Corner radius end mills XSpeed

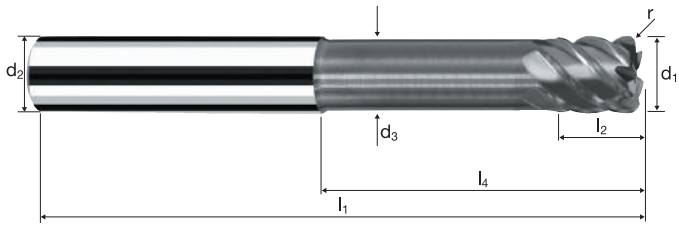
Tolerance r 0/+0.015, 6xd

X-Generation X

II

HM XT

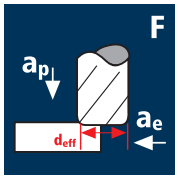
λ 55°
γ -10°

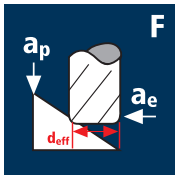


	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60		Ti Titanium	GG(G) Tool Steel HSS

Example: **Order-N°.** Coating **X** Article-N°. **7204** ø-Code **140**

Ø Code	d_1 0/-0.01	d_2 h4	d_3	l_1	l_2	l_3	l_4	r 0/+0.015	α	z	X-AL X7204
140	2.00	6.00	1.90	66	3.00	12.00	20.31	0.500	6.0°	4	●
180	3.00	6.00	2.80	66	4.00	18.00	24.63	0.500	3.7°	4	●
220	4.00	6.00	3.70	69	5.00	24.00	28.95	0.500	2.1°	4	●
260	5.00	6.00	4.60	75	6.00	30.00	33.27	0.500	0.9°	4	●
295	6.00	6.00	5.50	80	7.00	42.34	43.00	0.500	0.0°	4	●
300	6.00	6.00	5.50	80	7.00	42.34	43.00	0.500	0.0°	6	●
386	8.00	8.00	7.40	90	9.00	52.29	53.00	0.500	0.0°	4	●
391	8.00	8.00	7.40	90	9.00	52.29	53.00	0.500	0.0°	6	●
440	10.00	10.00	9.20	105	11.00	63.20	64.00	0.500	0.0°	4	●
450	10.00	10.00	9.20	105	11.00	63.20	64.00	0.500	0.0°	6	●
491	12.00	12.00	11.00	120	13.00	73.13	74.00	0.500	0.0°	4	●
501	12.00	12.00	11.00	120	13.00	73.13	74.00	0.500	0.0°	6	●
606	16.00	16.00	15.00	135	17.00	85.13	86.00	0.500	0.0°	6	●

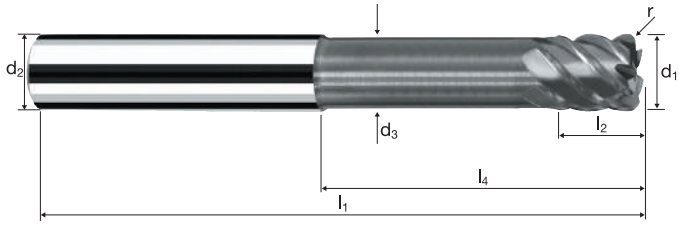
Application	Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	r [mm]
	Hardened tool steel 48 - 52 HRC	2.00	4	150	0.020	0.050	0.440	1.44	33155	2655	0.50
		3.00	4	150	0.025	0.050	0.660	2.44	19570	1955	0.50
		4.00	4	150	0.030	0.060	0.880	3.47	13760	1650	0.50
		5.00	4	150	0.030	0.060	1.100	4.47	10680	1280	0.50
		6.00	6	150	0.035	0.080	1.320	5.54	8620	1810	0.50
		8.00	6	150	0.040	0.080	1.760	7.54	6330	1520	0.50
		10.00	6	150	0.045	0.100	2.200	9.60	4975	1345	0.50
		12.00	6	150	0.050	0.100	2.640	11.60	4115	1235	0.50
		16.00	6	150	0.060	0.120	3.520	15.65	3050	1100	0.50
	Hardened tool steel 52 - 56 HRC	2.00	4	120	0.020	0.050	0.440	1.44	26525	2120	0.50
		3.00	4	120	0.025	0.050	0.660	2.44	15655	1565	0.50
		4.00	4	120	0.030	0.060	0.880	3.47	11010	1320	0.50
		5.00	4	120	0.030	0.060	1.100	4.47	8545	1025	0.50
		6.00	6	120	0.035	0.080	1.320	5.54	6895	1450	0.50
		8.00	6	120	0.040	0.080	1.760	7.54	5065	1215	0.50
		10.00	6	120	0.045	0.100	2.200	9.60	3980	1075	0.50
		12.00	6	120	0.050	0.100	2.640	11.60	3295	990	0.50
		16.00	6	120	0.060	0.120	3.520	15.65	2440	880	0.50
	Hardened tool steel 56 - 60 HRC	2.00	4	80	0.015	0.050	0.440	1.44	17685	1060	0.50
		3.00	4	80	0.020	0.050	0.660	2.44	10435	835	0.50
		4.00	4	80	0.025	0.060	0.880	3.47	7340	735	0.50
		5.00	4	80	0.025	0.060	1.100	4.47	5695	570	0.50
		6.00	6	80	0.030	0.080	1.320	5.54	4595	825	0.50
		8.00	6	80	0.030	0.080	1.760	7.54	3375	610	0.50
		10.00	6	80	0.035	0.100	2.200	9.60	2655	555	0.50
		12.00	6	80	0.040	0.100	2.640	11.60	2195	525	0.50
		16.00	6	80	0.050	0.120	3.520	15.65	1625	490	0.50
	Hardened tool steel > 60 HRC	2.00	4	40	0.015	0.050	0.440	1.44	8840	530	0.50
		3.00	4	40	0.020	0.050	0.660	2.44	5220	415	0.50
		4.00	4	40	0.025	0.060	0.880	3.47	3670	365	0.50
		5.00	4	40	0.025	0.060	1.100	4.47	2850	285	0.50
		6.00	6	40	0.030	0.080	1.320	5.54	2300	415	0.50
		8.00	6	40	0.030	0.080	1.760	7.54	1690	305	0.50
		10.00	6	40	0.035	0.100	2.200	9.60	1325	280	0.50
		12.00	6	40	0.040	0.100	2.640	11.60	1100	265	0.50
		16.00	6	40	0.050	0.120	3.520	15.65	815	245	0.50

Application	Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	β [°]
	Hardened tool steel 48 - 52 HRC	2.00	4	256	0.020	0.050	0.050	1.94	42005	3360	45°
		3.00	4	300	0.025	0.050	0.050	2.94	32480	3250	45°
		4.00	4	300	0.030	0.060	0.060	3.96	24115	2895	45°
		5.00	4	300	0.035	0.060	0.060	4.96	19255	2695	45°
		6.00	6	300	0.040	0.080	0.080	5.98	15970	3830	45°
		8.00	6	300	0.045	0.080	0.080	7.98	11965	3230	45°
		10.00	6	300	0.050	0.100	0.100	9.99	9560	2870	45°
		12.00	6	300	0.055	0.100	0.100	11.99	7965	2630	45°
		16.00	6	300	0.065	0.120	0.120	16.00	5970	2330	45°
	Hardened tool steel 52 - 56 HRC	2.00	4	250	0.020	0.050	0.050	1.94	41020	3280	45°
		3.00	4	250	0.025	0.050	0.050	2.94	27065	2705	45°
		4.00	4	250	0.030	0.060	0.060	3.96	20095	2410	45°
		5.00	4	250	0.035	0.060	0.060	4.96	16045	2245	45°
		6.00	6	250	0.040	0.080	0.080	5.98	13305	3195	45°
		8.00	6	250	0.045	0.080	0.080	7.98	9970	2690	45°
		10.00	6	250	0.050	0.100	0.100	9.99	7965	2390	45°
		12.00	6	250	0.050	0.100	0.100	11.99	6635	1990	45°
		16.00	6	250	0.060	0.120	0.120	16.00	4975	1790	45°
	Hardened tool steel 56 - 60 HRC	2.00	4	180	0.015	0.050	0.050	1.94	29535	1770	45°
		3.00	4	180	0.020	0.050	0.050	2.94	19490	1560	45°
		4.00	4	180	0.025	0.060	0.060	3.96	14470	1445	45°
		5.00	4	180	0.030	0.060	0.060	4.96	11550	1385	45°
		6.00	6	180	0.035	0.080	0.080	5.98	9580	2010	45°
		8.00	6	180	0.040	0.080	0.080	7.98	7180	1725	45°
		10.00	6	180	0.045	0.100	0.100	9.99	5735	1550	45°
		12.00	6	180	0.045	0.100	0.100	11.99	4780	1290	45°
		16.00	6	180	0.055	0.120	0.120	16.00	3580	1180	45°
	Hardened tool steel > 60 HRC	2.00	4	100	0.010	0.050	0.050	1.94	16410	655	45°
		3.00	4	100	0.015	0.050	0.050	2.94	10825	650	45°
		4.00	4	100	0.015	0.060	0.060	3.96	8040	480	45°
		5.00	4	100	0.020	0.060	0.060	4.96	6420	515	45°
		6.00	6	100	0.020	0.080	0.080	5.98	5325	640	45°
		8.00	6	100	0.025	0.080	0.080	7.98	3990	600	45°
		10.00	6	100	0.025	0.100	0.100	9.99	3185	480	45°
		12.00	6	100	0.030	0.100	0.100	11.99	2655	480	45°
		16.00	6	100	0.035	0.120	0.120	16.00	1990	420	45°

Corner radius end mills XSpeed

Tolerance r 0/+0.015, 6xd

HM XT	λ 55° γ -10°

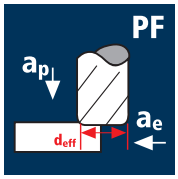


	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60		Ti Titanium	GG(G) Tool Steel HSS

Example: **Order-N°.** Coating **X** | Article-N°. **7204** | ø-Code **218**

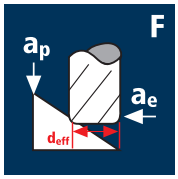
Ø Code	d_1 0/-0.01	d_2 h4	d_3	l_1	l_2	l_3	l_4	r 0/+0.015	α	z	X-AL X7204
218	4.00	6.00	3.70	69	5.00	24.00	28.95	1.000	2.1°	4	●
258	5.00	6.00	4.60	75	6.00	30.00	33.27	1.000	1.0°	4	●
293	6.00	6.00	5.50	80	7.00	42.34	43.00	1.000	0.0°	4	●
297	6.00	6.00	5.50	80	7.00	42.34	43.00	1.000	0.0°	6	●
384	8.00	8.00	7.40	90	9.00	52.29	53.00	1.000	0.0°	4	●
388	8.00	8.00	7.40	90	9.00	52.29	53.00	1.000	0.0°	6	●
435	10.00	10.00	9.20	105	11.00	63.20	64.00	1.000	0.0°	4	●
445	10.00	10.00	9.20	105	11.00	63.20	64.00	1.000	0.0°	6	●
486	12.00	12.00	11.00	120	13.00	73.13	74.00	1.000	0.0°	4	●
496	12.00	12.00	11.00	120	13.00	73.13	74.00	1.000	0.0°	6	●
608	16.00	16.00	15.00	135	17.00	85.13	86.00	1.000	0.0°	6	●

Application



Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	r [mm]
Hardened tool steel 48 - 52 HRC	4.00	4	150	0.040	0.180	0.880	3.14	15205	2435	1.00
	5.00	4	150	0.045	0.220	1.100	4.25	11235	2020	1.00
	6.00	6	150	0.050	0.260	1.320	5.35	8925	2675	1.00
	8.00	6	150	0.060	0.320	1.760	7.47	6390	2300	1.00
	10.00	6	150	0.080	0.380	2.200	9.57	4990	2395	1.00
	12.00	6	150	0.095	0.450	2.640	11.67	4090	2330	1.00
	16.00	6	150	0.105	0.500	3.520	15.73	3035	1910	1.00
Hardened tool steel 52 - 56 HRC	4.00	4	120	0.035	0.180	0.880	3.14	12165	1705	1.00
	5.00	4	120	0.040	0.220	1.100	4.25	8990	1440	1.00
	6.00	6	120	0.045	0.260	1.320	5.35	7140	1930	1.00
	8.00	6	120	0.055	0.320	1.760	7.47	5115	1685	1.00
	10.00	6	120	0.070	0.380	2.200	9.57	3990	1675	1.00
	12.00	6	120	0.085	0.450	2.640	11.67	3275	1670	1.00
	16.00	6	120	0.095	0.500	3.520	15.73	2430	1385	1.00
Hardened tool steel 56 - 60 HRC	4.00	4	80	0.035	0.180	0.880	3.14	8110	1135	1.00
	5.00	4	80	0.035	0.220	1.100	4.25	5990	840	1.00
	6.00	6	80	0.040	0.260	1.320	5.35	4760	1140	1.00
	8.00	6	80	0.050	0.320	1.760	7.47	3410	1025	1.00
	10.00	6	80	0.065	0.380	2.200	9.57	2660	1040	1.00
	12.00	6	80	0.080	0.450	2.640	11.67	2180	1045	1.00
	16.00	6	80	0.085	0.500	3.520	15.73	1620	825	1.00
Hardened tool steel > 60 HRC	4.00	4	40	0.025	0.180	0.880	3.14	4055	405	1.00
	5.00	4	40	0.025	0.220	1.100	4.25	2995	300	1.00
	6.00	6	40	0.030	0.260	1.320	5.35	2380	430	1.00
	8.00	6	40	0.035	0.320	1.760	7.47	1705	360	1.00
	10.00	6	40	0.045	0.380	2.200	9.57	1330	360	1.00
	12.00	6	40	0.055	0.450	2.640	11.67	1090	360	1.00
	16.00	6	40	0.060	0.500	3.520	15.73	810	290	1.00

Application



Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	β [°]
Hardened tool steel 48 - 52 HRC	4.00	4	300	0.030	0.080	0.080	3.86	24740	2970	45°
	5.00	4	300	0.035	0.080	0.080	4.86	19650	2750	45°
	6.00	6	300	0.040	0.110	0.110	5.90	16185	3885	45°
	8.00	6	300	0.045	0.110	0.110	7.90	12090	3265	45°
	10.00	6	300	0.050	0.140	0.140	9.94	9605	2880	45°
	12.00	6	300	0.055	0.140	0.140	11.94	8000	2640	45°
	16.00	6	300	0.065	0.160	0.160	15.96	5985	2335	45°
Hardened tool steel 52 - 56 HRC	4.00	4	250	0.030	0.080	0.080	3.86	20615	2475	45°
	5.00	4	250	0.035	0.080	0.080	4.86	16375	2290	45°
	6.00	6	250	0.040	0.110	0.110	5.90	13490	3235	45°
	8.00	6	250	0.045	0.110	0.110	7.90	10075	2720	45°
	10.00	6	250	0.050	0.140	0.140	9.94	8005	2400	45°
	12.00	6	250	0.050	0.140	0.140	11.94	6665	2000	45°
	16.00	6	250	0.060	0.160	0.160	15.96	4985	1795	45°
Hardened tool steel 56 - 60 HRC	4.00	4	180	0.025	0.080	0.080	3.86	14845	1485	45°
	5.00	4	180	0.030	0.080	0.080	4.86	11790	1415	45°
	6.00	6	180	0.035	0.110	0.110	5.90	9710	2040	45°
	8.00	6	180	0.040	0.110	0.110	7.90	7255	1740	45°
	10.00	6	180	0.045	0.140	0.140	9.94	5765	1555	45°
	12.00	6	180	0.045	0.140	0.140	11.94	4800	1295	45°
	16.00	6	180	0.055	0.160	0.160	15.96	3590	1185	45°
Hardened tool steel > 60 HRC	4.00	4	100	0.015	0.080	0.080	3.86	8245	495	45°
	5.00	4	100	0.020	0.080	0.080	4.86	6550	525	45°
	6.00	6	100	0.020	0.110	0.110	5.90	5395	645	45°
	8.00	6	100	0.025	0.110	0.110	7.90	4030	605	45°
	10.00	6	100	0.025	0.140	0.140	9.94	3200	480	45°
	12.00	6	100	0.030	0.140	0.140	11.94	2665	480	45°
	16.00	6	100	0.035	0.160	0.160	15.96	1995	420	45°