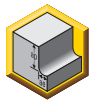



■ HARVI III Ball Nose • UJBV • Unequal Flute Spacing • Roughing

Material Group													Recommended feed per tooth (fz = mm/th) for side milling (A).					
	Side Milling (A)		short			medium			long									
	A		adaptor reach									D1 – Diameter						
			KCSM15			KCSM15			KCSM15									
	Cutting Speed – vc m/min			Cutting Speed – vc m/min			Cutting Speed – vc m/min											
ap	ae	min		max	min		max	min		max	mm	10,0	12,0	16,0	20,0	25,0		
P	0	Ap max	0,4 x D	150	–	200	135	–	180	135	–	180	fz	0,052	0,060	0,073	0,082	0,089
	1	Ap max	0,4 x D	150	–	200	135	–	180	135	–	180	fz	0,052	0,060	0,073	0,082	0,089
	2	Ap max	0,4 x D	140	–	190	126	–	171	126	–	171	fz	0,052	0,060	0,073	0,082	0,089
	3	Ap max	0,4 x D	120	–	160	108	–	144	108	–	144	fz	0,044	0,051	0,063	0,073	0,082
	4	Ap max	0,4 x D	90	–	150	81	–	135	81	–	135	fz	0,039	0,045	0,055	0,064	0,070
	5	Ap max	0,4 x D	60	–	100	51	–	85	48	–	80	fz	0,035	0,041	0,050	0,058	0,066
M	6	Ap max	0,4 x D	50	–	75	42,5	–	63,75	40	–	60	fz	0,029	0,034	0,041	0,047	0,051
	1	Ap max	0,4 x D	90	–	115	72	–	92	63	–	80,5	fz	0,044	0,051	0,063	0,073	0,082
	2	Ap max	0,4 x D	60	–	80	48	–	64	42	–	56	fz	0,035	0,041	0,050	0,058	0,066
K	3	Ap max	0,4 x D	60	–	70	48	–	56	42	–	49	fz	0,029	0,034	0,041	0,047	0,051
	1	Ap max	0,4 x D	120	–	150	108	–	135	108	–	135	fz	0,052	0,060	0,073	0,082	0,089
	2	Ap max	0,4 x D	110	–	140	99	–	126	99	–	126	fz	0,044	0,051	0,063	0,073	0,082
S	3	Ap max	0,4 x D	110	–	130	99	–	117	99	–	117	fz	0,035	0,041	0,050	0,058	0,066
	1	Ap max	0,4 x D	50	–	90	40	–	72	30	–	54	fz	0,044	0,051	0,063	0,073	0,082
	2	Ap max	0,4 x D	25	–	40	20	–	32	15	–	24	fz	0,023	0,027	0,034	0,039	0,044
	3	Ap max	0,4 x D	25	–	40	20	–	32	15	–	24	fz	0,023	0,027	0,034	0,039	0,044
H	4	Ap max	0,4 x D	50	–	60	40	–	48	30	–	36	fz	0,032	0,037	0,046	0,054	0,060
	1	Ap max	0,4 x D	80	–	140	64	–	112	48	–	84	fz	0,039	0,045	0,055	0,064	0,070
	2	Ap max	0,4 x D	70	–	120	56	–	96	42	–	72	fz	0,029	0,034	0,041	0,047	0,051

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. Please adjust parameters according to system stability.
 For side milling with ap larger than 1 x D, reduce fz by 20%!
 Cylindrical shanks not recommended for full slotting.



■ HARVI III Ball Nose • UJBV • Unequal Flute Spacing • Finishing

Material Group												Recommended feed per tooth (fz = mm/th) for side milling (A).						
	Side Milling (A)		short			medium			long									
	A		adaptor reach									D1 – Diameter						
			KCSM15			KCSM15			KCSM15									
	Cutting Speed – vc m/min			Cutting Speed – vc m/min			Cutting Speed – vc m/min											
ap	ae	min		max	min		max	min		max	mm	10,0	12,0	16,0	20,0	25,0		
P	0	Ap max	0,06 x D	285	–	380	257	–	342	257	–	342	fz	0,061	0,070	0,086	0,097	0,105
	1	Ap max	0,06 x D	285	–	380	257	–	342	257	–	342	fz	0,061	0,070	0,086	0,097	0,105
	2	Ap max	0,06 x D	266	–	361	239	–	325	239	–	325	fz	0,061	0,070	0,086	0,097	0,105
	3	Ap max	0,06 x D	228	–	304	205	–	274	205	–	274	fz	0,051	0,060	0,074	0,086	0,097
	4	Ap max	0,06 x D	171	–	285	154	–	257	154	–	257	fz	0,046	0,053	0,065	0,075	0,083
	5	Ap max	0,06 x D	114	–	190	97	–	162	91	–	152	fz	0,041	0,048	0,059	0,069	0,077
M	6	Ap max	0,06 x D	95	–	143	81	–	121	76	–	114	fz	0,034	0,040	0,048	0,055	0,060
	1	Ap max	0,06 x D	171	–	219	137	–	175	120	–	153	fz	0,051	0,060	0,074	0,086	0,097
	2	Ap max	0,06 x D	114	–	152	91	–	122	80	–	106	fz	0,041	0,048	0,059	0,069	0,077
K	3	Ap max	0,06 x D	114	–	133	91	–	106	80	–	93	fz	0,034	0,040	0,048	0,055	0,060
	1	Ap max	0,06 x D	228	–	285	205	–	257	205	–	257	fz	0,061	0,070	0,086	0,097	0,105
	2	Ap max	0,06 x D	209	–	266	188	–	239	188	–	239	fz	0,051	0,060	0,074	0,086	0,097
S	3	Ap max	0,06 x D	209	–	247	188	–	222	188	–	222	fz	0,041	0,048	0,059	0,069	0,077
	1	Ap max	0,06 x D	95	–	171	76	–	137	57	–	103	fz	0,051	0,060	0,074	0,086	0,097
	2	Ap max	0,06 x D	48	–	76	38	–	61	29	–	46	fz	0,027	0,032	0,039	0,046	0,052
	3	Ap max	0,06 x D	48	–	76	38	–	61	29	–	46	fz	0,027	0,032	0,039	0,046	0,052
H	4	Ap max	0,06 x D	95	–	114	76	–	91	57	–	68	fz	0,038	0,044	0,055	0,063	0,071
	1	Ap max	0,06 x D	152	–	266	122	–	213	91	–	160	fz	0,046	0,053	0,065	0,075	0,083
	2	Ap max	0,06 x D	133	–	228	106	–	182	80	–	137	fz	0,034	0,040	0,048	0,055	0,060

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
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Duo-Lock Modular Milling