



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 ]

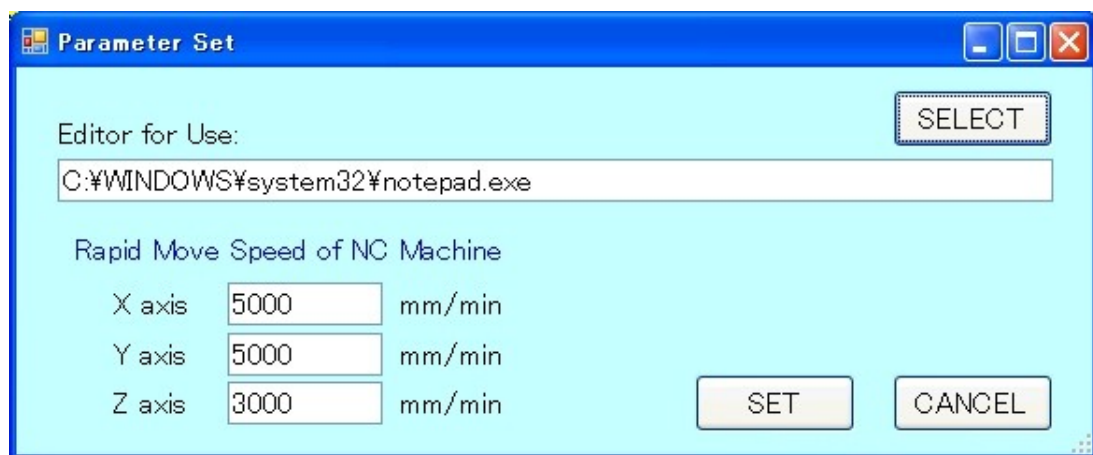
When pushing this button, it becomes Japanese display.

## [ Parameter ]

You specify an editor for the editing.

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

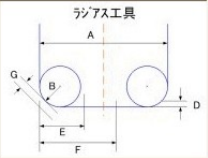
At present, you aren't using the rapid move speed of the machine tool.



# [ 45 RADIUS ]

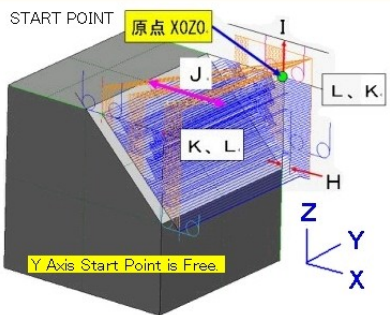
**CHAMFER RADIUS TOOL**

**ラジウス工具**



A Diameter:  mm  
 B. Corner R:  mm  
 Feed Rate:  mm/min  
 Spindle Speed:  rev/min  
 D. Z Down Value:  mm  
 E. Std. Cutting Width:  mm  
 F. Limit Cutting Width:  mm  
 G. Remainder:  mm  
 H. Distance X:  mm

START POINT 原点 X0Z0



Y Axis Start Point is Free

I. Rapid Move Height:  mm  
 J. Chamfer Length:  mm  
 K. Y Start Point:  mm  
 L. Y End Point:  mm

☒ 1way ☐ 2way **G92** ☐ Yes ☒ No

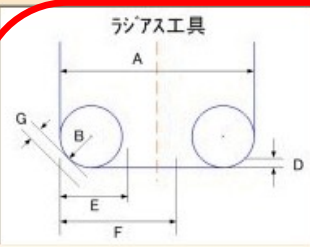
Write Holder:  
 C:¥

Check File:

File Name:

**CHAMFER RADIUS TOOL**

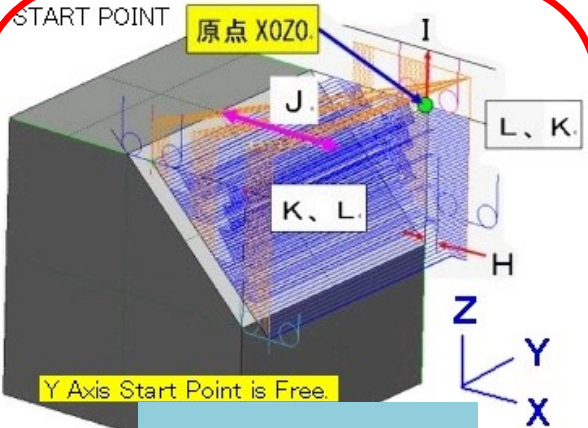
**ラジウス工具**



**Cutting Condition**

Feed Rate:  mm/min  
 Spindle Speed:  rev/min  
 D. Z Down Value:  mm  
 E. Std. Cutting Width:  mm  
 F. Limit Cutting Width:  mm  
 G. Remainder:  mm  
 H. Distance X:  mm

START POINT 原点 X0Z0



Y Axis Start Point is Free

**Data Area**

I. Rapid Move Height:  mm  
 J. Chamfer Length:  mm  
 K. Y Start Point:  mm  
 L. Y End Point:  mm

☒ 1way ☐ 2way **G92** ☐ Yes ☒ No

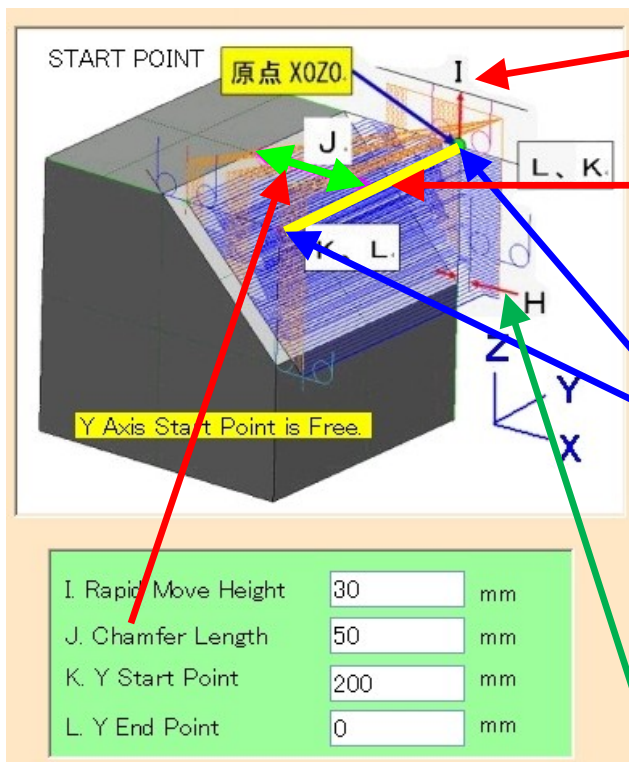
Write Holder:  
 C:¥

**NC Output**

Check File:

File Name:

# Data Area



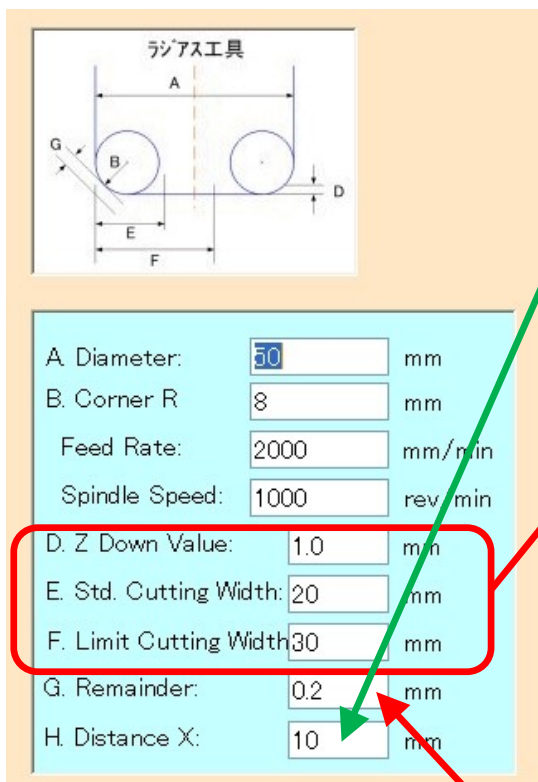
Rapid move Z height

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



<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 the NC Output software interface. At the top, there are two radio buttons: "1way" (selected) and "2way". To the right, there is a "G92" label followed by "Yes" and "No" radio buttons, with "No" selected. Below these, there is a "Graphic Display" section with "NC CHECK" and "NC DISPLAY" buttons. On the left, there is a "Write Holder:" label with a text input field containing "C:¥". Below this, there are two rows of controls: "Check File:" with a text input field containing "CmenRadiusCheck" and an "EDIT" button; and "File Name:" with a text input field containing "CmenRadius" and an "EDIT" button. A "SELECT" button is located to the right of the "Check File" controls. At the bottom right, there are "START" and "CANCEL" buttons. Red boxes and arrows highlight the following elements: a box around the "Check File" and "File Name" controls with an arrow pointing to the explanation of the "Check File" function; a box around the "SELECT" button with an arrow pointing to the explanation of its function; a box around the "NC CHECK" and "NC DISPLAY" buttons with an arrow pointing to the explanation of the "NC DISPLAY" function; a box around the "START" button with an arrow pointing to the explanation of its function; and a box around the "CANCEL" button with an arrow pointing to the explanation of its function.

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.

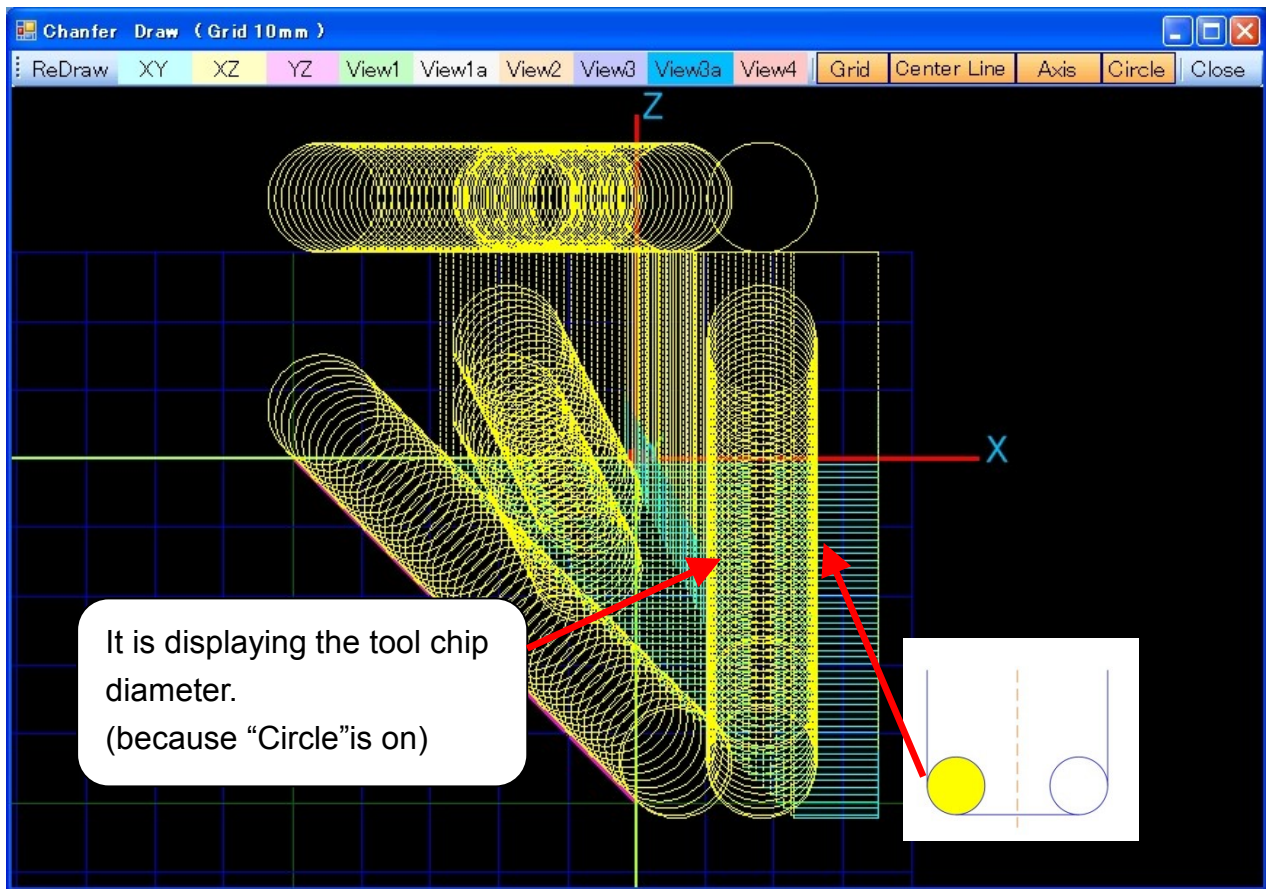
When pushing the "Start" button  
after fill in all data, the NC data of  
the file name is created in folder.

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

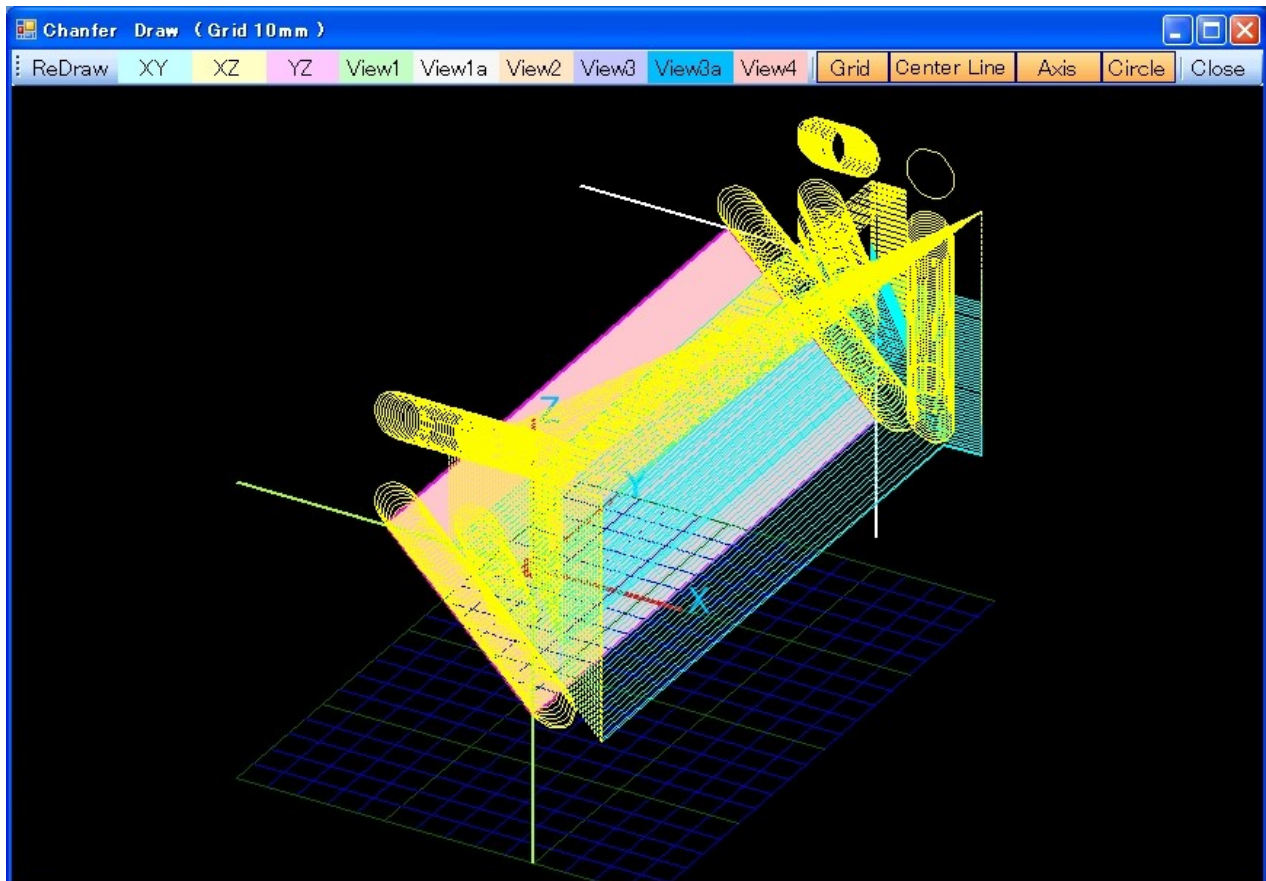


# The Display of the NC data

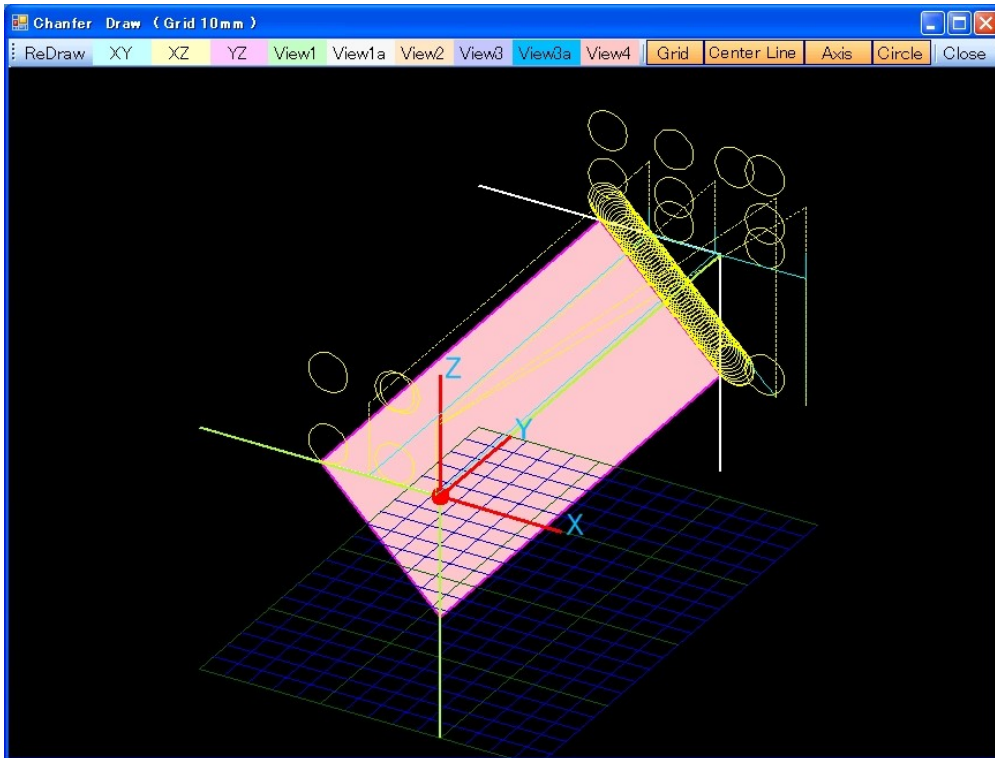
The following shows by "NC DISPLAY" button. This figure is shown in "the XZ plane".



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

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".

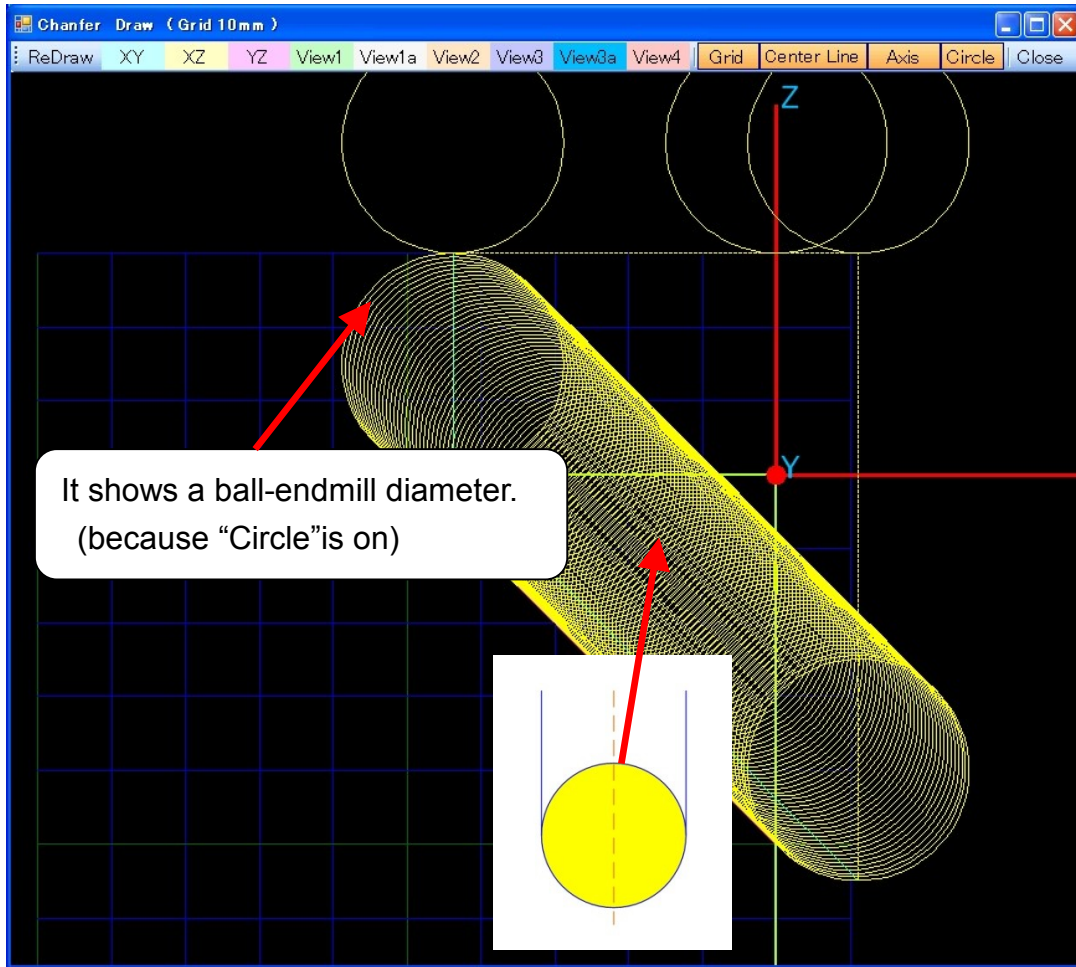
Only a difference is described.

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

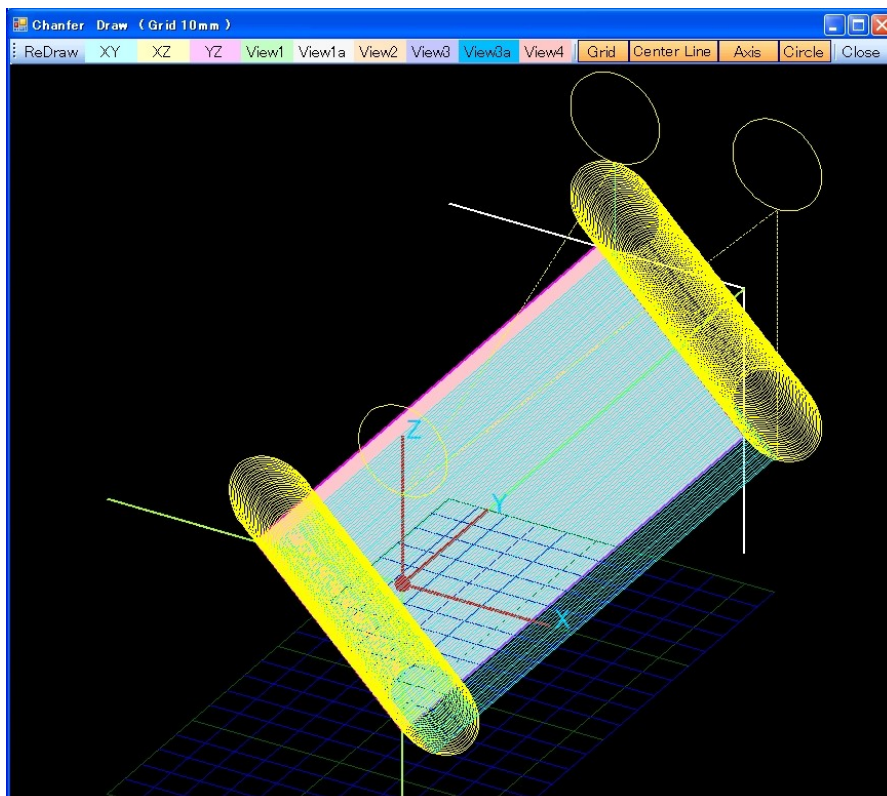


# The Display of the NC data

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

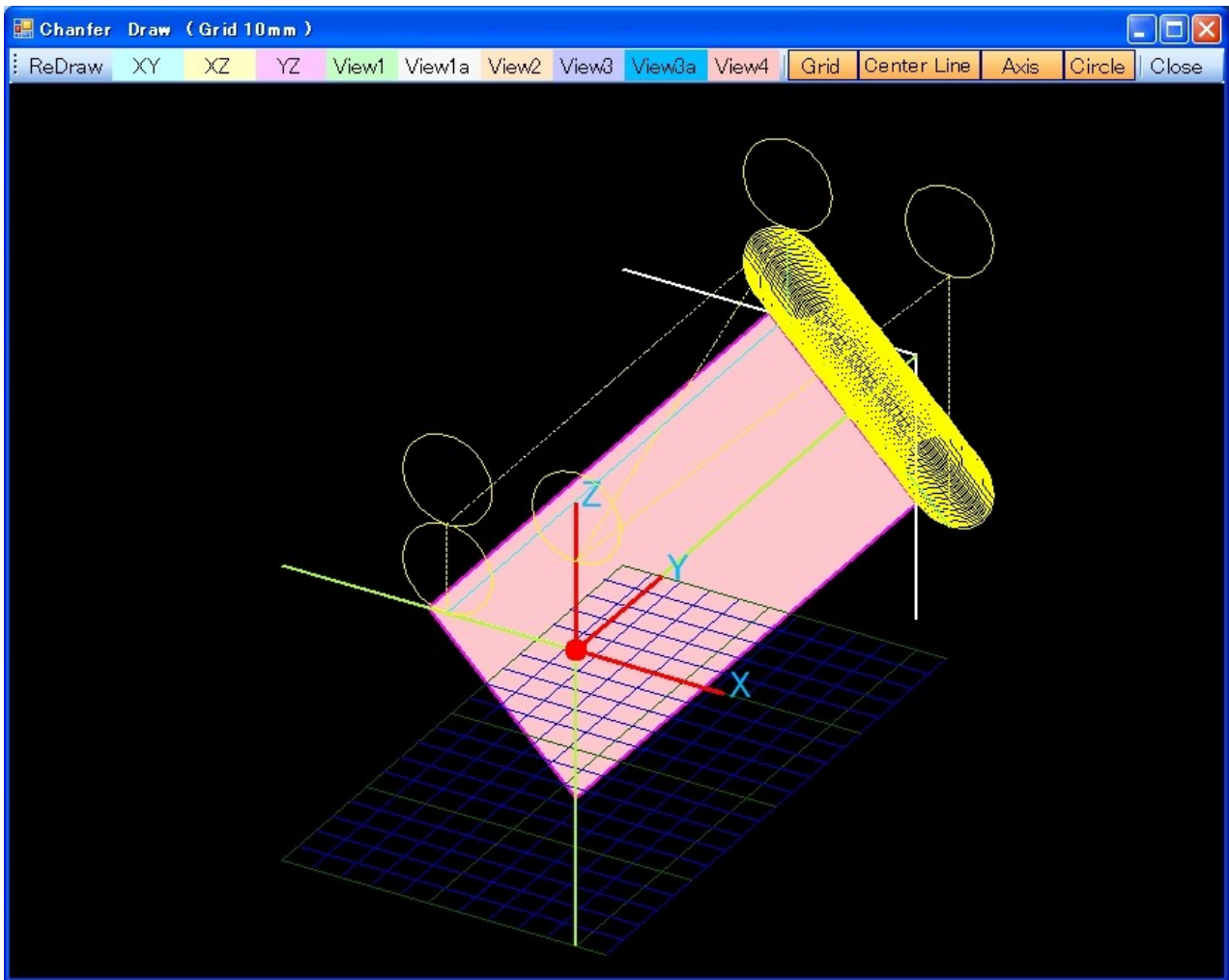


Following figure is shown in "VIEW2".



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 ]

**CHAMFER RADIUS TOOL**

ラジウス工具

A Diameter: 50 mm  
 B. Corner R: 8 mm  
 Feed Rate: 1000 mm/min  
 Spindle Speed: 1200 rev/min  
 D. Z Down Value: 1 mm  
 E. Std. Cutting Width: 25 mm  
 F. Limit Cutting Width: 40 mm  
 G. Remainder: 0 mm  
 H. Distance X: 10 mm

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

G92 ☐ Yes ☒ No ☒ 1way ☐ 2way

Write Holder: C:¥

Check File: MentoriRadiusCheck EDIT

File Name: MentoriRadius EDIT

START CANCEL

Graphic Display: NC CHECK NC DISPLAY

START POINT 原点X0Z0

Y Axis Start Point is Free.

I J K L M N

H

Z Y

**CHAMFER RADIUS TOOL**

ラジウス工具

Feed Rate: 1000 mm/min  
 Spindle Speed: 1200 rev/min

F. Limit Cutting Width: 40 mm  
 G. Remainder: 0 mm  
 H. Distance X: 10 mm

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

G92 ☐ Yes ☒ No ☒ 1way ☐ 2way

Write Holder: C:¥

Check File: MentoriRadiusCheck EDIT

File Name: MentoriRadius EDIT

START CANCEL

Graphic Display: NC CHECK NC DISPLAY

START POINT 原点X0Z0

Y Axis Start Point is Free.

I J K L M N

H

Z Y

**Cutting Condition**

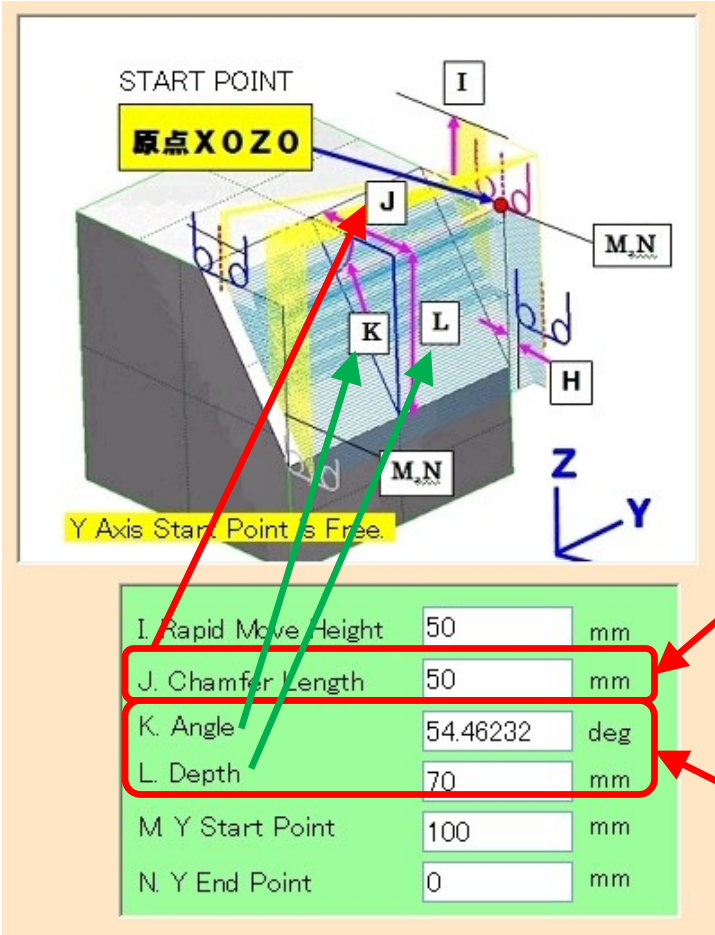
**Data Area**

**NC Output**

**Same as [45-RADIUS]**

# Data Area

Only a difference with the “45 RADIUS” is described.



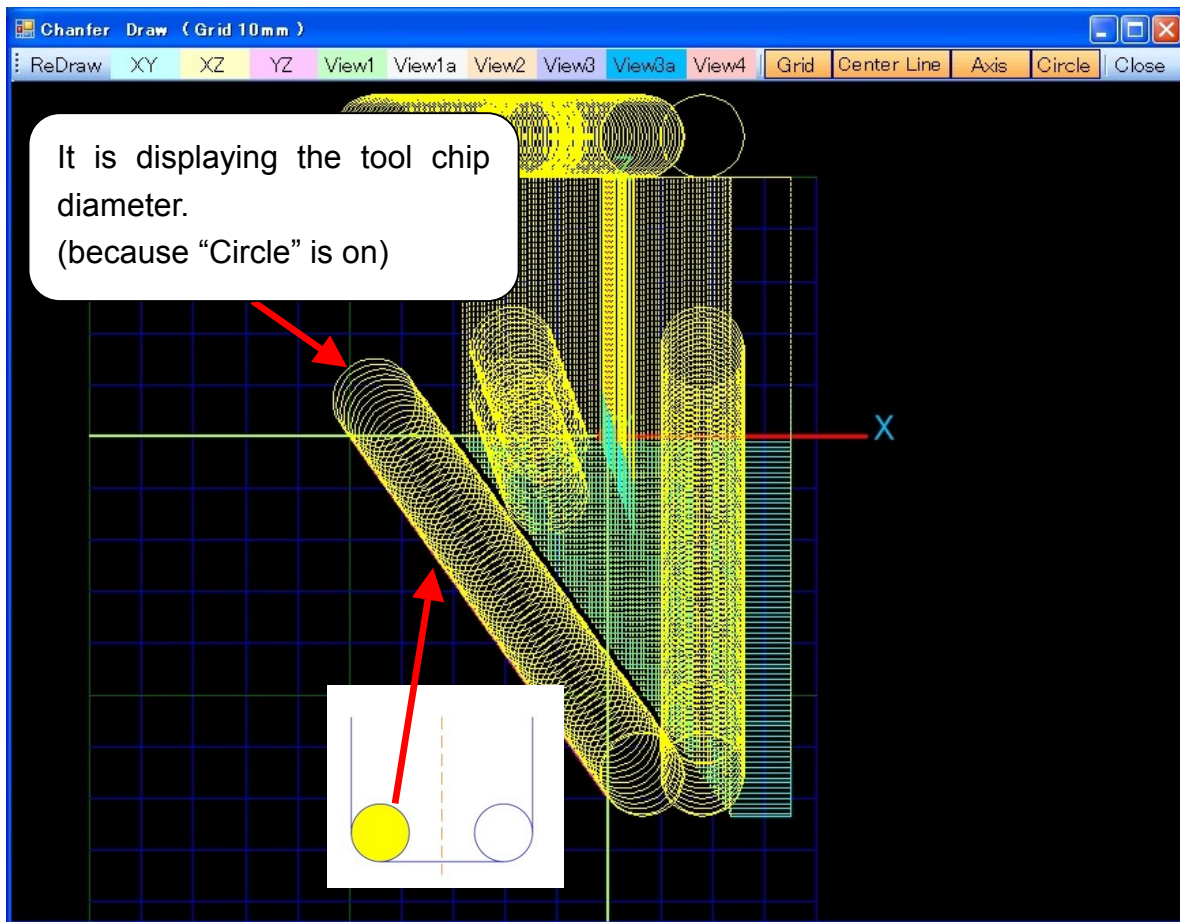
First, You input chamfer length.  
This is a standard.

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

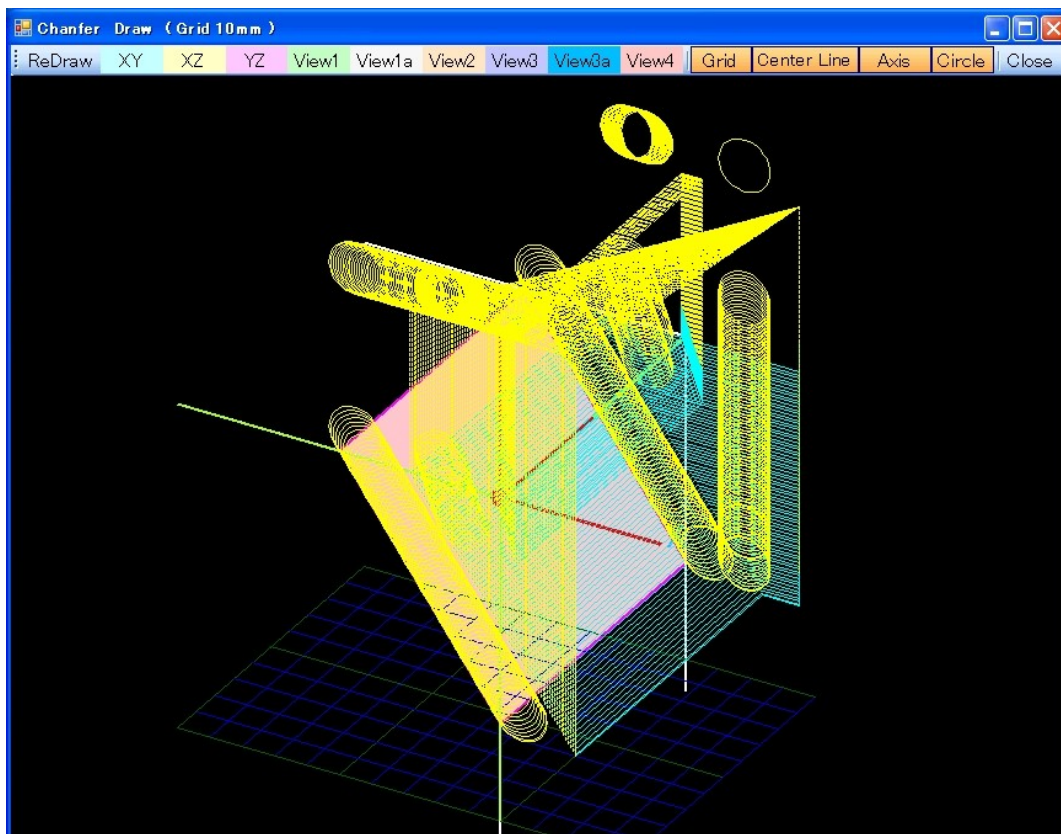


# The Display of the NC data

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



Following figure is shown in "VIEW2".



## [ BALL ]

[illegible]

**CHAMFER BALL TOOL**

**Cutting Condition**

ボールエンド

A

**Same as [45-BALL]**

A Diameter: 30 mm

Feed Rate: 2000 mm/min

Spindle Speed: 1000 rev/min

C. Z Down Value: 0.5 mm

D. Remainder: 0 mm

**Data Area**

原点X0Z0

START POINT

Y Axis S

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

G92 ☐ Yes ☒ No

-- Graphic Display --

NC CHECK

AY

**NC Output**

Write Holder: C:¥

Check File: MentoriBall

File Name: MentoriBall

EDIT

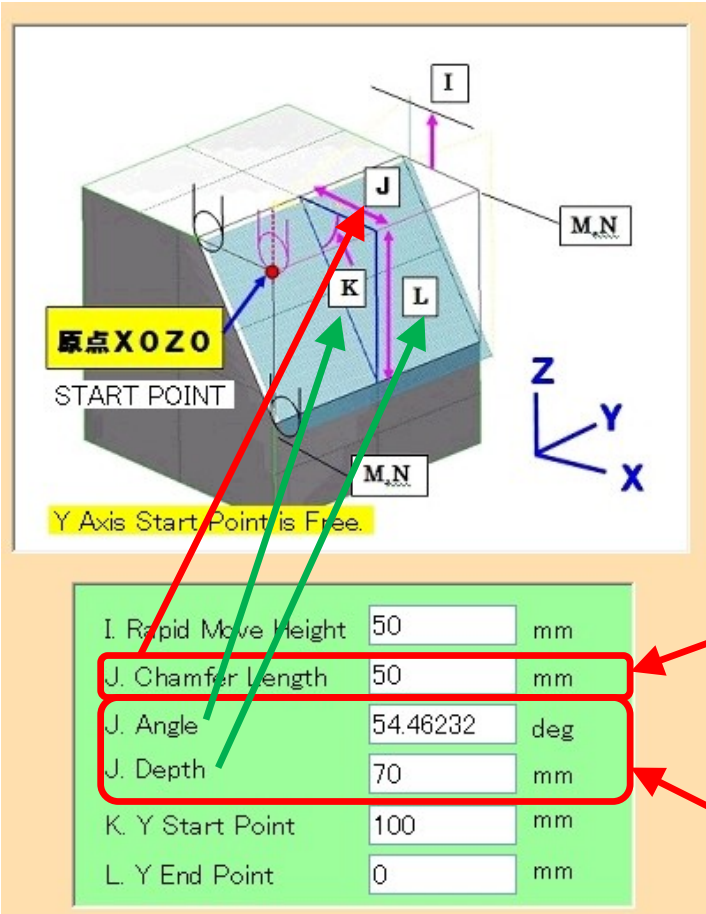
START

CANCEL

**Same as [45-BALL]**

# Data Area

Only a difference with the “45 BALL”is described.

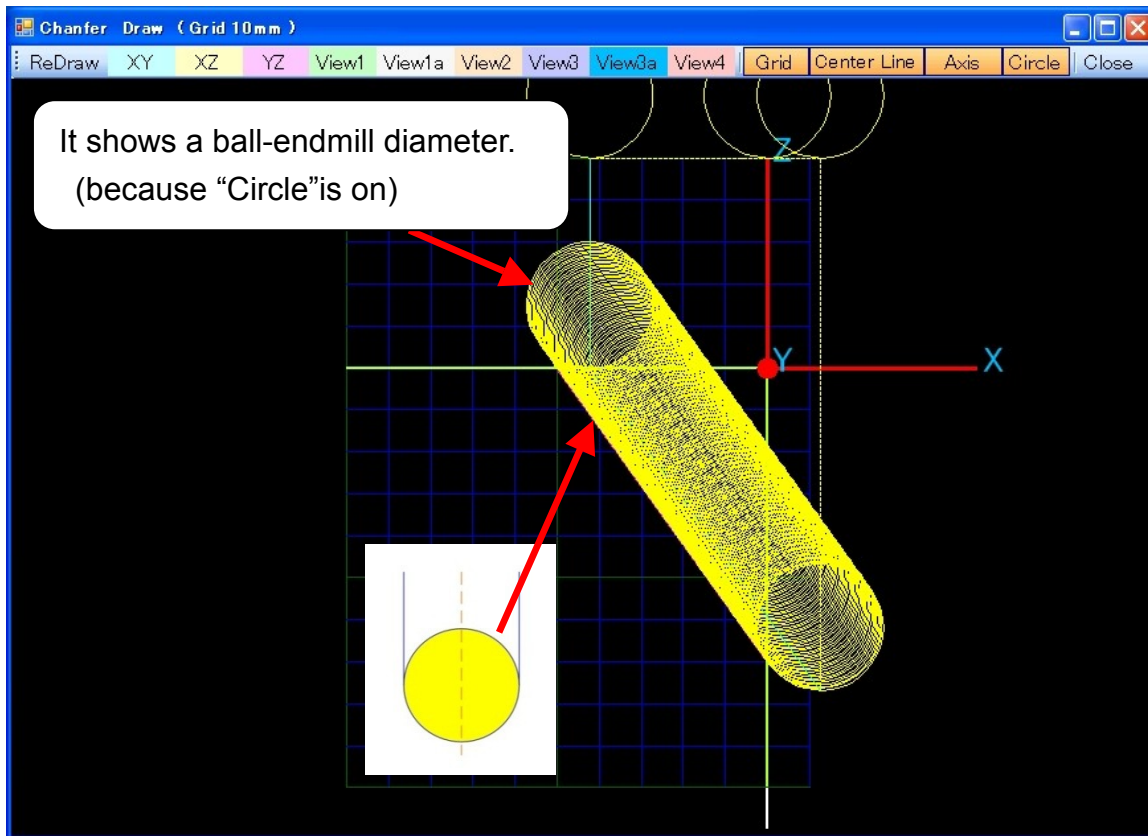


First, You input chamfer length.  
This is a standard.

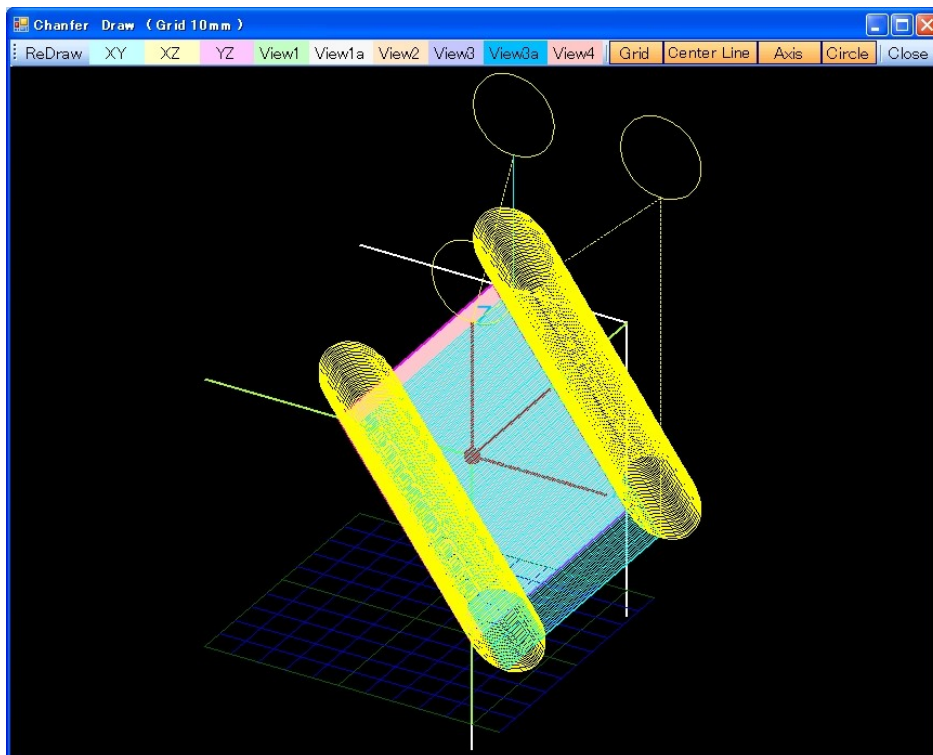
Next, you input an angle or a depth.  
When moving a cursor to another place, the other is computed.

# 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