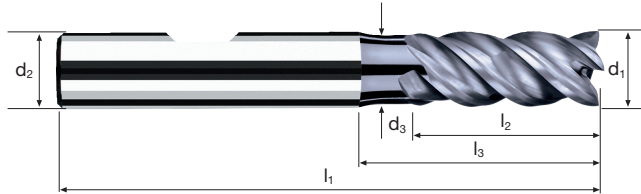
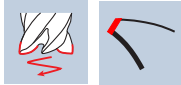
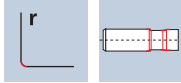


Cylindrical end mills NX-NVDS

Smooth-edged, normal version with short neck
High-performance penetration edge



**HM
MG10** λ 45°
 γ -20°



Roughing HPC



Roughing HDC



Finishing



Rm
850-1100

Rm
1100-1300

Rm
1300-1500

HRC
48-56

HRC
56-60

Ti
Titanium

**GG(G)
Tool Steel**

										POLYCHROM	
										P8600	
										P8500	
Example: Order-N°.	Coating P		Article-N°. 8600		ø-Code 220			 			
Ø Code	d1 e8	d2 h6	d3	l1	l2	l3	r	α	z		
220	4	6	3.7	57	8	16	0.10	3.0°	4	●	
260	5	6	4.6	57	10	18	0.10	1.5°	4	●	
300	6	6	5.5	57	12	20	0.10	0.0°	4	●	
391	8	8	7.4	63	19	26	0.15	0.0°	4	●	
450	10	10	9.2	72	23	31	0.20	0.0°	4	●	
501	12	12	11.0	83	27	37	0.20	0.0°	4	●	
610	16	16	15.0	92	32	43	0.20	0.0°	4	●	
682	20	20	19.0	104	39	53	0.20	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 / v _{fZ} [mm/min]	Q [cm ² /min]	φZ [°]	φA [°]	
	Steel 850 - 1100 N/mm ² 	4	4	150	0.030	6.0	1.6	11935	1430	13.5	20°	See ToolExpert HelixRamp (www.fraisa.com)	
		5	4	150	0.035	7.5	2.0	9550	1335	20.0	20°		
6	4	150	0.040	9.0	2.4	7960	1275	27.5	20°				
8	4	150	0.050	12.0	3.2	5970	1195	46.0	20°				
10	4	150	0.065	15.0	4.0	4775	1240	74.5	20°				
12	4	150	0.075	18.0	4.8	3980	1195	103.0	20°				
16	4	150	0.085	24.0	6.4	2985	1015	156.0	20°				
20	4	150	0.100	30.0	8.0	2385	955	229.0	20°				
	Steel 1100 - 1300 N/mm ² 	4	4	115	0.030	6.0	1.6	9150	1100	10.5	17.5°		See ToolExpert HelixRamp (www.fraisa.com)
		5	4	115	0.035	7.5	2.0	7320	1025	15.5	17.5°		
6	4	115	0.040	9.0	2.4	6100	975	21.0	17.5°				
8	4	115	0.050	12.0	3.2	4575	915	35.0	17.5°				
10	4	115	0.065	15.0	4.0	3660	950	57.0	17.5°				
12	4	115	0.075	18.0	4.8	3050	915	79.0	17.5°				
16	4	115	0.085	24.0	6.4	2290	780	120.0	17.5°				
20	4	115	0.100	30.0	8.0	1830	730	175.0	17.5°				
Hardened tool steel 52 - 56 HRC 	Hardened tool steel 52 - 56 HRC 	4	4	50	0.015	6.0	1.6	3980	240	2.5	15°	See ToolExpert HelixRamp (www.fraisa.com)	
		5	4	50	0.020	7.5	2.0	3185	255	4.0	15°		
6	4	50	0.025	9.0	2.4	2655	265	5.5	15°				
8	4	50	0.030	12.0	3.2	1990	240	9.0	15°				
10	4	50	0.035	15.0	4.0	1590	225	13.5	15°				
12	4	50	0.045	18.0	4.8	1325	240	20.5	15°				
16	4	50	0.055	24.0	6.4	995	220	34.0	15°				
20	4	50	0.070	30.0	8.0	795	225	54.0	15°				
Titanium alloys >300 HB [Ti6Al4V] 	Titanium alloys >300 HB [Ti6Al4V] 	4	4	60	0.020	6.0	1.6	4775	380	3.5	12°		See ToolExpert HelixRamp (www.fraisa.com)
		5	4	60	0.025	7.5	2.0	3820	380	5.5	12°		
6	4	60	0.030	9.0	2.4	3185	380	8.0	12°				
8	4	60	0.040	12.0	3.2	2385	380	14.5	12°				
10	4	60	0.045	15.0	4.0	1910	345	20.5	12°				
12	4	60	0.055	18.0	4.8	1590	350	30.0	12°				
16	4	60	0.065	24.0	6.4	1195	310	47.5	12°				
20	4	60	0.080	30.0	8.0	955	305	73.0	12°				

Application	Material	d1 [mm]	z	v _c [m/min]	f _z [mm]	a _p [mm]	a _e [mm]	n [min ⁻¹]	v _f / v _{fR} [mm/min]	Q [cm ² /min]	φR [°]	LR [mm]
	Steel 850 - 1100 N/mm ² 	4	4	120	0.025	5.0	4	9550	955	19.0	32°	8.0
		5	4	120	0.025	6.3	5	7640	765	24.0	32°	10.4
6	4	120	0.030	7.5	6	6365	765	34.5	32°	12.0		
8	4	120	0.040	10.0	8	4775	765	61.0	32°	16.0		
10	4	120	0.050	12.5	10	3820	765	95.5	32°	20.0		
12	4	120	0.055	15.0	12	3185	700	126.0	32°	24.0		
16	4	120	0.065	20.0	16	2385	620	198.5	32°	32.0		
20	4	120	0.075	25.0	20	1910	575	287.5	32°	40.0		
	Steel 1100 - 1300 N/mm ² 	4	4	90	0.025	5.0	4	7160	715	14.5	28°	9.4
		5	4	90	0.025	6.3	5	5730	575	18.0	28°	12.2
6	4	90	0.030	7.5	6	4775	575	26.0	28°	14.1		
8	4	90	0.040	10.0	8	3580	575	46.0	28°	18.8		
10	4	90	0.050	12.5	10	2865	575	72.0	28°	23.5		
12	4	90	0.055	15.0	12	2385	525	94.5	28°	28.2		
16	4	90	0.065	20.0	16	1790	465	149.0	28°	37.6		
20	4	90	0.075	25.0	20	1430	430	215.0	28°	47.0		
Hardened tool steel 52 - 56 HRC 	Hardened tool steel 52 - 56 HRC 	4	4	40	0.010	5.0	4	3185	125	2.5	24°	11.2
		5	4	40	0.015	6.3	5	2545	155	5.0	24°	14.6
6	4	40	0.020	7.5	6	2120	170	7.5	24°	16.8		
8	4	40	0.025	10.0	8	1590	160	13.0	24°	22.5		
10	4	40	0.025	12.5	10	1275	130	16.5	24°	28.1		
12	4	40	0.035	15.0	12	1060	150	27.0	24°	33.7		
16	4	40	0.040	20.0	16	795	125	40.0	24°	44.9		
20	4	40	0.055	25.0	20	635	140	70.0	24°	56.2		
Titanium alloys >300 HB [Ti6Al4V] 	Titanium alloys >300 HB [Ti6Al4V] 	4	4	50	0.015	5.0	4	3980	240	5.0	19°	14.5
		5	4	50	0.020	6.3	5	3185	255	8.0	19°	18.9
6	4	50	0.025	7.5	6	2655	265	12.0	19°	21.8		
8	4	50	0.030	10.0	8	1990	240	19.0	19°	29.0		
10	4	50	0.035	12.5	10	1590	225	28.0	19°	36.3		
12	4	50	0.040	15.0	12	1325	210	38.0	19°	43.6		
16	4	50	0.050	20.0	16	995	200	64.0	19°	58.1		
20	4	50	0.060	25.0	20	795	190	95.0	19°	72.6		