

Parameter recommendation for routing of IMS made of aluminum and copper

MPK end mill type: EAC30R
 Cutting speed: v=210 m/min for aluminium (180 m/min for copper)

D1	n	fxy	Fxy	Fz	H	Depth
Router diameter	Spindle speed	Chip load	Feed rate	Infeed with pre drilling	Routing depth	into the back up
[mm]	[rpm]	[$\mu\text{m}/1$]	[m/min]	[m/min]	[mm]	[mm]
0.8	83000	3	0.25	-	0.8	0.3
1.0	66000	5	0.3	-	1.0	0.4
1.2	55000	9	0.5	-	1.2	0.4
1.5	44000	14	0.6	0.3	1.5	0.4
1.6	42000	17	0.7	0.3	1.6	0.4
1.8	37000	21	0.8	0.4	1.8	0.4
2.0	33000	30	1.0	0.5	2.0	0.5
2.4	28000	36	1.0	0.5	2.4	0.5
3.0	22000	45	1.0	0.5	3.0	0.5

General recommendation:

- With ceramic dielectric or copper reduce feed rate by approx. 25% and spindle speed by approx. 15%
- For depth routing, reduce feed rate by approx. 25%.
- Use entry material, e.g. phenolic paper $\geq 0.80\text{mm}$ thickness.
- Max pressure at pressure foot.
- Please use minimal quantity lubrication, if possible (ethanol / oil emulsion).
- Routing in 2 passes with \emptyset -compensation improves quality and dimension.

Router specification:

Overall length: 38.2 -0.3mm
 Flute length: L $\pm 0.2\text{mm}$
 Working length: L -2.0mm
 Nominal diameter: D1 $\pm 0.015\text{mm}$
 Shank diameter: D = 3.175 -0.001 / -0.007mm