

Optimization with stock simulation and creation D/B for 3 axis machining

To survive in mold industry

Delivery date and quality are affected by how fast and good in NC machining. NC machining totally depends on CAM data and engineer's skill and experiences. This causes big difference in quality and time, and there is big limit in CAM functions

Fast delivery & good quality	deficit by time & quality
<p>NC 10h Electrode 5, Graphite 3h Polishing 3h</p> <p>Cost = 100,000\$, Delivery = 7days, Quality A</p>	<p>NC 12h Electrode 15, Graphite 10h Polishing 8h</p> <p>Cost = 150,000\$, Delivery = 10days, Quality B</p>

Create system by data base

NC data created by CAM will be regenerated into optimized NC data by simulation and verification. The optimized NC data makes the safest and fastest machining at all time without any accident.

NCBrain Data Base

CAM / NC Data → **NCBrain Simulation** → Optimized NC Data

Profit after using NCBrain

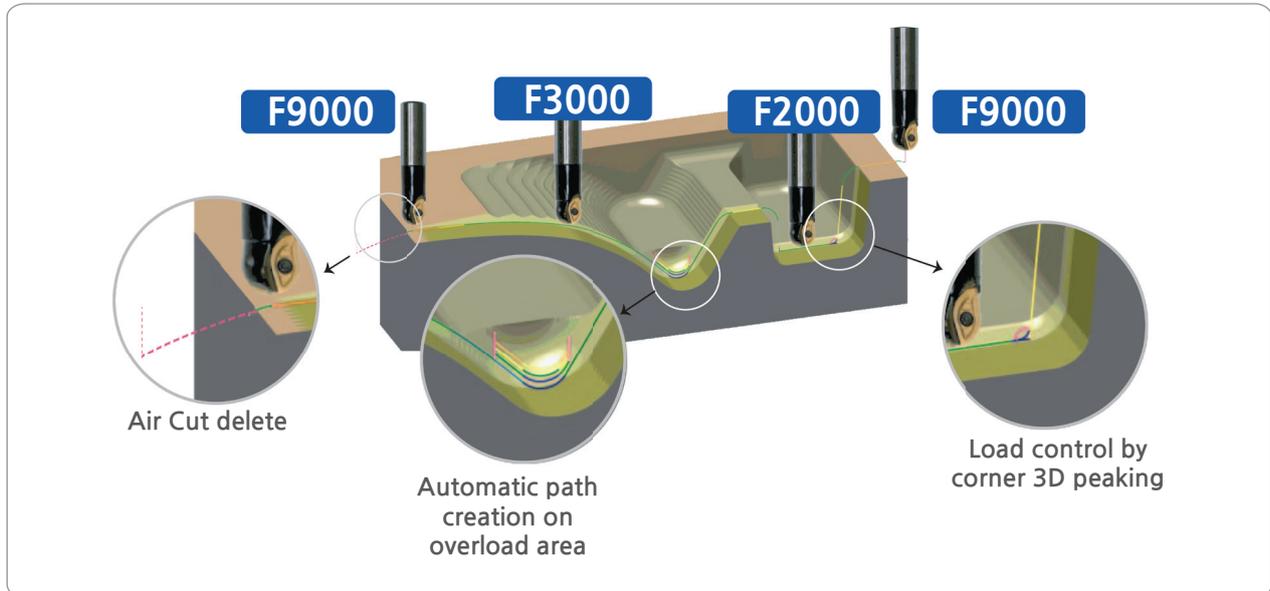


$20,000 \times 20\% \times 12\text{Months} = 48,000$
 $48,000 \times \text{Equipment} \times \text{Run @ Rate } 0.7 = ?$

● Main function of NCBrain

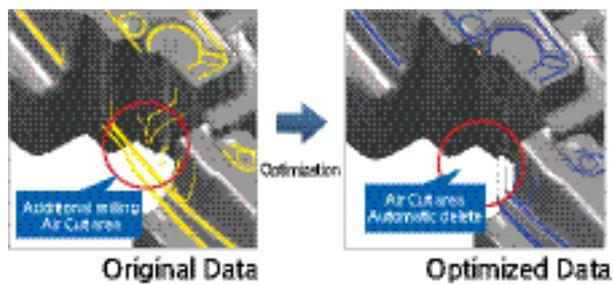
■ Feed rate controls by cutting load

Control best feed rate by cutting load, which helps to minimize tool breakage, abrasion and cutting time.



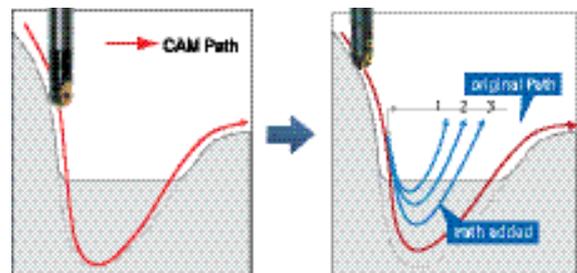
■ Air Cut delete

Unnecessary tool path called 'Aircut' reaches normally from 5% to 30%. This Aircut path should be deleted. NCBrain deletes unnecessary Aircut path automatically, and makes easy CAM job accordingly.



■ Tool path addition on overload

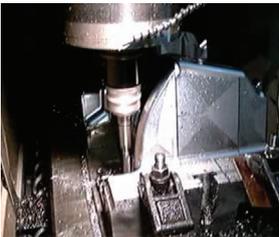
Overload area can cause tool breakage, low quality, and over cutting. NCBrain can handle these problems with self-creating tool path on extremely loaded area.



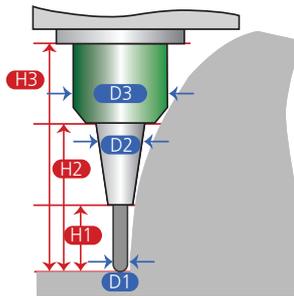
● Main function of NCBrain

■ Best tool length information

According to the tool length, minor and major accidents can happen all the time. NCBrain shows optimal length information after 1 simulation. So fast and safe machining can be done simply.

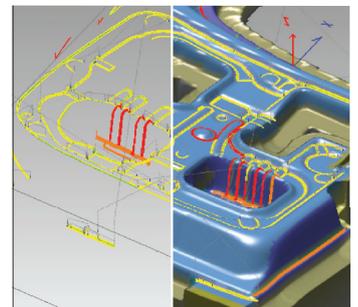


In Panel Slide Core



■ Tool length division

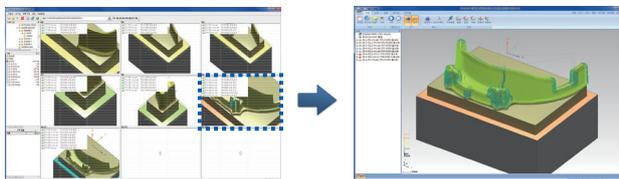
Because of small and deep area, the whole deficient machining can happen more often than not. NCBrain divides these NC data by diameter and length of the cutting tool, which makes efficient machining accordingly.



● NCBrain Option

■ E-List

Auto centering for electrode coordinate of, G54 G55..., and automatic ATC management



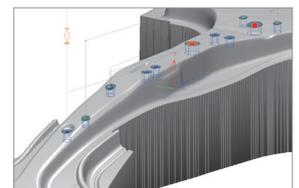
Integrated control for electrode, location, ATC and coordinates by E-list

■ Press | Press Bottom Die

Automatic machining by recognition of bottom die location & shape



Manual process checking shape



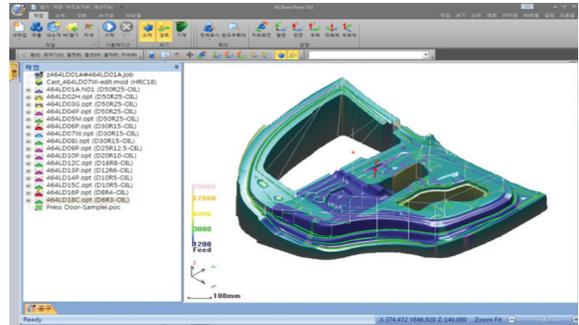
Automatic machining by NCBrain 2D CAM

How to use NCBrain

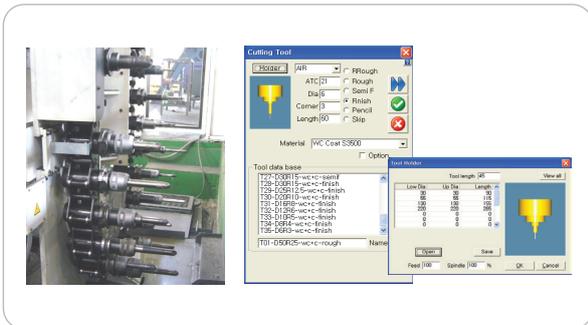
1. Define the stock by NC DATA & CAD DATA



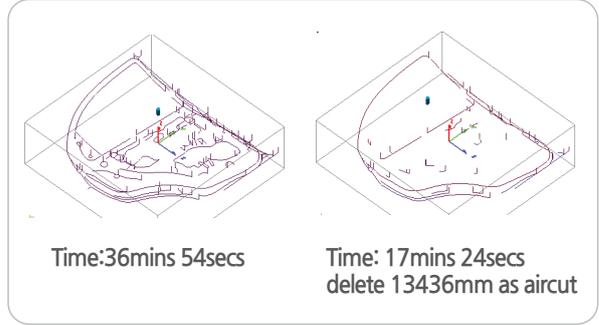
2. Optimization by opening NC data



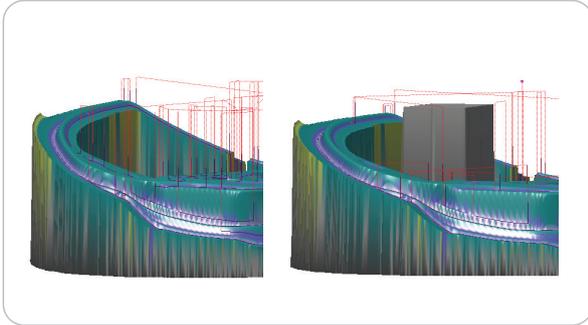
3. Manage cutting D/B and ATC



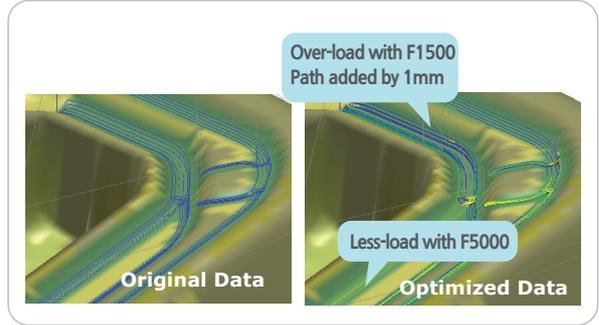
4. Delete tool path on no load area



5. Reduce G0 height by recognition of shape



6. Feedrate control by load and tool path addition on over load area



	RPM	FEED	TIME
original	5000	1800	1:36
NCBrain	5000	1500 5000	1:06

32%