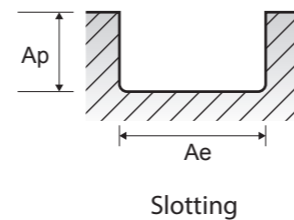


G9H80, G9H81, G9H85, G9H87, G9H91, G9H93, G9H96

SQUARE / CORNER RADIUS / 2 Flute / SLOTTING / INCH / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1						
P	1-2	Non-alloy steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170		
					IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037	.0037	.0037	.0037	.0037	.0037	
					RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	750	650	550	450	350	250	150
	3-4		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	
					IPT	.0005	.0006	.0008	.0009	.0013	.0016	.0017	.0019	.0024	.0029	.0039	.0039	.0039	.0039	.0039	.0039	.0039
					RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	650	550	450	350	250	150	100
	5		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
					IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041	.0041
					RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	350	250	150	100	70	40
	6		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	
					IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037	.0037	.0037	.0037	.0037	.0037	.0037
					RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	750	650	550	450	350	250	150
7	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145			
			IPT	.0005	.0006	.0008	.0009	.0013	.0016	.0017	.0019	.0024	.0029	.0039	.0039	.0039	.0039	.0039	.0039	.0039		
			RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	650	550	450	350	250	150	100	70	
8-9	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
			IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041	.0041		
			RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	350	250	150	100	70	40	30	
10	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170			
			IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037	.0037	.0037	.0037	.0037	.0037	.0037		
			RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	750	650	550	450	350	250	150	100	
11.1	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
			IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041	.0041		
			RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	350	250	150	100	70	40	30	
M	14.1	Stainless steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
					IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041	
					RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	350	250	150	100	70	40
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	195	195			
					IPT	.0006	.0008	.0011	.0015	.0022	.0027	.0032	.0037	.0051	.0061	.0080	.0080	.0080	.0080	.0080	.0080	
					RPM	5960	4770	3970	2980	2380	1990	1700	1490	1190	990	740	550	400	300	200	150	100
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	1.0D	SFM	490	490	490	490	490	490	490	490	490	490	490	490	490	490			
					IPT	.0005	.0008	.0009	.0011	.0015	.0019	.0021	.0023	.0030	.0036	.0048	.0048	.0048	.0048	.0048	.0048	
					RPM	14970	11980	9980	7490	5990	4990	4280	3740	2990	2500	1870	1370	1070	870	770	670	570
	26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	1.0D	SFM	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370		
					IPT	.0006	.0007	.0009	.0012	.0015	.0020	.0021	.0023	.0030	.0036	.0047	.0047	.0047	.0047	.0047	.0047	.0047
					RPM	11310	9050	7540	5650	4520	3770	3230	2830	2260	1880	1410	1010	760	560	410	310	210

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



E5H80, E5H81, E5H85, E5H87, E5H91, E5H93, E5H96

SQUARE / CORNER RADIUS / 2 FLUTE / SLOTTING / INCH / **Uncoated**

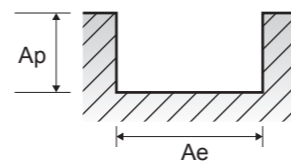
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)															
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1					
P	1-2	Non-alloy steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110		
					IPT	.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0029	.0039	.0039	.0039	.0039	.0039	.0039
					RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420	310	210	150	100	70
	3-4		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
					IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0026	.0030	.0038	.0038	.0038	.0038	.0038	.0038
					RPM	2900	2320	1940	1450	1160	970	830	730	580	480	360	260	180	130	90	60
	5		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
					IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0016	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041
					RPM	2440	1960	1630	1220	980	810	700	610	490	410	310	210	150	100	70	40
	6		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
					IPT	.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0030	.0039	.0039	.0039	.0039	.0039	.0039
					RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420	310	210	150	100	70
7	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95		
			IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0026	.0030	.0038	.0038	.0038	.0038	.0038	.0038		
			RPM	2900	2320	1940	1450	1160	970	830	730	580	480	360	260	180	130	90	60	40	30
8-9	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0016	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041		
			RPM	2440	1960	1630	1220	980	810	700	610	490	410	310	210	150	100	70	40	30	20
10	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110		
			IPT	.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0030	.0039	.0039	.0039	.0039	.0039	.0039		
			RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420	310	210	150	100	70	40	30
11.1	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0016	.0027	.0032	.0041	.0041	.0041	.0041	.0041	.0041		
			RPM	2440	1960	1630	1220	980	810	700	610	490	410	310	210	150	100	70	40	30	20
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	125	125	125	125	125	125	125	125	125	125	125	125	125	125		
					IPT	.0006	.0008	.0011	.0015	.0021	.0027	.0032	.0037	.0050	.0061	.0084	.0084	.0084	.0084	.0084	.0084
					RPM	3820	3060	2550	1910	1530	1270	1090	950	760	640	480	350	250	180	130	90
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	1.0D	SFM	315	315	315	315	315	315</										

G9H86

SQUARE / 2 FLUTE / SLOTING / METRIC / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						3	4	5	6	8	10	12	16	18	20	25		
P	1-2	Non-alloy steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0004	.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036		
					RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660		
	3-4		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145
					IPT	.0004	.0006	.0008	.0009	.0013	.0016	.0018	.0025	.0028	.0031	.0038		
					RPM	4690	3520	3300	2750	2060	1650	1410	1170	880	780	700	560	
	5		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041		
					RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470		
	6		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0004	.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036		
RPM		5500			4120	3300	2750	2060	1650	1370	1030	920	820	660				
7	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145		
			IPT	.0004	.0006	.0008	.0009	.0013	.0016	.0018	.0025	.0028	.0031	.0038				
			RPM	4690	3520	3300	2750	2060	1650	1410	1170	880	780	700	560			
8-9	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
10	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170		
			IPT	.0004	.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036				
			RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660				
11.1	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
M	14.1	Stainless steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041		
					RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	
					IPT	.0006	.0009	.0011	.0014	.0022	.0029	.0035	.0052	.0058	.0064	.0079		
					RPM	6310	4730	3780	3150	2360	1890	1580	1180	1050	950	760		
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	1.0D	SFM	490	490	490	490	490	490	490	490	490	490	490	490	
					IPT	.0005	.0008	.0009	.0011	.0015	.0020	.0022	.0030	.0034	.0038	.0047		
					RPM	15850	11890	9510	7920	5940	4750	3960	2970	2640	2380	1900		
	26-29.1		Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	1.0D	SFM	370	370	370	370	370	370	370	370	370	370	370	370
						IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0030	.0034	.0038	.0047	
						RPM	11970	8970	7180	5980	4490	3590	2990	2240	1990	1790	1440	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



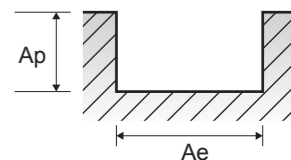
Slotting

E5H86

SQUARE / 2 FLUTE / SLOTING / METRIC / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						3	4	5	6	8	10	12	16	18	20	25		
P	1-2	Non-alloy steel	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038		
					RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430		
	3-4		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95
					IPT	.0004	.0006	.0008	.0009	.0012	.0016	.0017	.0026	.0028	.0031	.0038		
					RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370		
	5		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80
					IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040		
					RPM	2590	1940	1550	1290	970	780	650	490	430	390	310		
	6		1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038		
RPM		3560			2670	2130	1780	1330	1070	890	670	590	530	430				
7	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95		
			IPT	.0004	.0006	.0008	.0009	.0012	.0016	.0017	.0026	.0028	.0031	.0038				
			RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370				
8-9	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040				
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310				
10	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038				
			RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430				
11.1	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040				
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310				
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	upto Ø1/2 : 0.5D over Ø1/2 : 0.3D	SFM	125	125	125	125	125	125	125	125	125	125	125	125	
					IPT	.0006	.0008	.0011	.0014	.0021	.0029	.0035	.0051	.0058	.0065	.0082		
					RPM	4040	3030	2430	2020	1520	1210	1010	760	670	610	490		
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	1.0D	SFM	315	315	315	315	315	315	315	315	315	315	315	315	
					IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0030	.0033	.0037	.0045		
					RPM	10190	7640	6110	5090	3820	3060	2550	1910	1700	1530	1220		
26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	1.0D	SFM	235	235	235	235	235	235	235	235	235	235	235	235		
				IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0031	.0034	.0037	.0045			
				RPM	7600	5700	4560	3800	2850	2280	1900	1420	1270	1140	910			

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

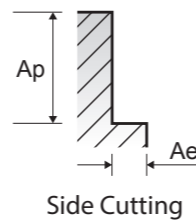


Slotting

G9H83, G9H84, G9H88, G9H90, G9H92, G9H94, G9H97
 SQUARE / CORNER RADIUS / 4 FLUTE / SIDE CUTTING / INCH / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																						
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1												
P	1-2	Non-alloy steel	0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170		
					IPT	.0006	.0009	.0011	.0013	.0017	.0022	.0024	.0026	.0038	.0044	.0056	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650	550	550	550	550	550	550	550	550	550	550	550	550
	3-4		0.1D	1.5D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	
					IPT	.0007	.0009	.0011	.0014	.0018	.0023	.0025	.0027	.0038	.0045	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	550	550	550	550	550	550	550	550	550	550	550	550	550
	5		0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
					IPT	.0006	.0008	.0010	.0012	.0016	.0020	.0022	.0024	.0040	.0046	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	460	460	460	460	460	460	460	460	460	460	460	460
	6		0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	
					IPT	.0006	.0009	.0011	.0013	.0017	.0022	.0024	.0026	.0038	.0044	.0056	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650	550	550	550	550	550	550	550	550	550	550	550	550
7	0.1D	1.5D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145			
			IPT	.0007	.0009	.0011	.0014	.0018	.0023	.0025	.0027	.0038	.0045	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060		
			RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	550	550	550	550	550	550	550	550	550	550	550	550	550		
8-9	0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
			IPT	.0006	.0008	.0010	.0012	.0016	.0020	.0022	.0024	.0040	.0046	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060		
			RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	460	460	460	460	460	460	460	460	460	460	460	460		
10	0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170			
			IPT	.0006	.0009	.0011	.0013	.0017	.0022	.0024	.0026	.0038	.0044	.0056	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060		
			RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650	550	550	550	550	550	550	550	550	550	550	550	550		
11.1	0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
			IPT	.0006	.0008	.0010	.0012	.0016	.0020	.0022	.0024	.0040	.0046	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060		
			RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460	460	460	460	460	460	460	460	460	460	460	460	460		
M	14.1	Stainless steel	0.1D	1.5D	SFM	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160		
					IPT	.0003	.0004	.0006	.0007	.0009	.0012	.0013	.0014	.0020	.0025	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035	.0035
					RPM	4890	3910	3260	2440	1960	1630	1400	1220	980	810	610	460	460	460	460	460	460	460	460	460	460	460	460
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195			
					IPT	.0009	.0012	.0016	.0023	.0033	.0041	.0048	.0056	.0078	.0081	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088	.0088
					RPM	5960	4770	3970	2980	2380	1990	1700	1490	1190	990	740	550	550	550	550	550	550	550	550	550	550	550	550
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	0.1D	1.5D	SFM	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490			
					IPT	.0008	.0011	.0013	.0017	.0022	.0027	.0031	.0034	.0044	.0053	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071	.0071
					RPM	14970	11980	9980	7490	5990	4990	4280	3740	2990	2500	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	0.1D	1.5D	SFM	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370			
				IPT	.0008	.0010	.0013	.0017	.0022	.0029	.0031	.0034	.0044	.0053	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069	.0069
				RPM	11310	9050	7540	5650	4520	3770	3230	2830	2260	1880	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410

SFM = ft./min.
 IPT = In./tooth
 RPM = rev./min.
 IPM = In./min.



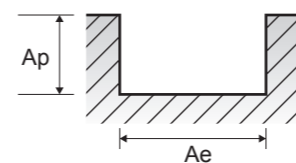
E5H83, E5H84, E5H88, E5H90, E5H92, E5H94, E5H97
 SQUARE / CORNER RADIUS / 4 FLUTE / SIDE CUTTING / INCH / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																						
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1												
P	1-2	Non-alloy steel	0.1D	1.5D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110		
					IPT	.0006	.0009	.0011	.0013	.0017	.0022	.0024	.0026	.0038	.0044	.0056	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420	420	420	420	420	420	420	420	420	420	420	420	420
	3-4		0.1D	1.5D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	
					IPT	.0007	.0009	.0011	.0013	.0018	.0023	.0025	.0027	.0038	.0045	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	2900	2320	1940	1450	1160	970	830	730	580	480	360	360	360	360	360	360	360	360	360	360	360	360	360
	5		0.1D	1.5D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
					IPT	.0006	.0008	.0010	.0012	.0016	.0020	.0022	.0024	.0040	.0046	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	2440	1960	1630	1220	980	810	700	610	490	410	310	310	310	310	310	310	310	310	310	310	310	310	310
	6		0.1D	1.5D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	
					IPT	.0006	.0009	.0011	.0013	.0017	.0022	.0024	.0026	.0038	.0044	.0056	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060
					RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420	420	420	420	420	420	420	420	420	420	420	420	420
7	0.1D	1.5D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95			
			IPT	.0007	.0009	.0011	.0013	.0018	.0023	.0025	.0027	.0038	.0045	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060	.0060		
			RPM	2900	2320	1940	1450	1160	970	830	730	58																

G9H83, G9H84, G9H88, G9H90, G9H92, G9H94, G9H97
 SQUARE / CORNER RADIUS / 4 FLUTE / SLOTING / INCH / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																			
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1									
P	1-2	Non-alloy steel	1.0D	0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037									
					RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650									
	3-4		SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	
			IPT	.0005	.0006	.0008	.0009	.0013	.0016	.0017	.0019	.0024	.0029	.0039											
			RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	550											
	5		SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
			IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041											
			RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460											
	6		SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	
IPT		.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037													
RPM		5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650													
7	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145			
	IPT	.0005	.0006	.0008	.0009	.0013	.0016	.0017	.0019	.0024	.0029	.0039													
	RPM	4430	3540	2950	2220	1770	1480	1270	1110	890	740	550													
8-9	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
	IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041													
	RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460													
10	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170			
	IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0018	.0025	.0029	.0037													
	RPM	5190	4160	3460	2600	2080	1730	1480	1300	1040	870	650													
11.1	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120			
	IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041													
	RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460													
M	14.1	Stainless steel	1.0D	0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120		
					IPT	.0004	.0006	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041									
					RPM	3670	2930	2440	1830	1470	1220	1050	920	730	610	460									
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.3D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195		
					IPT	.0006	.0008	.0011	.0015	.0022	.0027	.0032	.0037	.0051	.0061	.0080									
					RPM	5960	4770	3970	2980	2380	1990	1700	1490	1190	990	740									
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	0.5D	SFM	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490		
					IPT	.0005	.0008	.0009	.0011	.0015	.0019	.0021	.0023	.0030	.0036	.0048									
					RPM	14970	11980	9980	7490	5990	4990	4280	3740	2990	2500	1870									
					IPM	32	36	36	34	36	37	36	34	36	36	36									
					IPM	370	370	370	370	370	370	370	370	370	370	370									
	26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	0.5D	SFM	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	
					IPT	.0006	.0007	.0009	.0012	.0015	.0020	.0021	.0023	.0030	.0036	.0047									
					RPM	11310	9050	7540	5650	4520	3770	3230	2830	2260	1880	1410									
					IPM	25	25	27	26	27	29	28	26	27	27	27									

SFM = ft./min.
 IPT = In./tooth
 RPM = rev./min.
 IPM = In./min.

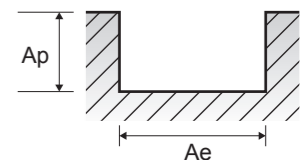


Slotting

E5H83, E5H84, E5H88, E5H90, E5H92, E5H94, E5H97
 SQUARE / CORNER RADIUS / 4 FLUTE / SLOTING / INCH / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																		
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1								
P	1-2	Non-alloy steel	1.0D	0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
					IPT	.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0030	.0039								
					RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420								
	3-4		SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
			IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0019	.0024	.0029	.0038										
			RPM	2900	2320	1940	1450	1160	970	830	730	580	480	360										
	5		SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041										
			RPM	2440	1960	1630	1220	980	810	700	610	490	410	310										
	6		SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
IPT		.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0030	.0039												
RPM		3360	2690	2240	1680	1340	1120	960	840	670	560	420												
7	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95		
	IPT	.0005	.0006	.0008	.0009	.0012	.0015	.0017	.0019	.0024	.0029	.0038												
	RPM	2900	2320	1940	1450	1160	970	830	730	580	480	360												
8-9	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
	IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041												
	RPM	2440	1960	1630	1220	980	810	700	610	490	410	310												
10	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110		
	IPT	.0004	.0006	.0007	.0009	.0011	.0014	.0016	.0018	.0025	.0030	.0039												
	RPM	3360	2690	2240	1680	1340	1120	960	840	670	560	420												
11.1	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
	IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0015	.0017	.0027	.0032	.0041												
	RPM	2440	1960	1630	1220	980	810	700	610	490	410	310												
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.3D	SFM	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	
					IPT	.0006	.0008	.0011	.0015	.0021	.0027	.0032	.0037	.0050	.0061	.0084								
					RPM	3820	3060	2550	1910	1530	1270	1090	950	760	640	480								
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	0.5D	SFM	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315	
					IPT	.0005	.0007	.0009	.0011	.0015	.0019	.0021	.0023	.0030	.0035	.0045								
					RPM	9630	7700	6420	4810	3850	3210	2750	2410	1930	1600	1200								
					IPM	20	22	23	22	23	24	23	22	23	23	22								
					IPM	235	235	235	235	235	235	235	235	235	235	235								
26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	0.5D	SFM	7180	5740	4790	3590	2870	2390	2050	1800	1440	1200	900									
				IPT	.0005	.0007	.0009	.0012	.0015	.0019	.0021	.0023	.0031	.0036	.0046									
				RPM	7180	5740	4790	3590	2870	2390	2050	1800	1440	1200	900									
				IPM	15	16	17	17	18	18	17	17	18	17	17									

SFM = ft./min.
 IPT = In./tooth
 RPM = rev./min.
 IPM = In./min.



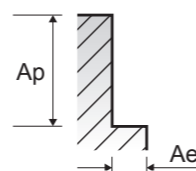
Slotting

G9H89, G9H95

SQUARE / 4 FLUTE / SIDE CUTTING / METRIC / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						3	4	5	6	8	10	12	16	18	20	25		
P	1-2	Non-alloy steel	0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0006	.0009	.0011	.0012	.0017	.0023	.0024	.0039	.0042	.0046	.0055		
					RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660		
	3-4		0.1D	1.5D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145
					IPT	.0006	.0009	.0012	.0013	.0018	.0024	.0026	.0038	.0043	.0047	.0059		
					RPM	4690	3520	2810	2340	1760	1410	1170	880	780	700	560		
	5		0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120
					IPT	.0006	.0008	.0011	.0011	.0016	.0022	.0023	.0040	.0044	.0048	.0059		
					RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470		
	6		0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0006	.0009	.0011	.0012	.0017	.0023	.0024	.0039	.0042	.0046	.0055		
					RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660		
7	0.1D	1.5D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145		
			IPT	.0006	.0009	.0012	.0013	.0018	.0024	.0026	.0038	.0043	.0047	.0059				
			RPM	4690	3520	2810	2340	1760	1410	1170	880	780	700	560				
8-9	0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0006	.0008	.0011	.0011	.0016	.0022	.0023	.0040	.0044	.0048	.0059				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
10	0.1D	1.5D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170		
			IPT	.0006	.0009	.0011	.0012	.0017	.0023	.0024	.0039	.0042	.0046	.0055				
			RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660				
11.1	0.1D	1.5D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0006	.0008	.0011	.0011	.0016	.0022	.0023	.0040	.0044	.0048	.0059				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
M	14.1	Stainless steel	0.1D	1.5D	SFM	160	160	160	160	160	160	160	160	160	160	160	160	
					IPT	.0003	.0005	.0006	.0006	.0009	.0012	.0013	.0020	.0024	.0027	.0034		
					RPM	5170	3880	3100	2590	1940	1550	1290	970	860	780	620		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	
					IPT	.0009	.0012	.0016	.0022	.0033	.0043	.0053	.0079	.0077	.0081	.0087		
					RPM	6310	4730	3780	3150	2360	1890	1580	1180	1050	950	760		
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	0.1D	1.5D	SFM	490	490	490	490	490	490	490	490	490	490	490	490	
					IPT	.0007	.0011	.0013	.0016	.0022	.0029	.0032	.0045	.0050	.0056	.0070		
					RPM	15850	11890	9510	7920	5940	4750	3960	2970	2640	2380	1900		
26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	0.1D	1.5D	SFM	370	370	370	370	370	370	370	370	370	370	370	370	370	
				IPT	.0008	.0011	.0014	.0016	.0022	.0030	.0032	.0045	.0050	.0055	.0068			
				RPM	11970	8970	7180	5980	4490	3590	2990	2240	1990	1790	1440			

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



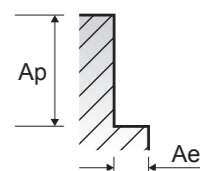
Side Cutting

E5H89, E5H95

SQUARE / 4 FLUTE / SIDE CUTTING / METRIC / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						3	4	5	6	8	10	12	16	18	20	25		
P	1-2	Non-alloy steel	0.1D	1.5D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	
					IPT	.0006	.0009	.0011	.0013	.0017	.0023	.0025	.0038	.0042	.0047	.0058		
					RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430		
	3-4		0.1D	1.5D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95
					IPT	.0006	.0009	.0012	.0013	.0018	.0024	.0025	.0039	.0042	.0046	.0057		
					RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370		
	5		0.1D	1.5D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80
					IPT	.0006	.0008	.0011	.0012	.0016	.0021	.0023	.0040	.0043	.0047	.0058		
					RPM	2590	1940	1550	1290	970	780	650	490	430	390	310		
	6		0.1D	1.5D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110
					IPT	.0006	.0009	.0011	.0013	.0017	.0023	.0025	.0038	.0042	.0047	.0058		
					RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430		
7	0.1D	1.5D	SFM	95	95	95	95	95	95	95	95	95	95	95	95	95		
			IPT	.0006	.0009	.0012	.0013	.0018	.0024	.0025	.0039	.0042	.0046	.0057				
			RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370				
8-9	0.1D	1.5D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0006	.0008	.0011	.0012	.0016	.0021	.0023	.0040	.0043	.0047	.0058				
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310				
10	0.1D	1.5D	SFM	110	110	110	110	110	110	110	110	110	110	110	110	110		
			IPT	.0006	.0009	.0011	.0013	.0017	.0023	.0025	.0038	.0042	.0047	.0058				
			RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430				
11.1	0.1D	1.5D	SFM	80	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0006	.0008	.0011	.0012	.0016	.0021	.0023	.0040	.0043	.0047	.0058				
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310				
M	14.1	Stainless steel	0.1D	1.5D	SFM	100	100	100	100	100	100	100	100	100	100	100	100	
					IPT	.0003	.0005	.0006	.0007	.0009	.0012	.0013	.0020	.0024	.0027	.0034		
					RPM	3230	2430	1940	1620	1210	970	810	610	540	490	390		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	SFM	125	125	125	125	125	125	125	125	125	125	125	125	
					IPT	.0009	.0013	.0017	.0022	.0032	.0043	.0053	.0076	.0087	.0097	.0122		
					RPM	4040	3030	2430	2020	1520	1210	1010	760	670	610	490		
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	0.1D	1.5D	SFM	315	315	315	315	315	315	315	315	315	315	315	315	
					IPT	.0007	.0011	.0014	.0016	.0023	.0030	.0033	.0046	.0050	.0055	.0067		
					RPM	10190	7640	6110	5090	3820	3060	2550	1910	1700	1530	1220		
26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	0.1D	1.5D	SFM	235	235	235	235	235	235	235	235	235	235	235	235		
				IPT	.0007	.0010	.0013	.0016	.0023	.0030	.0033	.0046	.0051	.0056	.0068			
				RPM	7600	5700	4560	3800	2850	2280	1900	1420	1270	1140	910			

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



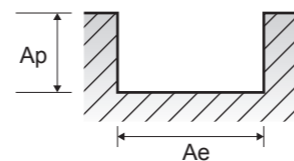
Side Cutting

G9H89, G9H95

SQUARE / 4 FLUTE / SLOTTING / METRIC / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						3	4	5	6	8	10	12	16	18	20	25		
P	1-2	Non-alloy steel	1.0D	0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
					IPT	.0004	.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036		
					RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660		
	3-4		1.0D	0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145
					IPT	.0004	.0006	.0008	.0009	.0013	.0016	.0018	.0025	.0028	.0031	.0038		
					RPM	4690	3520	2810	2340	1760	1410	1170	880	780	700	560		
	5		1.0D	0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041		
					RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470		
	6		1.0D	0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170
IPT		.0004			.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036				
RPM		5500			4120	3300	2750	2060	1650	1370	1030	920	820	660				
7	1.0D	0.3D	SFM	145	145	145	145	145	145	145	145	145	145	145	145	145		
			IPT	.0004	.0006	.0008	.0009	.0013	.0016	.0018	.0025	.0028	.0031	.0038				
			RPM	4690	3520	2810	2340	1760	1410	1170	880	780	700	560				
8-9	1.0D	0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
10	1.0D	0.3D	SFM	170	170	170	170	170	170	170	170	170	170	170	170	170		
			IPT	.0004	.0006	.0008	.0008	.0012	.0016	.0017	.0026	.0028	.0030	.0036				
			RPM	5500	4120	3300	2750	2060	1650	1370	1030	920	820	660				
11.1	1.0D	0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120	120	120		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0016	.0027	.0030	.0033	.0041				
			RPM	3880	2910	2330	1940	1460	1160	970	730	650	580	470				
M	14.1	Stainless steel	1.0D	0.3D	SFM	120	120	120	120	120	120	120	120	120	120	120		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.3D	SFM	195	195	195	195	195	195	195	195	195	195	195	195	
					IPT	.0006	.0009	.0011	.0014	.0022	.0029	.0035	.0052	.0058	.0064	.0079		
					RPM	6310	4730	3780	3150	2360	1890	1580	1180	1050	950	760		
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	0.5D	SFM	490	490	490	490	490	490	490	490	490	490	490		
					IPT	.0005	.0008	.0009	.0011	.0015	.0020	.0022	.0030	.0034	.0038	.0047		
					RPM	15850	11890	9510	7920	5940	4750	3960	2970	2640	2380	1900		
	26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	0.5D	SFM	370	370	370	370	370	370	370	370	370	370	370		
					IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0030	.0034	.0038	.0047		
					RPM	11970	8970	7180	5980	4490	3590	2990	2240	1990	1790	1440		

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



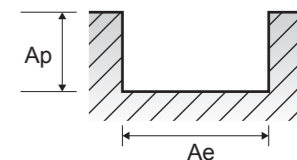
Slotting

E5H89, E5H95

SQUARE / 4 FLUTE / SLOTTING / METRIC / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)											
						3	4	5	6	8	10	12	16	18	20	25	
P	1-2	Non-alloy steel	1.0D	0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110
					IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038	
					RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430	
	3-4		1.0D	0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95
					IPT	.0004	.0006	.0008	.0009	.0012	.0016	.0017	.0025	.0028	.0031	.0038	
					RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370	
	5		1.0D	0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80
					IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040	
					RPM	2590	1940	1550	1290	970	780	650	490	430	390	310	
	6		1.0D	0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110
IPT		.0004			.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038			
RPM		3560			2670	2130	1780	1330	1070	890	670	590	530	430			
7	1.0D	0.3D	SFM	95	95	95	95	95	95	95	95	95	95	95	95		
			IPT	.0004	.0006	.0008	.0009	.0012	.0016	.0017	.0025	.0028	.0031	.0038			
			RPM	3070	2300	1840	1540	1150	920	770	580	510	460	370			
8-9	1.0D	0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040			
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310			
10	1.0D	0.3D	SFM	110	110	110	110	110	110	110	110	110	110	110	110		
			IPT	.0004	.0006	.0008	.0008	.0011	.0015	.0017	.0025	.0028	.0031	.0038			
			RPM	3560	2670	2130	1780	1330	1070	890	670	590	530	430			
11.1	1.0D	0.3D	SFM	80	80	80	80	80	80	80	80	80	80	80	80		
			IPT	.0004	.0005	.0007	.0008	.0011	.0014	.0016	.0027	.0030	.0033	.0040			
			RPM	2590	1940	1550	1290	970	780	650	490	430	390	310			
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.3D	SFM	125	125	125	125	125	125	125	125	125	125	125	
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	1.0D	0.5D	SFM	315	315	315	315	315	315	315	315	315	315	315	
					IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0030	.0033	.0037	.0045	
					RPM	10190	7640	6110	5090	3820	3060	2550	1910	1700	1530	1220	
	26-29.1	Copper and Copper Alloys (Bronze / Brass) Non Metallic Materials	1.0D	0.5D	SFM	235	235	235	235	235	235	235	235	235	235	235	
					IPT	.0005	.0007	.0009	.0011	.0015	.0020	.0022	.0031	.0034	.0037	.0045	
					RPM	7600	5700	4560	3800	2850	2280	1900	1420	1270	1140	910	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



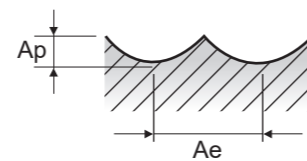
Slotting

G9H98, G9I02, G9I04, G9I07

BALL NOSE / 2 FLUTE / SIDE CUTTING / INCH / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1		
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160	160
					IPT	.0005	.0007	.0009	.0010	.0013	.0016	.0017	.0018	.0023	.0028	.0036		
	RPM				4890	3910	3260	2440	1960	1630	1400	1220	980	810	610			
	IPM				5	5	6	5	5	5	5	4	4	5	4			
	SFM				130	130	130	130	130	130	130	130	130	130	130			
	IPT				.0003	.0004	.0005	.0006	.0008	.0010	.0010	.0011	.0015	.0018	.0022			
	5	Low alloy steel	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130	130		
					IPT	.0003	.0004	.0005	.0006	.0008	.0010	.0010	.0011	.0015	.0018	.0022		
	RPM				3970	3180	2650	1990	1590	1320	1140	990	790	660	500			
	IPM				2	2	3	2	2	3	2	2	2	2	2			
	SFM				160	160	160	160	160	160	160	160	160	160	160			
	IPT				.0005	.0007	.0009	.0010	.0013	.0016	.0017	.0018	.0023	.0028	.0036			
6-7	High alloyed steel, and tool steel	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130	130			
				IPT	.0003	.0004	.0005	.0006	.0008	.0010	.0010	.0011	.0015	.0018	.0022			
RPM				3970	3180	2650	1990	1590	1320	1140	990	790	660	500				
IPM				2	2	3	2	2	3	2	2	2	2	2				
SFM				160	160	160	160	160	160	160	160	160	160	160				
IPT				.0005	.0007	.0009	.0010	.0013	.0016	.0017	.0018	.0023	.0028	.0036				
8-9	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	220	220	220	220	220	220	220	220	220	220	220			
				IPT	.0006	.0010	.0014	.0019	.0032	.0053	.0050	.0047	.0062	.0073	.0066			
RPM				6720	5380	4480	3360	2690	2240	1920	1680	1340	1120	840				
IPM				8	11	13	13	17	24	19	16	17	16	11				
SFM				660	660	660	660	660	660	660	660	660	660	660				
IPT				.0003	.0005	.0007	.0008	.0012	.0016	.0019	.0022	.0025	.0030	.0039				
10	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	660	660	660	660	660	660	660	660	660	660	660			
				IPT	.0003	.0005	.0007	.0008	.0012	.0016	.0019	.0022	.0025	.0030	.0039			
RPM				20170	16130	13450	10080	8070	6720	5760	5040	4030	3360	2520				
IPM				14	15	19	16	19	21	21	22	20	20	19				
SFM				425	425	425	425	425	425	425	425	425	425	425				
IPT				.0004	.0005	.0007	.0008	.0012	.0016	.0019	.0022	.0025	.0030	.0038				
11.1	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	12990	10390	8660	6490	5190	4330	3710	3250	2600	2160	1620			
				IPT	.0004	.0005	.0007	.0008	.0012	.0016	.0019	.0022	.0025	.0030	.0038			
RPM				12990	10390	8660	6490	5190	4330	3710	3250	2600	2160	1620				
IPM				9	9	11	11	13	14	14	14	13	13	12				
SFM				140	140	140	140	140	140	140	140	140	140	140				
IPT				.0006	.0010	.0014	.0019	.0032	.0040	.0044	.0047	.0063	.0071	.0069				

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

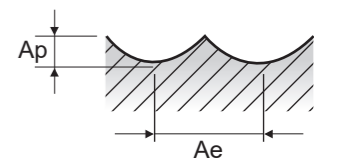


E5H98, E5I02, E5I04, E5I07

BALL NOSE / 2 FLUTE / SIDE CUTTING / INCH / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1		
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100	100	
					IPT	.0005	.0007	.0009	.0010	.0013	.0017	.0017	.0018	.0024	.0029	.0037		
	RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380			
	IPM				3	3	4	3	3	3	3	3	3	3	3			
	SFM				85	85	85	85	85	85	85	85	85	85	85			
	IPT				.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022			
	5	Low alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100		
					IPT	.0005	.0007	.0009	.0010	.0013	.0017	.0017	.0018	.0024	.0029	.0037		
	RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380			
	IPM				3	3	4	3	3	3	3	3	3	3	3			
	SFM				85	85	85	85	85	85	85	85	85	85	85			
	IPT				.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022			
6-7	High alloyed steel, and tool steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0005	.0007	.0009	.0010	.0013	.0017	.0017	.0018	.0024	.0029	.0037			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				3	3	4	3	3	3	3	3	3	3	3				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022				
8-9	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0005	.0007	.0009	.0010	.0013	.0017	.0017	.0018	.0024	.0029	.0037			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				3	3	4	3	3	3	3	3	3	3	3				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022				
10	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0005	.0007	.0009	.0010	.0013	.0017	.0017	.0018	.0024	.0029	.0037			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				3	3	4	3	3	3	3	3	3	3	3				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022				
11.1	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	2600	2080	1730	1300	1040	870	740	650	520	430	320			
				IPT	.0003	.0004	.0005	.0006	.0007	.0009	.0010	.0011	.0015	.0018	.0022			
RPM				2600	2080	1730	1300	1040	870	740	650	520	430	320				
IPM				1	2	2	1	2	2	2	1	2	2	1				
SFM				140	140	140	140	140	140	140	140	140	140	140				
IPT				.0006	.0010	.0014	.0019	.0032	.0040	.0044	.0047	.0063	.0071	.0069				

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

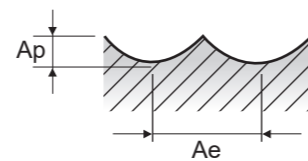


G9103

BALL NOSE / 2 FLUTE / SIDE CUTTING / METRIC / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)											
						3	4	5	6	8	10	12	16	18	20	25	
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160
					IPT	.0005	.0007	.0009	.0010	.0014	.0017	.0023	.0027	.0029	.0035		
	RPM				5170	3880	3100	2590	1940	1550	1290	970	860	780	620		
	IPM				5	5	6	5	5	5	4	4	5	5	4		
	SFM				130	130	130	130	130	130	130	130	130	130	130		
	IPT				.0003	.0004	.0005	.0005	.0008	.0010	.0010	.0015	.0018	.0018	.0021		
	5	Low alloy steel	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130	130	
					IPT	.0003	.0004	.0005	.0005	.0008	.0010	.0010	.0015	.0018	.0018	.0021	
	RPM				4200	3150	2520	2100	1580	1260	1050	790	700	630	500		
	IPM				2	2	3	2	2	3	2	2	2	2	2		
	SFM				160	160	160	160	160	160	160	160	160	160	160		
	IPT				.0005	.0007	.0009	.0010	.0014	.0017	.0023	.0027	.0029	.0035			
6-7	High alloyed steel, and tool steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160			
				IPT	.0005	.0007	.0009	.0010	.0014	.0017	.0023	.0027	.0029	.0035			
RPM				5170	3880	3100	2590	1940	1550	1290	970	860	780	620			
IPM				5	5	6	5	5	5	4	4	5	5	4			
SFM				130	130	130	130	130	130	130	130	130	130	130			
IPT				.0003	.0004	.0005	.0005	.0008	.0010	.0010	.0015	.0018	.0018	.0021			
8-9	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130			
				IPT	.0003	.0004	.0005	.0005	.0008	.0010	.0010	.0015	.0018	.0018	.0021		
RPM				4200	3150	2520	2100	1580	1260	1050	790	700	630	500			
IPM				2	2	3	2	2	3	2	2	2	2	2			
SFM				160	160	160	160	160	160	160	160	160	160	160			
IPT				.0005	.0007	.0009	.0010	.0014	.0017	.0023	.0027	.0029	.0035				
10	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130			
				IPT	.0003	.0004	.0005	.0005	.0008	.0010	.0010	.0015	.0018	.0018	.0021		
RPM				4200	3150	2520	2100	1580	1260	1050	790	700	630	500			
IPM				2	2	3	2	2	3	2	2	2	2	2			
SFM				220	220	220	220	220	220	220	220	220	220	220			
IPT				.0006	.0010	.0015	.0018	.0033	.0056	.0044	.0063	.0077	.0069	.0065			
11.1	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	660	660	660	660	660	660	660	660	660	660			
				IPT	.0003	.0005	.0007	.0008	.0012	.0016	.0020	.0025	.0029	.0031	.0038		
RPM				21340	16010	12810	10670	8000	6400	5340	4000	3560	3200	2560			
IPM				14	15	19	16	19	21	22	20	21	20	19			
SFM				140	140	140	140	140	140	140	140	140	140	140			
IPT				.0006	.0010	.0015	.0018	.0032	.0042	.0045	.0063	.0073	.0068	.0068			
15-20	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	425	425	425	425	425	425	425	425	425	425			
				IPT	.0003	.0005	.0007	.0008	.0012	.0017	.0020	.0025	.0029	.0031	.0038		
RPM				13740	10310	8250	6870	5150	4120	3440	2580	2290	2060	1650			
IPM				9	9	12	10	13	14	13	13	13	13	12			
SFM				140	140	140	140	140	140	140	140	140	140	140			
IPT				.0006	.0010	.0015	.0018	.0032	.0042	.0045	.0063	.0073	.0068	.0068			

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

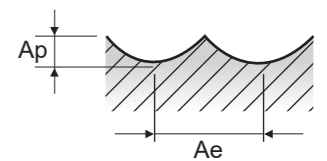


E5103

BALL NOSE / 2 FLUTE / SIDE CUTTING / METRIC / **Uncoated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						3	4	5	6	8	10	12	16	18	20	25
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100
					IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036
	RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390	
	IPM				3	3	4	3	3	3	3	3	3	3	3	
	SFM				85	85	85	85	85	85	85	85	85	85	85	
	IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021	
	5	Low alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	
					IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036
	RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390	
	IPM				3	3	4	3	3	3	3	3	3	3	3	
	SFM				85	85	85	85	85	85	85	85	85	85	85	
	IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021	
6-7	High alloyed steel, and tool steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100		
				IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036	
RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390		
IPM				3	3	4	3	3	3	3	3	3	3	3		
SFM				85	85	85	85	85	85	85	85	85	85	85		
IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021		
8-9	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100		
				IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036	
RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390		
IPM				3	3	4	3	3	3	3	3	3	3	3		
SFM				85	85	85	85	85	85	85	85	85	85	85		
IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021		
10	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100		
				IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036	
RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390		
IPM				3	3	4	3	3	3	3	3	3	3	3		
SFM				85	85	85	85	85	85	85	85	85	85	85		
IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021		
11.1	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100		
				IPT	.0005	.0007	.0009	.0010	.0013	.0018	.0017	.0024	.0027	.0030	.0036	
RPM				3230	2430	1940	1620	1210	970	810	610	540	490	390		
IPM				3	3	4	3	3	3	3	3	3	3	3		
SFM				85	85	85	85	85	85	85	85	85	85	85		
IPT				.0003	.0004	.0005	.0005	.0007	.0010	.0011	.0015	.0017	.0018	.0021		
15-20	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	140	140	140	140	140	140	140	140	140	140		
				IPT	.0006	.0010	.0015	.0018	.0032	.0042	.0045	.0063	.0073	.0068	.0068	
RPM				4530	3400	2720	2260	1700	1360	1130	850	750	680	540		
IPM				5	7	8	8	11	11	10	11	11	9	7		
SFM				425	425	425	425	425	425	425	425	425	425	425		
IPT				.0003	.0005	.0007	.0008	.0012	.0017	.0020	.0025	.0029	.0031	.0038		

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

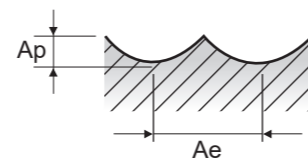


G9H99, G9I01, G9I05, G9I06, G9I08, G9I09

BALL NOSE / 4 FLUTE / SIDE CUTTING / INCH / **X-Coated**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1		
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160	160
					IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0022	.0028		
	RPM				4890	3910	3260	2440	1960	1630	1400	1220	980	810	610			
	IPM				8	8	9	8	8	8	7	7	7	7	7			
	SFM				130	130	130	130	130	130	130	130	130	130	130			
	IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017			
	RPM	3970	3180	2650	1990	1590	1320	1140	990	790	660	500						
	IPM	3	4	4	3	4	4	4	3	4	4	3						
	6-7	Low alloy steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160	
					IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0022	.0028		
	RPM				4890	3910	3260	2440	1960	1630	1400	1220	980	810	610			
	IPM				8	8	9	8	8	8	7	7	7	7	7			
SFM	130				130	130	130	130	130	130	130	130	130	130				
IPT	.0002				.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	3970	3180	2650	1990	1590	1320	1140	990	790	660	500							
IPM	3	4	4	3	4	4	4	3	4	4	3							
8-9	High alloyed steel, and tool steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160		
				IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0022	.0028			
RPM				4890	3910	3260	2440	1960	1630	1400	1220	980	810	610				
IPM				8	8	9	8	8	8	7	7	7	7	7				
SFM				130	130	130	130	130	130	130	130	130	130	130				
IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	3970	3180	2650	1990	1590	1320	1140	990	790	660	500							
IPM	3	4	4	3	4	4	4	3	4	4	3							
10	High alloyed steel, and tool steel	0.7D	0.3D	SFM	160	160	160	160	160	160	160	160	160	160	160	160		
				IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0022	.0028			
RPM				4890	3910	3260	2440	1960	1630	1400	1220	980	810	610				
IPM				8	8	9	8	8	8	7	7	7	7	7				
SFM				130	130	130	130	130	130	130	130	130	130	130				
IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	3970	3180	2650	1990	1590	1320	1140	990	790	660	500							
IPM	3	4	4	3	4	4	4	3	4	4	3							
11.1	High alloyed steel, and tool steel	0.7D	0.3D	SFM	130	130	130	130	130	130	130	130	130	130	130			
				IPT	.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017			
RPM				3970	3180	2650	1990	1590	1320	1140	990	790	660	500				
IPM				3	4	4	3	4	4	4	3	4	4	3				
SFM				220	220	220	220	220	220	220	220	220	220	220				
IPT				.0004	.0007	.0011	.0014	.0024	.0029	.0032	.0034	.0047	.0055	.0048				
RPM	6720	5380	4480	3360	2690	2240	1920	1680	1340	1120	840							
IPM	12	16	19	19	26	26	24	23	25	25	16							
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	660	660	660	660	660	660	660	660	660	660	660		
					IPT	.0003	.0004	.0005	.0006	.0009	.0012	.0014	.0016	.0019	.0023	.0029		
RPM					20170	16130	13450	10080	8070	6720	5760	5040	4030	3360	2520			
IPM					21	22	28	25	29	32	32	33	30	31	29			
SFM					425	425	425	425	425	425	425	425	425	425	425			
IPT					.0003	.0003	.0005	.0006	.0009	.0012	.0014	.0016	.0019	.0023	.0029			
RPM	12990	10390	8660	6490	5190	4330	3710	3250	2600	2160	1620							
IPM	14	14	17	16	19	20	21	21	19	19	18							
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	0.7D	0.3D	SFM	425	425	425	425	425	425	425	425	425	425	425		
					IPT	.0003	.0003	.0005	.0006	.0009	.0012	.0014	.0016	.0019	.0023	.0029		
RPM					12990	10390	8660	6490	5190	4330	3710	3250	2600	2160	1620			
IPM					14	14	17	16	19	20	21	21	19	19	18			
SFM					140	140	140	140	140	140	140	140	140	140	140			
IPT					.0004	.0007	.0011	.0014	.0024	.0030	.0033	.0035	.0047	.0054	.0053			
RPM	4280	3420	2850	2140	1710	1430	1220	1070	860	710	530							
IPM	8	10	12	12	16	17	16	15	16	15	11							

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



E5H99, E5I01, E5I05, E5I06, E5I08, E5I09

BALL NOSE / 4 FLUTE / SIDE CUTTING / INCH / **Uncoated**

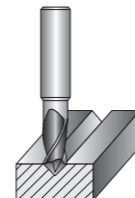
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1		
P	1-4	Non-alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100	100	
					IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0022	.0028		
	RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380			
	IPM				5	5	5	5	5	5	4	4	4	4	4			
	SFM				85	85	85	85	85	85	85	85	85	85	85			
	IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017			
	RPM	2600	2080	1730	1300	1040	870	740	650	520	430	320						
	IPM	2	2	3	2	2	3	2	2	2	2	2						
	6-7	Low alloy steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100		
					IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0021	.0028		
	RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380			
	IPM				5	5	5	5	5	5	4	4	4	4	4			
SFM	85				85	85	85	85	85	85	85	85	85	85				
IPT	.0002				.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	2600	2080	1730	1300	1040	870	740	650	520	430	320							
IPM	2	2	3	2	2	3	2	2	2	2	2							
8-9	High alloyed steel, and tool steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0021	.0028			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				5	5	5	5	5	5	4	4	4	4	4				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	2600	2080	1730	1300	1040	870	740	650	520	430	320							
IPM	2	2	3	2	2	3	2	2	2	2	2							
10	High alloyed steel, and tool steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0021	.0028			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				5	5	5	5	5	5	4	4	4	4	4				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	2600	2080	1730	1300	1040	870	740	650	520	430	320							
IPM	2	2	3	2	2	3	2	2	2	2	2							
11.1	High alloyed steel, and tool steel	0.7D	0.3D	SFM	100	100	100	100	100	100	100	100	100	100	100			
				IPT	.0004	.0005	.0007	.0008	.0010	.0012	.0013	.0014	.0018	.0021	.0028			
RPM				3060	2440	2040	1530	1220	1020	870	760	610	510	380				
IPM				5	5	5	5	5	5	4	4	4	4	4				
SFM				85	85	85	85	85	85	85	85	85	85	85				
IPT				.0002	.0003	.0004	.0004	.0006	.0007	.0008	.0009	.0012	.0014	.0017				
RPM	2600	2080	1730	1300	1040	870	740	650	520	430	320							
IPM	2	2	3	2	2	3	2	2	2	2	2							
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.7D	0.3D	SFM	140	140	140	140	140	140	140	140	140	140	140		
					IPT	.0004	.0007	.0011	.0014	.0024	.0030	.0033	.0035	.0047	.0054	.0053		
RPM					4280	3420	2850	2140	1710	1430	1220	1070	860	710	530			
IPM					8	10	12	12	16	17	16	15	16	15	11			
SFM					425	425	425	425	425	425	425	425	425	425	425			
IPT					.0003	.0003	.0005	.0006	.0009	.0012	.0014	.0016						

G9I31, G9I33

2 FLUTE / DRILL MILL / V-Grooving / **X-Coated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)									
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	
P	1-2	Non-alloy steel	SFM	255	255	255	255	255	255	255	255	255	255
			IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023	
			RPM	7720	5150	3860	3090	2570	2210	1930	1540	1290	
	3-4		SFM	185	185	185	185	185	185	185	185	185	
			IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023	
			RPM	5610	3740	2810	2250	1870	1600	1400	1120	940	
	5		SFM	160	160	160	160	160	160	160	160	160	
			IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023	
			RPM	4910	3280	2460	1970	1640	1400	1230	980	820	
	6		SFM	255	255	255	255	255	255	255	255	255	
			IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023	
			RPM	7720	5150	3860	3090	2570	2210	1930	1540	1290	
7	SFM	185	185	185	185	185	185	185	185	185			
	IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023			
	RPM	5610	3740	2810	2250	1870	1600	1400	1120	940			
8-9	SFM	160	160	160	160	160	160	160	160	160			
	IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023			
	RPM	4910	3280	2460	1970	1640	1400	1230	980	820			
10	SFM	255	255	255	255	255	255	255	255	255			
	IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023			
	RPM	7720	5150	3860	3090	2570	2210	1930	1540	1290			
11.1	SFM	160	160	160	160	160	160	160	160	160			
	IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023			
	RPM	4910	3280	2460	1970	1640	1400	1230	980	820			
M	14.1	Stainless steel	SFM	140	140	140	140	140	140	140	140		
			IPT	.0003	.0005	.0006	.0007	.0008	.0011	.0015	.0015	.0022	
			RPM	4210	2810	2110	1680	1400	1200	1050	840	700	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	185	185	185	185	185	185	185	185		
			IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023	
			RPM	5610	3740	2810	2250	1870	1600	1400	1120	940	
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	690	690	690	690	690	690	690	690		
			IPT	.0006	.0010	.0013	.0018	.0021	.0022	.0023	.0032	.0041	
			RPM	21060	14040	10530	8420	7020	6020	5260	4210	3510	
			IPM	26	28	27	30	29	26	24	27	29	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

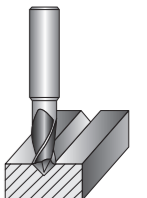


E5I31, E5I33

2 FLUTE / DRILL MILL / V-Grooving / **Uncoated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)									
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	
P	1-2	Non-alloy steel	SFM	180	180	180	180	180	180	180	180	180	
			IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023	
			RPM	5510	3680	2760	2210	1840	1580	1380	1100	920	
	3-4		SFM	130	130	130	130	130	130	130	130	130	
			IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023	
			RPM	4010	2670	2010	1600	1340	1150	1000	800	670	
	5		SFM	115	115	115	115	115	115	115	115	115	
			IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023	
			RPM	3510	2340	1750	1400	1170	1000	880	700	580	
	6		SFM	180	180	180	180	180	180	180	180	180	
			IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023	
			RPM	5510	3680	2760	2210	1840	1580	1380	1100	920	
7	SFM	130	130	130	130	130	130	130	130	130			
	IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023			
	RPM	4010	2670	2010	1600	1340	1150	1000	800	670			
8-9	SFM	115	115	115	115	115	115	115	115	115			
	IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023			
	RPM	3510	2340	1750	1400	1170	1000	880	700	580			
10	SFM	180	180	180	180	180	180	180	180	180			
	IPT	.0004	.0006	.0008	.0011	.0013	.0014	.0015	.0018	.0023			
	RPM	5510	3680	2760	2210	1840	1580	1380	1100	920			
11.1	SFM	115	115	115	115	115	115	115	115	115			
	IPT	.0003	.0005	.0007	.0011	.0012	.0013	.0014	.0018	.0023			
	RPM	3510	2340	1750	1400	1170	1000	880	700	580			
M	14.1	Stainless steel	SFM	100	100	100	100	100	100	100	100		
			IPT	.0003	.0005	.0006	.0007	.0008	.0011	.0015	.0015	.0022	
			RPM	3010	2010	1500	1200	1000	860	750	600	500	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	130	130	130	130	130	130	130	130		
			IPT	.0003	.0005	.0006	.0009	.0011	.0013	.0016	.0018	.0023	
			RPM	4010	2670	2010	1600	1340	1150	1000	800	670	
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	490	490	490	490	490	490	490	490		
			IPT	.0006	.0010	.0013	.0018	.0021	.0022	.0023	.0032	.0041	
			RPM	15040	10030	7520	6020	5010	4300	3760	3010	2510	
			IPM	19	20	19	21	21	19	17	19	20	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

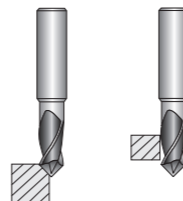


G9I31, G9I33

2 FLUTE / DRILL MILL / CHAMFERING & SIDE CUTTING / **X-Coated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)									
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	
P	1-2	Non-alloy steel	SFM	250	250	250	250	250	250	250	250	250	250
			IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030	
			RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280	
	3-4		SFM	185	185	185	185	185	185	185	185	185	185
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029	
			RPM	5600	3740	2800	2240	1870	1600	1400	1120	930	
	5		SFM	160	160	160	160	160	160	160	160	160	160
			IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030	
			RPM	4920	3280	2460	1970	1640	1410	1230	980	820	
	6		SFM	250	250	250	250	250	250	250	250	250	250
			IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030	
			RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280	
7	SFM	185	185	185	185	185	185	185	185	185	185		
	IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029			
	RPM	5600	3740	2800	2240	1870	1600	1400	1120	930			
8-9	SFM	160	160	160	160	160	160	160	160	160	160		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030			
	RPM	4920	3280	2460	1970	1640	1410	1230	980	820			
10	SFM	250	250	250	250	250	250	250	250	250	250		
	IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030			
	RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280			
11.1	SFM	160	160	160	160	160	160	160	160	160	160		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030			
	RPM	4920	3280	2460	1970	1640	1410	1230	980	820			
M	14.1	Stainless steel	SFM	135	135	135	135	135	135	135	135	135	
			IPT	.0004	.0006	.0007	.0009	.0010	.0015	.0019	.0019	.0029	
			RPM	4190	2800	2100	1680	1400	1200	1050	840	700	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	185	185	185	185	185	185	185	185	185	
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029	
			RPM	5600	3740	2800	2240	1870	1600	1400	1120	930	
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	690	690	690	690	690	690	690	690	690	
			IPT	.0008	.0013	.0017	.0023	.0027	.0028	.0030	.0042	.0053	
			RPM	21050	14030	10520	8420	7020	6010	5260	4210	3510	
			IPM	4	4	4	5	5	5	4	5	5	
			IPM	4	4	4	5	5	5	4	5	5	
			IPM	4	4	4	5	5	5	4	5	5	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

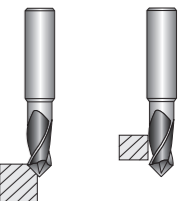


E5I31, E5I33

2 FLUTE / DRILL MILL / CHAMFERING & SIDE CUTTING / **Uncoated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)								
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
P	1-2	Non-alloy steel	SFM	180	180	180	180	180	180	180	180	180
			IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030
			RPM	5500	3670	2750	2200	1830	1570	1380	1100	920
	3-4		SFM	130	130	130	130	130	130	130	130	130
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029
			RPM	4000	2670	2000	1600	1330	1140	1000	800	670
	5		SFM	115	115	115	115	115	115	115	115	115
			IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030
			RPM	3510	2340	1760	1410	1170	1000	880	700	590
	6		SFM	180	180	180	180	180	180	180	180	180
			IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030
			RPM	5500	3670	2750	2200	1830	1570	1380	1100	920
7	SFM	130	130	130	130	130	130	130	130	130		
	IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029		
	RPM	4000	2670	2000	1600	1330	1140	1000	800	670		
8-9	SFM	115	115	115	115	115	115	115	115	115		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030		
	RPM	3510	2340	1760	1410	1170	1000	880	700	590		
10	SFM	180	180	180	180	180	180	180	180	180		
	IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030		
	RPM	5500	3670	2750	2200	1830	1570	1380	1100	920		
11.1	SFM	115	115	115	115	115	115	115	115	115		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030		
	RPM	3510	2340	1760	1410	1170	1000	880	700	590		
M	14.1	Stainless steel	SFM	100	100	100	100	100	100	100	100	
			IPT	.0004	.0006	.0007	.0009	.0010	.0015	.0019	.0019	.0029
			RPM	2990	2000	1500	1200	1000	860	750	600	500
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	130	130	130	130	130	130	130	130	
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029
			RPM	4000	2670	2000	1600	1330	1140	1000	800	670
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	490	490	490	490	490	490	490	490	
			IPT	.0008	.0013	.0017	.0023	.0027	.0028	.0030	.0042	.0053
			RPM	15040	10020	7520	6010	5010	4300	3760	3010	2510
			IPM	3	3	3	4	4	4	4	4	
			IPM	3	3	3	4	4	4	4	4	
			IPM	3	3	3	4	4	4	4	4	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

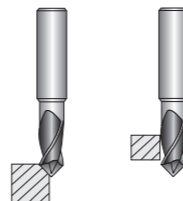


G9I32, G9I34

4 FLUTE / DRILL MILL / CHAMFERING & SIDE CUTTING / **X-Coated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)									
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	
P	1-2	Non-alloy steel	SFM	250	250	250	250	250	250	250	250	250	250
			IPT	.0010	.0016	.0021	.0029	.0033	.0036	.0038	.0048	.0061	
			RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280	
			IPM	16	17	16	18	17	16	15	15	16	
	3-4		SFM	185	185	185	185	185	185	185	185	185	185
			IPT	.0008	.0012	.0015	.0023	.0028	.0034	.0041	.0046	.0059	
			RPM	5600	3740	2800	2240	1870	1600	1400	1120	930	
			IPM	9	9	9	10	10	11	11	10	11	
	5		SFM	160	160	160	160	160	160	160	160	160	160
			IPT	.0008	.0012	.0017	.0028	.0030	.0033	.0036	.0047	.0060	
			RPM	4920	3280	2460	1970	1640	1410	1230	980	820	
			IPM	8	8	8	11	10	9	9	9	10	
6	SFM	250	250	250	250	250	250	250	250	250	250		
	IPT	.0010	.0016	.0021	.0029	.0033	.0036	.0038	.0048	.0061			
	RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280			
	IPM	16	17	16	18	17	16	15	15	16			
7	SFM	185	185	185	185	185	185	185	185	185	185		
	IPT	.0008	.0012	.0015	.0023	.0028	.0034	.0041	.0046	.0059			
	RPM	5600	3740	2800	2240	1870	1600	1400	1120	930			
	IPM	9	9	9	10	10	11	11	10	11			
8-9	SFM	160	160	160	160	160	160	160	160	160	160		
	IPT	.0008	.0012	.0017	.0028	.0030	.0033	.0036	.0047	.0060			
	RPM	4920	3280	2460	1970	1640	1410	1230	980	820			
	IPM	8	8	8	11	10	9	9	9	10			
10	SFM	250	250	250	250	250	250	250	250	250	250		
	IPT	.0010	.0016	.0021	.0029	.0033	.0036	.0038	.0048	.0061			
	RPM	7700	5130	3850	3080	2570	2200	1930	1540	1280			
	IPM	16	17	16	18	17	16	15	15	16			
11.1	SFM	160	160	160	160	160	160	160	160	160	160		
	IPT	.0008	.0012	.0017	.0028	.0030	.0033	.0036	.0047	.0060			
	RPM	4920	3280	2460	1970	1640	1410	1230	980	820			
	IPM	8	8	8	11	10	9	9	9	10			
M	14.1	Stainless steel	SFM	135	135	135	135	135	135	135	135	135	
			IPT	.0009	.0012	.0015	.0019	.0021	.0029	.0038	.0039	.0058	
			RPM	4190	2800	2100	1680	1400	1200	1050	840	700	
			IPM	7	7	6	6	6	7	8	7	8	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	185	185	185	185	185	185	185	185	185	
			IPT	.0008	.0012	.0015	.0023	.0028	.0034	.0041	.0046	.0059	
			RPM	5600	3740	2800	2240	1870	1600	1400	1120	930	
			IPM	9	9	9	10	10	11	11	10	11	
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	690	690	690	690	690	690	690	690	690	
			IPT	.0016	.0026	.0033	.0046	.0053	.0057	.0061	.0084	.0106	
			RPM	21050	14030	10520	8420	7020	6010	5260	4210	3510	
			IPM	68	73	70	77	75	68	64	71	75	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.

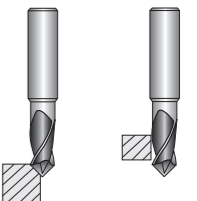


E5I32, E5I34

4 FLUTE / DRILL MILL / CHAMFERING & SIDE CUTTING / **Uncoated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)								
				1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
P	1-2	Non-alloy steel	SFM	180	180	180	180	180	180	180	180	180
			IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030
			RPM	5500	3670	2750	2200	1830	1570	1380	1100	920
			IPM	11	12	11	13	12	11	10	10	11
	3-4		SFM	130	130	130	130	130	130	130	130	130
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029
			RPM	4000	2670	2000	1600	1330	1140	1000	800	670
			IPM	6	7	6	7	7	8	8	7	8
	5		SFM	115	115	115	115	115	115	115	115	115
			IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030
			RPM	3510	2340	1760	1410	1170	1000	880	700	590
			IPM	5	5	6	8	7	7	6	7	7
6	SFM	180	180	180	180	180	180	180	180	180		
	IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030		
	RPM	5500	3670	2750	2200	1830	1570	1380	1100	920		
	IPM	11	12	11	13	12	11	10	10	11		
7	SFM	130	130	130	130	130	130	130	130	130		
	IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029		
	RPM	4000	2670	2000	1600	1330	1140	1000	800	670		
	IPM	6	7	6	7	7	8	8	7	8		
8-9	SFM	115	115	115	115	115	115	115	115	115		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030		
	RPM	3510	2340	1760	1410	1170	1000	880	700	590		
	IPM	5	5	6	8	7	7	6	7	7		
10	SFM	180	180	180	180	180	180	180	180	180		
	IPT	.0005	.0008	.0010	.0015	.0017	.0018	.0019	.0024	.0030		
	RPM	5500	3670	2750	2200	1830	1570	1380	1100	920		
	IPM	11	12	11	13	12	11	10	10	11		
11.1	SFM	115	115	115	115	115	115	115	115	115		
	IPT	.0004	.0006	.0009	.0014	.0015	.0016	.0018	.0023	.0030		
	RPM	3510	2340	1760	1410	1170	1000	880	700	590		
	IPM	5	5	6	8	7	7	6	7	7		
M	14.1	Stainless steel	SFM	100	100	100	100	100	100	100	100	
			IPT	.0004	.0006	.0007	.0009	.0010	.0015	.0019	.0019	.0029
			RPM	2990	2000	1500	1200	1000	860	750	600	500
			IPM	5	5	4	4	4	5	6	5	6
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	130	130	130	130	130	130	130	130	
			IPT	.0004	.0006	.0008	.0012	.0014	.0017	.0021	.0023	.0029
			RPM	4000	2670	2000	1600	1330	1140	1000	800	670
			IPM	6	7	6	7	7	8	8	7	8
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	490	490	490	490	490	490	490	490	
			IPT	.0008	.0013	.0017	.0023	.0027	.0028	.0030	.0042	.0053
			RPM	15040	10020	7520	6010	5010	4300	3760	3010	2510
			IPM	48	52	50	55	53	49	45	50	53

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.





G9I52, G9I53, G9I54

2 FLUTE / CHAMFER MILL / CHAMFERING / **X-Coated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)			
				1/8	1/4	3/8	1/2
P	1-2	Non-alloy steel	SFM	250	250	250	250
			IPT	.0005	.0010	.0017	.0019
			RPM	7700	3850	2570	1930
	3-4		IPM	8	8	9	7
			SFM	185	185	185	185
			IPT	.0004	.0008	.0014	.0021
	5		RPM	5600	2800	1870	1400
			IPM	4	4	5	6
			SFM	160	160	160	160
	6		IPT	.0004	.0009	.0015	.0018
			RPM	4920	2460	1640	1230
IPM		4	4	5	4		
7	Low alloy steel	SFM	250	250	250	250	
		IPT	.0005	.0010	.0017	.0019	
		RPM	7700	3850	2570	1930	
8-9		IPM	8	8	9	7	
		SFM	185	185	185	185	
		IPT	.0004	.0008	.0014	.0021	
10		RPM	5600	2800	1870	1400	
		IPM	4	4	5	6	
		SFM	160	160	160	160	
11.1		High alloyed steel, and tool steel	IPT	.0004	.0009	.0015	.0018
			RPM	4920	2460	1640	1230
	IPM		4	4	5	4	
M 14.1	Stainless steel		SFM	135	135	135	135
			IPT	.0004	.0007	.0010	.0019
			RPM	4190	2100	1400	1050
K 15-20	Grey cast iron Nodular cast iron Malleable cast iron		IPM	4	3	3	4
			SFM	185	185	185	185
			IPT	.0004	.0008	.0014	.0021
N 21-25	Aluminum-wrought alloy Aluminum-cast, alloyed		RPM	5600	2800	1870	1400
			IPM	4	4	5	6
		SFM	690	690	690	690	
		IPT	.0008	.0017	.0027	.0030	
		RPM	21050	10520	7020	5260	
		IPM	34	35	37	32	

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



E5I52, E5I53, E5I54

2 FLUTE / CHAMFER MILL / CHAMFERING / **Uncoated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)				
				1/8	1/4	3/8	1/2	
P	1-2	Non-alloy steel	SFM	180	180	180	180	
			IPT	.0005	.0010	.0017	.0019	
			RPM	5500	2750	1830	1380	
	3-4		IPM	6	6	6	5	
			SFM	130	130	130	130	
			IPT	.0004	.0008	.0014	.0021	
	5		RPM	4000	2000	1330	1000	
			IPM	3	3	4	4	
			SFM	115	115	115	115	
	6		Low alloy steel	IPT	.0004	.0009	.0015	.0018
				RPM	3510	1760	1170	880
IPM		3		3	3	3		
7	SFM	180		180	180	180		
	IPT	.0005		.0010	.0017	.0019		
	RPM	5500		2750	1830	1380		
8-9	IPM	6		6	6	5		
	SFM	130		130	130	130		
	IPT	.0004		.0008	.0014	.0021		
10	High alloyed steel, and tool steel	RPM		4000	2000	1330	1000	
		IPM		3	3	4	4	
		SFM	115	115	115	115		
11.1		IPT	.0004	.0009	.0015	.0018		
		RPM	3510	1760	1170	880		
		IPM	3	3	3	3		
M 14.1		Stainless steel	SFM	100	100	100	100	
			IPT	.0004	.0007	.0010	.0019	
			RPM	2990	1500	1000	750	
K 15-20		Grey cast iron Nodular cast iron Malleable cast iron	IPM	3	2	2	3	
			SFM	130	130	130	130	
	IPT		.0004	.0008	.0014	.0021		
N 21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	RPM	4000	2000	1330	1000		
		IPM	3	3	4	4		
		SFM	490	490	490	490		
		IPT	.0008	.0017	.0027	.0030		
		RPM	15040	7520	5010	3760		
		IPM	24	25	27	23		

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



G9I55, G9I56, G9I57

4 FLUTE / CHAMFER MILL / CHAMFERING / **X-Coated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)			
				1/8	1/4	3/8	1/2
P	1-2	Non-alloy steel	SFM	250	250	250	250
			IPT	.0010	.0021	.0033	.0038
			RPM	7700	3850	2570	1930
	3-4		SFM	185	185	185	185
			IPT	.0008	.0015	.0028	.0041
			RPM	5600	2800	1870	1400
	5		SFM	160	160	160	160
			IPT	.0008	.0017	.0030	.0036
			RPM	4920	2460	1640	1230
	6		SFM	250	250	250	250
			IPT	.0010	.0021	.0033	.0038
			RPM	7700	3850	2570	1930
7	SFM	185	185	185	185		
	IPT	.0008	.0015	.0028	.0041		
	RPM	5600	2800	1870	1400		
8-9	SFM	160	160	160	160		
	IPT	.0008	.0017	.0030	.0036		
	RPM	4920	2460	1640	1230		
10	SFM	250	250	250	250		
	IPT	.0010	.0021	.0033	.0038		
	RPM	7700	3850	2570	1930		
11.1	SFM	160	160	160	160		
	IPT	.0008	.0017	.0030	.0036		
	RPM	4920	2460	1640	1230		
M	14.1	Stainless steel	SFM	135	135	135	135
			IPT	.0009	.0015	.0021	.0038
			RPM	4190	2100	1400	1050
			IPM	7	6	6	8
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	185	185	185	185
			IPT	.0008	.0015	.0028	.0041
			RPM	5600	2800	1870	1400
			IPM	9	9	10	11
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	690	690	690	690
			IPT	.0016	.0033	.0053	.0061
			RPM	21050	10520	7020	5260
			IPM	68	70	75	64

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.



E5I55, E5I56, E5I57

4 FLUTE / CHAMFER MILL / CHAMFERING / **Uncoated**

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)			
				1/8	1/4	3/8	1/2
P	1-2	Non-alloy steel	SFM	180	180	180	180
			IPT	.0005	.0010	.0017	.0019
			RPM	5500	2750	1830	1380
	3-4		SFM	130	130	130	130
			IPT	.0004	.0008	.0014	.0021
			RPM	4000	2000	1330	1000
	5		SFM	115	115	115	115
			IPT	.0004	.0009	.0015	.0018
			RPM	3510	1760	1170	880
	6		SFM	180	180	180	180
			IPT	.0005	.0010	.0017	.0019
			RPM	5500	2750	1830	1380
7	SFM	130	130	130	130		
	IPT	.0004	.0008	.0014	.0021		
	RPM	4000	2000	1330	1000		
8-9	SFM	115	115	115	115		
	IPT	.0004	.0009	.0015	.0018		
	RPM	3510	1760	1170	880		
10	SFM	180	180	180	180		
	IPT	.0005	.0010	.0017	.0019		
	RPM	5500	2750	1830	1380		
11.1	SFM	115	115	115	115		
	IPT	.0004	.0009	.0015	.0018		
	RPM	3510	1760	1170	880		
M	14.1	Stainless steel	SFM	100	100	100	100
			IPT	.0004	.0007	.0010	.0019
			RPM	2990	1500	1000	750
			IPM	5	4	4	6
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM	130	130	130	130
			IPT	.0004	.0008	.0014	.0021
			RPM	4000	2000	1330	1000
			IPM	6	6	7	8
N	21-25	Aluminum-wrought alloy Aluminum-cast, alloyed	SFM	490	490	490	490
			IPT	.0008	.0017	.0027	.0030
			RPM	15040	7520	5010	3760
			IPM	48	50	53	45

SFM = ft./min.
IPT = In./tooth
RPM = rev./min.
IPM = In./min.