



NC soft for Machine Shop

Home Page <http://www.autonc.jp>

Chamfer Cutting Manual



[45 RADIUS]

You can cut 45 degrees Chamfered surface by the equal height processing by the radius end mill. One-way, the Zigzag processing can be chosen. In the range of same Z height, the zigzag processing can be chosen. When the path at the same Z height is one, it becomes one-way processing. This is for roughing cut. It is best for steel block.

[45 BALL]

It cuts 45 degrees Chamfered surface with the ball end mill. By the zigzag surface going-along processing, you complete a surface. This is for finish cut.

[RADIUS]

You can cut any degrees Chamfered surface by the equal height processing by the radius end mill. One-way, the Zigzag processing can be chosen.

You can input both length of the chamfered surface, or one length and a angle.

[BALL]

It cuts any degrees Chamfered surface with the ball end mill.

By the zigzag surface going-along processing, you complete a surface.

This is for finish cut.

[Japanese]

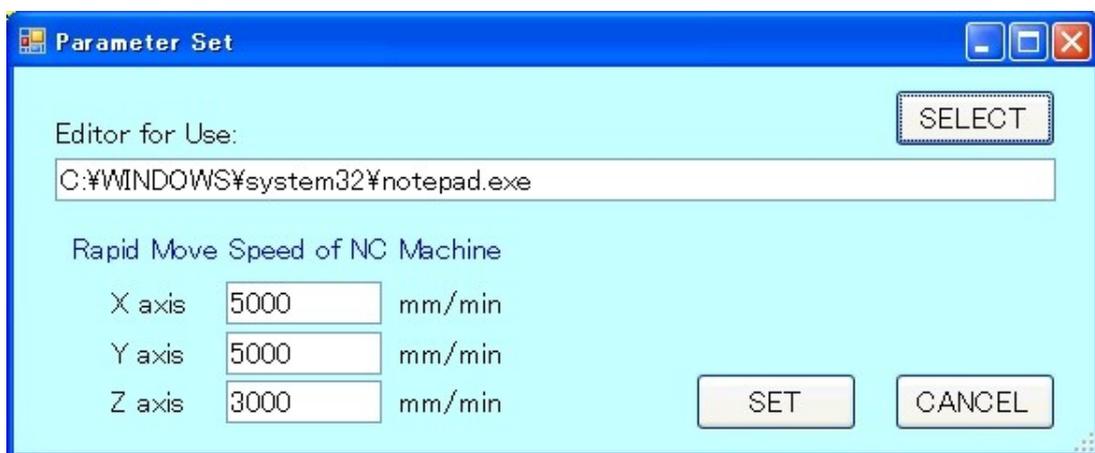
When pushing this button, it becomes Japanese display.

[Parameter]

You specify an editor for the editing.

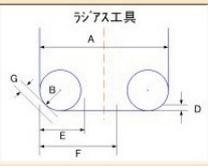
You start up the editor at the "EDIT" button of the program.

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

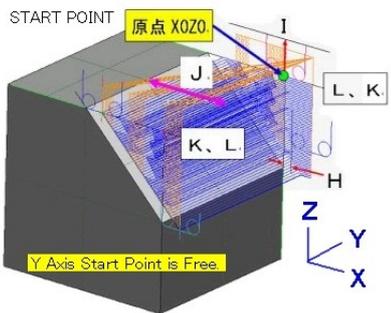


[45 RADIUS]

CHAMFER RADIUS TOOL



START POINT 原点 X0Z0



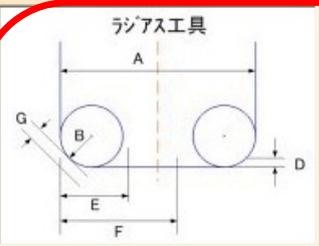
Y Axis Start Point is Free.

I Rapid Move Height 30 mm
 J Chamfer Length 50 mm
 K Y Start Point 200 mm
 L Y End Point 0 mm

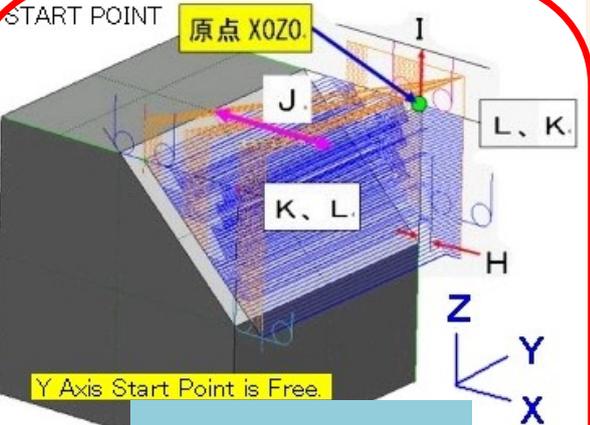
1way 2way **G92** Yes No

Write Holder: C:¥
 Check File: CmenRadiusCheck [EDIT] [SELECT] [NC CHECK] [NC DISPLAY]
 File Name: CmenRadius [EDIT] [START] [CANCEL]

CHAMFER RADIUS TOOL



START POINT 原点 X0Z0



Y Axis Start Point is Free.

I Rapid Move Height 30 mm
 J Chamfer Length 50 mm
 K Y Start Point 200 mm
 L Y End Point 0 mm

1way 2way **G92** Yes No

Write Holder: C:¥
 Check File: CmenRadiusCheck [EDIT] [SELECT] [NC CHECK] [NC DISPLAY]
 File Name: CmenRadius [EDIT] [START] [CANCEL]

Cutting Condition

Feed Rate: 2000 mm/min
 Spindle Speed: 1000 rev/min
 D. Z Down Value: 1.0 mm
 E. Std. Cutting Width: 20 mm
 F. Limit Cutting Width: 30 mm
 G. Remainder: 0.2 mm
 H. Distance X: 10 mm

Data Area

NC Output

Data Area

START POINT 原点 X0Z0

Y Axis Start Point is Free.

I. Rapid Move Height	<input type="text" value="30"/>	mm
J. Chamfer Length	<input type="text" value="50"/>	mm
K. Y Start Point	<input type="text" value="200"/>	mm
L. Y End Point	<input type="text" value="0"/>	mm

Rapid move Z height

It makes a corner X0Z0.
And it enters data.

The Y axis data moves from Y Start Point to Y End Point by one-way cut or two-way cut (the range with same Z height).
The starting point of the Y axis is optional.
When it is not below the decimal point, the decimal point can be omitted.

H. When moving Z by rapid move, it takes a distance of this width from steel block.

Cutting Condition

ラジアス工具

A Diameter:	<input type="text" value="30"/>	mm
B. Corner R	<input type="text" value="8"/>	mm
Feed Rate:	<input type="text" value="2000"/>	mm/min
Spindle Speed:	<input type="text" value="1000"/>	rev. min
D. Z Down Value:	<input type="text" value="1.0"/>	mm
E. Std. Cutting Width:	<input type="text" value="20"/>	mm
F. Limit Cutting Width:	<input type="text" value="30"/>	mm
G. Remainder:	<input type="text" value="0.2"/>	mm
H. Distance X:	<input type="text" value="10"/>	mm

<The thinking way of cutting width>

D.Z Down Value, every time it goes down, the width to cut is computed.

It cuts off a quotient with (the width / E. Std. cutting width) and it decides the cut number of times.

If it doesn't exceed F. Limit cutting width, it moves a tool at the pace.
When exceeding a F width, it divides by the cut number of times +1 once more and it decides a pace.

G. Remainder is the remaining finish value.
it is perpendicular to the surface.

NC Output

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).

You choose one-way or two-way with the radio button.
 When choosing one-way, it moves from the Y start point only to the direction of the Y end point.
 When returning to the Y start point , Z rises to the rapid moving height, and moves a pitch after returning to the previous starting-point.

It is possible to display the NC data.

The screenshot shows a software interface for NC output. At the top, there are two radio button groups: '1way' (selected) and '2way', and 'G92' with 'Yes' and 'No' (selected) radio buttons. Below these is a 'Write Holder:' field containing 'C:¥'. A red box highlights the 'Check File:' field with 'CmenRadiusCheck' and an 'EDIT' button, and the 'File Name:' field with 'CmenRadius' and an 'EDIT' button. A 'SELECT' button is positioned between these two fields. To the right, another red box highlights a 'Graphic Display' section containing 'NC CHECK' and 'NC DISPLAY' buttons. Below this are 'START' and 'CANCEL' buttons. Red arrows point from the text boxes to these specific UI elements.

You enter a file name.
 The "Check file" simulates NC movement before actual NC data and confirms data inputs.
 " Edit " When pushing the button, the editor starts up and opens a file.

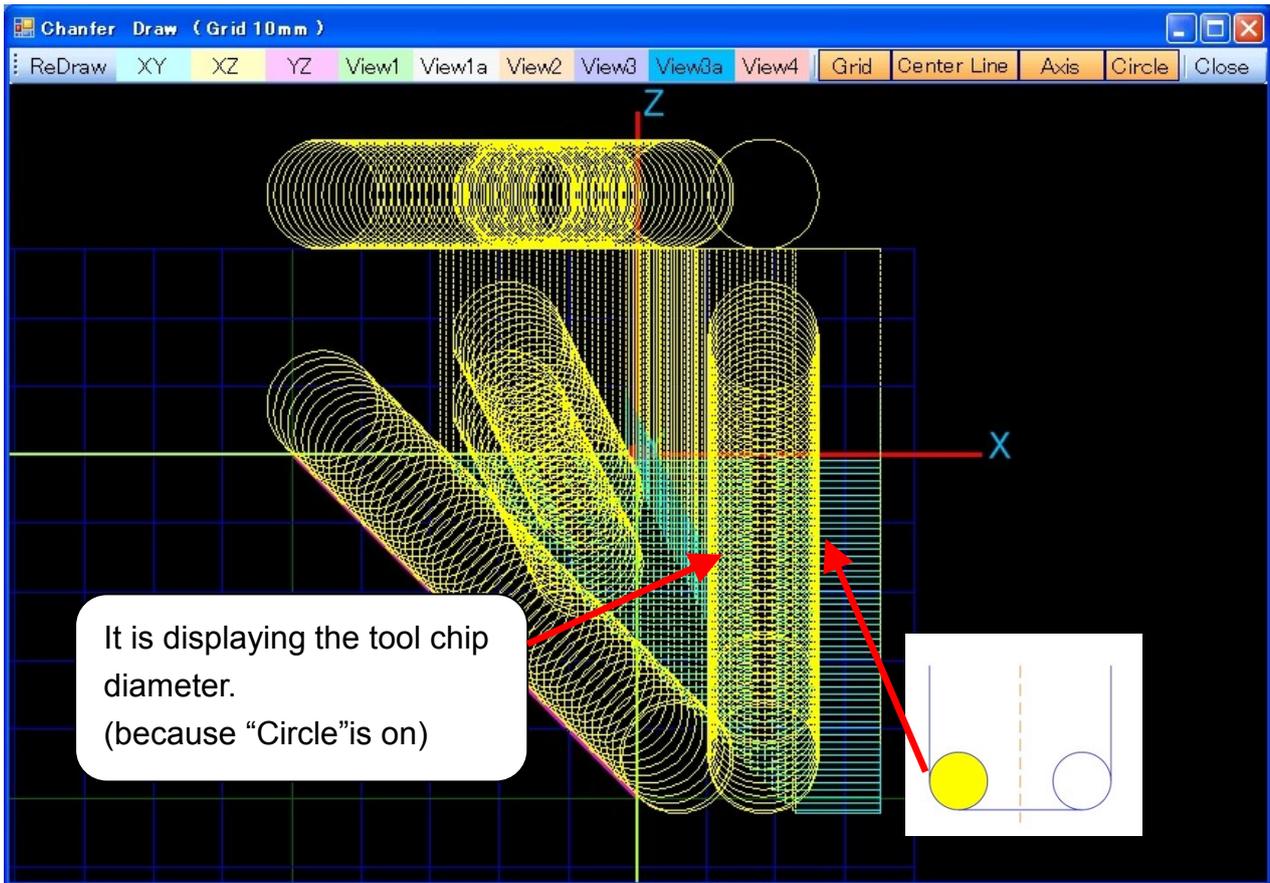
"Select" At the button, it selects a write folder.

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

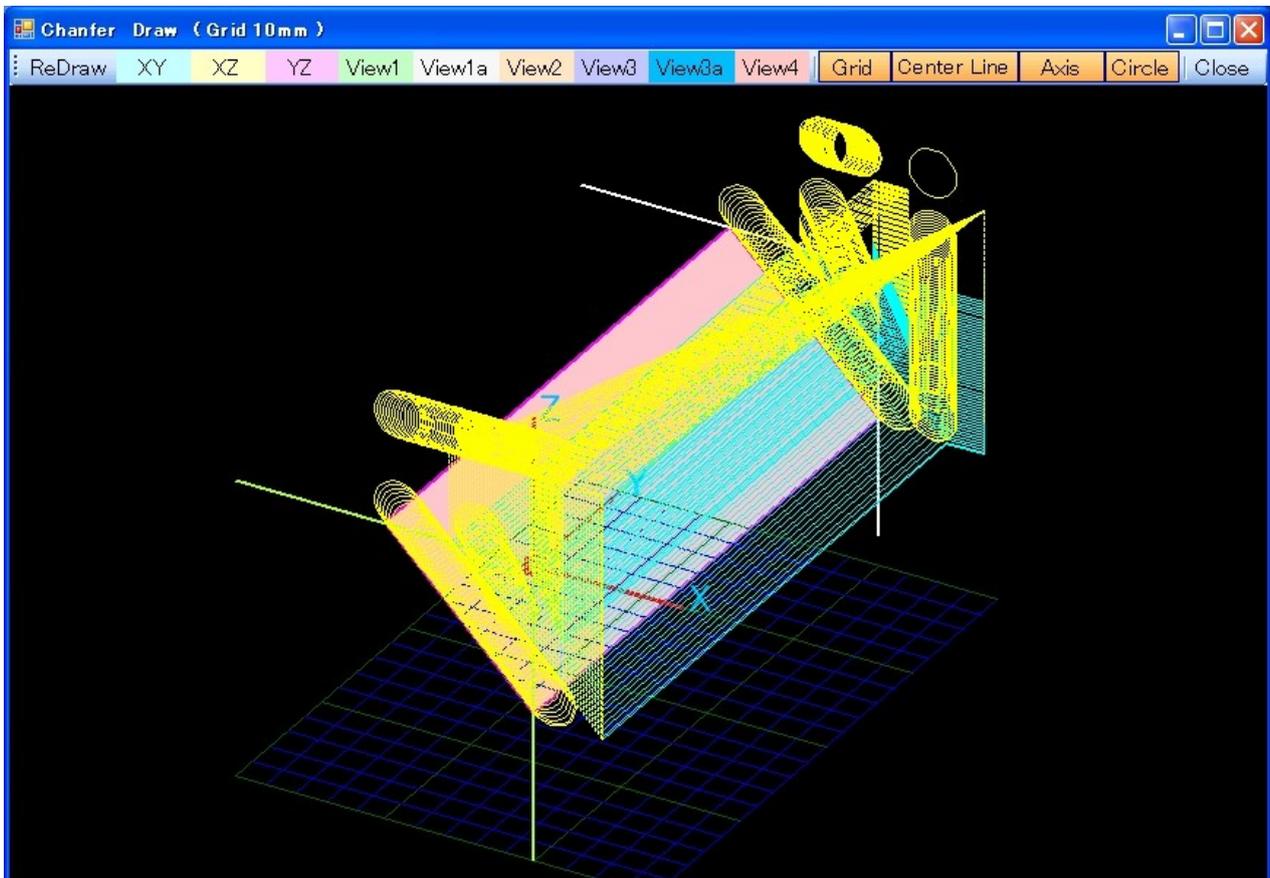
When pushing the "Cancel" button, it ends.
 Input data is saved and is restored in the next time.

The Display of the NC data

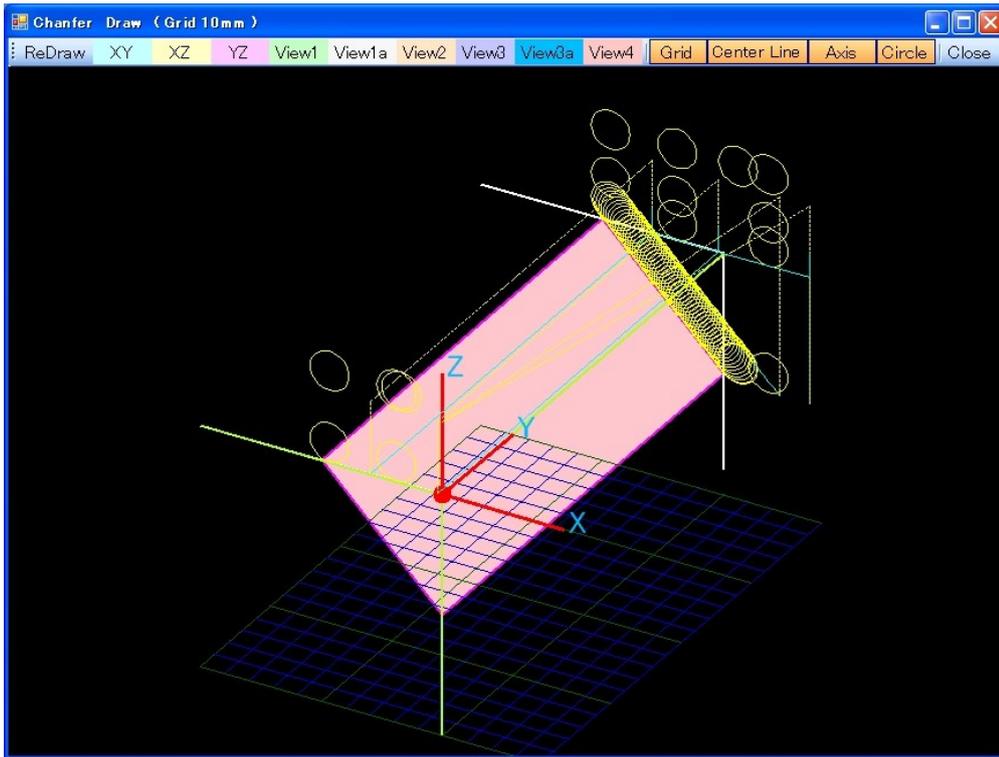
The following shows by "NC DISPLAY" button. This figure is shown in "the XZ plane".



Following figure is shown in "VIEW2".



The following figure is displaying a "Check File". You can understand a width of cuts and a shape. First, it goes to the most low position of Z.



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 which 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 mm 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.

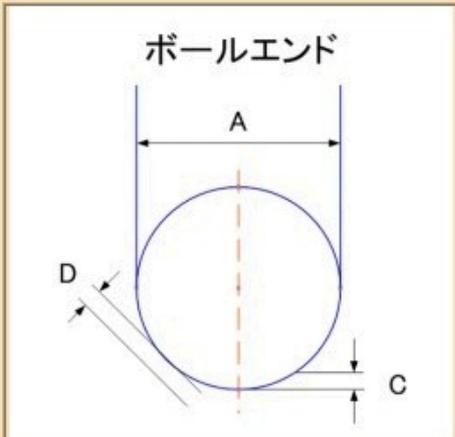
It returns to the ex-screen by "Close".

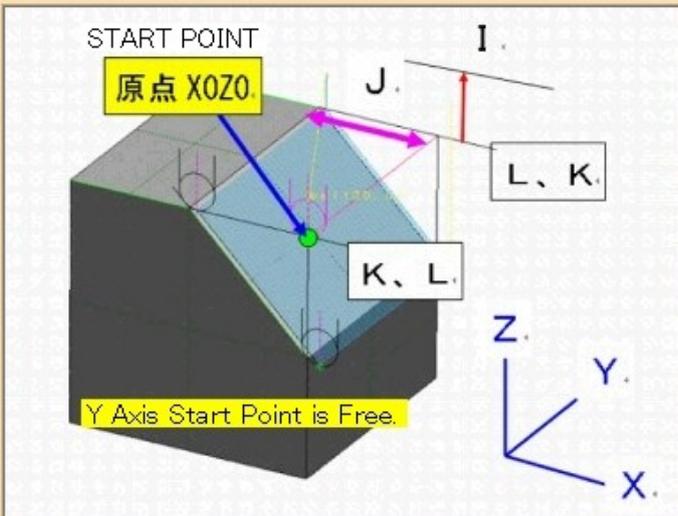
[45 BALL]

CHAMFER BALL TOOL
⏏

CHAMFER BALL TOOL

ボールエンド





A. Diameter: mm

Feed Rate: mm/min

Spindle Speed: rev/min

C. Z Down Value: mm

D. Remainder: mm

I. Rapid Move Height mm

J. Chamfer Length mm

K. Y Start Point mm

L. Y End Point mm

G92 Yes No

-- Graphic Display --

Write Holder:

Check File:

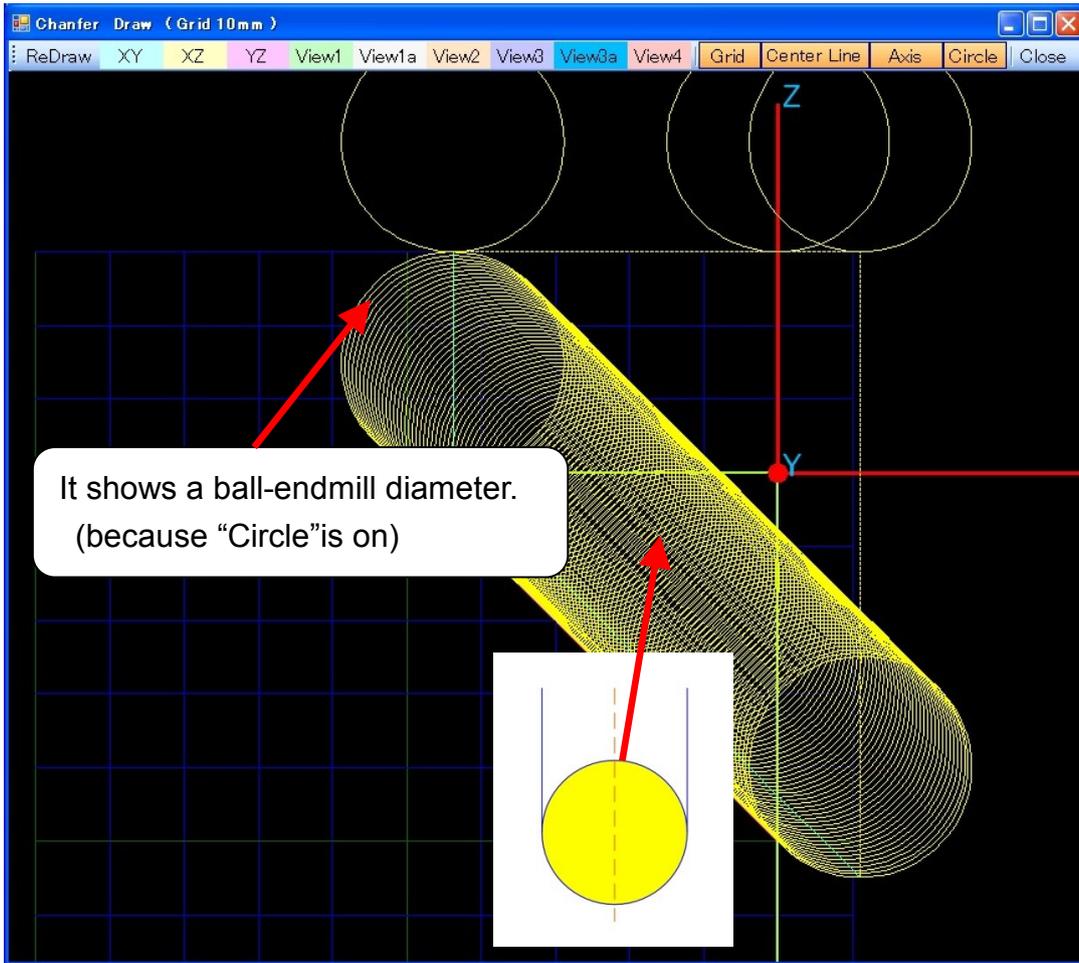
File Name:

The way of the data definition is the same as the "45 RADIUS".
Only a difference is described.

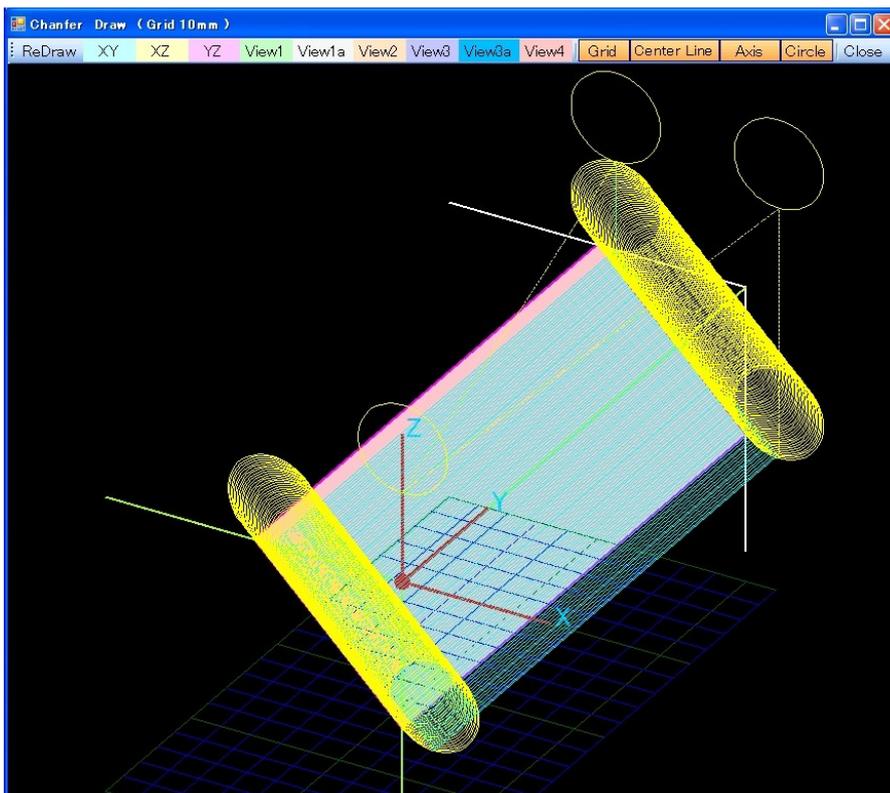
The Y axis data goes and returns between the Y start point and the Y end point.
It is surface going-along milling.

The Display of the NC data

The following figure shows by "NC DISPLAY" button. This figure is shown in "the XZ plane".

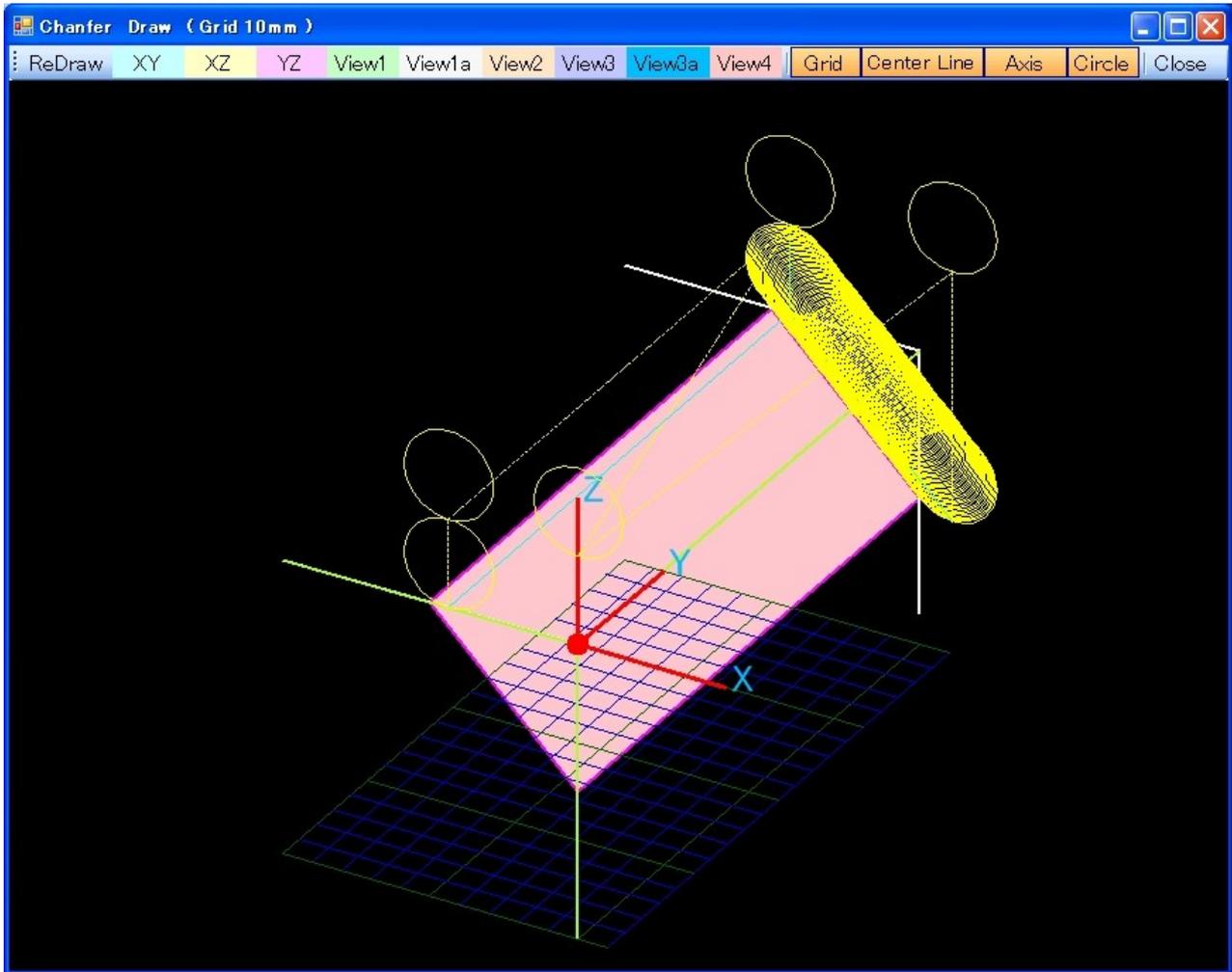


Following figure is shown in "VIEW2".

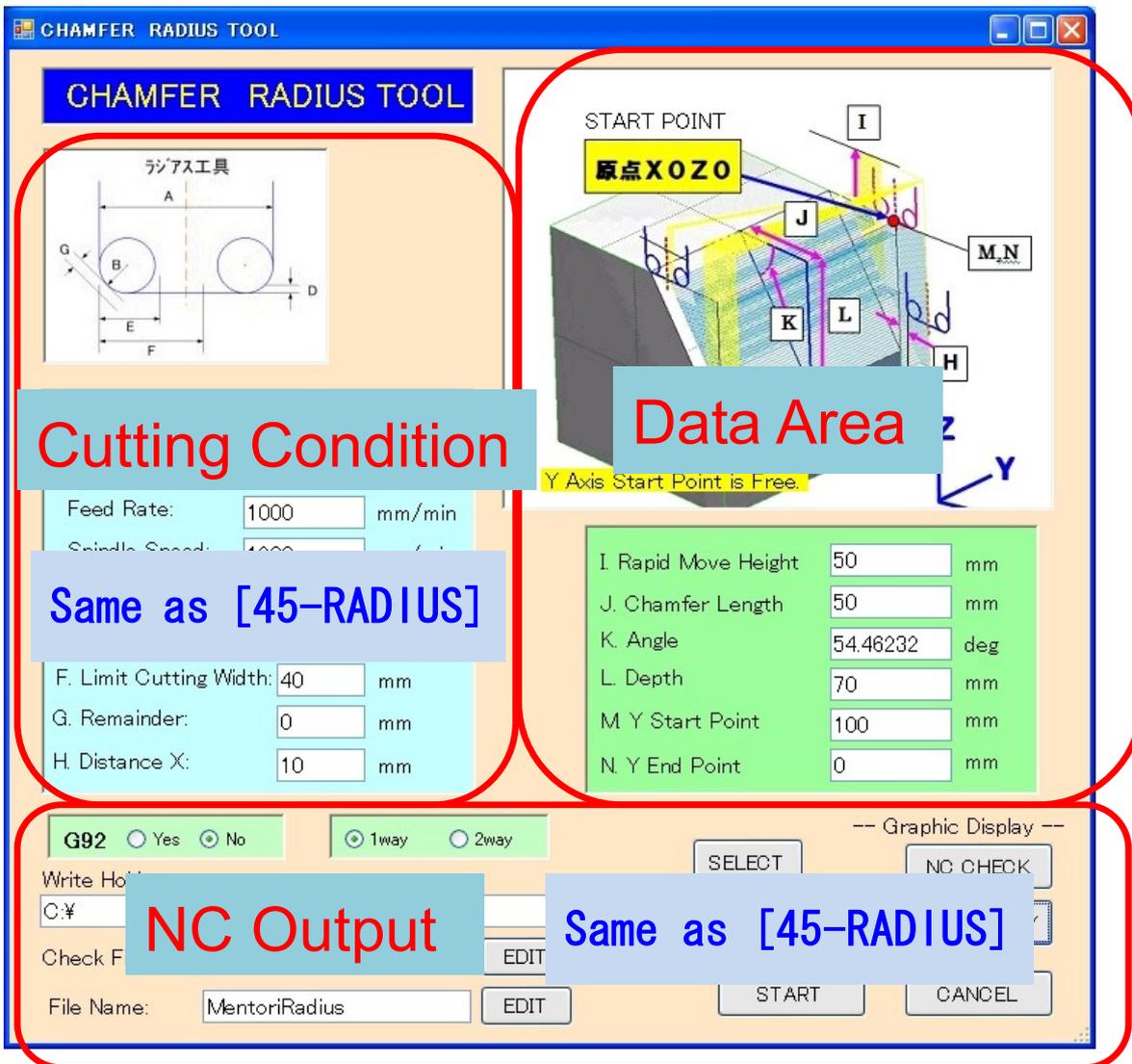
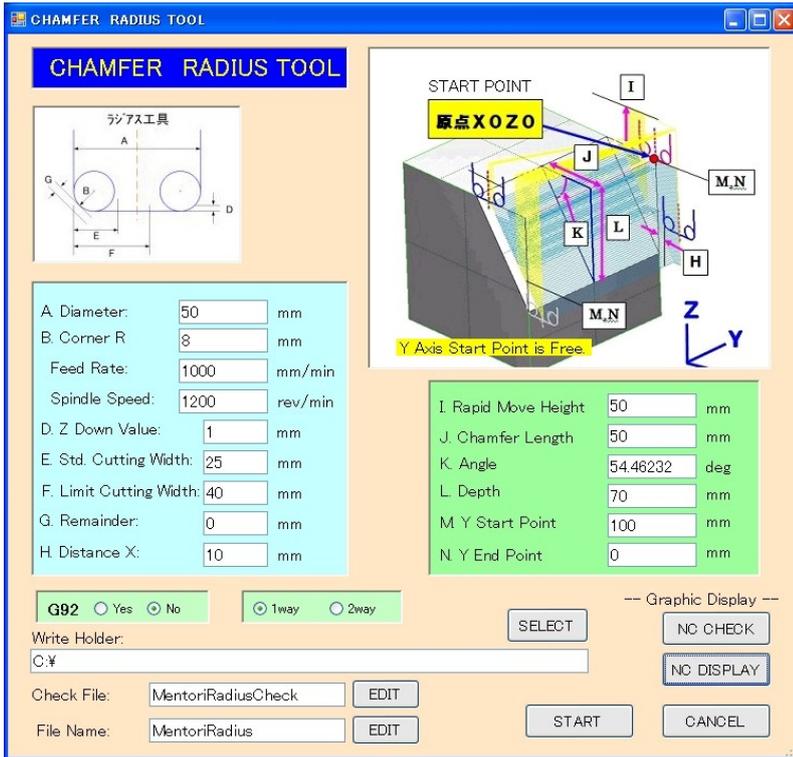


The following figure is displaying a " Check File".

It moves a width of cuts in Z0. And after that, it moves along the finish line.



[RADIUS]



Data Area

Only a difference with the "45 RADIUS" is described.

START POINT
原点XOZO

Y Axis Start Point is Free.

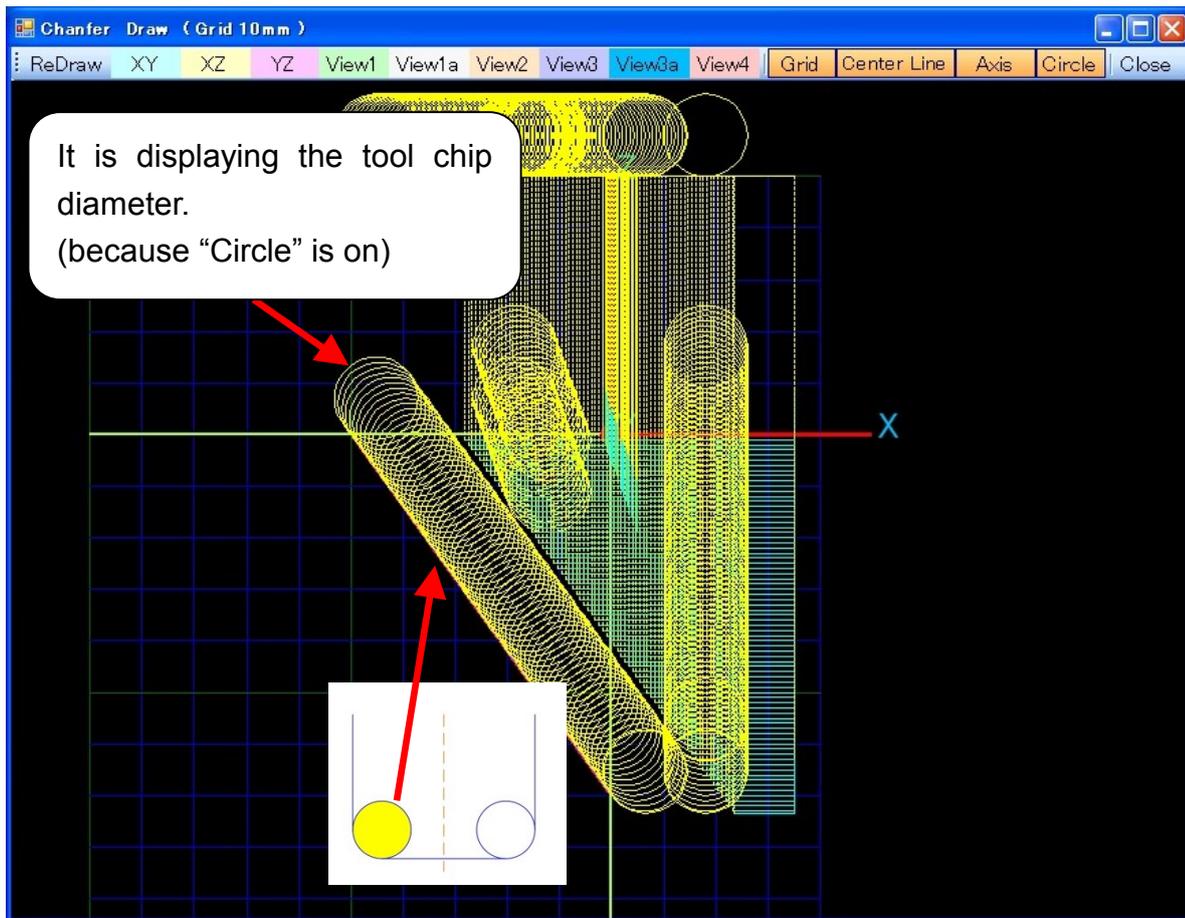
I. Rapid Move Height	50	mm
J. Chamfer Length	50	mm
K. Angle	54.46232	deg
L. Depth	70	mm
M. Y Start Point	100	mm
N. Y End Point	0	mm

First, You input chamfer length.
This is a standard.

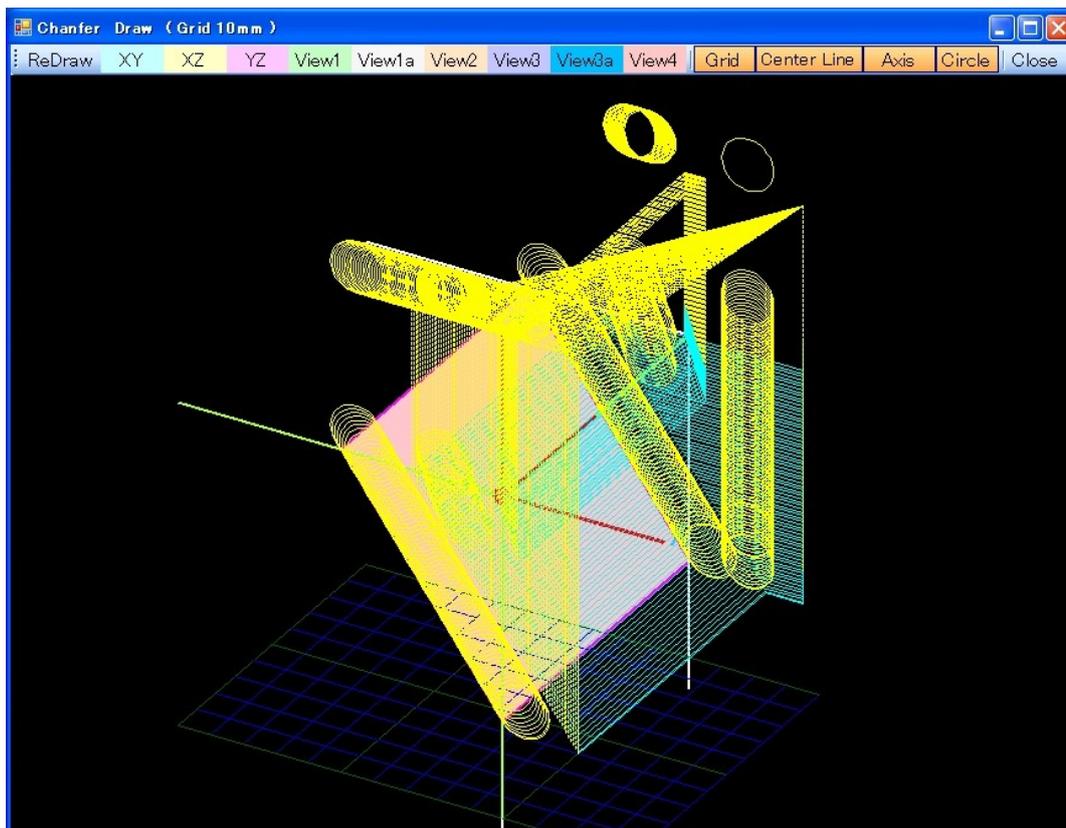
Next, you input an angle or a depth.
When moving a cursor to another place, the other is computed.

The Display of the NC data

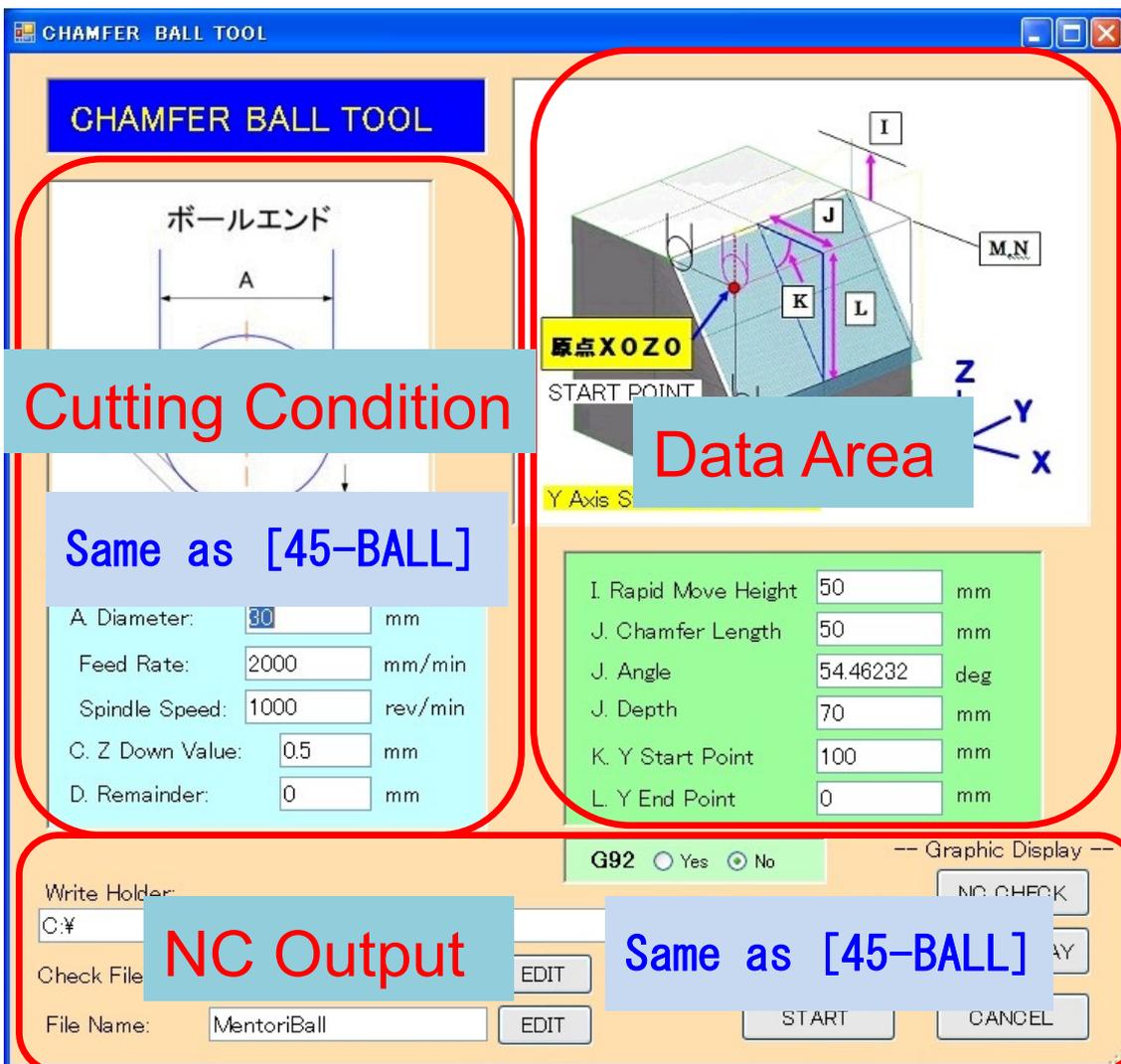
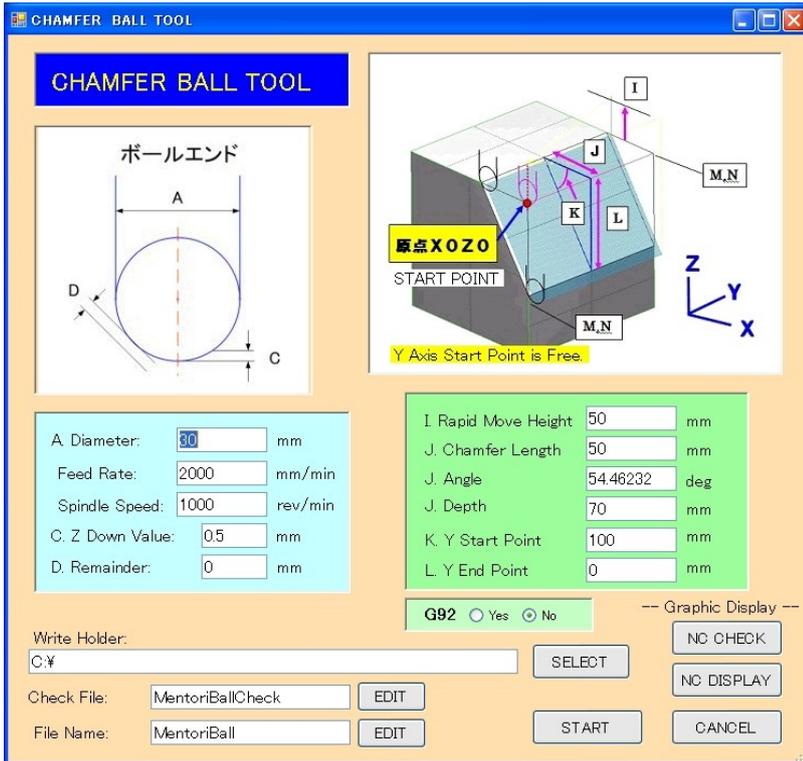
The following shows by "NC DISPLAY" button. This figure is shown in "the XZ plane".



Following figure is shown in "VIEW2".



[BALL]



Data Area

Only a difference with the "45 BALL" is described.

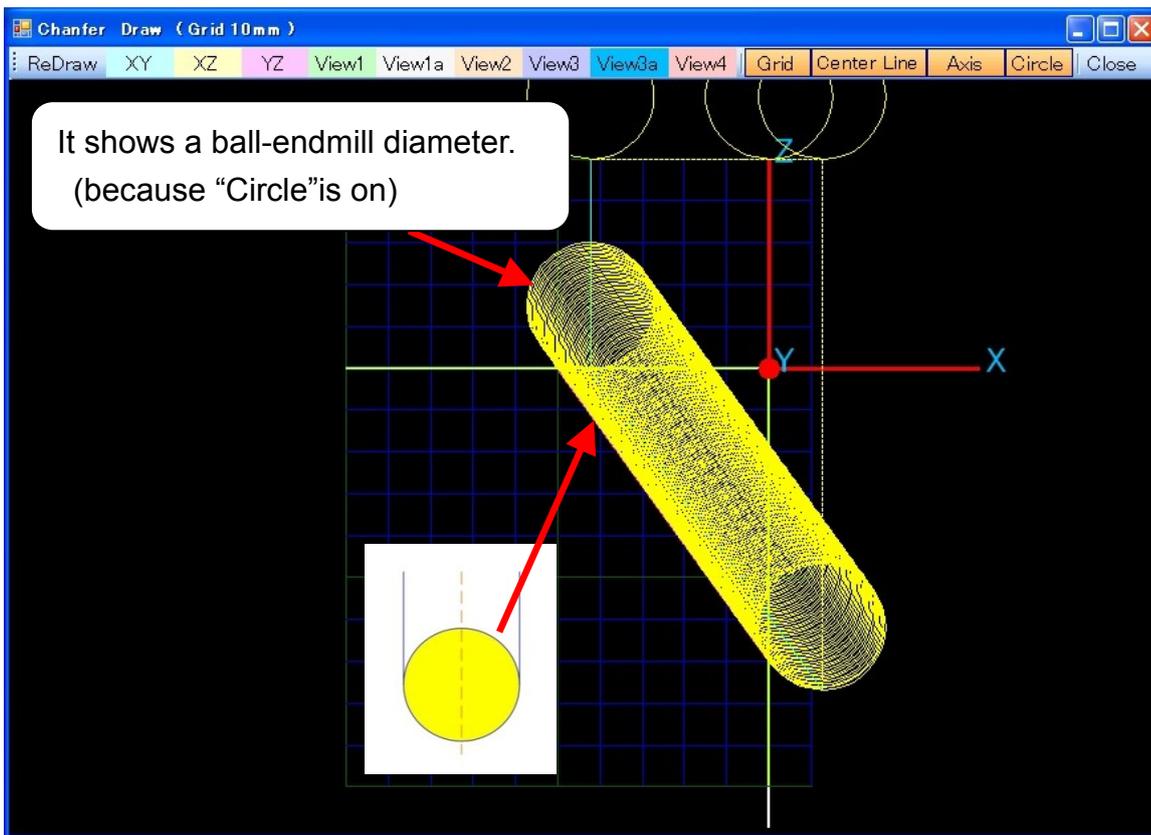
I. Rapid Move Height	50	mm
J. Chamfer Length	50	mm
J. Angle	54.46232	deg
J. Depth	70	mm
K. Y Start Point	100	mm
L. Y End Point	0	mm

First, You input chamfer length.
This is a standard.

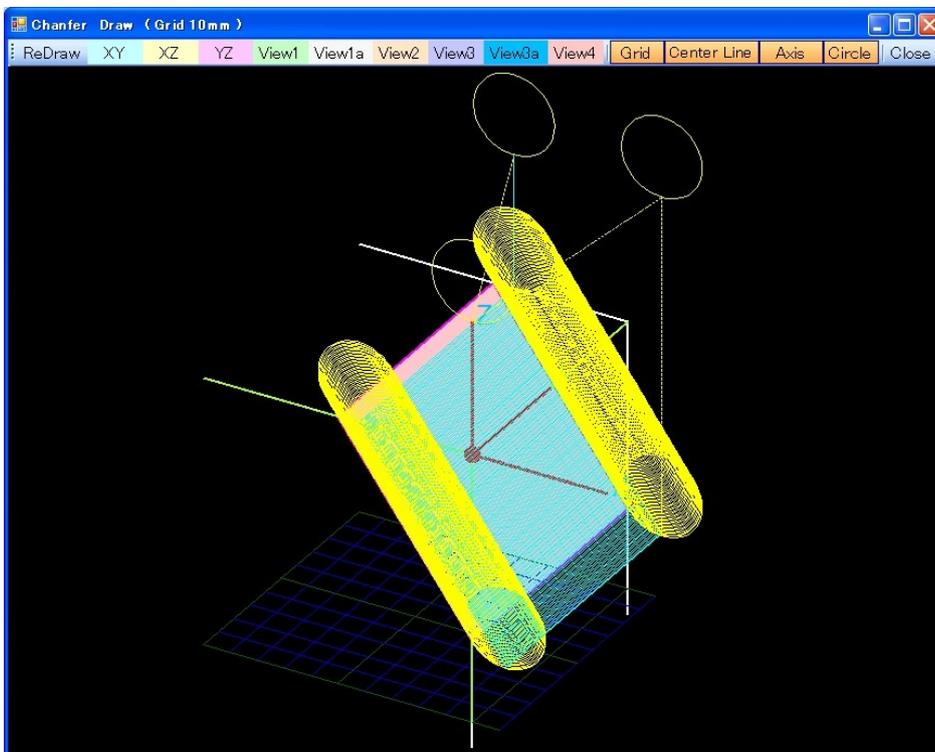
Next, you input an angle or a depth.
When moving a cursor to another place, the other is computed.

The Display of the NC data

The following shows by "NC DISPLAY" button. This figure is shown in "the XZ plane".



Following figure is shown in "VIEW2".



The above