

HARVI™ IV • Side Milling/Slotting • Application Data • **METRIC**

Material Group		Max Ae Factor (KAp)	KCSM15A Base Cutting Speed Vc m/min	Feed per Tooth (fz=mm/th)				
				D1 - Diameter (mm)				
				10	12	16	20	25
P	3	1	130	0,049	0,044	0,067	0,080	0,095
	4	1	100	0,044	0,049	0,059	0,069	0,081
	5	0,8	65	0,038	0,043	0,053	0,063	0,076
	6	0,7	50	0,032	0,036	0,043	0,050	0,060
M	1	1	80	0,049	0,055	0,067	0,080	0,095
	2	0,8	60	0,038	0,043	0,053	0,063	0,076
	3	0,8	60	0,032	0,036	0,043	0,050	0,060
S	1	0,5	50	0,049	0,055	0,067	0,080	0,095
	2	0,5	30	0,038	0,043	0,053	0,063	0,076
	3	0,5	25	0,026	0,030	0,036	0,043	0,051
	4	0,7	45	0,041	0,051	0,061	0,069	0,081
H	1	0,8	80	0,044	0,049	0,059	0,069	0,081
	2	0,5	70	0,037	0,041	0,050	0,059	0,070

NOTE:

These guidelines may require variations to achieve optimum results.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >12 mm diameter. Maximum ramp angle is 2°.

Tools with chip splitters can be used as finishers.

Maximum Cutting Width and Adjustment Factors for Speed & Feed Calculation • **METRIC**

Maximum cutting width (Ae) for given cutting depth (Ap)

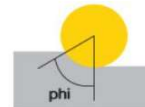
Ap	≤0,125 x D1	>0,125xD1 ≤ 0,5xD1	>0,5xD1 ≤ 1xD1	>1xD1 ≤ 2xD1	>2xD1 ≤ 3xD1	>3xD1 ≤ 4xD1	>4 x D1
Max Ae	100% x D1	50% x D1 x KAp	40% x D1 x KAp	30% x D1 x KAp	20% x D1 x KAp	15% x D1 x KAp	10% x D1 x KAp

Adjustment factors for speed (Vc) and feed (Fz)

Ae/D1	≤2%	>2% ≤ 5%	>5 ≤ 7,5%	>7,5% ≤ 10%	>10% ≤ 15%	>15% ≤ 20%	>20% ≤ 30%	>30% ≤ 40%	>40% ≤ 50%	>50% ≤ 100%
Kv	3	2,5	1,9	1,4	1,35	1,3	1,2	1,1	1	0,9
KFz	3,28	2,3	1,95	1,7	1,5	1,25	1,09	1,02	1	1

Angle of engagement (phi°) relative to cutting width (Ae)

Ae	2%	5%	7,50%	10%	15%	20%	30%	40%	50%	100%
Angle of Engagement - (phi°)	16,26	25,84	31,79	36,87	45,57	53,13	66,42	78,46	90	180



To calculate application specific cutting data, please use KAp, Kv, and KFz from tables above for adaption of cutting speeds and feeds respectively:

Maximum Ae= KAp * D1 * Ap1Max/D1

Vc new = Vc * Kv

Fz new = Fz * KFz

Sample Calculation

Material: S4

D1: 25 mm

Ap: 2xD1

Max Ae: 30% x KAp x D1 30% x 0,7 x D1 = 21%xD1

M/Min: Base x Kv 45 x 1,2 = 54

Fz: Base x KFz 0,081 x 1,09 = 0,088

Final cutting data recommendation:

Max Ae = 30% * 0,7 * 25 = 5,25 mm

Vc new = 45 * 1,2 = 54 m/min

Fz new = 0,081 * 1,09 = 0,088 mm/th

Application Data • Minimum Helical Interpolation Diameter • **METRIC**

Tool. dia. mm	Interpolation dia. mm
10	14,25
12	16,25
16	21,31
20	26,38
25	32,44

Maximum ramp angle is 2° on centerline.