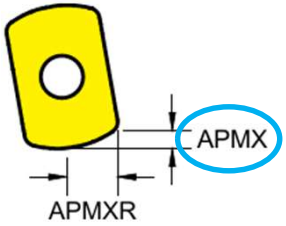
Strictly Confidential

Avoiding common errors

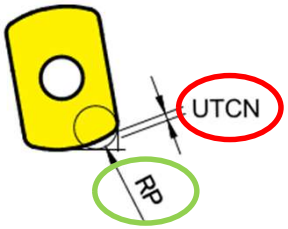
HF4 programming

October 7, 2020

HF4 MiLL Profiling



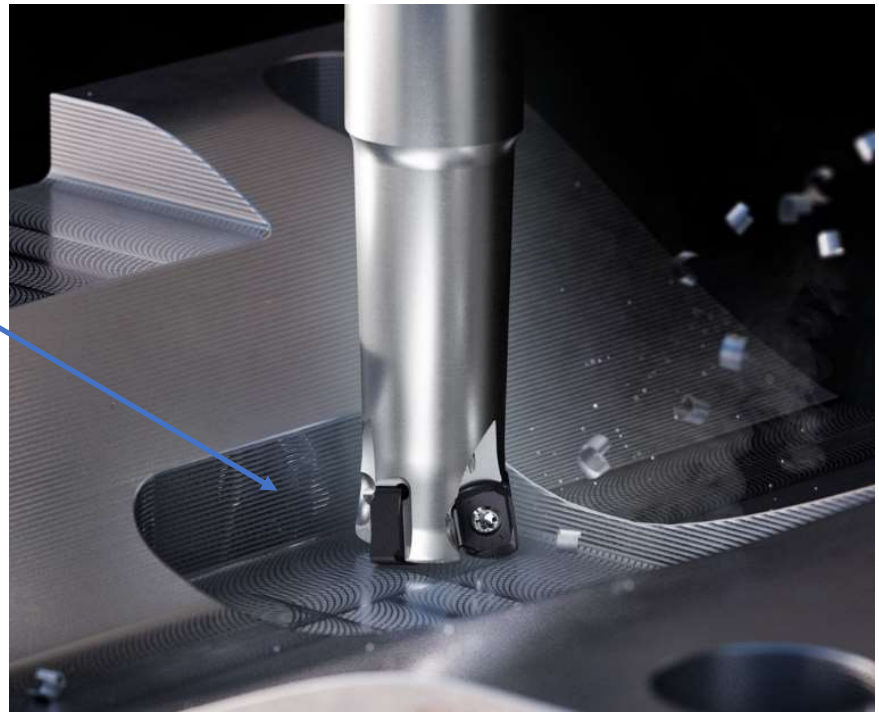
External Cutter Diameter **DCX**	Maximum Depth of Cut **APMX**	Profiling: Programmed Corner Radius **RP**	Profiling: Uncut Thickness **UTCN**
16mm (0.625")	**0.9mm (.035")**	2.0mm (.079")	0.3mm (.011")
20mm (0.750")	**1.0mm (.039")**	2.0mm (.079")	0.31mm (.012")
25mm (1")	**1.0mm (.039")**	2.0mm (.079")	0.31mm (.012")
32mm (1.25")	**1.0mm (.039")**	2.0mm (.079")	0.31mm (.012")
40mm (1.5")	**1.0mm (.039")**	2.0mm (.079")	0.31mm (.012")
50mm (2")	**1.0mm (.039")**	2.0mm (.079")	0.31mm (.012")



Programmed Corner Radius Overcut

Program R

Programmed Corner Radius **RP**	Overcut
2mm (.079”)	0mm (.000”)
2.5mm (.098”)	0.18mm (.007”)
3mm (.118”)	0.36mm (.014”)

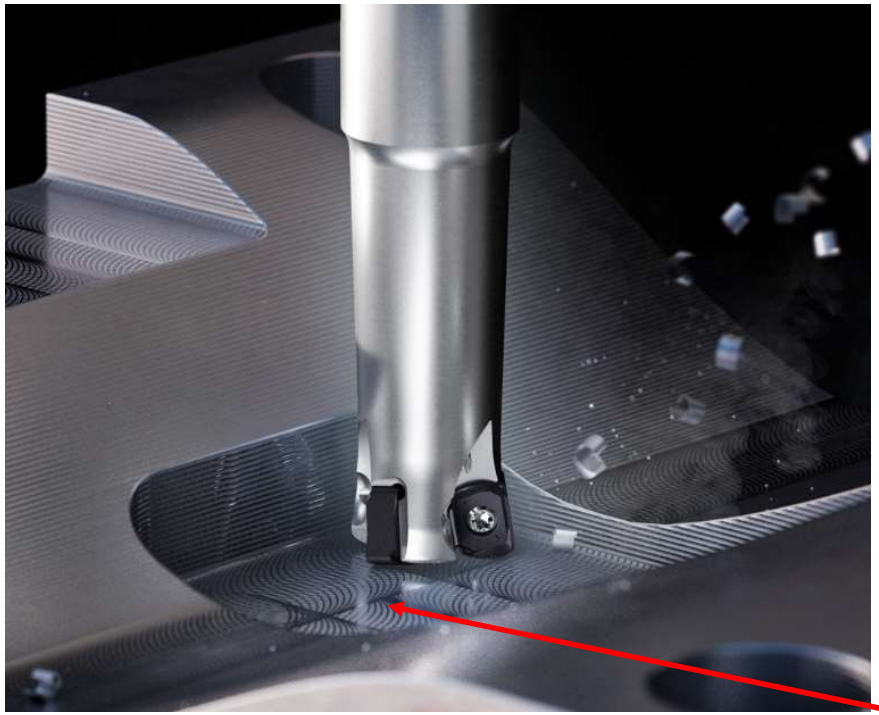


For any application where you are going up against a wall, machining a full slot, or profiling, you ***MUST*** program a 2mm (.079”) corner radius.

Any larger programmed corner radius and you will cut outside of nominal diameter, which ***will cause catastrophic failure*** as soon as total depth of cut exceeds 1mm (0.9mm for the 16mm (0.625”)

HF4 MiLL Programmed Corner Radius Uncut Thickness

If the application is ***face milling only*** and flatness is the primary concern, program a corner radius of 3mm (.118”) as this will generate the smallest Uncut Thickness (scallops on the floor).

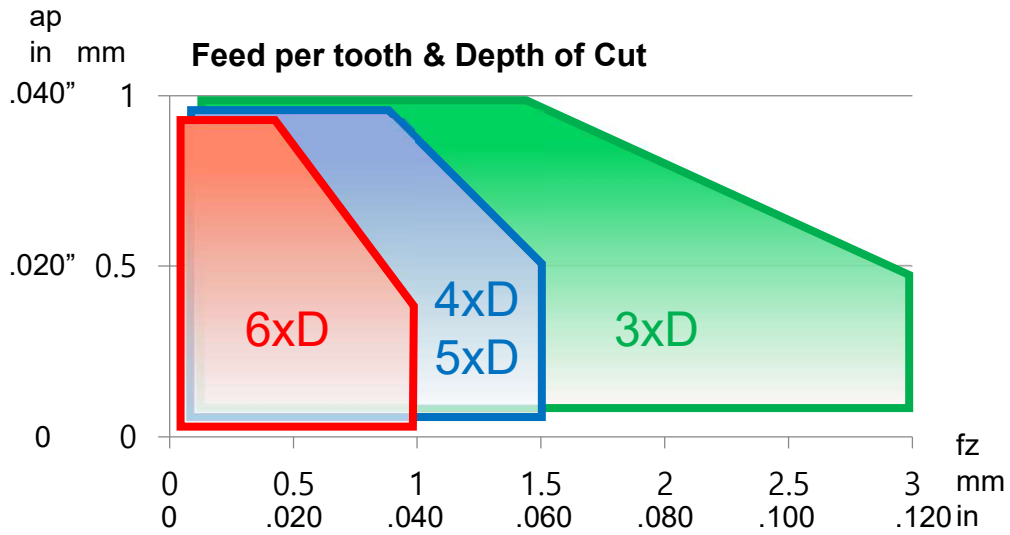


Program R

Programmed Corner Radius **RP**	Uncut Thickness **UTCN**
2mm (.079”)	0.31mm (.012”)
2.5mm (.098”)	0.18mm (.007”)
3mm (.118”)	0.07mm (.003”)

HF4 MiLL Feed rate

Fz (mm)	Hex (mm)
0.050	0.013
0.075	0.019
1.000	0.259
1.250	0.324
1.500	0.388
1.750	0.453
2.000	0.518
2.250	0.582
2.500	0.647
2.750	0.712
3.000	0.776



Fz (in)	Hex (in)
0.020	0.0052
0.030	0.0078
0.040	0.0104
0.050	0.0129
0.060	0.0155
0.070	0.0181
0.080	0.0207
0.090	0.0233
0.100	0.0259
0.110	0.0285
0.120	0.0311

Because of chip thinning, it is ***CRUCIAL*** to increase your feed rate to the proper level. Failure to do so will cause shortened tool life (due to insufficient thermal evacuation) and reduced chip evacuation from the cutting zone.

- The shorter the overhang, the higher the feed.
- The lower the depth of cut the higher the feed.

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