FastCAM®

The World Standard in Profiling Software
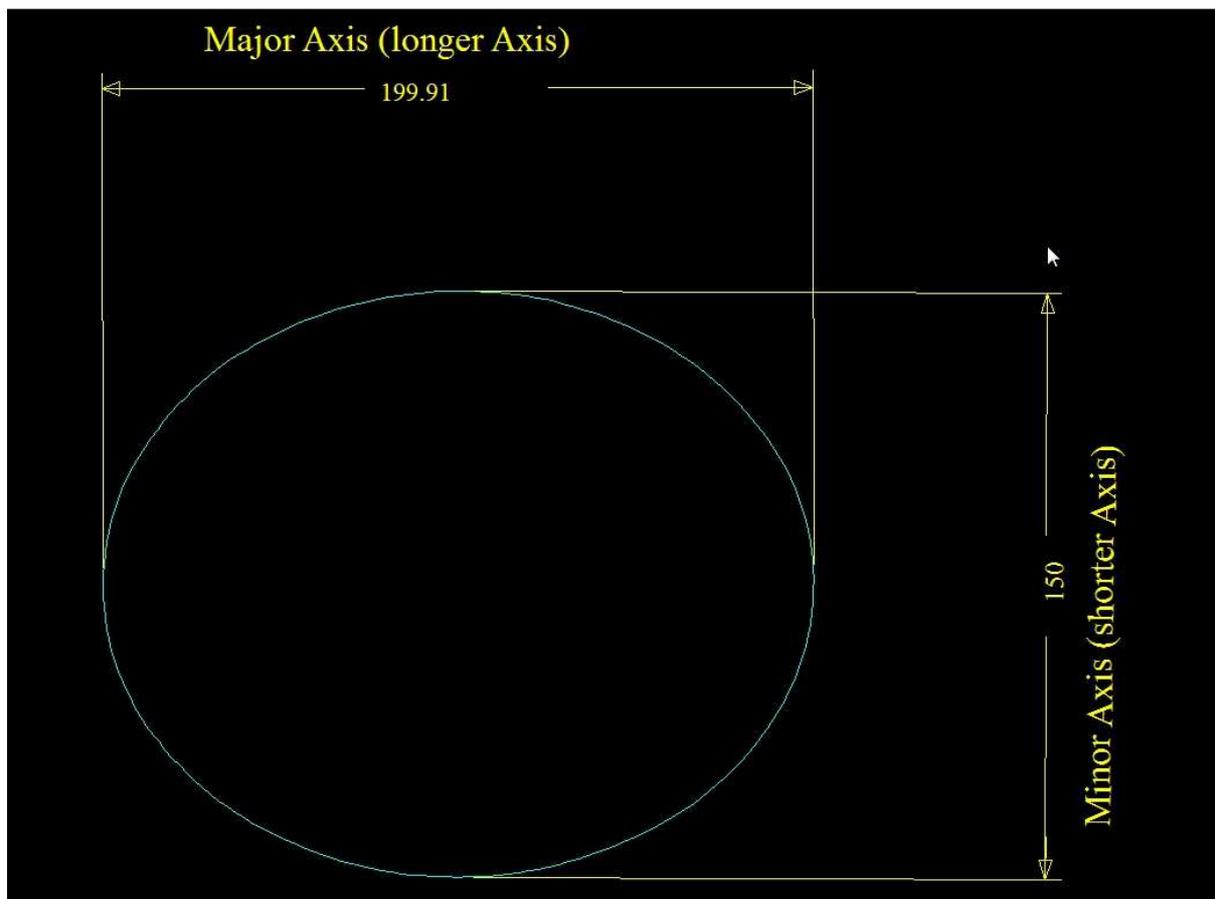
How to…

Draw an ellipse or oval in FastCAM?

Requirement – identify the Major ,Minor Axis length, and know the acceptable tolerance.

Summary of step to Draw an Ellipse

- Access the Ellipse item.
- Specify 2 points to make up the major axis of an ellipse
- Specify the length of the Minor Axis.
- Specify the Maximum deviation / tolerance for FastCAM provide a curve fit to approximate the elippse.
- Final check to accept or re-try building an ellipse with new settings.

Access the Ellipse item.

Look under the Constructs menu in FastCAM, and find the Ellipse, it is the first item in the Construct List.
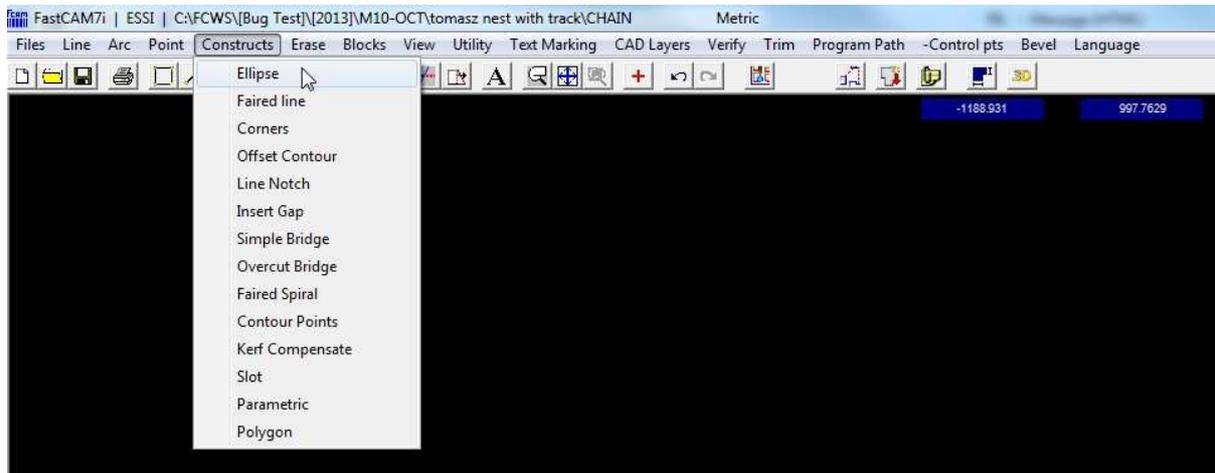
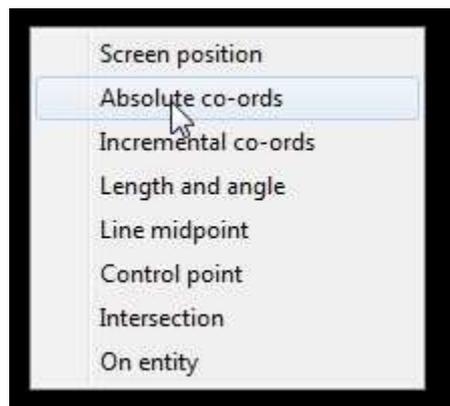## Specify the Major Axis of the Ellipse

As per drawing lines, use any of the points specification methods to indicate the start and end of the ellipse major axis. The examples below uses Absolute Co-ordrinates to specify the start and end of a 200mm major axis.

Upon choosing Ellipse, FastCAM will provide the message below:
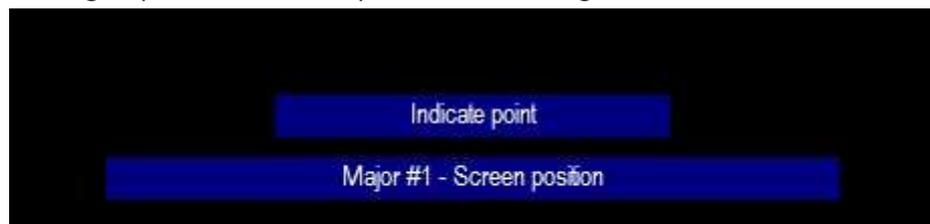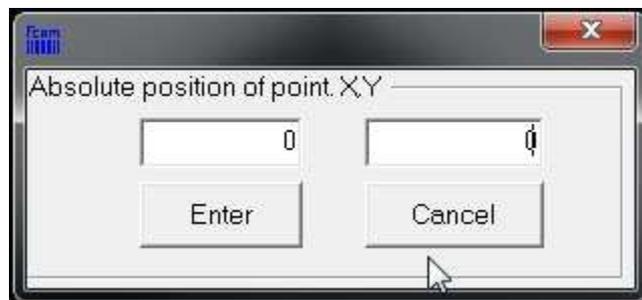

Typically the initial point system is in Screen Position from when FastCAM launches, Right click on the mouse to select the co-ordinate system of your choice.
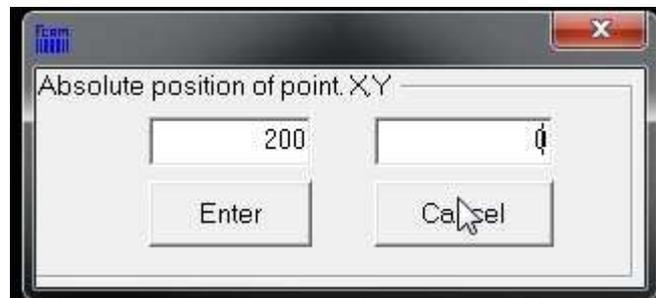
In this example absolute co-ordinate is used.

Absolute start point in x and y axis (0mm,0mm)

Absolute end point in x and y axis (200mm,0mm)

This sets a major axis of 200 mm in length. You will notice the blue message confirms the major axis length.

Moving on…

Specify the Minor Axis Diameter.

A new text box will appear, asking for the length of the Minor Axis.
Initially the number displayed is the same as the Major Axis length.

Change the Minor Axis diameter to the length required.
In this example, Minor Axis diameter is changed to 150mm.

Moving on…

# Specify the Maximum deviation / tolerance

FastCAM stays within the tolerance and provide arcs to curve fit and approximate an ellipse.

In this example, a deviation of 1mm is set.

This deviation settings affects the number of entities required to produce the target ellipse.

The lower the deviation setting, the more entities required, and vice versa.

The goal is to use the largest acceptable deviation for the job so that entities number is minimised. For most CNC machine, processing smaller number of entities will allow for smoother motion around the ellipse.
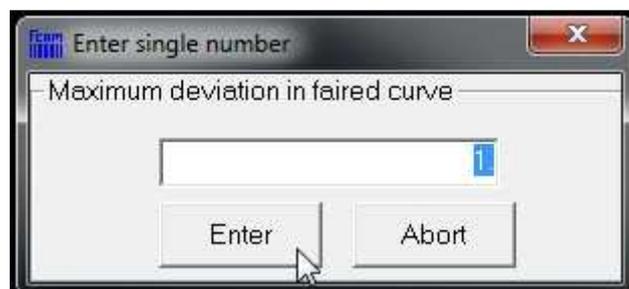
Final check to accept or re-try with new settings.

Upon entering the axes and deviation data, FastCAM will display the ellipse.

In this example, the tolerance was 1mm and the Major axis sits within the tolerance.