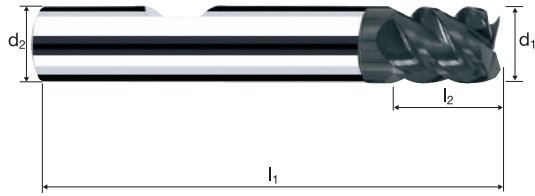
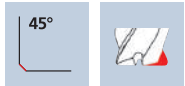


# Cylindrical end mills HX

Smooth-edged, short version



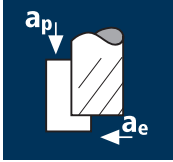
HM  
MG10     λ 55°  
                  γ -10°



		Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60		Ti Titanium	GG(G)
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Ø Code	d <sub>1</sub> e8	d <sub>2</sub> h6	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	45°	α	z	Example: Order-N°.		POLYCHROM	DURO-S
									Coating <b>D</b>	Article-N° <b>5349</b>	ø-Code <b>100</b>	
100	1.00	6.00	50	1.00	11.79	0.07	13.0°	3			P5349	D5349
108	1.20	6.00	50	1.20	11.82	0.07	12.5°	3			P5249	D5249
120	1.50	6.00	50	1.50	11.56	0.07	12.0°	3				
140	2.00	6.00	50	2.00	11.12	0.10	11.0°	3				
148	2.20	6.00	50	2.20	11.45	0.10	10.0°	3				
160	2.50	6.00	50	2.50	11.19	0.10	9.5°	3				
180	3.00	6.00	50	3.00	10.76	0.10	8.5°	4				
220	4.00	6.00	54	4.00	9.89	0.10	6.5°	4				
260	5.00	6.00	54	5.00	9.02	0.15	3.5°	4				
300	6.00	6.00	54	7.00	-	0.15	0.0°	4				
391	8.00	8.00	58	9.00	-	0.15	0.0°	4				
450	10.00	10.00	66	11.00	-	0.20	0.0°	4				
501	12.00	12.00	73	13.00	-	0.20	0.0°	4				
610	16.00	16.00	82	17.00	-	0.20	0.0°	4				

## Application



## Material

Hardened tool steel  
42 - 48 HRC



d1 [mm]	z	v <sub>r</sub> [m/min]	f <sub>s</sub> [mm]	a <sub>p</sub> [mm]	a <sub>e</sub> [mm]	n [min <sup>-1</sup> ]	v <sub>r</sub> [mm/min]	Q [cm <sup>3</sup> /min]
2.00	3	90	0.015	2.000	1.200	14325	645	1.5
3.00	4	90	0.025	3.000	1.800	9550	955	5.2
4.00	4	90	0.025	4.000	2.400	7160	715	6.9
5.00	4	90	0.035	5.000	3.000	5730	800	12.0
6.00	4	90	0.040	6.000	1.500	4775	765	6.9
8.00	4	90	0.055	8.000	4.800	3580	790	30.3
10.00	4	90	0.070	10.000	6.000	2865	800	48.1
12.00	4	90	0.085	12.000	7.200	2385	810	70.1
16.00	4	90	0.110	16.000	4.000	1790	790	50.4

Hardened tool steel  
48 - 52 HRC



2.00	3	70	0.010	2.000	1.200	11140	335	0.8
3.00	4	70	0.020	3.000	1.800	7425	595	3.2
4.00	4	70	0.025	4.000	2.400	5570	555	5.3
5.00	4	70	0.030	5.000	3.000	4455	535	8.0
6.00	4	70	0.035	6.000	1.500	3715	520	4.7
8.00	4	70	0.050	8.000	4.800	2785	555	21.4
10.00	4	70	0.060	10.000	6.000	2230	535	32.1
12.00	4	70	0.075	12.000	7.200	1855	555	48.1
16.00	4	70	0.100	16.000	4.000	1395	555	35.7

Hardened tool steel  
52 - 56 HRC



2.00	3	50	0.010	2.000	1.200	7960	240	0.6
3.00	4	50	0.015	3.000	1.800	5305	320	1.7
4.00	4	50	0.020	4.000	2.400	3980	320	3.1
5.00	4	50	0.025	5.000	3.000	3185	320	4.8
6.00	4	50	0.030	6.000	1.500	2655	320	2.9
8.00	4	50	0.040	8.000	4.800	1990	320	12.2
10.00	4	50	0.050	10.000	6.000	1590	320	19.1
12.00	4	50	0.060	12.000	7.200	1325	320	27.5
16.00	4	50	0.080	16.000	4.000	995	320	20.4

Hardened tool steel  
56 - 60 HRC



2.00	3	25	0.005	2.000	1.200	3980	60	0.1
3.00	4	25	0.010	3.000	1.800	2655	105	0.6
4.00	4	25	0.015	4.000	2.400	1990	120	1.1
5.00	4	25	0.020	5.000	3.000	1590	125	1.9
6.00	4	25	0.020	6.000	1.500	1325	105	1.0
8.00	4	25	0.030	8.000	4.800	995	120	4.6
10.00	4	25	0.035	10.000	6.000	795	110	6.7
12.00	4	25	0.045	12.000	7.200	665	120	10.3
16.00	4	25	0.060	16.000	4.000	495	120	7.6



Hardened tool steel  
42 - 48 HRC



2.00	3	75	0.010	1.000	2.000	11935	360	0.7
3.00	4	75	0.015	1.500	3.000	7960	475	2.1
4.00	4	75	0.025	2.000	4.000	5970	595	4.8
5.00	4	75	0.025	2.500	5.000	4775	475	6.0
6.00	4	75	0.035	3.000	6.000	3980	555	10.0
8.00	4	75	0.045	4.000	8.000	2985	535	17.2
10.00	4	75	0.055	5.000	10.000	2385	525	26.3
12.00	4	75	0.070	6.000	12.000	1990	555	40.1
16.00	4	75	0.085	4.000	16.000	1490	505	32.5

Hardened tool steel  
48 - 52 HRC



2.00	3	60	0.010	1.000	2.000	9550	285	0.6
3.00	4	60	0.015	1.500	3.000	6365	380	1.7
4.00	4	60	0.020	2.000	4.000	4775	380	3.1
5.00	4	60	0.030	2.500	5.000	3820	460	5.7
6.00	4	60	0.035	3.000	6.000	3185	445	8.0
8.00	4	60	0.045	4.000	8.000	2385	430	13.8
10.00	4	60	0.055	5.000	10.000	1910	420	21.0
12.00	4	60	0.065	6.000	12.000	1590	415	29.8
16.00	4	60	0.090	4.000	16.000	1195	430	27.5

Hardened tool steel  
52 - 56 HRC



2.00	3	40	0.010	1.000	2.000	6365	190	0.4
3.00	4	40	0.015	1.500	3.000	4245	255	1.1
4.00	4	40	0.020	2.000	4.000	3185	255	2.0
5.00	4	40	0.020	2.500	5.000	2545	205	2.5
6.00	4	40	0.025	3.000	6.000	2120	210	3.8
8.00	4	40	0.035	4.000	8.000	1590	225	7.1
10.00	4	40	0.045	5.000	10.000	1275	230	11.5
12.00	4	40	0.055	6.000	12.000	1060	235	16.8
16.00	4	40	0.070	4.000	16.000	795	225	14.3

Hardened tool steel  
56 - 60 HRC



2.00	3	20	0.006	1.000	2.000	3185	55	0.1
3.00	4	20	0.009	1.500	3.000	2120	75	0.3
4.00	4	20	0.013	2.000	4.000	1590	85	0.7
5.00	4	20	0.016	2.500	5.000	1275	80	1.0
6.00	4	20	0.019	3.000	6.000	1060	80	1.5
8.00	4	20	0.025	4.000	8.000	795	80	2.5
10.00	4	20	0.031	5.000	10.000	635	80	3.9
12.00	4	20	0.038	6.000	12.000	530	80	5.8
16.00	4	20	0.050	4.000	16.000	400	80	5.1