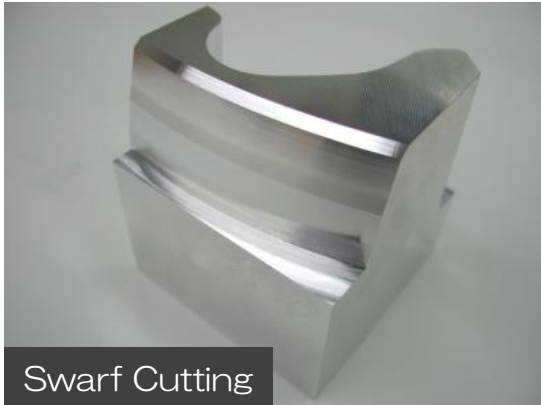
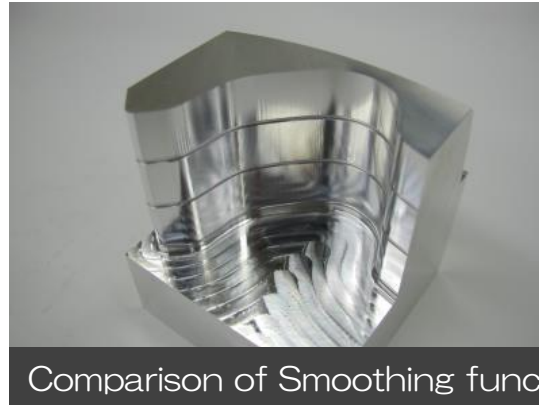


Simultaneous 5 Axis CAM

This is a cutting sample comparing smooth function of Swarf Cutting.



Swarf Cutting



Comparison of Smoothing function

【Material】
Aluminum (A7075)
【Size】
70mm x 70mm x 75mm

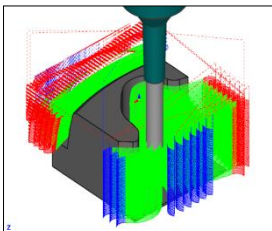
NO.	Process	Tool Dia. (mm)	XY step (mm)	Z step (mm)	Stock (mm)	Speed (r.p.m)	Feed (mm/min)	Cutting Time (hh:mm)
1	Rough1	Φ 10R0.8	4	0.5	0.2	13,000	2,000	00:42
2	Finish1 (5Axis)	Φ 6R3	0.15	1.0	0	14,000	1,000	00:59
3	Rough2	Φ 10R0.8	4	0.5	0.2	13,000	2,000	00:30
4	Finish2 (5Axis)	Φ 6R3	0.15	1.0	0	14,000	1,000	00:23
5	Rough3	Φ 10R0.8	4	0.5	0.2	13,000	2,000	00:21
6	Finish2 (5Axis)	Φ 6R3	0.15	1.0	0	14,000	700	00:31
7	Swarf cutting (5Axis)	Φ 10R0	0.1	—	0	11,000	400	00:02
8	Finish (Buttom)	φ 10R0	4.0	—	0	10,000	1,000	00:01
9	Finish	Φ 2R1	—	0.1	0	17,000	210	00:02
CuttingTime								3:31

Data creation・Process

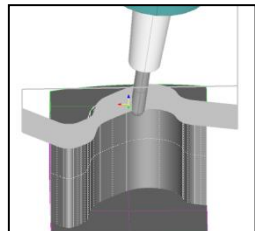
【3Axis】
Rough Φ 10R0.8

【Simultaneous 5Axis】 Finish (5Axis) Φ 6R3
Comparison of Smoothing function

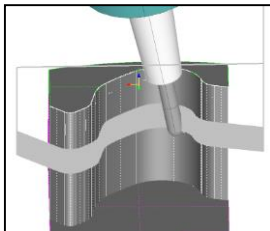
【Swarf Cutting】
(5Axis) Φ 10R0



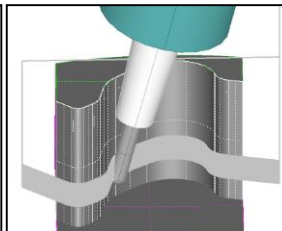
Process No1 + 3 + 5
Upper, Middle, Lower



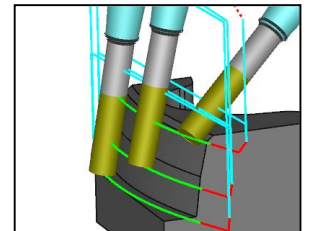
Process No2
Upper



Process No4
Middle



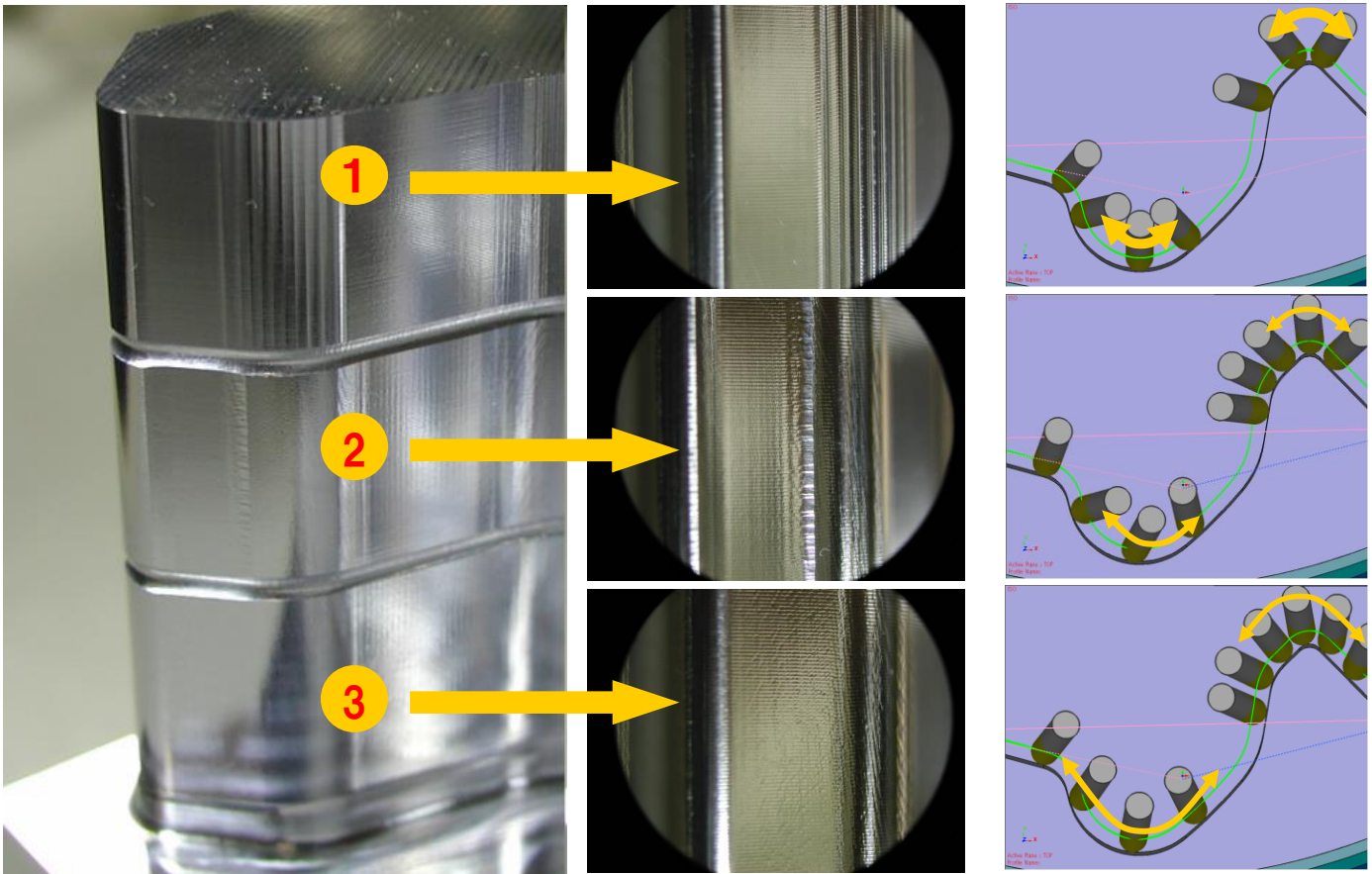
Process No6
Lower



Process No7

Smoothing

Smoothing is our unique function to control axis.



項目	内容
① Upper Without smoothing	<p>There are many gaps.</p> <p>There are many gaps because of rapid rotation of tilting axis and rotating axis at the high curvature area. This program is created just for experiment, official version of CAM-TOOL can't output this version.</p>
② Middle 5Axis conversion (Curve) with Smoothing 0%	<p>There are gaps at the portion that the rotating axis rapidly.</p> <p>It controls tilting axis and rotating axis of 5axis machine with a guide curve. The finished surface could be more smooth but there are gaps at the corners.</p>
③ Lower 5Axis conversion (Auto) with smoothing 100%	<p>There are no gaps because of smoothing function.</p> <p>CAM-TOOL controls tilting axis and rotating axis automatically. The finished surface are greatly smooth and gaps are get discreet.</p>

Swarf Cutting

Swarf cutting cut the part of linear section with the side of a cutter. Our unique smoothing function can reduce extreme vector change and achieves smooth rotation.

