

KOR5™ DS & KOR6™ DT • 3 x D • Application Data • Metric



KOR5 DS 3 x D



KOR6 DT 3 x D

Material Group	A	KC643M			Recommended feed per tooth (fz = mm/th) for side milling (A).							
		Cutting Speed — vc m/min			mm	D1 — Diameter						
		ap	ae	min		8,0	10,0	12,0	16,0	20,0	25,0	
P	0	3 x D	0,1 x D	150	—	440	fz	0,072	0,086	0,099	0,121	0,137
	1	3 x D	0,1 x D	150	—	440	fz	0,072	0,086	0,099	0,121	0,137
	2	3 x D	0,1 x D	140	—	418	fz	0,072	0,086	0,099	0,121	0,137
	3	3 x D	0,1 x D	120	—	352	fz	0,060	0,073	0,084	0,105	0,121
	4	3 x D	0,1 x D	90	—	330	fz	0,054	0,065	0,075	0,092	0,106
	5	3 x D	0,1 x D	60	—	220	fz	0,048	0,058	0,067	0,084	0,097
M	6	3 x D	0,1 x D	50	—	165	fz	0,040	0,048	0,056	0,068	0,078
	1	3 x D	0,1 x D	90	—	253	fz	0,060	0,073	0,084	0,105	0,121
	2	3 x D	0,1 x D	60	—	176	fz	0,048	0,058	0,067	0,084	0,097
K	3	3 x D	0,1 x D	60	—	154	fz	0,040	0,048	0,056	0,068	0,078
	1	3 x D	0,1 x D	120	—	330	fz	0,072	0,086	0,099	0,121	0,137
	2	3 x D	0,1 x D	110	—	308	fz	0,060	0,073	0,084	0,105	0,121
S	3	3 x D	0,1 x D	110	—	286	fz	0,048	0,058	0,067	0,084	0,097
	1	3 x D	0,1 x D	50	—	198	fz	0,060	0,073	0,084	0,105	0,121
	2	3 x D	0,1 x D	25	—	88	fz	0,032	0,038	0,045	0,056	0,065
H	3	3 x D	0,1 x D	25	—	88	fz	0,032	0,038	0,045	0,056	0,065
	4	3 x D	0,1 x D	50	—	132	fz	0,044	0,053	0,062	0,077	0,089
	1	3 x D	0,1 x D	80	—	308	fz	0,054	0,065	0,075	0,092	0,106
	2	3 x D	0,1 x D	70	—	264	fz	0,040	0,048	0,056	0,068	0,078

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.

Side milling applications — for longest reach (L3) tools, reduce Ae by 30%.
For better surface finish, reduce feed per tooth.

KOR5™ DS & KOR6™ DT • 5 x D • Application Data • Metric



KOR5 DS 5 x D



KOR6 DT 5 x D

Material Group	A	KC643M			Recommended feed per tooth (fz = mm/th) for side milling (A).							
		Cutting Speed — vc m/min			mm	D1 — Diameter						
		ap	ae	min		8,0	10,0	12,0	16,0	20,0	25,0	
P	0	5 x D	0,05 x D	150	—	540	fz	0,097	0,117	0,134	0,163	0,185
	1	5 x D	0,05 x D	150	—	540	fz	0,097	0,117	0,134	0,163	0,185
	2	5 x D	0,05 x D	140	—	513	fz	0,097	0,117	0,134	0,163	0,185
	3	5 x D	0,05 x D	120	—	432	fz	0,081	0,098	0,114	0,141	0,164
	4	5 x D	0,05 x D	90	—	405	fz	0,073	0,087	0,101	0,124	0,143
	5	5 x D	0,05 x D	60	—	270	fz	0,065	0,078	0,091	0,113	0,131
M	6	5 x D	0,05 x D	50	—	202,5	fz	0,054	0,065	0,075	0,092	0,105
	1	5 x D	0,05 x D	90	—	310,5	fz	0,081	0,098	0,114	0,141	0,164
	2	5 x D	0,05 x D	60	—	216	fz	0,065	0,078	0,091	0,113	0,131
K	3	5 x D	0,05 x D	60	—	189	fz	0,054	0,065	0,075	0,092	0,105
	1	5 x D	0,05 x D	120	—	405	fz	0,097	0,117	0,134	0,163	0,185
	2	5 x D	0,05 x D	110	—	378	fz	0,081	0,098	0,114	0,141	0,164
S	3	5 x D	0,05 x D	110	—	351	fz	0,065	0,078	0,091	0,113	0,131
	1	5 x D	0,05 x D	50	—	243	fz	0,081	0,098	0,114	0,141	0,164
	2	5 x D	0,05 x D	25	—	108	fz	0,043	0,052	0,060	0,075	0,087
H	3	5 x D	0,05 x D	25	—	108	fz	0,043	0,052	0,060	0,075	0,087
	4	5 x D	0,05 x D	50	—	162	fz	0,060	0,072	0,084	0,104	0,120
	1	5 x D	0,05 x D	80	—	378	fz	0,073	0,087	0,101	0,124	0,143
	2	5 x D	0,05 x D	70	—	324	fz	0,054	0,065	0,075	0,092	0,105

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.

Side milling applications — for longest reach (L3) tools, reduce Ae by 30%.
For better surface finish, reduce feed per tooth.

KOR5 DS & KOR6 DT • Adjustment Factor for Feed and Speed Calculation • Metric

	Ae/D	2%	4%	5%	8%	10%	12%	20%	30%	40%	50%	100%
Speed factor	Kv	2,1—3,6	1,6—3	1,6—2,5	1,6	1,4	1,38	1,3	1,2	1,1	1	0,9
Feed factor	KFz	3,58	2,56	2,3	1,84	1,67	1,54	1,25	1,09	1,02	1	1

NOTE: For an Ae/D ratio of 5% or less there is a range given for speed factor Kv, which allows the user to either be more conservative at the lower value or more aggressive with the higher value.
This can also be considered based on the machinability of the material, from difficult to free cutting.

These calculations are for roughing/semi-finishing cuts when used with the recommended base Fz.

For light finishing cuts requiring improved surface quality it is recommended to reduce the base Fz approximately 50% and then apply these factors.

To calculate application specific cutting data, please use KV coefficient table to the right for adaptation of cutting speed and KFz for feed respectively.

Vc new = Vc * Kv
Fz new = IPT * KFz

Calculation example:

Application: D1 = 25mm, KOR5™ / KOR6™ 3 x D;
P5 material group;
Ae 2,5mm (Ae = 10% of D1)
Cutting data recommendation: 220m/min;
Fz = 0,109 mm/z
Adjustment coefficients: Ae = 2,5mm equals 10%;
Kv = 1,4; KFz = 1,67

Final cutting data recommendation:

Vc new = 220 * 1,4 = 308mm/min
Fz new = 0,109 * 1,67 = 0,182mm/z

KOR5™ DA • Application Data • Metric



Material Group					K600			Recommended feed per tooth (fz = mm/zh)					
	A		B		Cutting Speed — vc m/min			D1 — Diameter					
	ap	ae	ap		min	—	max	mm	10,0	12,0	16,0	20,0	25,0
N	1	0,5 x D1	0,5 x D1	0,25 x D1	200	—	2000	fz	0,080	0,120	0,160	0,200	0,225
	2	0,5 x D1	0,5 x D1	0,25 x D1	200	—	1500	fz	0,070	0,110	0,140	0,180	0,213

NOTE: These guidelines may require variations to achieve optimum results. For better surface finish, reduce feed per tooth.

For cutting aluminum with high silicon, TiCN coating is recommended.

Ap for milling machine with ceramic bearings spindle, multiply by 0,5.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >12mm diameter.

KOR5™ DA • Adjustment Factor Table for Feed Calculation • Metric

Ae/D1	2%	5%	10%	20%	30%	40%	50%	100%
Max Ap	Ap1 Max	Ap1 Max	Ap1 Max	Ap1 Max	2 x D1	1 x D1	0,5 x D1	0,25 x D1
Feed Multiplier (KFz)	3,60	2,30	1,70	1,25	1,09	1,02	1,00	0,90

To calculate application specific cutting data, please use Kv coefficient table to the right for adaptation of cutting speed and KFz for feed respectively.

Fz new = IPT * KFz

Calculation example:

Application: D1 = 25mm;

N2 material group;

Ae 2,5mm (Ae = 10% of D1)

Cutting data recommendation: 1500m/min;

Fz = 0,213 mm/z

Adjustment coefficients: Ae = 2,5mm equals 10%;

KFz = 1,70

Final cutting data recommendation:

Fz new = 0,213 * 1,70 = 0,362 mm/z