

CG CAM-TOOL

SolidWorks add-in High Precision CAM System

Milling Sample

Hub



Feature

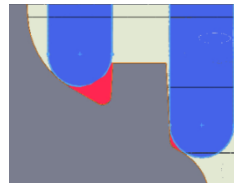
Hub cavity has 4 core cone at gradient surface. Since there are remaining area which the roughing tool can't cut into, remaining volume can be unequal. Furthermore, it has turned edges which the tool load becomes large.

《 Point 》

- (1) Rest machining with low tool load variation.
- (2) Smooth movement to keep off cutter mark by instantaneous dwell at turned edge.

[Material] S50C(13HRC)

[Size] 70mm x 70mm x 30mm



Difference of remaining volume

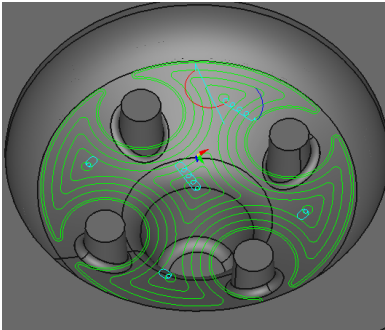


Turned edge

NO.	Process	Tool Dia. (mm)	XY step (mm)	Z step (mm)	Stock (mm)	Speed (r.p.m)	Feed (mm/min)	Cutting time (hh:mm)	
1	Rough1	D6R3	1.1	0.35	0.1	14,000	2,500	00:16	
2	Rough2	D4R2	0.7	0.25	0.1	14,000	2,500	00:04	
3	Second Rough1	D2R1	0.15	0.1	0.1	16,000	1,500	00:12	
4	Second Rough2	D1R0.5	0.12	0.07	0.1	20,000	1,200	00:08	
5	Semi Finish	D2R1	0.15	0.1	0.05	16,000	1,500	00:21	
6	Finish	D2R1	0.15	(0.089)	0	16,000	1,500	00:22	
7	Finish	D2R1	0.089	0.1	0	16,000	1,500	00:13	
8	Finish	D2R1	(0.00125)	0.1	0	16,000	1,500	00:06	
9	Finish	D1R0.5	0.063	0.07	0	20,000	1,200	00:05	
() Cusp height								Total time	1:47

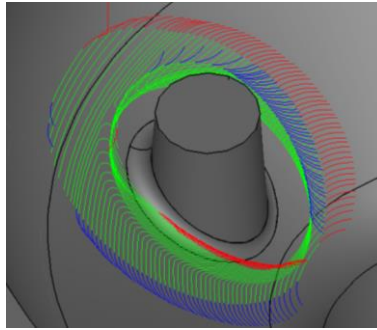
Cutting processes

[1.Rough]
Z-level Roughing D6R3



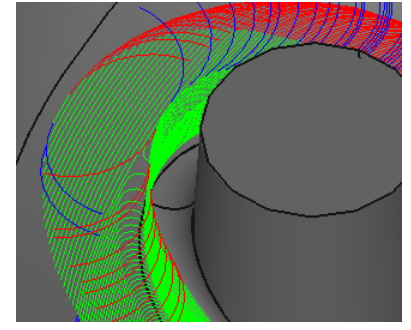
Insert R

[2.Rough]
Rest Machining D4R2



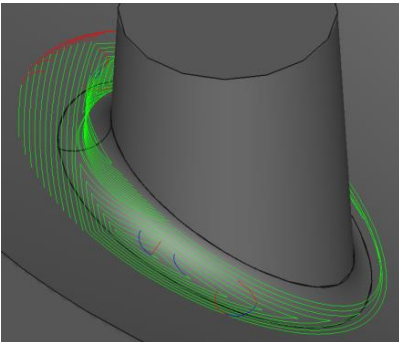
Rest machining with Insert R

[3.Second Rough]
Rest Machining D2R1



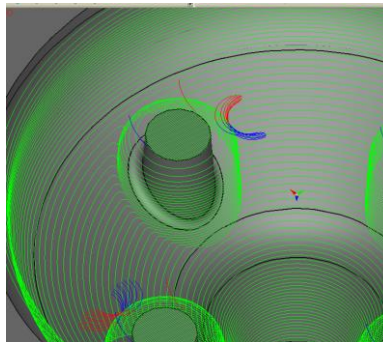
Rest machining with Insert R

[4.Second Rough]
Rest Machining D1R0.5



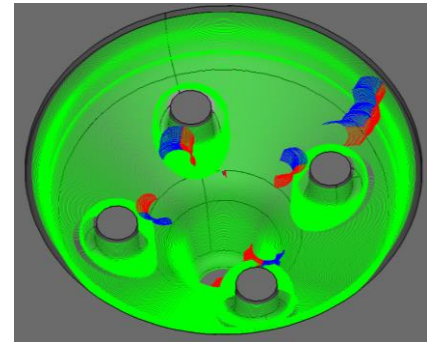
Z-level + Along surface path

[5.Semi Finish]
Z-level Finishing D2R1



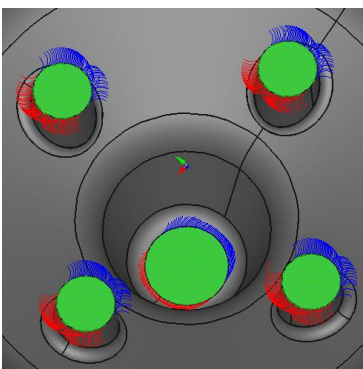
Insert R at Turned edge

[6.Finish]
Z-level Finishing D2R1



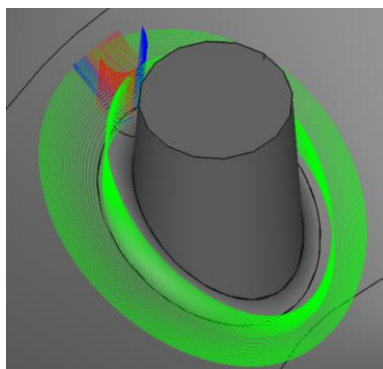
Cusp height + Insert R

[7. Finish]
Low Angle Finishing D2R1



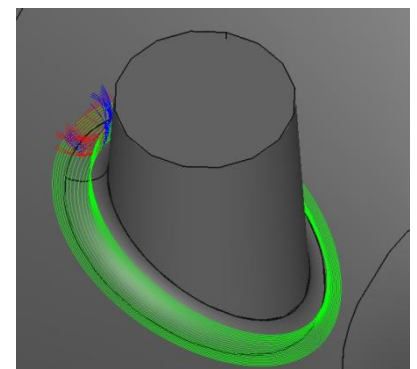
Horizontal area

[8,Finish]
Corner Processing D2R1



Ridgeline path

[9,Finish]
Corner Processing D1R0.5



Ridgeline path