February 14th revision in 2009

AutoNC NC soft for Machine Shop

Home Page http://www.autonc.jp

Manual of Slide Cut

[Japanese]

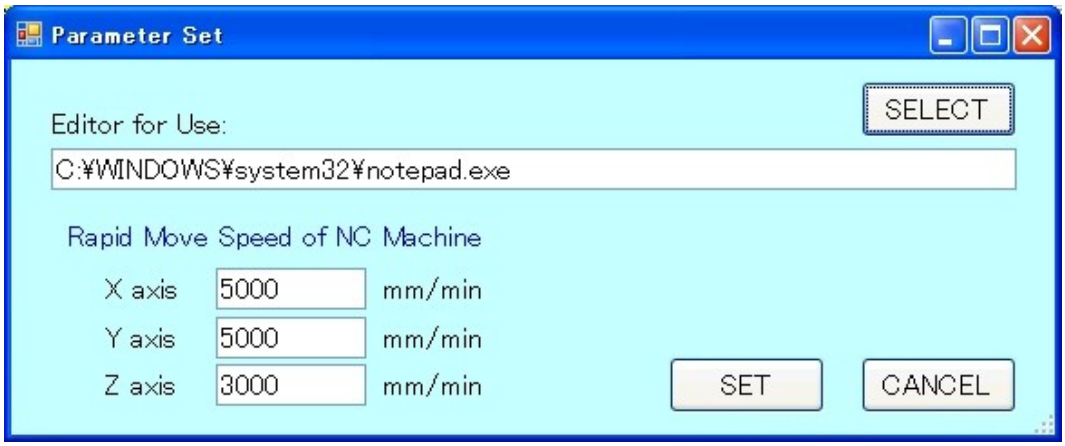
When pushing this button, it becomes Japanese display.

[Parameter]

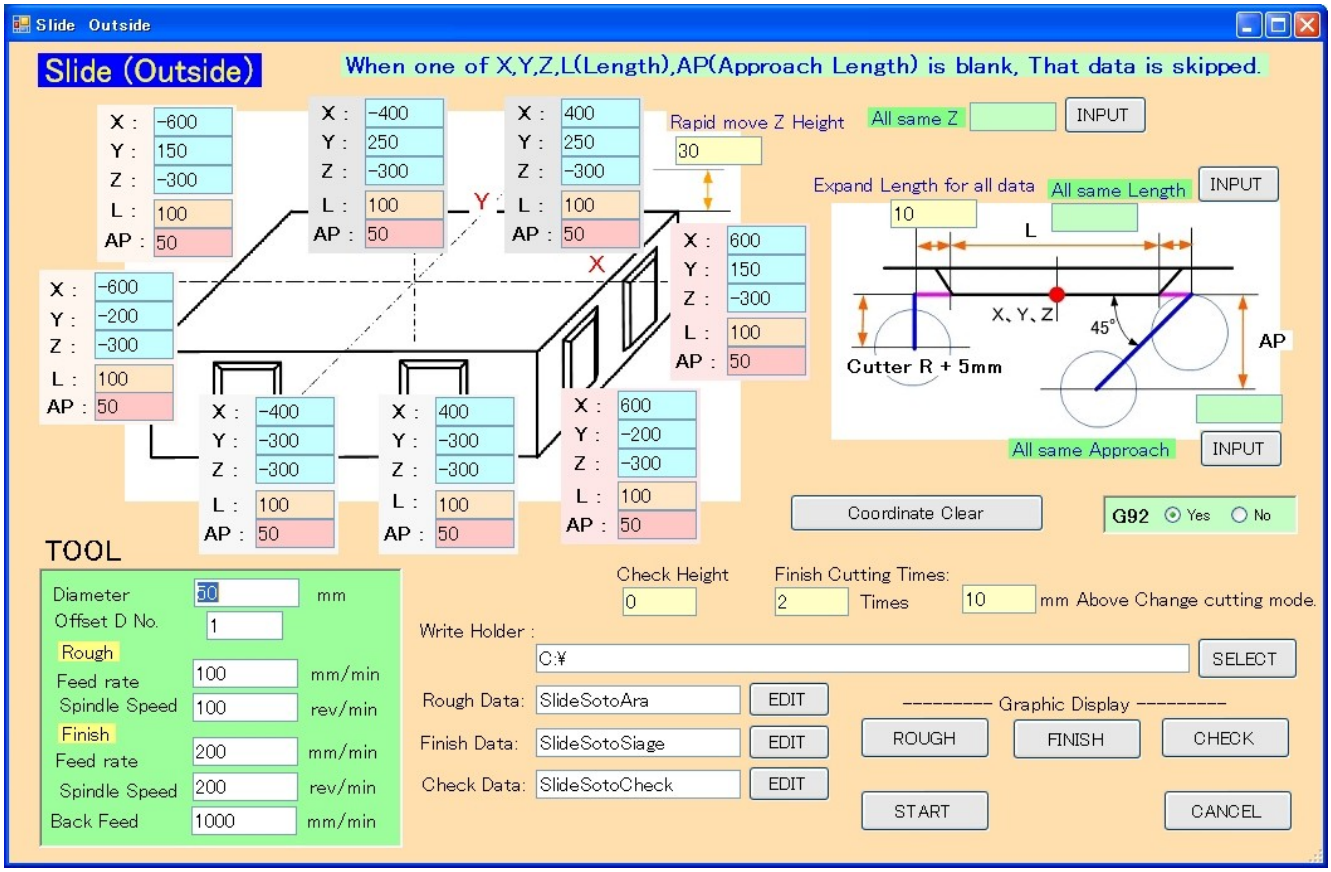
You specify an editor for the editing.

You start up the editor at the "EDIT" button of the program.

At present, you aren't using the rapid move speed of the machine tool.



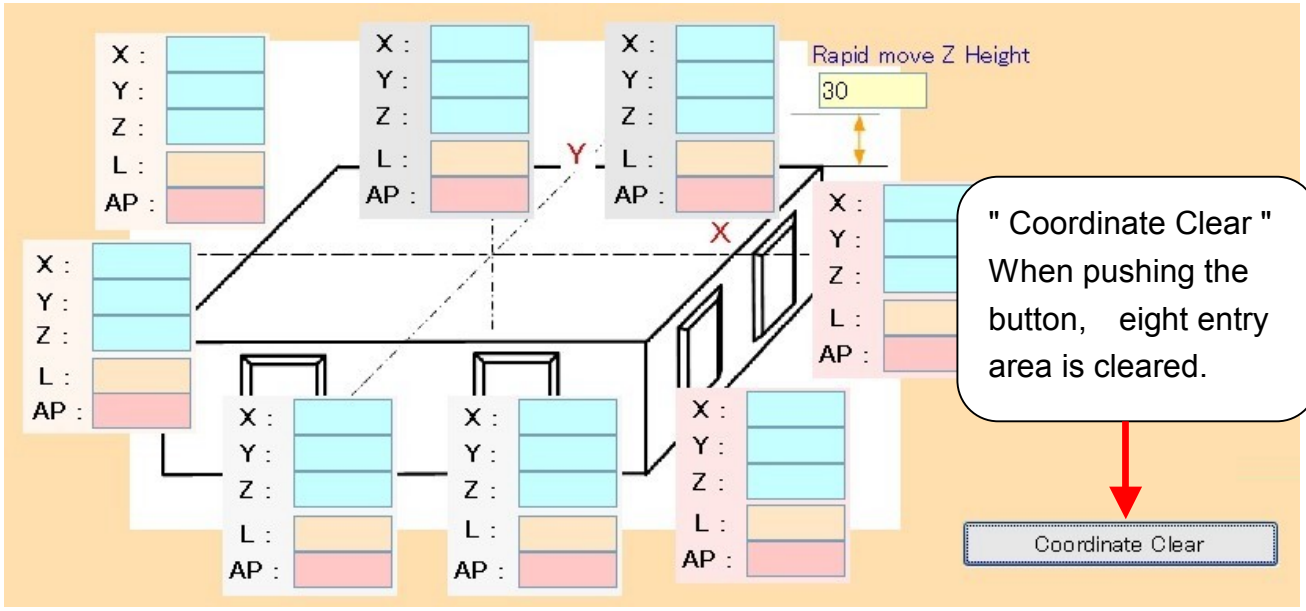
OUTSIDE (Slide cut)



It creates the tool radius offset data which cuts the outside of the material.
It starts from the position which is X0Y0Z(rapid move Z height).

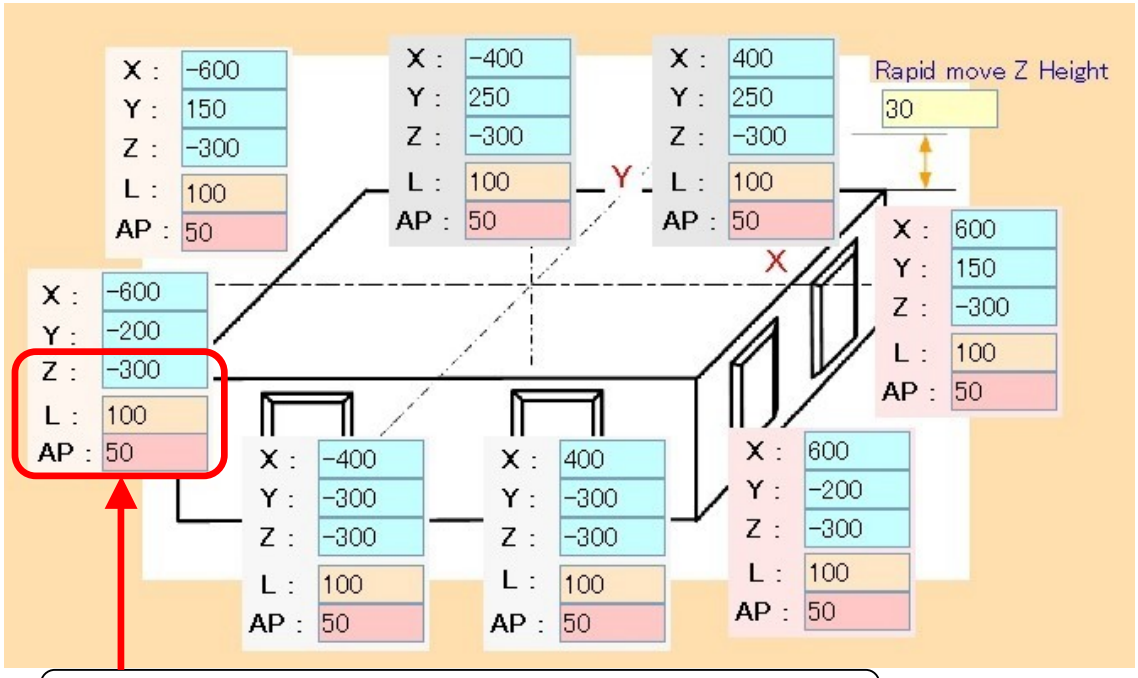
It made an approach 45 degrees from the end of the slide for the interference to be least.
Also,　Z rises at the position that is distant of the tool radius + 5 mm.

To avoid the interference in each place, Z, L, the AP can be individually changed.



・ Input a coordinate-value with slide epicenter to the light-blue X, the Y.
(The epicenter becomes a division center with slide length.)
・ Input the position Z where the tool goes down.
・ Input the length of the slide to the L (the length).
・ Put a distance in the AP (the approach length) from the slide surface, where Z goes down.

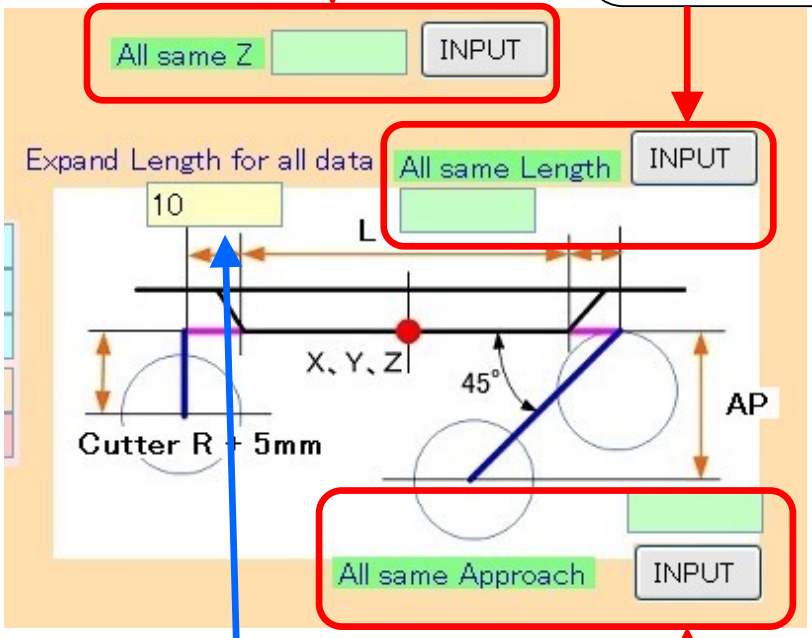
If not needing below the decimal point, omit a decimal point.
If any one of the X, the Y, the Z, the L (the length), the AP (the approach length) is space, it can be removed from the cut object.



About Z,L,and AP, there is collective input function.

Same Z data is written in light-blue eight places when inputting Z value to the olive-green area and pushing the " INPUT " button.

Same L data is written in light-orange eight places when inputting L value to the olive-green area and pushing the " INPUT " button.



Same AP data is written in the pink eight places when inputting the AP (the approach length) to the olive-green area and pushing the " INPUT " button.

The slide length can be controlled at the extension length.
Eight all of the places are extended.
The extension length is the value which is added to both sides of slide length (L).

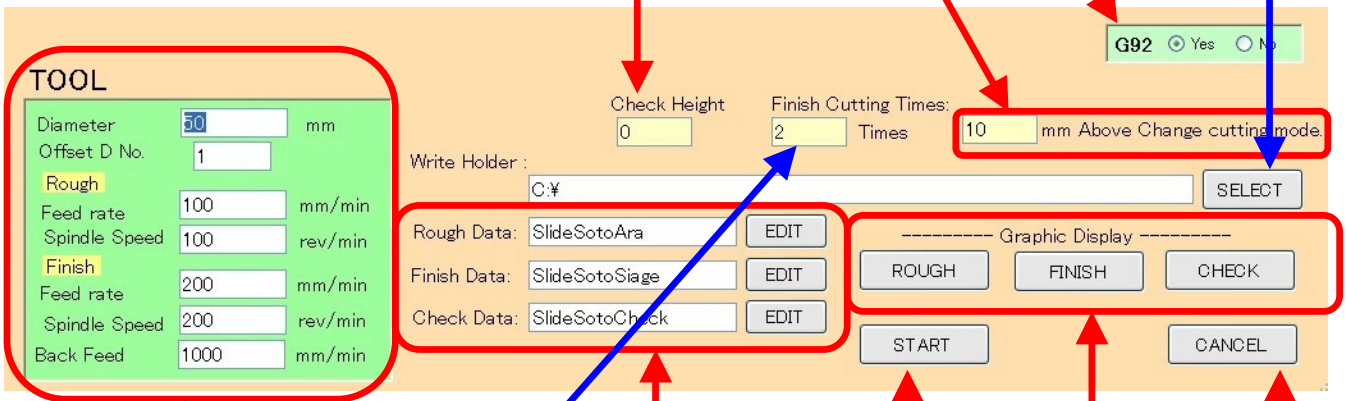
When slide length is 100 and extension length is 10,actual cutting length is 120.

You choose Yes or No at the <G92>.
When you choose Yes, G90G92X0Y0Z (the rapid move z height) is stored.
When it is No, G90X0Y0; G01Z (the rapid move z height) is stored.
(For the details, you refer to the NC data).

It becomes a cutting mode from above this than entered Z value.

"Select" At the button, it selects a write folder.

The check data rises to the check height after goes down Z depth once and checks a movement.



You enter all file names.
The check data is NC data for the confirmation of the input data.
" Edit " When pushing the button, the editor starts up and opens a file.

It is possible to display the NC data.

When pushing the "Start" button after fill in all data, the NC data of the file name is created in folder.

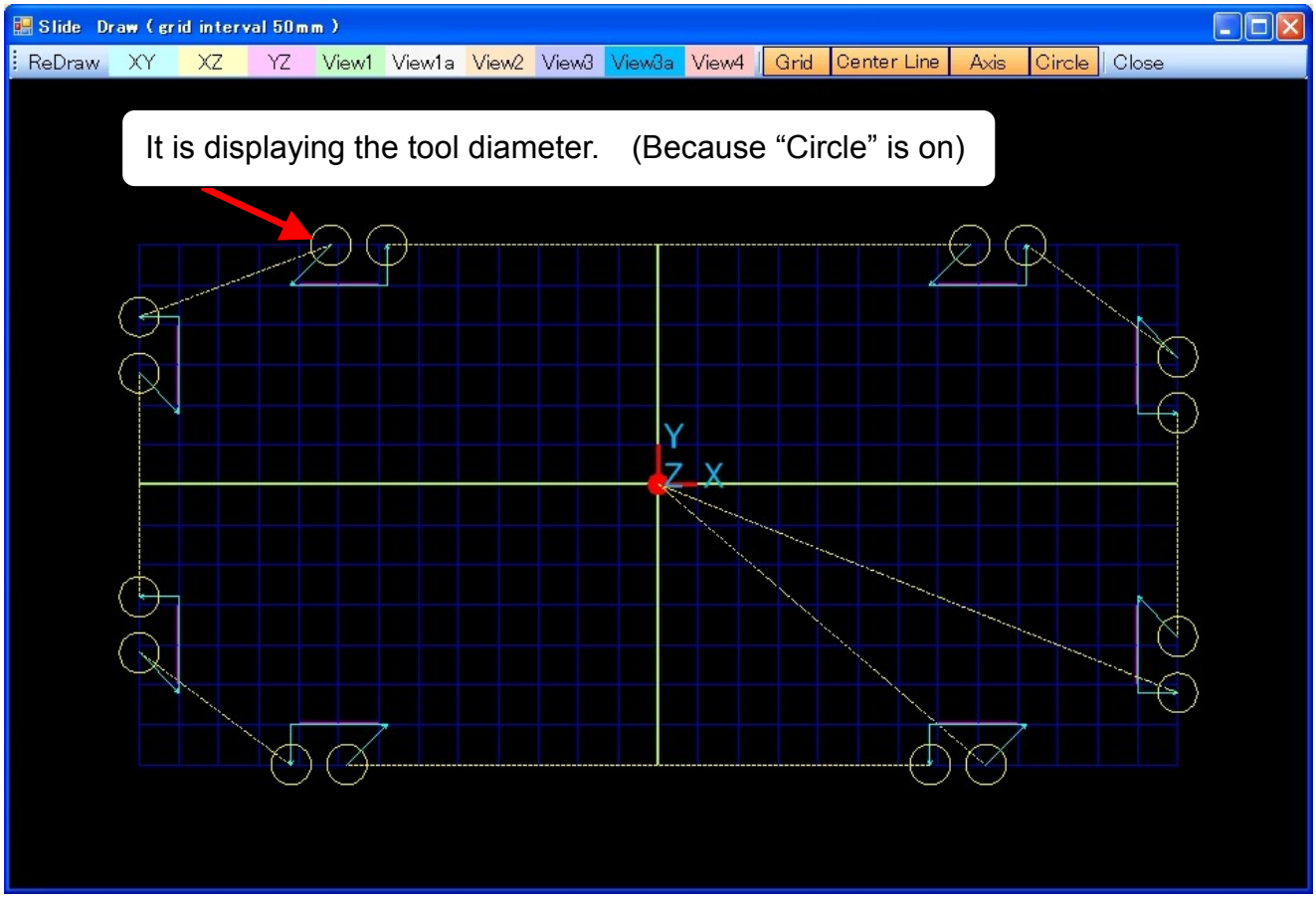
You enter tool information.

When putting equal to or more than 2 in the Cutting-Times,
It returns to the position in front of G41 from the position that was left in G40 as same Z height at the Back-Feed-Rate speed.

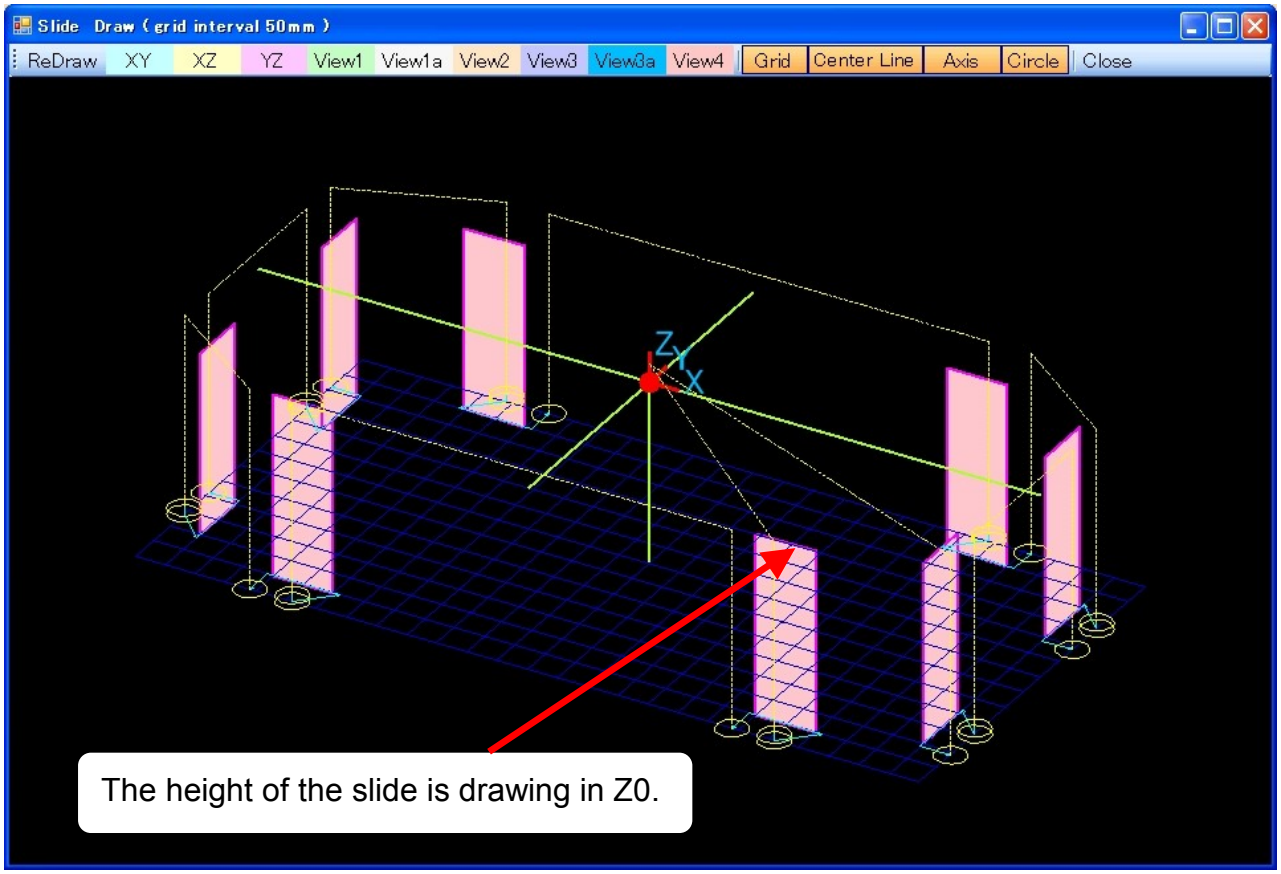
When pushing the "Cancel" button, it ends.
Input data is saved and is restored in the next time.

The Display of the NC data

The following shows by "ROUGH" button. This figure is shown in "the XY plane".



It is displaying the following figure in VIEW2.



The Display menu

You can select the display direction.
XY plane , XZ plane ,YZ plane, View1, View1a, View2, View3, View3a, View4.
View is the show that was seen from the diagonal top.
View1, View2, View3, View4 are the show which was seen from 30 degrees above from just beside.
View1a, View3a are the show, which was seen from 60 degrees above from just beside.

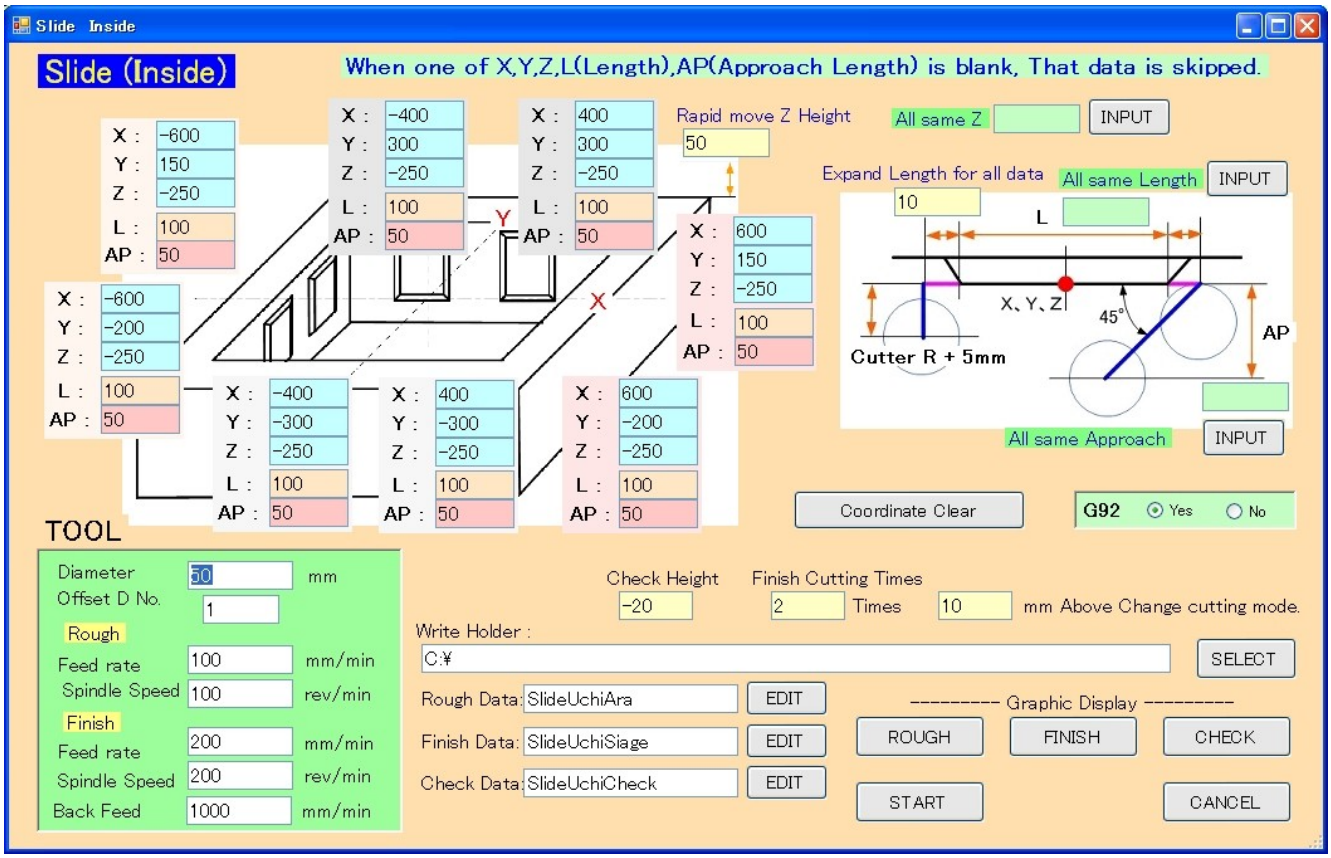
The show button of Grid, the centerline, the Axis, Circle becomes on.

When making "Grid" off, the grid of blue 50 ㎜ disappears.
When making "Centerline" off, the olive-green X-axis, the Y-axis, the Z-axis disappear.
When making "Axis" off, the coordinate system of the X, the Y, Z disappears.
When making "Circle" off, the tool diameter display disappears.

> The part can be displayed in the expansion when clicking with the mouse and dragging.

It returns to the ex-screen by "Close".

INSIDE (Slide cut)



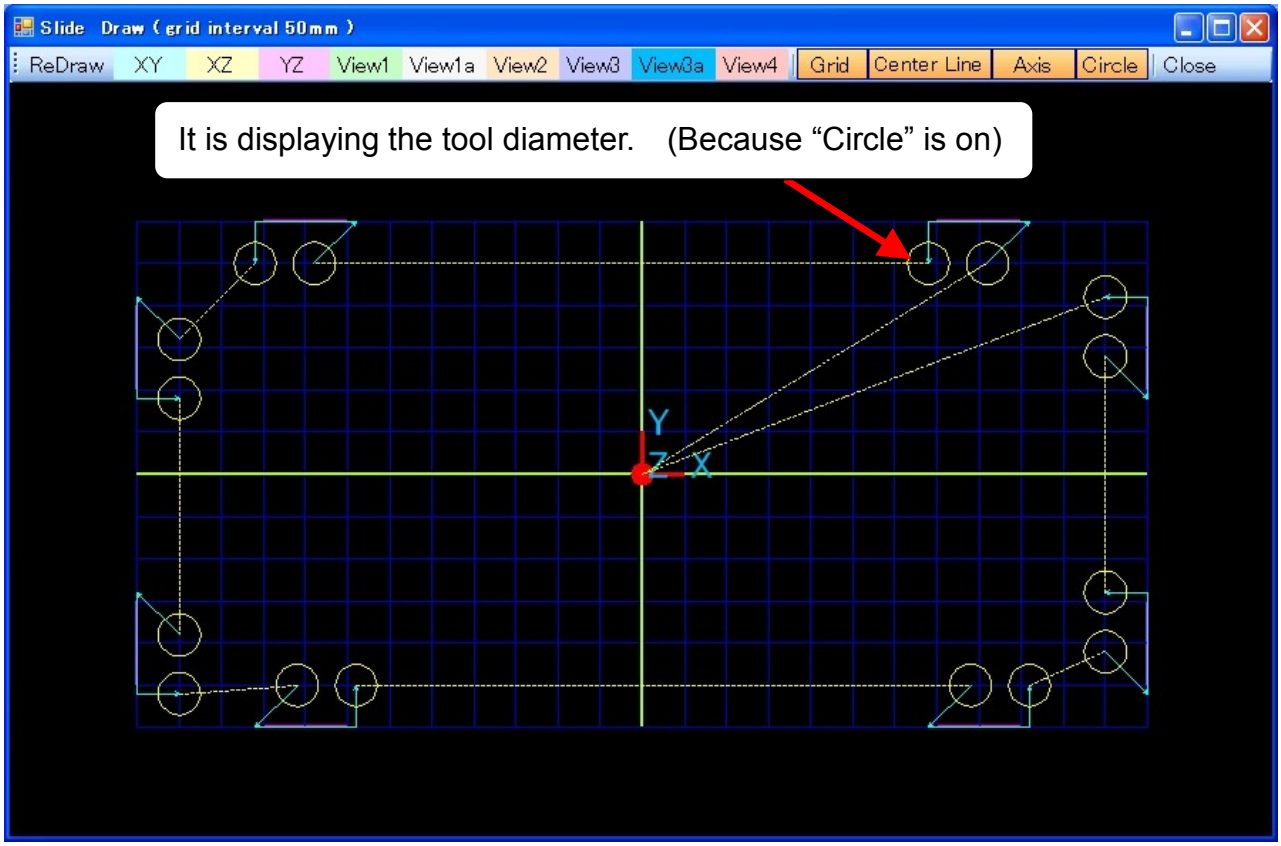
The way of the data definition is the same as the OUTSIDE.
It creates the tool radius offset data which cuts the inside of the material.

It made an approach 45 degrees from the end of the slide for the interference to be least.
Also, if leaving in the tool radius +5 mm, Z rises.

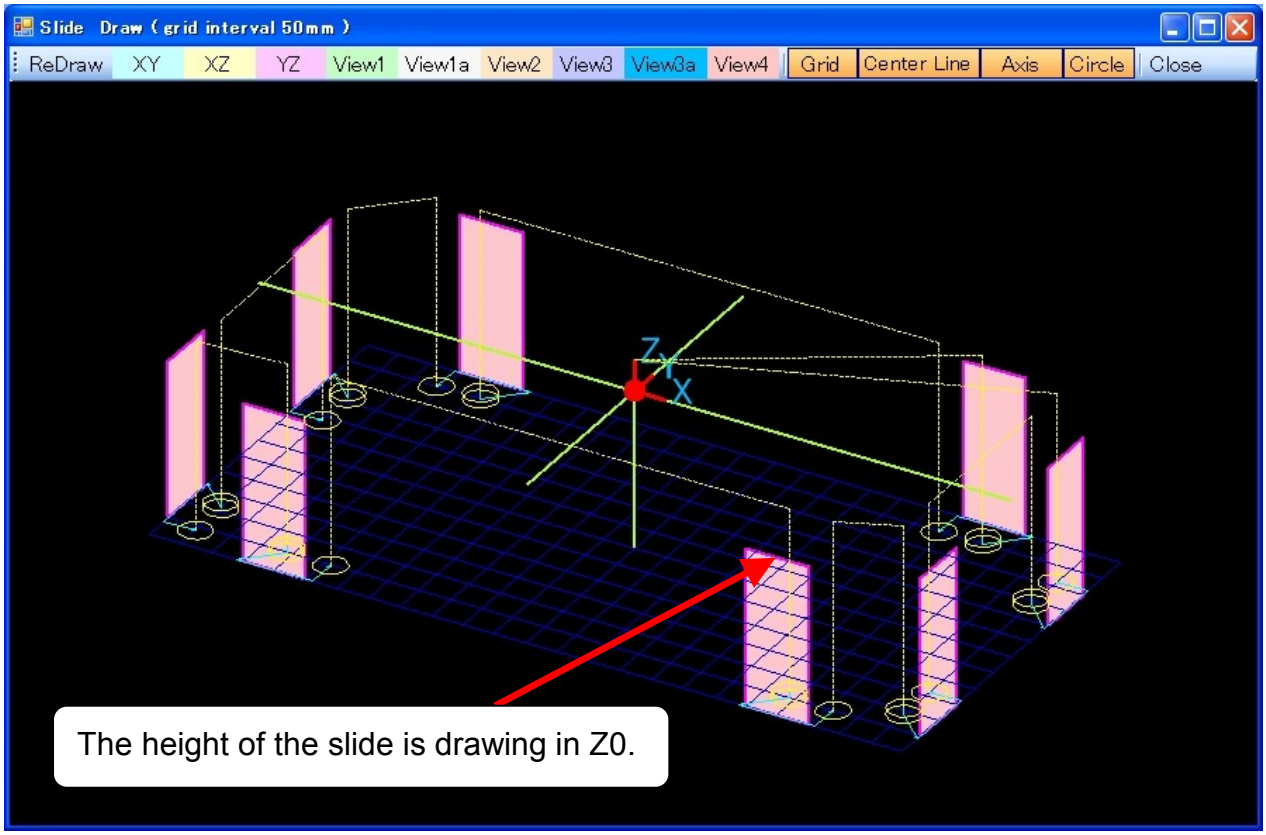
To avoid the interference in each place, Z, L, the AP can be individually changed.

The Display of the NC data

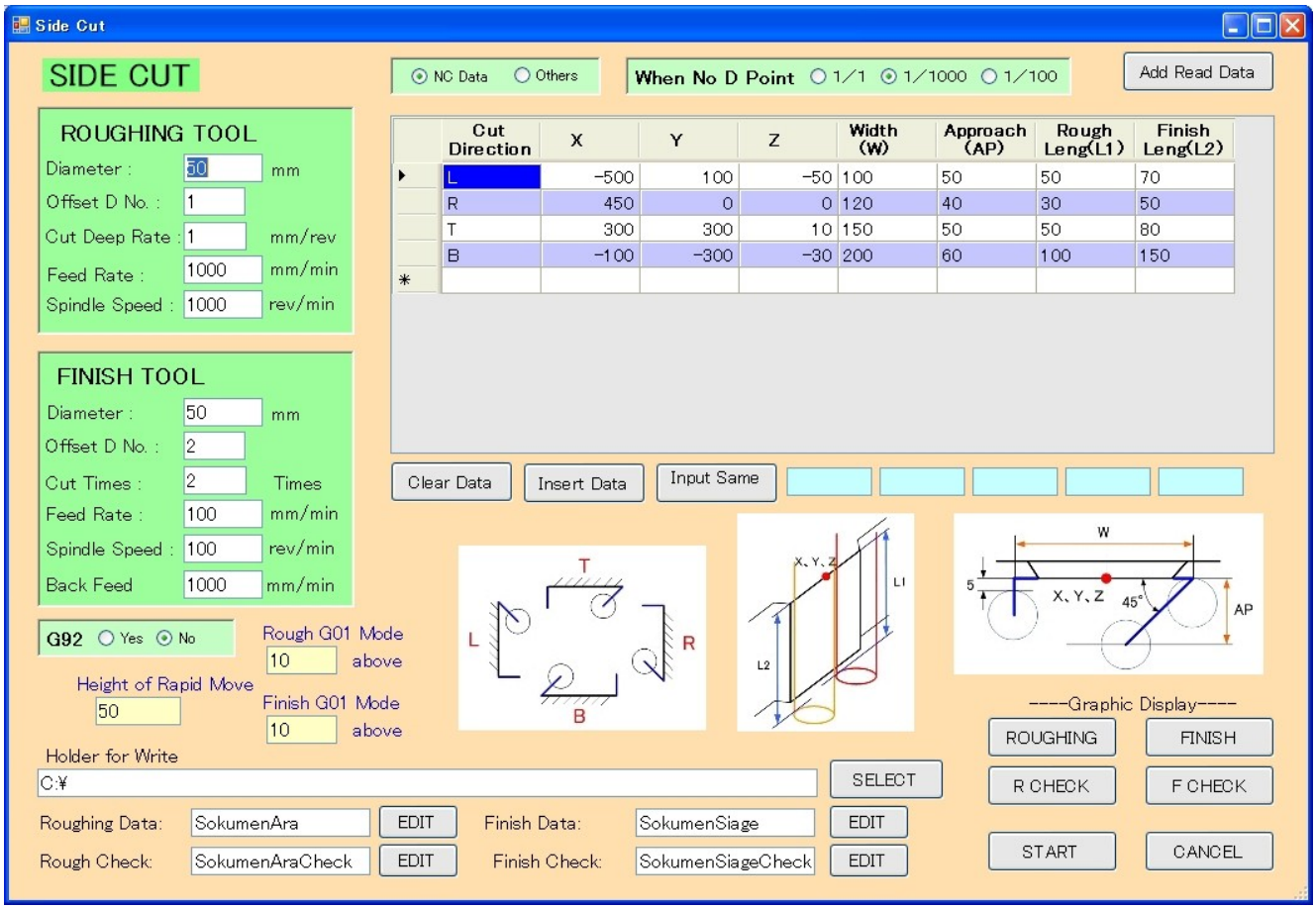
The following shows by "ROUGH" button. This figure is shown in "the XY plane".



It is displaying the following figure in VIEW2.

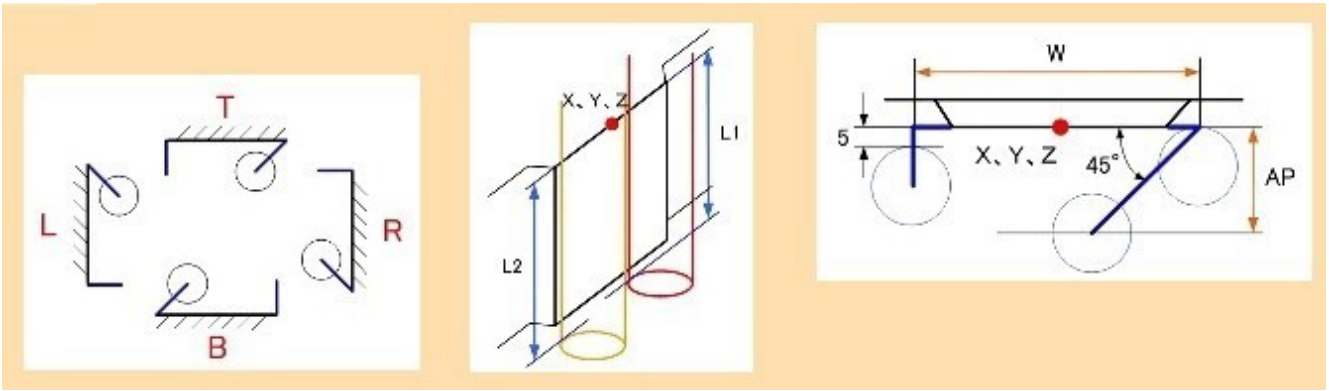


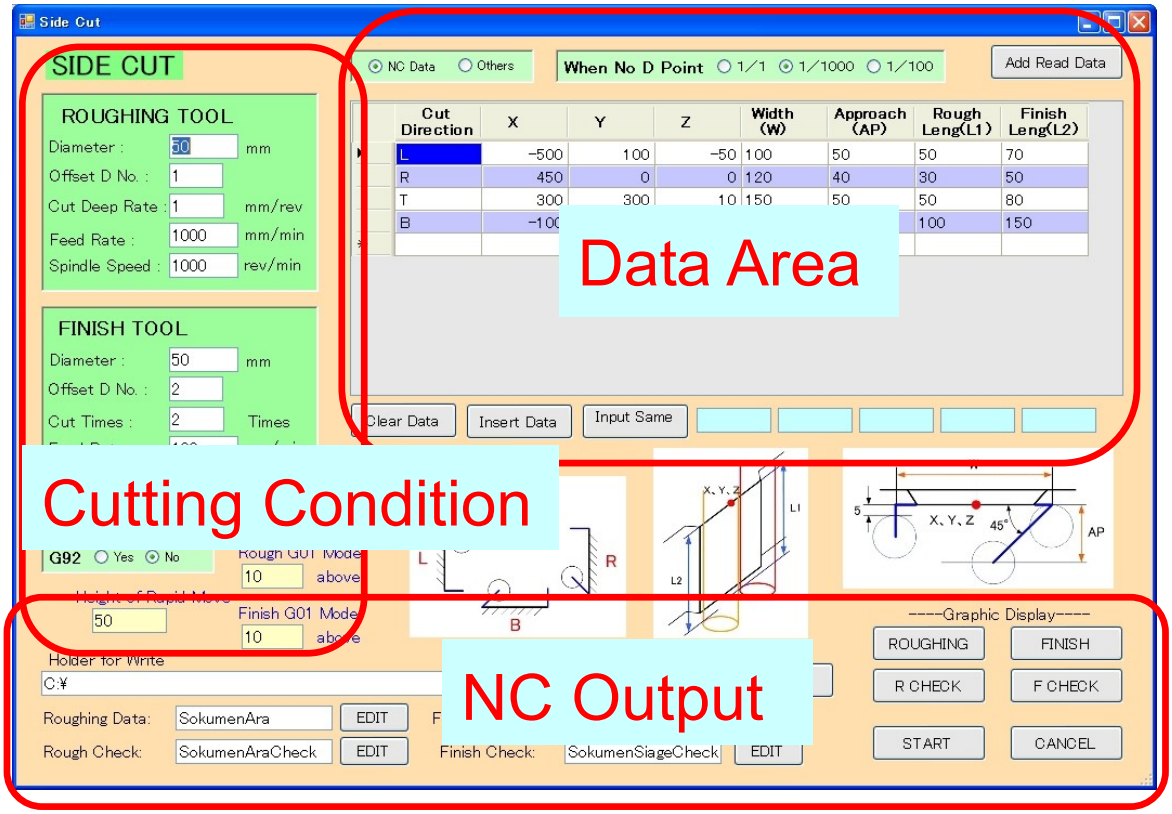
SIDE CUT



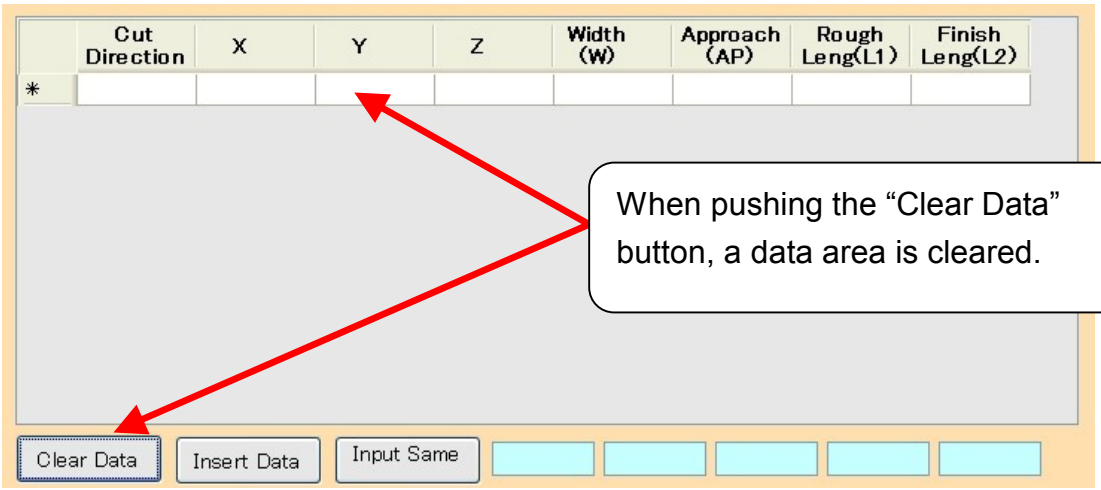
The number and the direction of the SIDE CUT machining don't have limitation like the slide(OUTSIDE, INSIDE).
The one line shows one place of cut data.
It cuts deeply at the pace from above by roughing data.　It cuts more than once by finishing data.
When wanting to cut once of roughing data, make a “Cut Deep Rate” bigger than the biggest Rough length (L1).　Both are offset data.

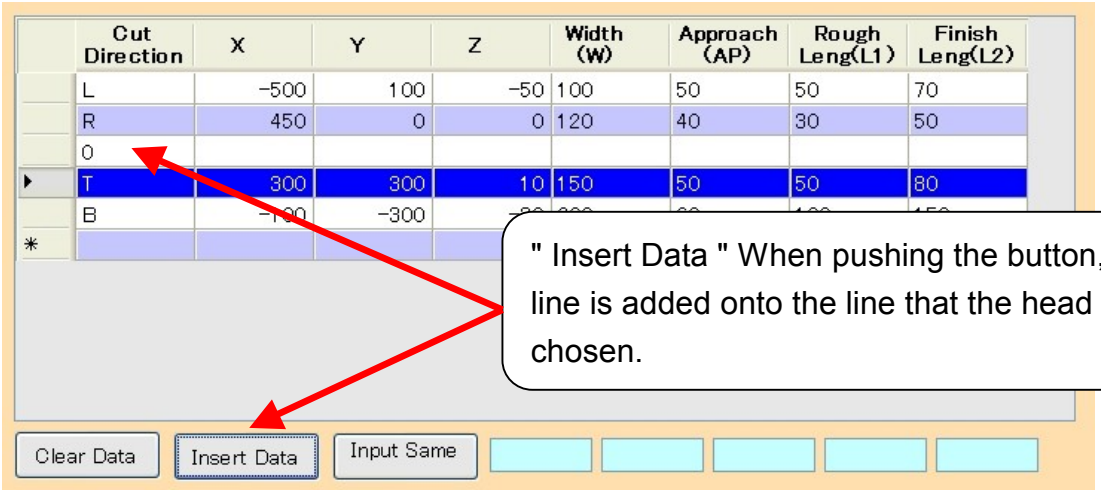
The Cut Direction is L(the left side), R (the right side), T (the top side), B (the bottom side).
The X, the Y, Z are a center position of upper edge of the surface.
As for the length of cut, it inputs a distance from the upper edge to L1, L2 in positive.




Side Cut
SIDE CUT
ROUGHING TOOL
Diameter :
Offset D No. :
Cut Deep Rate :
Feed Rate :
Spindle Speed :
FINISH TOOL
Diameter :
Offset D No. :
Cut Times :
NC Data
Others
When No D Point
1/1
1/1000
1/100
Add Read Data
Cut Direction
X
Y
Z
Width (W)
Approach (AP)
Rough Leng(L1)
Finish Leng(L2)
Data Area
Clear Data
Insert Data
Input Same
Cutting Condition
G92
Yes
No
Holder for Write
Roughing Data:
SokumenAra
Rough Check:
SokumenAraCheck
Finish Check:
SokumenSiageCheck
EDIT
NC Output
----Graphic Display----
ROUGHING
FINISH
R CHECK
F CHECK
START
CANCEL

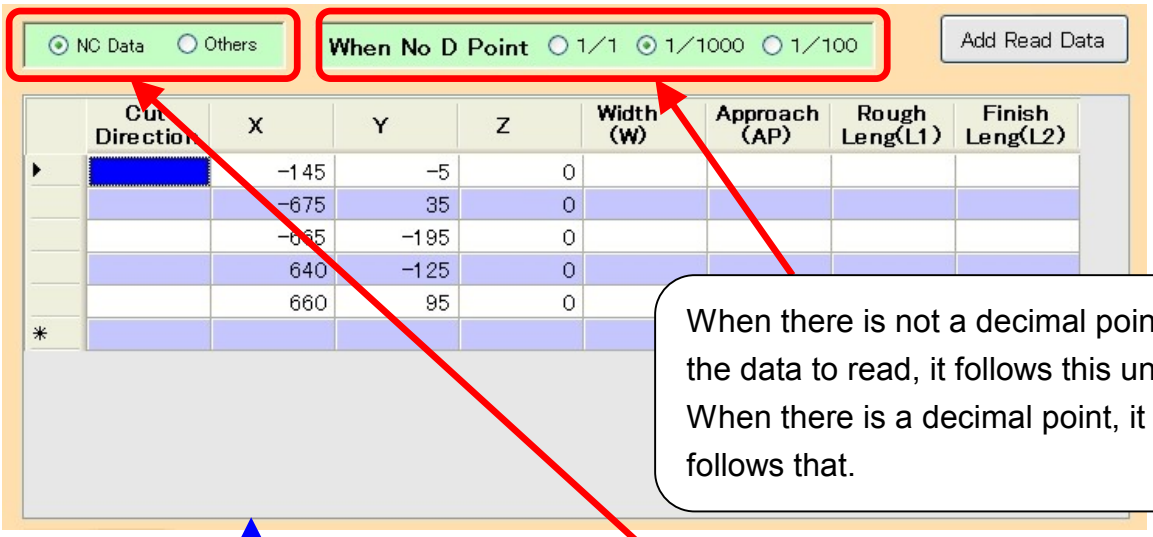
Data Area


Cut Direction
X
Y
Z
Width (W)
Approach (AP)
Rough Leng(L1)
Finish Leng(L2)
When pushing the “Clear Data” button, a data area is cleared.
Clear Data
Insert Data
Input Same


Cut Direction
X
Y
Z
Width (W)
Approach (AP)
Rough Leng(L1)
Finish Leng(L2)
L -500 100 -50 100 50 50 70
R 450 0 0 120 40 30 50
0
T 300 300 10 150 50 50 80
B -100 -300
" Insert Data " When pushing the button, a line is added onto the line that the head was chosen.
Clear Data
Insert Data
Input Same

By "Add Read Data" button, It is possible to read the NC data, the text data, the CSV data and so on.

This figure is data after reading NC data.



When there is not a decimal point in the data to read, it follows this unit. When there is a decimal point, it follows that.

You choose NC data or the others.
As for the others, the data is independent every line.
Even if the NC data moves only a X axis, the previous Y and Z position is kept.

The NC data 1/1000 reading in

```
%
(test)
(X100.0Y200.0Z300.0)
N0001G90
N0002G92X0Y0Z0
N0003M03
(test)
(X100.0Y200.0Z300.0)
N0004G00X-145000Y-5000
N0005X-675000Y35000
N0006X-665000Y-195000
N0007X640000Y-125000
N0008X660000Y95000
N0009G80
N0010G00X0Y0
N0011M02
%
```

In the reading of the NC data, it is skiped the following line.

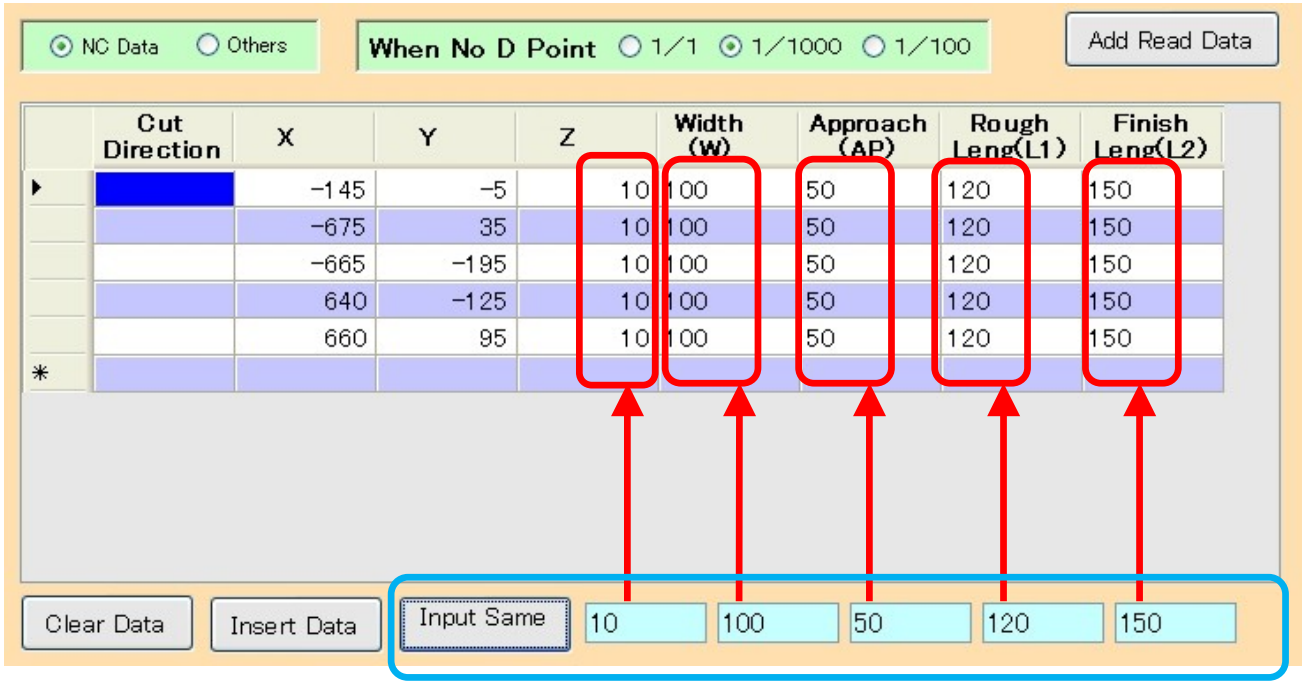
1. Including the ( ) data.
2. The line of X0Y0.
3. The line where there is not a movement.

It isn't possible to read from the NC data except the X, or Y, Z.

Make the data to read here positioning data in circle center.

It adds the remainder to the read NC data.

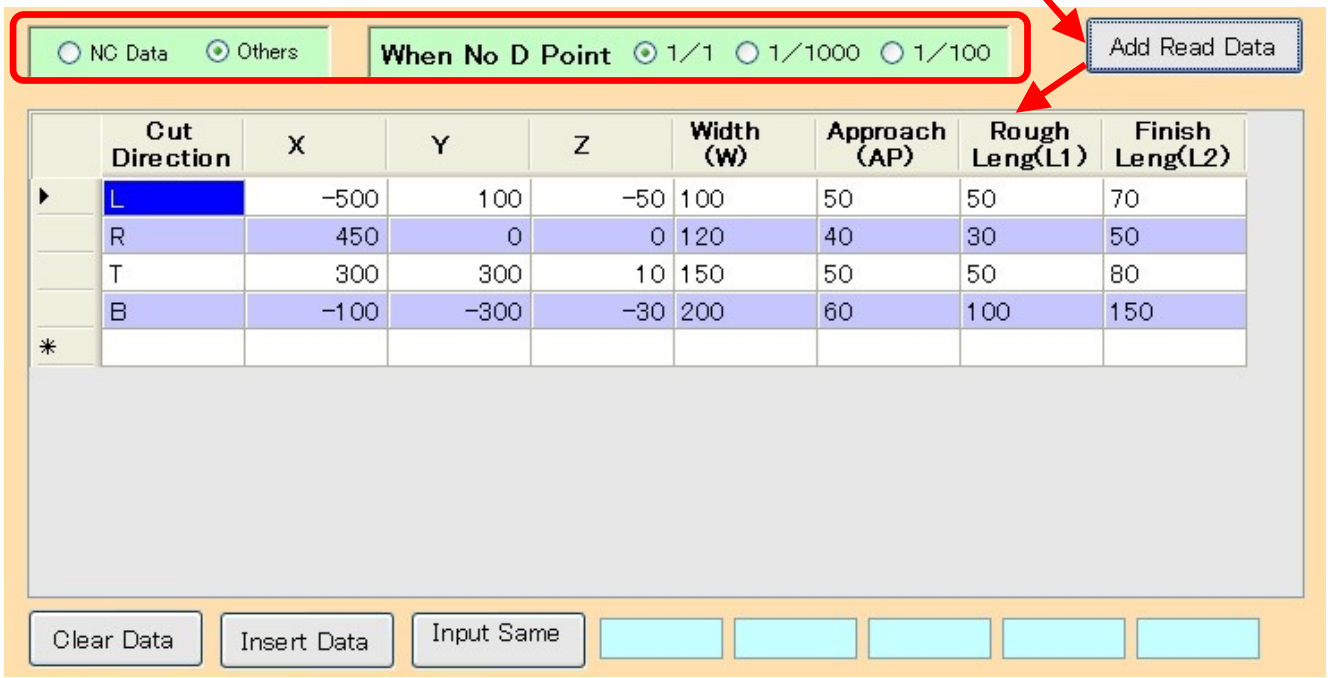
Pushing "Input Same" button after inputting in each light blue area below, the same data are added in the list.



The reading in of the other data

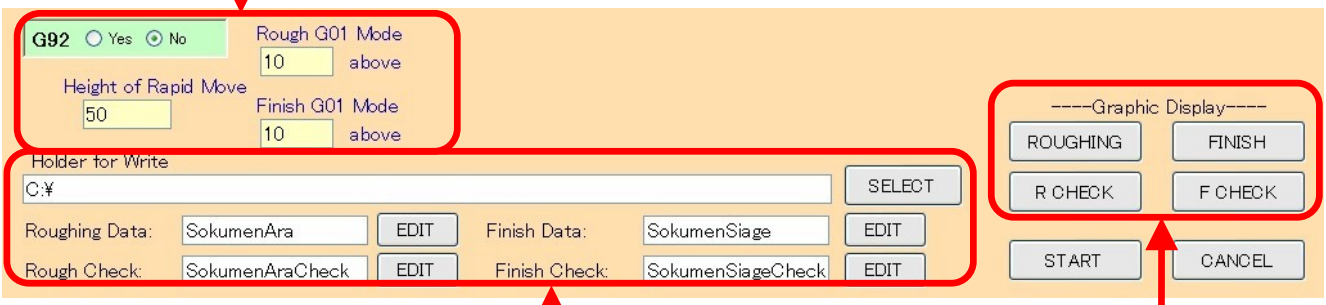
Text data

```
L -500 100 -50 100 50 50 70
R 450 0 0 120 40 30 50
T 300 300 10 150 50 50 80
B -100 -300 -30 200 60 100 150
```



NC Output

"Rough G01 Mode 10 above"and "Finish G01 Mode 10 above"is meaning that it goes down from the height of rapid move to 10mm above of Z value, and goes down to Z value by G01 mode.



For roughing cut, it cuts deeply at the equal pace in Z.
For finishing cut, it turns around the same height several times.

The Check file first moves to lowest depth and goes up to Z value and moves once to confirm a path.

If confirming check data,it's no need to confirm Roughing data and Finish data.
" EDIT " When pushing the button, the editor starts up and opens a file.

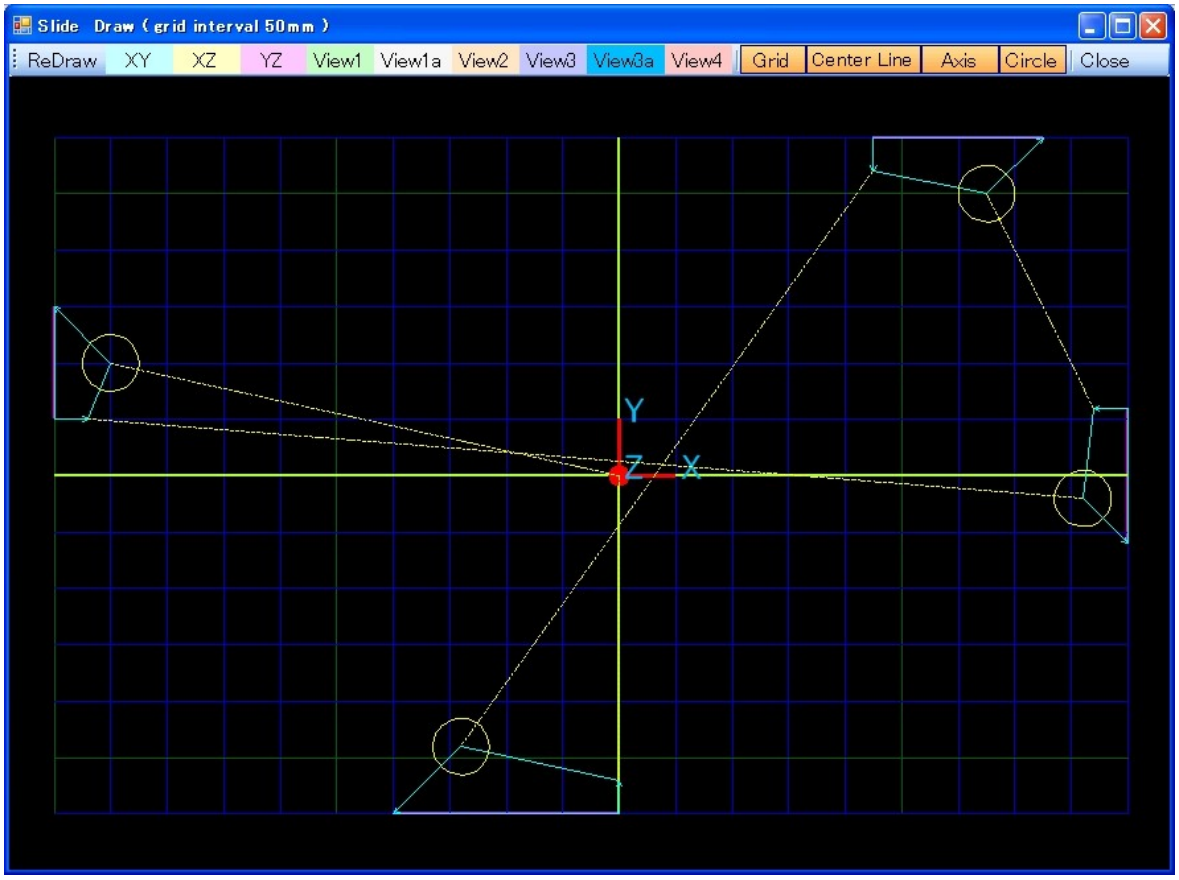
Cutting Condition

Back Feed:

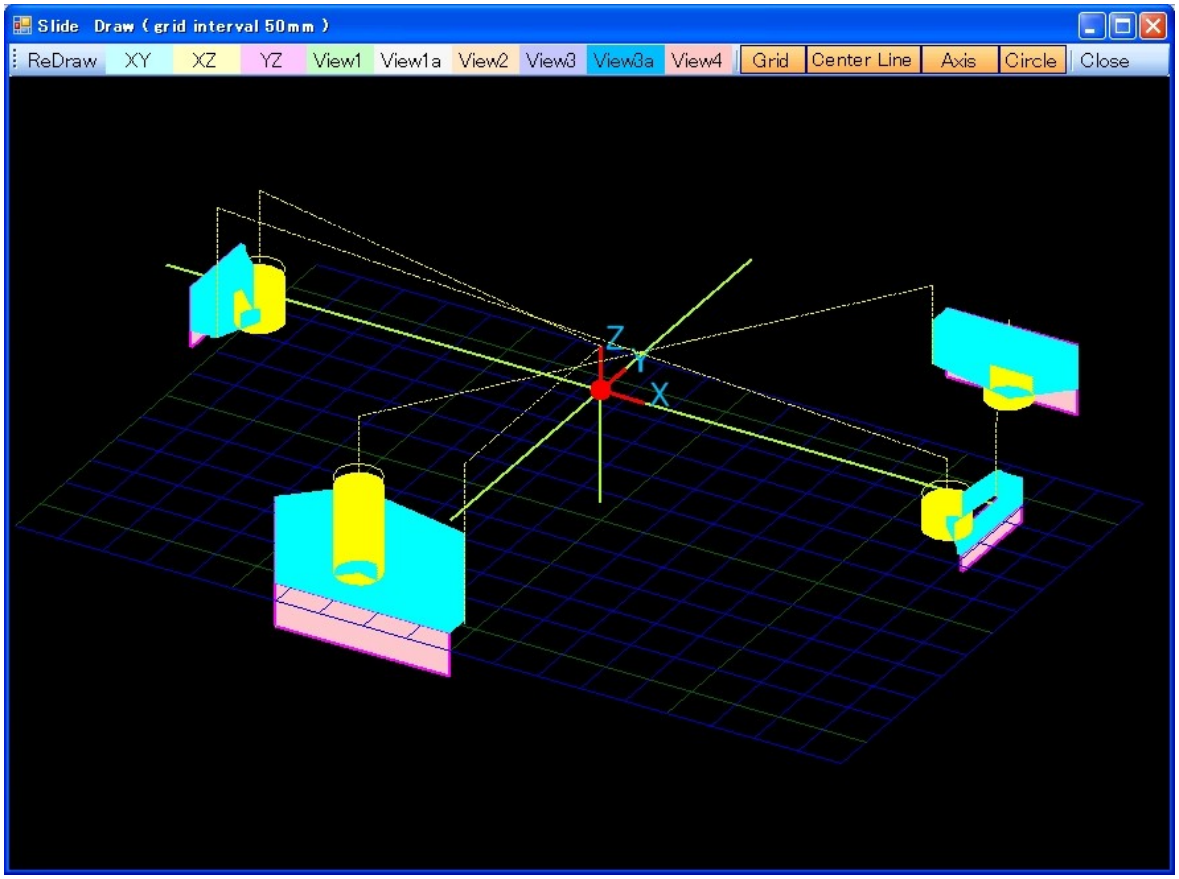
When the finish cut number of times is equal to or more than 2, it returns in front of G41 with the same Z height.
It calls this returning speed "Back Feed".

The Display of the NC data

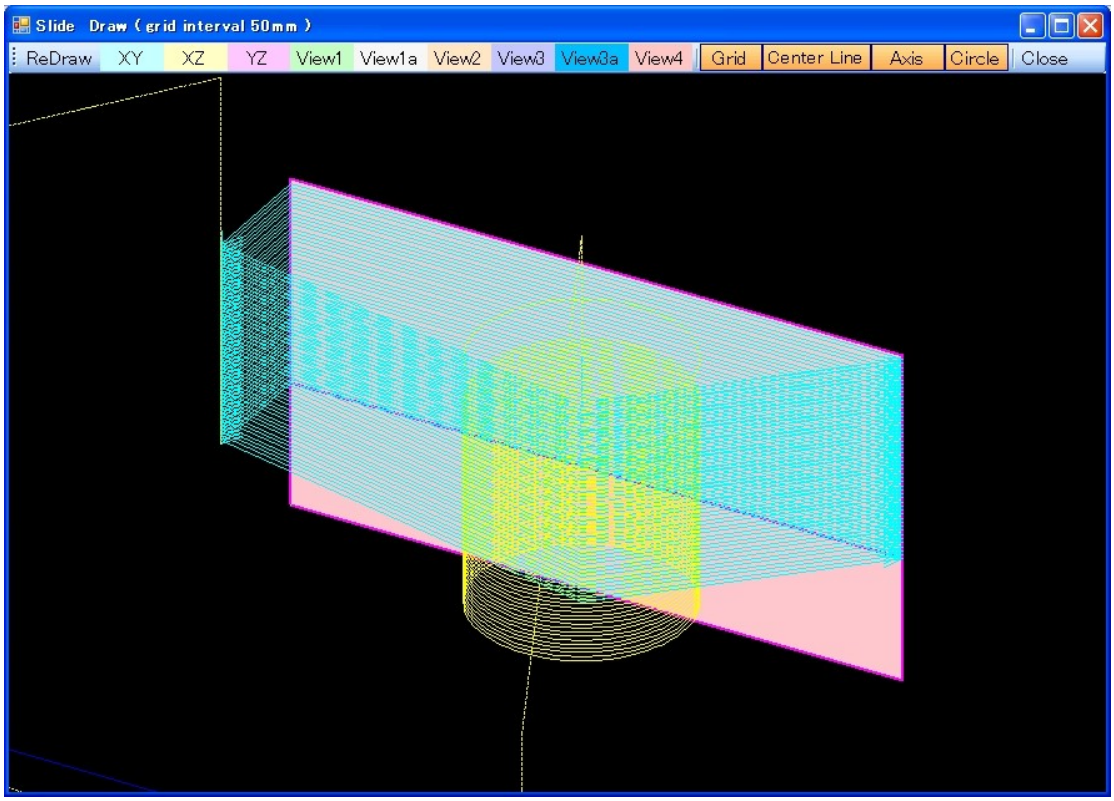
The following shows by "ROUGHING" button. This figure is shown in "the XY plane".



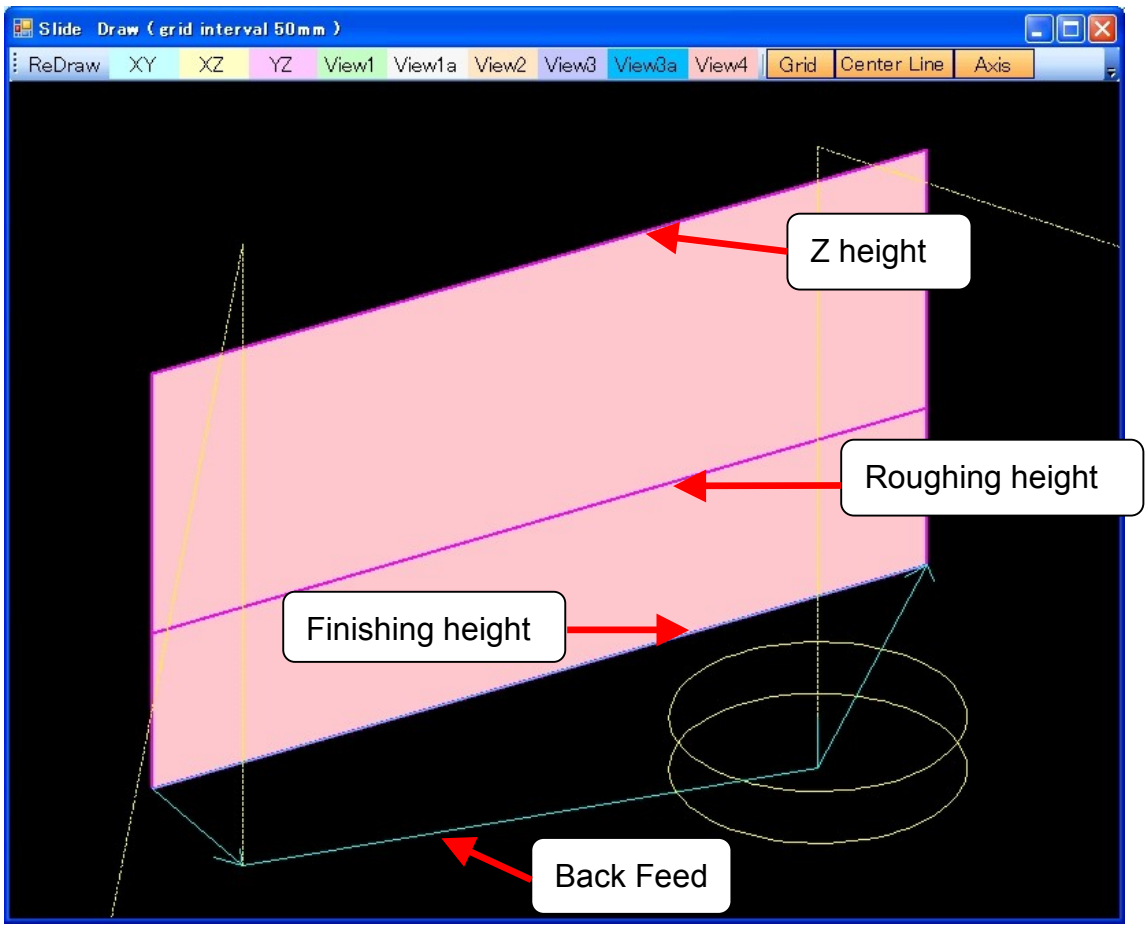
It is displaying the following figure in VIEW2.



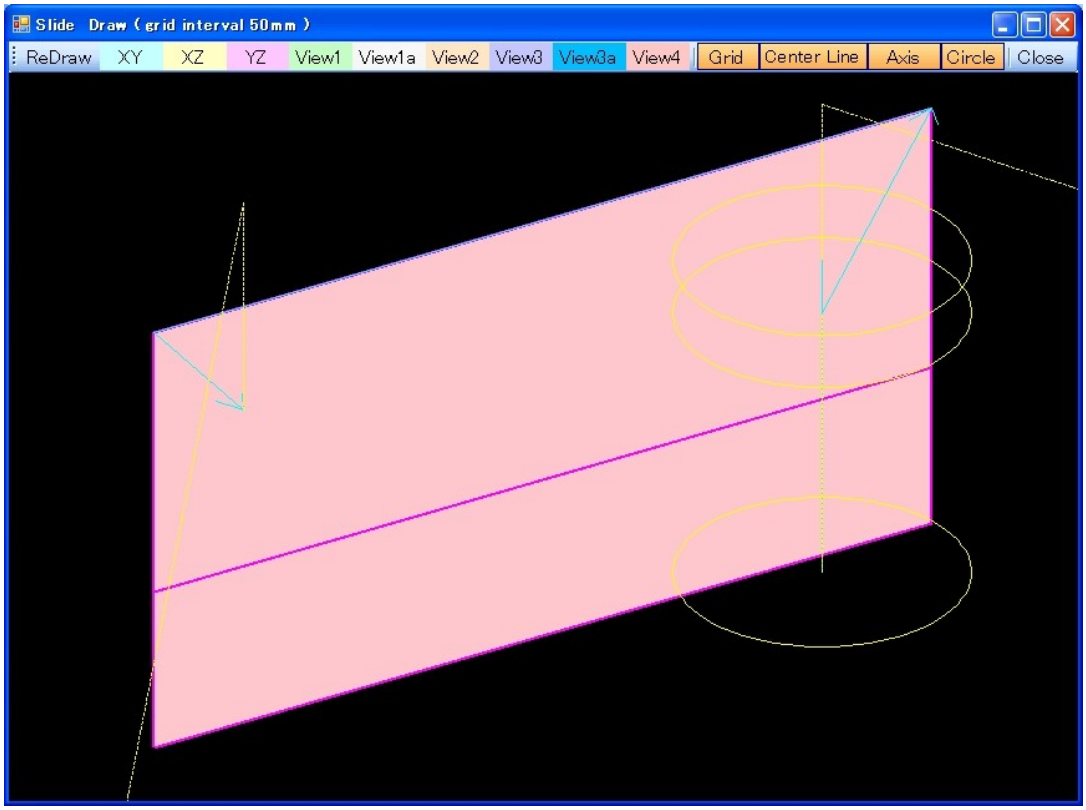
Following figure is shown in ” VIEW2”.
It is partially expanded with clicking and dragging by the mouse.



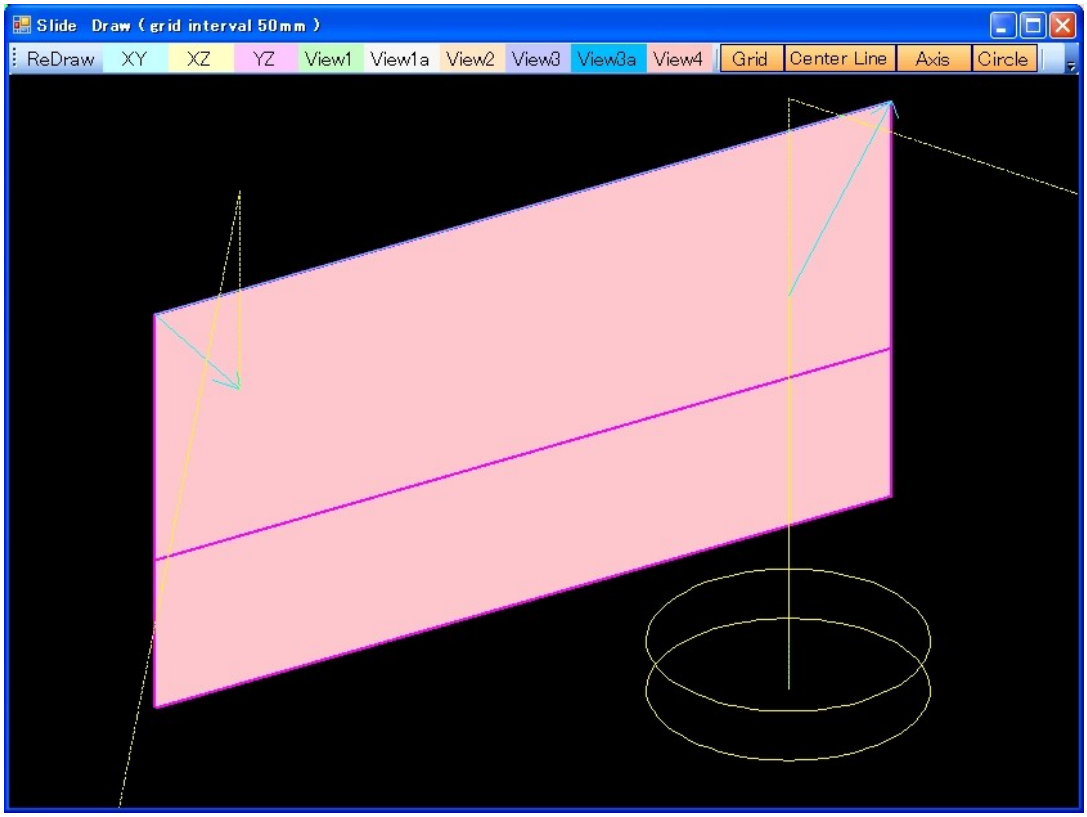
The following shows by "FINISH" button. This figure is shown in "VIEW2" and expanded.
The line at the center of the plane is the roughing height, and the plane bottom is the finishing height .



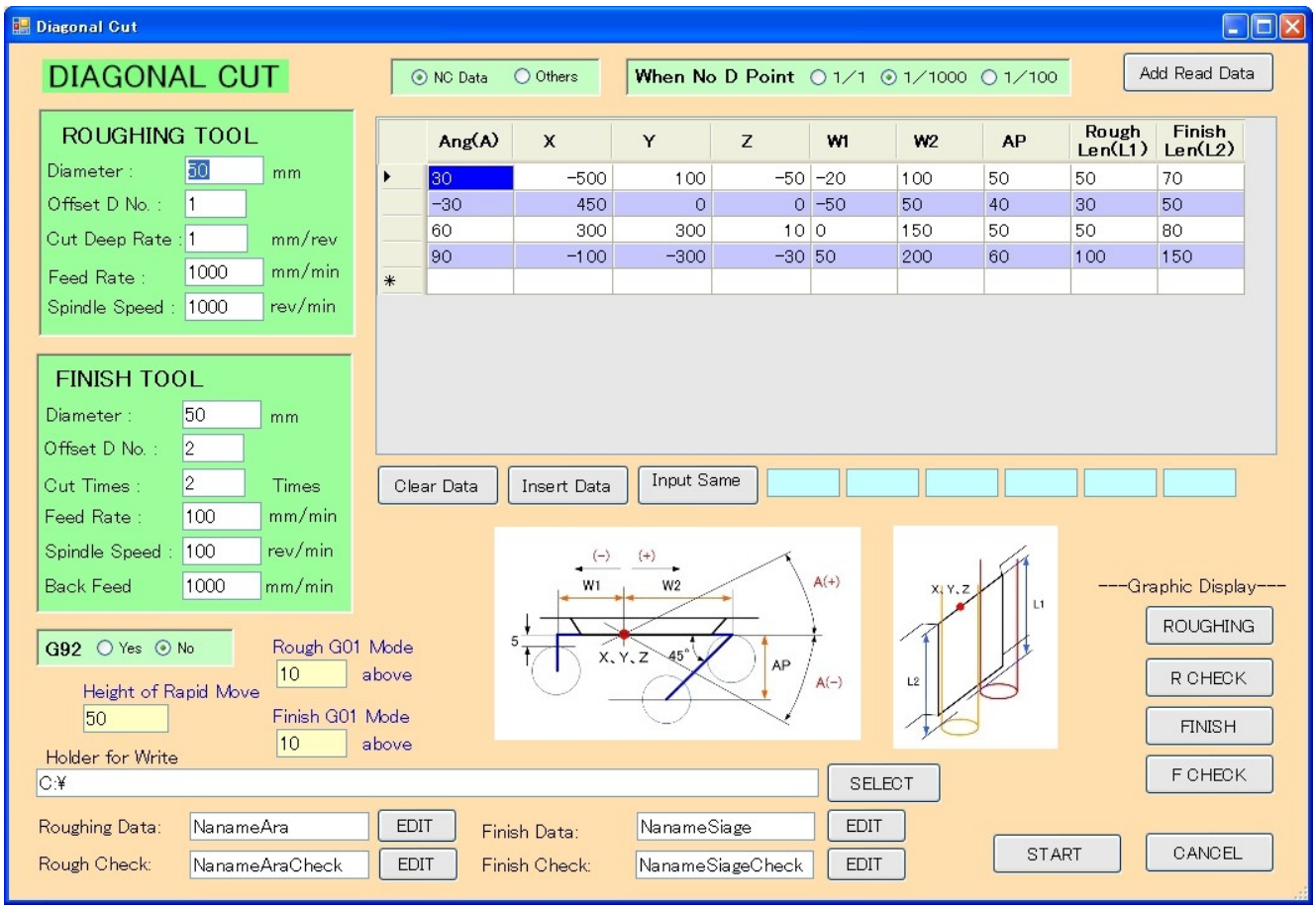
The following shows by "R CHECK" button to confirm the roughing cut.
This figure is shown in "VIEW2" and expanded.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.



The following shows by "F CHECK" button to confirm the finishing cut.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.

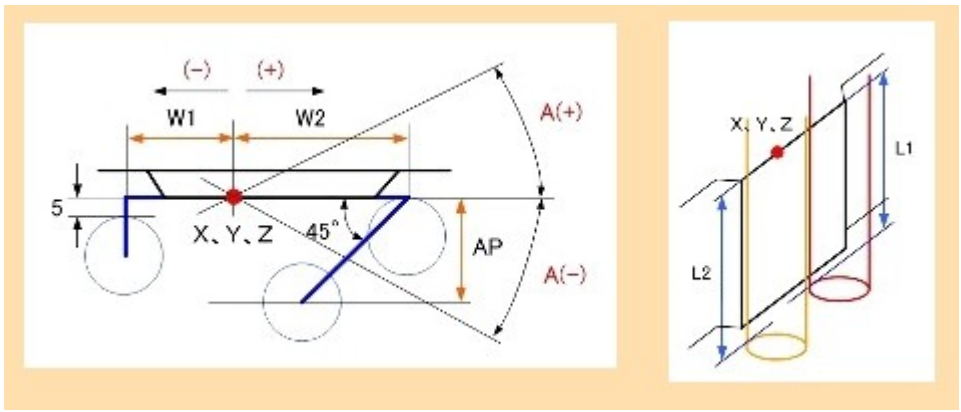


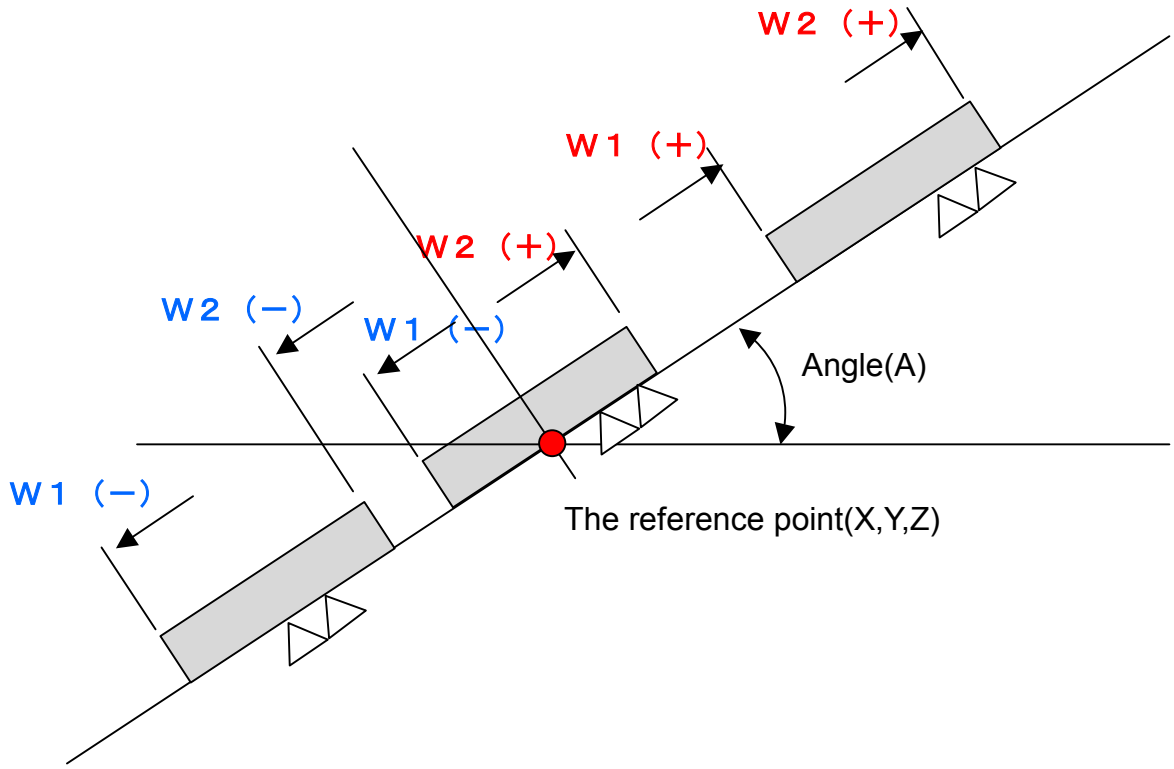
DIAGONAL



DIAGONAL is the one to have added an angle to the “SIDE CUT”.
The one line of data is one place.　The machining　is a down cut by the offset.

It cuts a X extension surface of some reference point (X,Y,Z).
It shows the width at width1(W1) and width2(W2).
Width1 is the left width of the cut surface and width2 is the right width.
If the reference point is on the cut surface, width 1 is negative and width 2 becomes positive.
If the cut surface is on the right from the reference point, width1, width2 are positive together.
If the cut surface is on the left from the reference point, width1, width2 are negative together.
It tilts the data at the angle. The tilt center is a reference point.

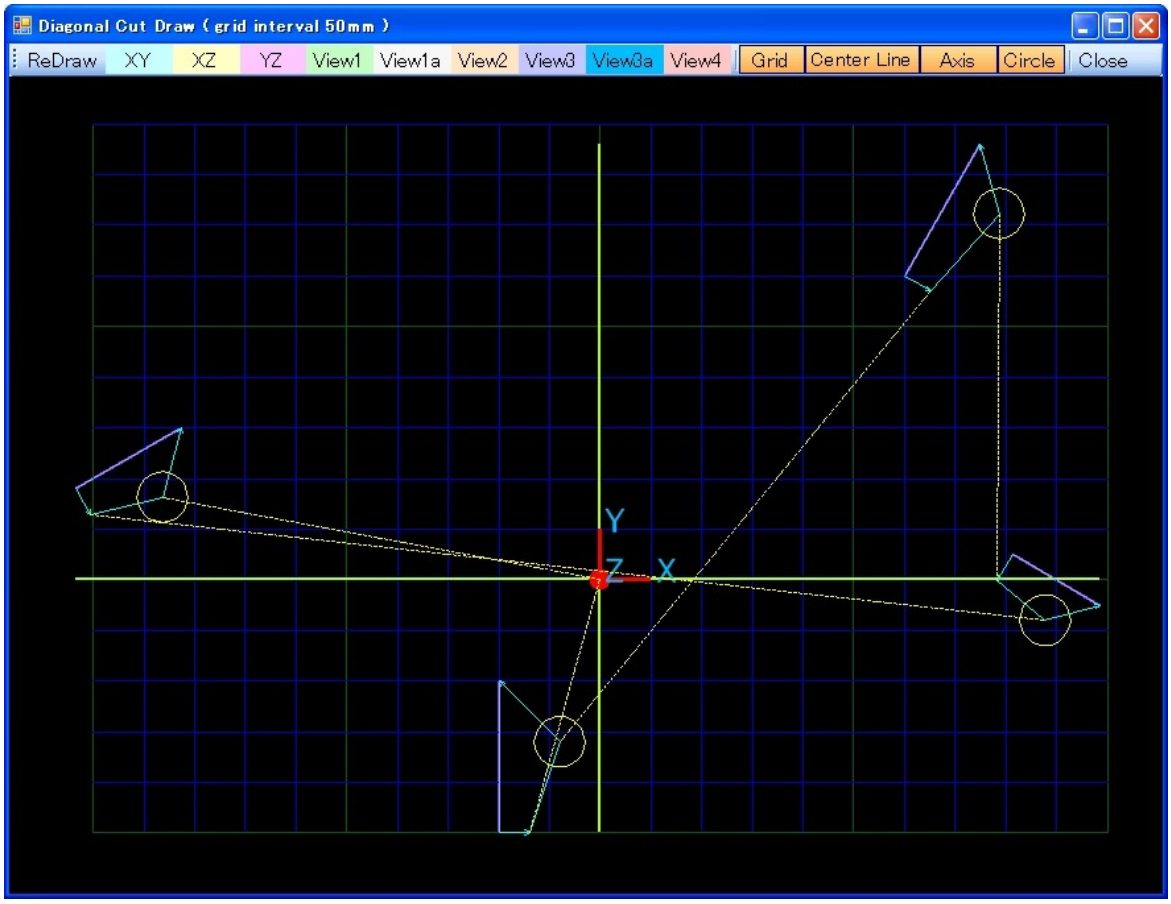




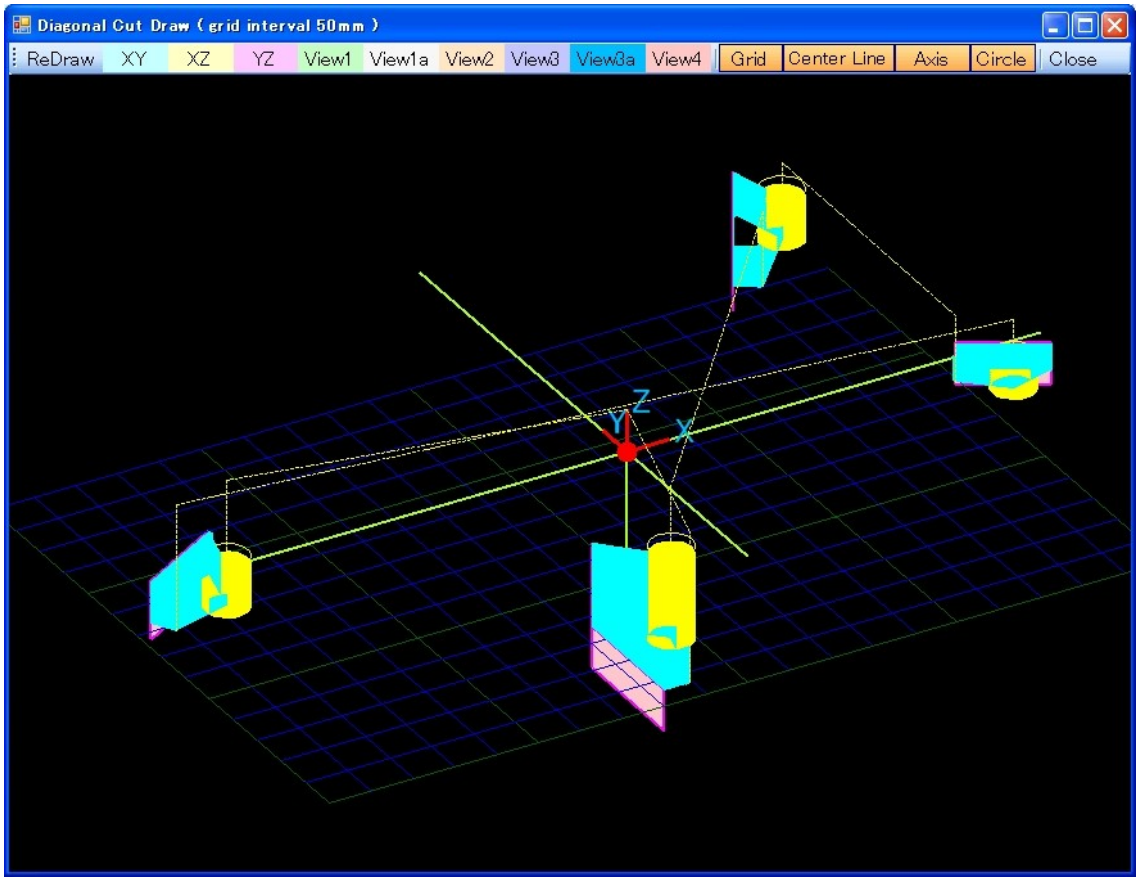
The others are the same as the “SIDE CUT”.

The Display of the NC data

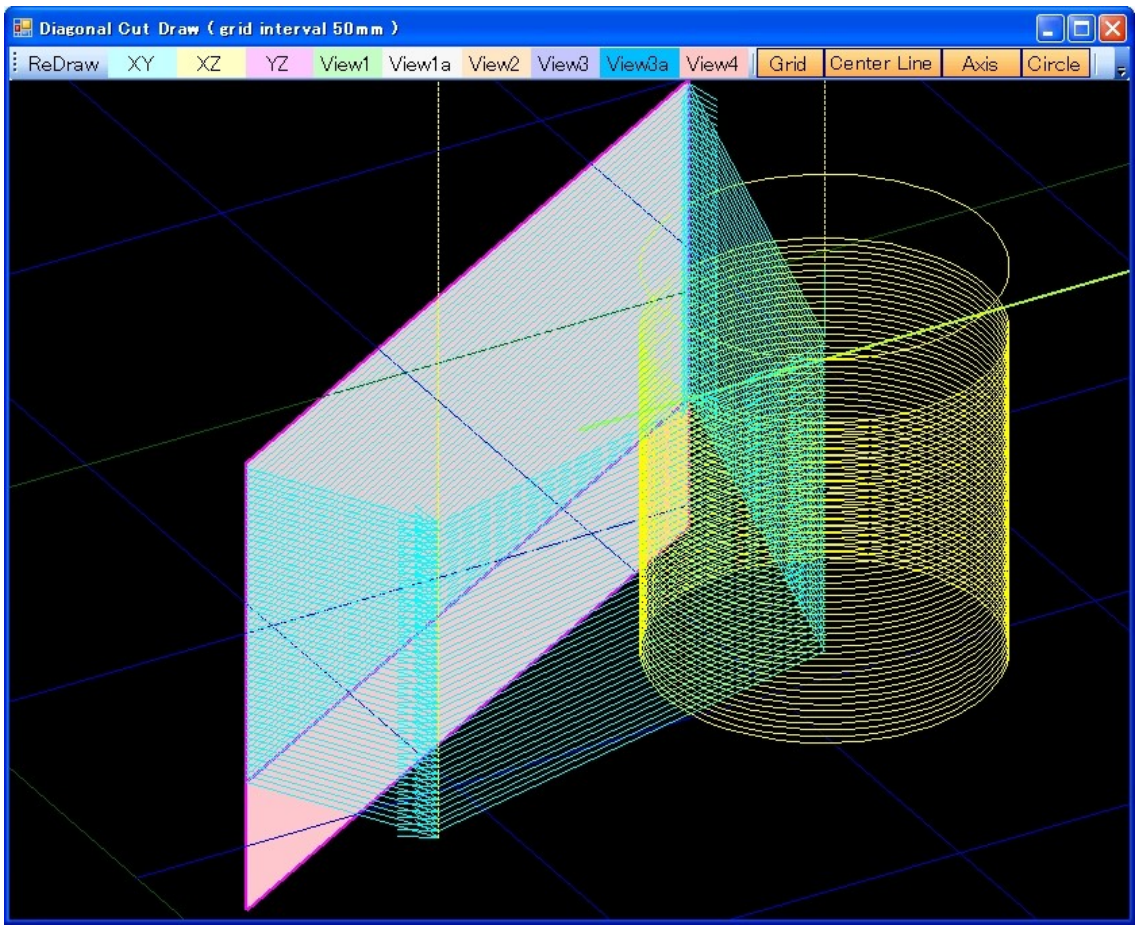
The following shows by "ROUGHING" button. This figure is shown in "the XY plane".



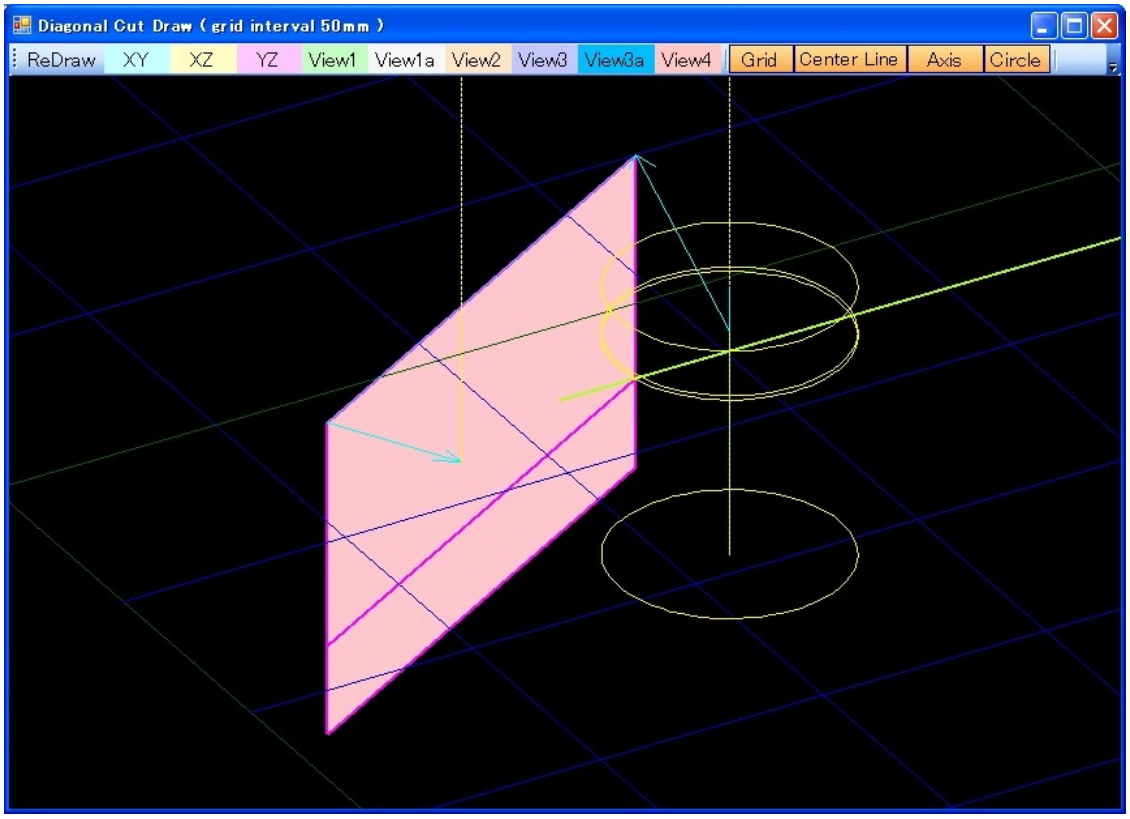
It is displaying the following figure in VIEW1.



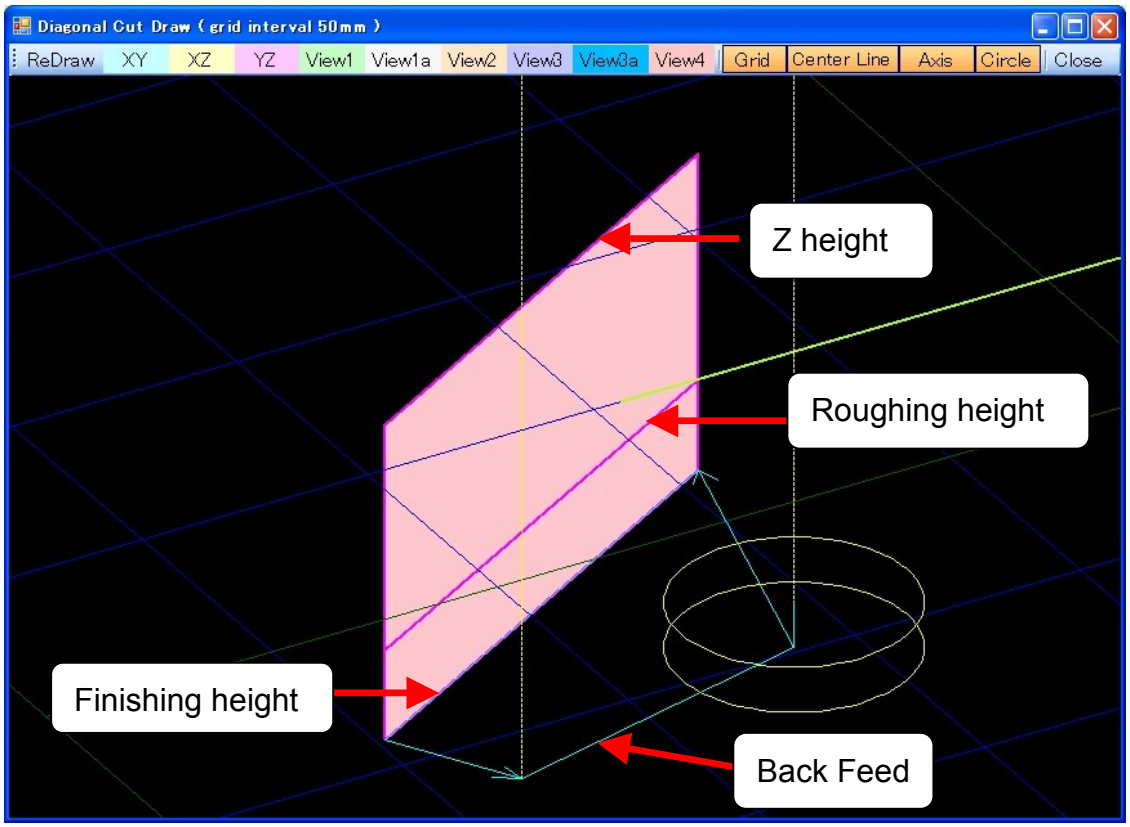
Following figure is shown in ” VIEW1”.
It is partially expanded with clicking and dragging by the mouse.



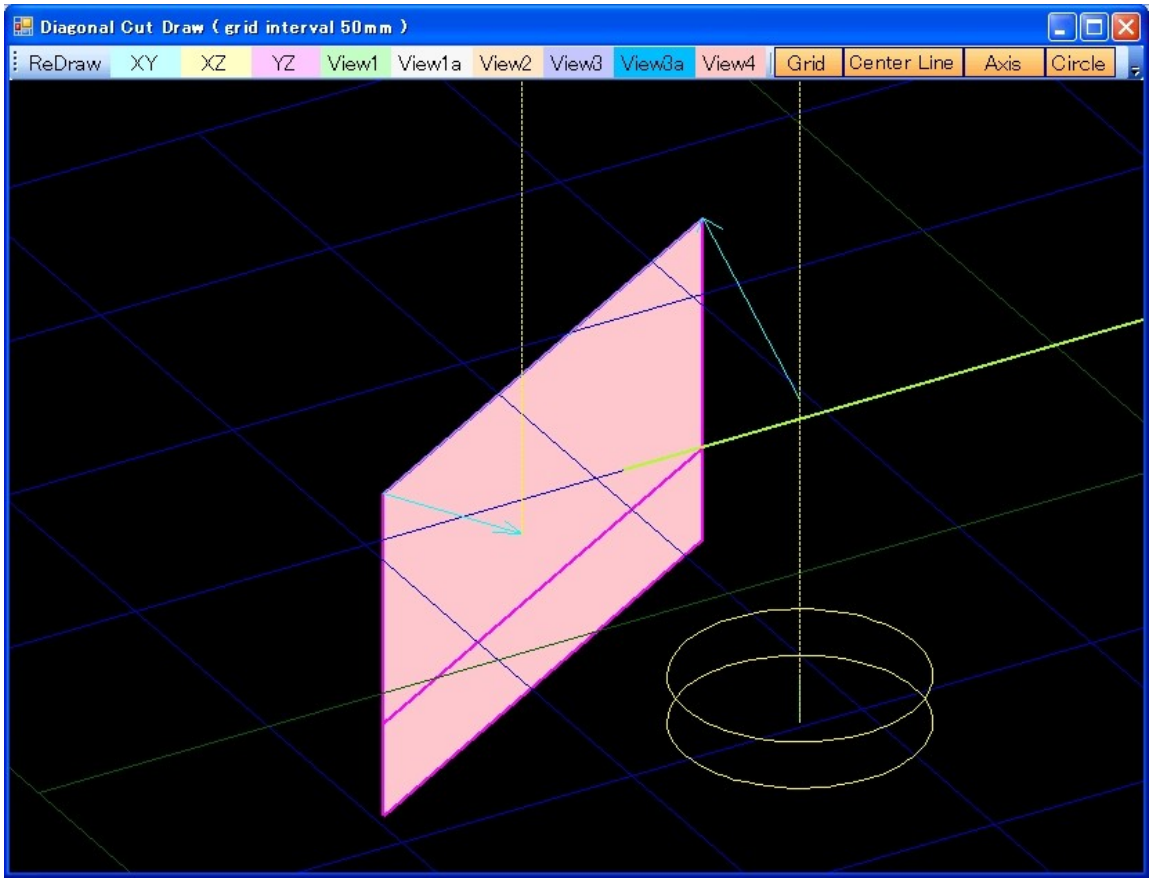
The following shows by "R CHECK" button to confirm the roughing cut.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.



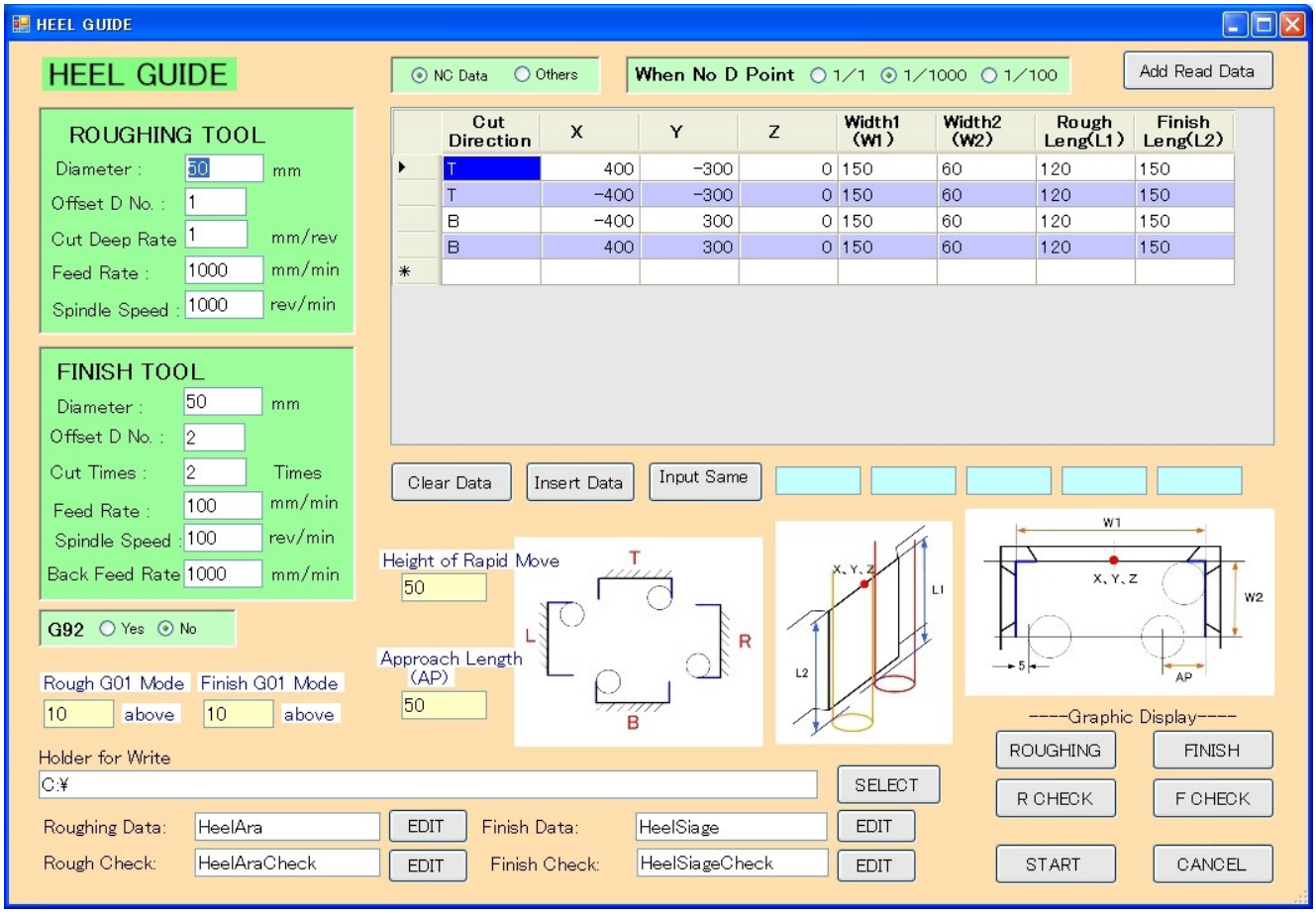
The following shows by "FINISH" button. This figure is shown in "VIEW1" and expanded.
The line at the center of the plane is the roughing height, and the plane bottom is the finishing height .



The following shows by "F CHECK" button to confirm the finishing cut.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.

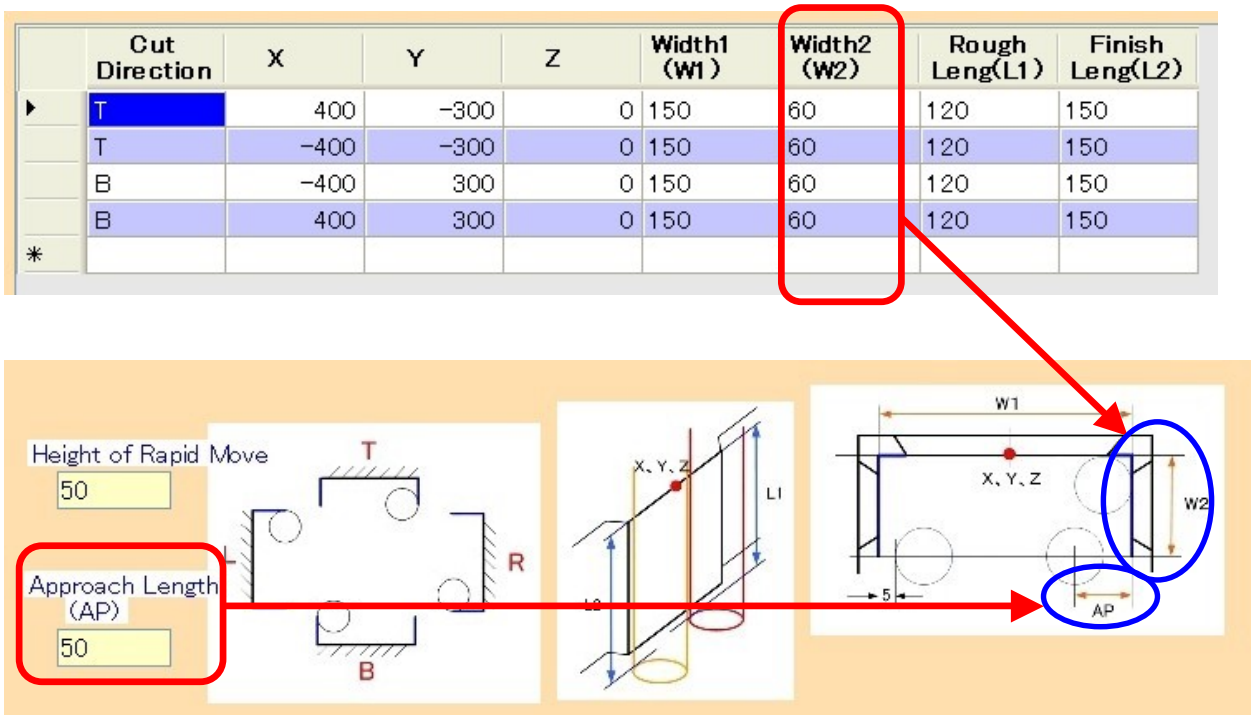


HEEL GUIDE



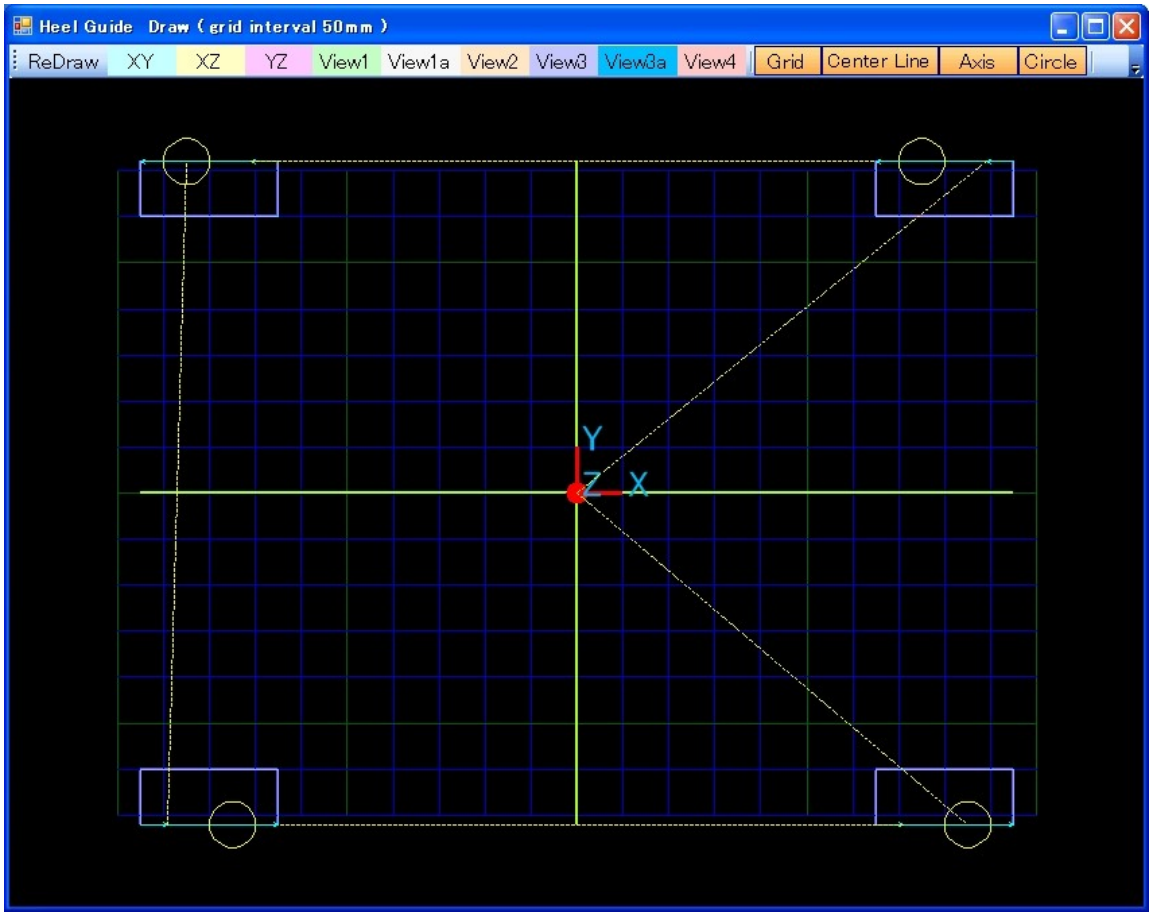
“HEEL GUIDE” is the same as "SIDE CUT" almost.

The difference is below.

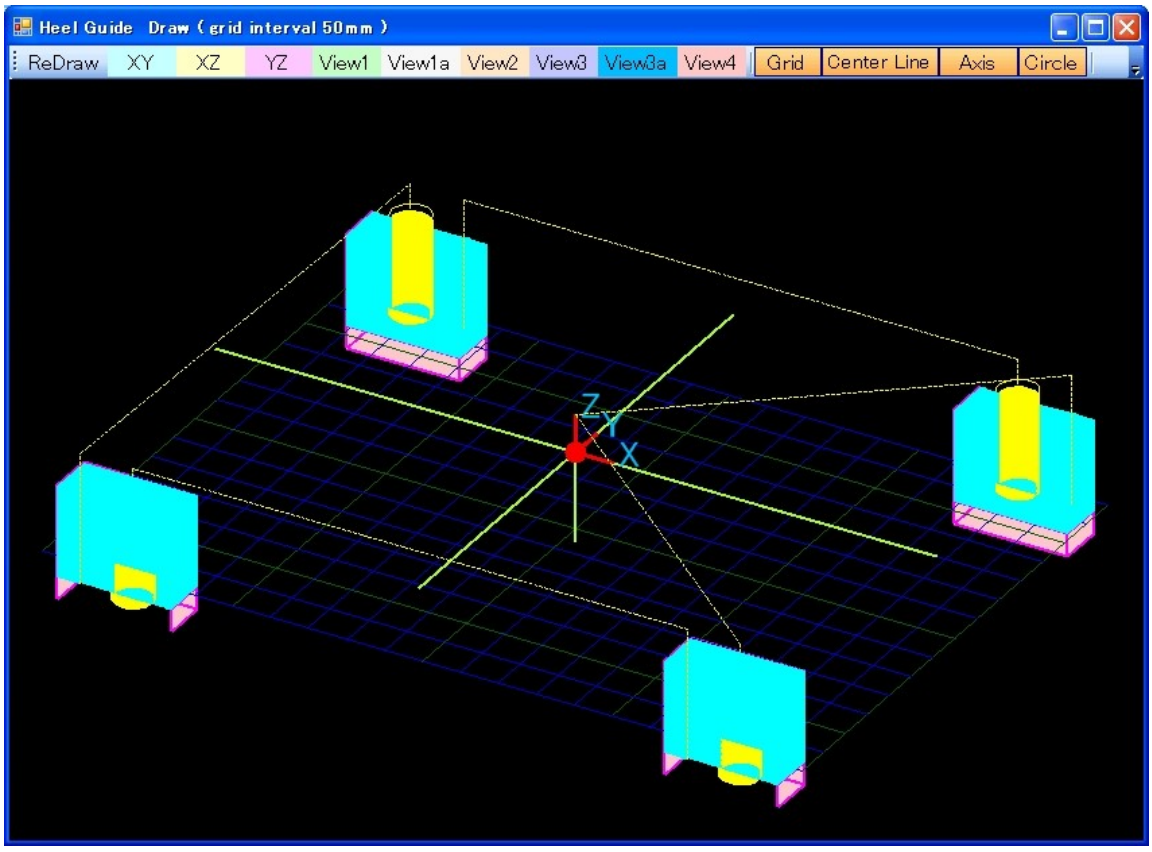


The Display of the NC data

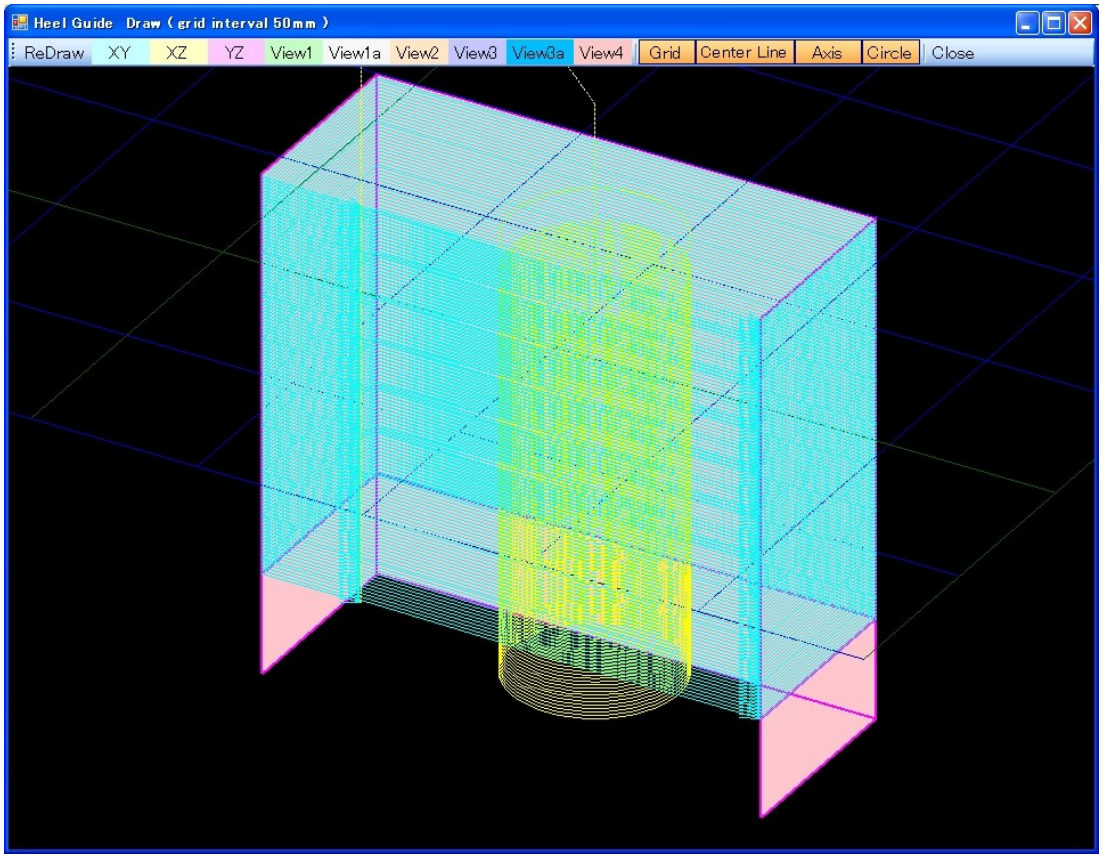
The following shows by "ROUGHING" button. This figure is shown in "the XY plane".



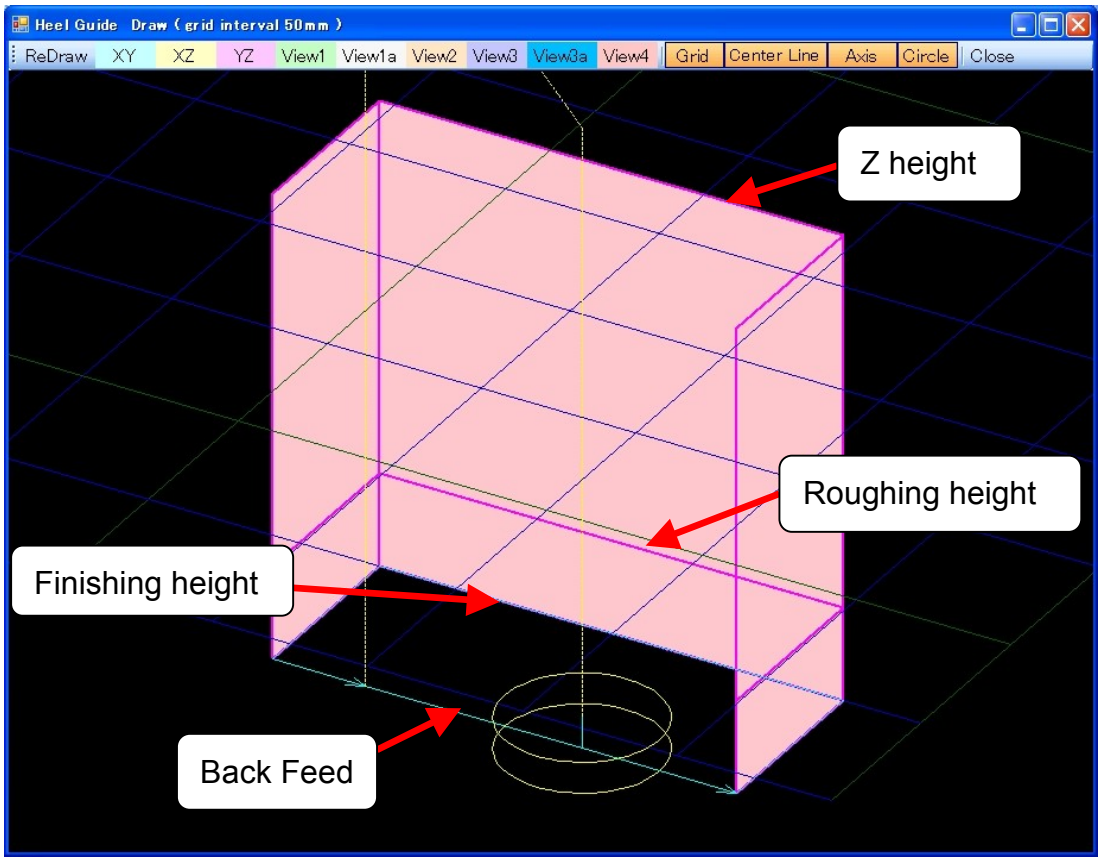
It is displaying the following figure in VIEW2.



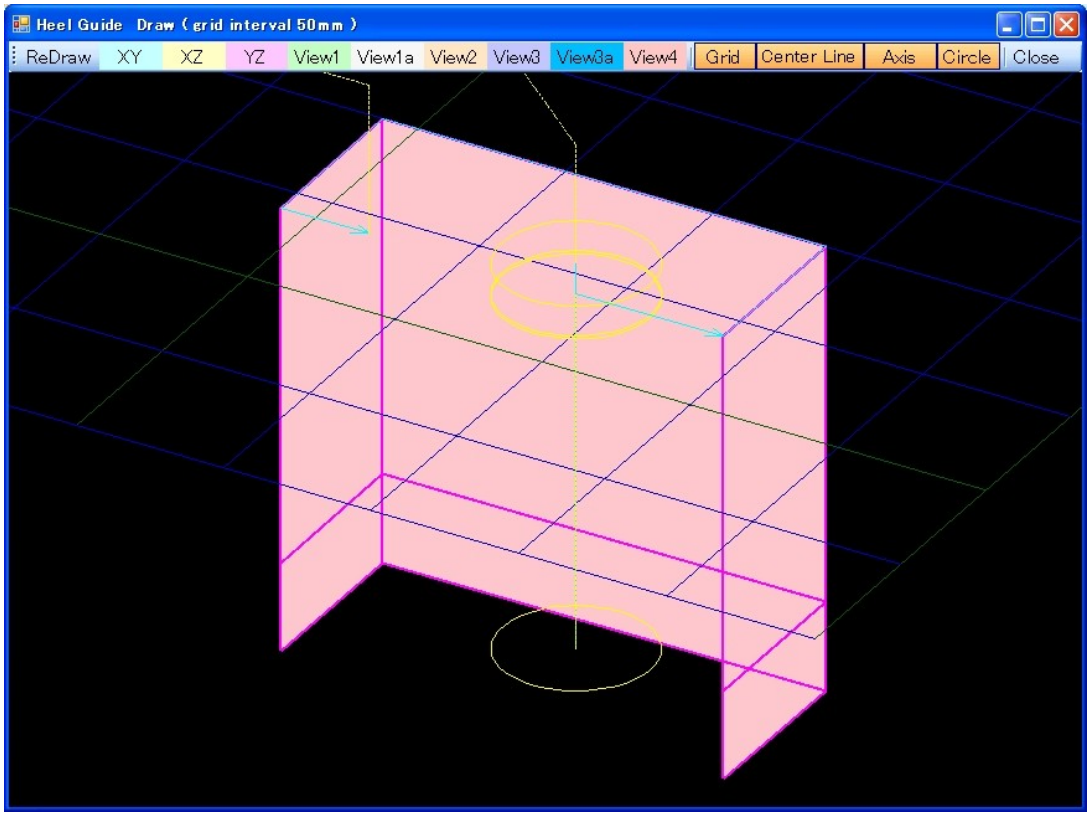
Following figure is shown in ” VIEW2”.
It is partially expanded with clicking and dragging by the mouse.



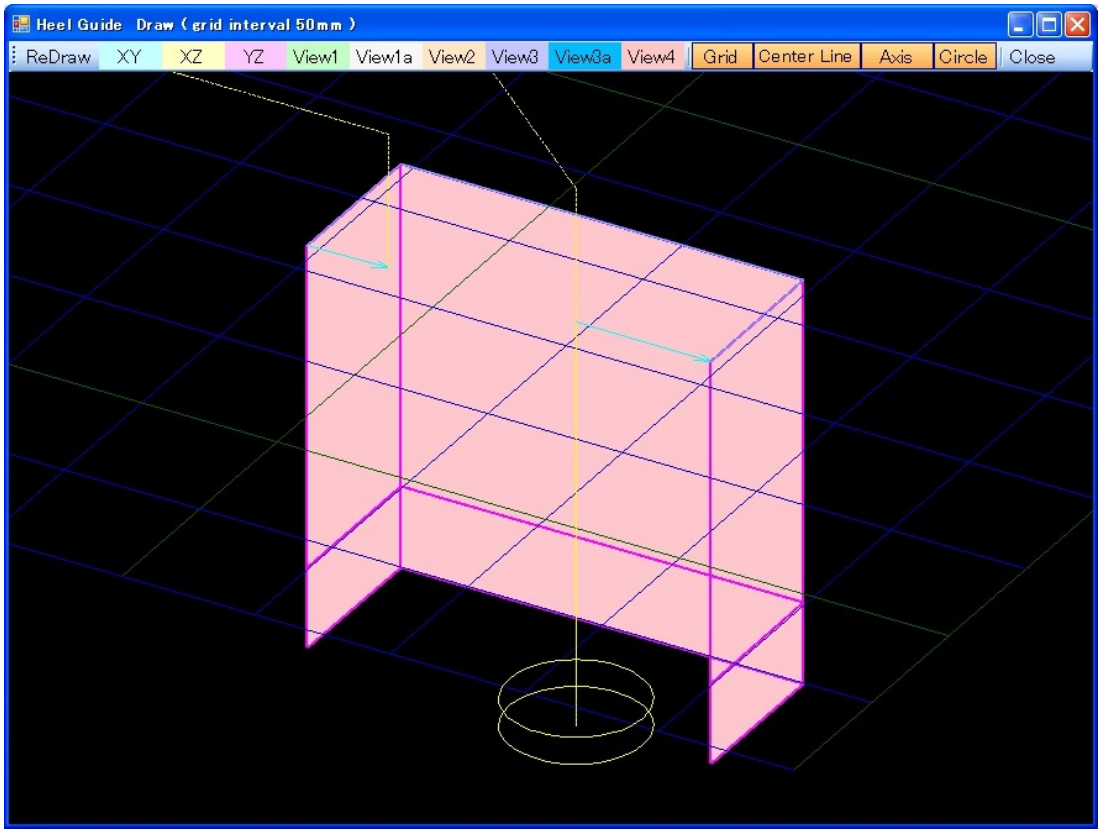
The following shows by "FINISH" button. This figure is shown in "VIEW2" and expanded.
The line at the center of the plane is the roughing height, and the plane bottom is the finishing height .



The following shows by "R CHECK" button to confirm the roughing cut.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.



The following shows by "F CHECK" button to confirm the finishing cut.
The Check data first moves to lowest depth and goes up to Z value and moves once to confirm a path.



The above