4	80	0.015	9.000	0.150	4245	255
		8.00	4	80	0.025	12.000	0.200	3185	320
		10.00	4	80	0.030	15.000	0.250	2545	305
		12.00	4	80	0.035	18.000	0.300	2120	295
		16.00	4	80	0.045	24.000	0.400	1590	285
	Wrought aluminium Construction aluminium	2.00	4	100	0.005	3.000	0.050	15915	320
		4.00	4	100	0.010	6.000	0.100	7960	320
		5.00	4	100	0.015	7.500	0.150	6365	380
		6.00	4	100	0.015	9.000	0.150	5305	320
		8.00	4	100	0.025	12.000	0.200	3980	400
		10.00	4	100	0.030	15.000	0.250	3185	380
		12.00	4	100	0.035	18.000	0.300	2655	370
		16.00	4	100	0.045	24.000	0.400	1990	360

Cylindrical end mills

Smooth-edged, normal version

HSS-E Co8	λ 40° γ 15°
90°	



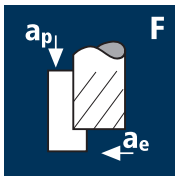
Roughing

Finishing

Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless	Ti Titanium	GG(G) Aluminium Copper

Example: **Order-N°.** Coating **U** Article-N°. **0110** ø-Code **682**

Ø Code	d_1 k8	d_2 h6	l_1	l_2	l_4	α	z	UNICUT-4X U0110
682	20.00	20.00	104	38.00	-	0.0°	4	●
690	21.00	20.00	104	38.00	-	0.0°	4	●
710	22.00	20.00	104	38.00	-	0.0°	4	●
741	24.00	20.00	111	45.00	-	0.0°	4	●
772	25.00	25.00	121	45.00	-	0.0°	4	●
800	28.00	25.00	121	45.00	-	0.0°	6	●
810	30.00	25.00	121	45.00	-	0.0°	6	●
832	32.00	32.00	133	53.00	-	0.0°	6	●
860	36.00	32.00	133	53.00	-	0.0°	6	●
881	40.00	32.00	143	63.00	-	0.0°	6	●

Application	Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min^{-1}]	v_f [mm/min]
	Steel < 850 N/mm²	20.00	4	65	0.055	30.000	0.500	1035	230
		22.00	4	65	0.065	33.000	0.550	940	245
		24.00	4	65	0.070	36.000	0.600	860	240
		25.00	4	65	0.070	37.500	0.650	830	230
		28.00	6	65	0.080	42.000	0.700	740	355
		30.00	6	65	0.085	45.000	0.750	690	350
		32.00	6	65	0.090	48.000	0.800	645	350
		36.00	6	65	0.105	54.000	0.900	575	360
		40.00	6	65	0.115	60.000	1.000	515	355
	Steel 850 - 1100 N/mm²	20.00	4	54	0.055	30.000	0.500	860	190
		22.00	4	54	0.065	33.000	0.550	780	205
		24.00	4	54	0.070	36.000	0.600	715	200
		25.00	4	54	0.070	37.500	0.650	690	195
		28.00	6	54	0.080	42.000	0.700	615	295
		30.00	6	54	0.085	45.000	0.750	575	290
		32.00	6	54	0.090	48.000	0.800	535	290
		36.00	6	54	0.105	54.000	0.900	475	300
		40.00	6	54	0.115	60.000	1.000	430	295
	Steel 1100 - 1300 N/mm²	20.00	4	42	0.055	30.000	0.500	670	145
		22.00	4	42	0.065	33.000	0.550	610	160
		24.00	4	42	0.070	36.000	0.600	555	155
		25.00	4	42	0.070	37.500	0.650	535	150
		28.00	6	42	0.080	42.000	0.700	475	230
		30.00	6	42	0.085	45.000	0.750	445	225
		32.00	6	42	0.090	48.000	0.800	420	225
		36.00	6	42	0.105	54.000	0.900	370	235
		40.00	6	42	0.115	60.000	1.000	335	230
	Cold work tool steel (12% Cr), high alloyed [1.2379]	20.00	4	30	0.055	30.000	0.500	475	105
		22.00	4	30	0.065	33.000	0.550	435	115
		24.00	4	30	0.070	36.000	0.600	400	110
		25.00	4	30	0.070	37.500	0.650	380	105
		28.00	6	30	0.080	42.000	0.700	340	165
		30.00	6	30	0.085	45.000	0.750	320	160
		32.00	6	30	0.090	48.000	0.800	300	160
		36.00	6	30	0.105	54.000	0.900	265	165
		40.00	6	30	0.115	60.000	1.000	240	165
	Cast iron (lamellar / spheroidal)	20.00	4	50	0.055	30.000	0.500	795	175
		22.00	4	50	0.065	33.000	0.550	725	190
		24.00	4	50	0.070	36.000	0.600	665	185
		25.00	4	50	0.070	37.500	0.650	635	180
		28.00	6	50	0.080	42.000	0.700	570	275
		30.00	6	50	0.085	45.000	0.750	530	270
		32.00	6	50	0.090	48.000	0.800	495	270
		36.00	6	50	0.105	54.000	0.900	440	280
		40.00	6	50	0.115	60.000	1.000	400	275
	Inox normal [Cr-Ni/1.4301] [Cr-Ni-Mo/1.4571]	20.00	4	26	0.055	30.000	0.500	415	90
		22.00	4	26	0.065	33.000	0.550	375	100
		24.00	4	26	0.070	36.000	0.600	345	95
		25.00	4	26	0.070	37.500	0.650	330	95
		28.00	6	26	0.080	42.000	0.700	295	140
		30.00	6	26	0.085	45.000	0.750	275	140
		32.00	6	26	0.090	48.000	0.800	260	140
		36.00	6	26	0.105	54.000	0.900	230	145
		40.00	6	26	0.115	60.000	1.000	205	145
	Unalloyed copper	20.00	4	80	0.055	30.000	0.500	1275	280
		22.00	4	80	0.065	33.000	0.550	1155	300
		24.00	4	80	0.070	36.000	0.600	1060	295
		25.00	4	80	0.070	37.500	0.650	1020	285
		28.00	6	80	0.080	42.000	0.700	910	435
		30.00	6	80	0.085	45.000	0.750	850	435
		32.00	6	80	0.090	48.000	0.800	795	430
		36.00	6	80	0.105	54.000	0.900	705	445
		40.00	6	80	0.115	60.000	1.000	635	440
	Wrought aluminium Construction aluminium	20.00	4	100	0.055	30.000	0.500	1590	350
		22.00	4	100	0.065	33.000	0.550	1445	375
		24.00	4	100	0.070	36.000	0.600	1325	370
		25.00	4	100	0.070	37.500	0.650	1275	355
		28.00	6	100	0.080	42.000	0.700	1135	545
		30.00	6	100	0.085	45.000	0.750	1060	540
		32.00	6	100	0.090	48.000	0.800	995	535
		36.00	6	100	0.105	54.000	0.900	885	555
		40.00	6	100	0.115	60.000	1.000	795	550