

# Using the MicroScribe to Input Data into Mastercam Design

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This document will guide you through the process of using the MicroScribe to input data into Mastercam Design. MicroScribe Utility Software (MUS), from Immersion Corporation, will be needed to format the data correctly for use within Mastercam. Information on MUS can be found on the Immersion web site:

<http://www.immersion.com/>

Any questions regarding this document may be directed to support@immersion.com via e-mail or by calling 408-350-8830.

## Set-up MUS:

1. Launch *MUS*.
2. Start *MUS* from the *Programs* menu or by double-clicking the desktop icon.
3. Click on the *MicroScribe Configuration* icon, in the middle of the bottom row . Choose *Metric* or *Standard* units. Click *OK*.
4. Click on the *Format Strings* icon at the top left of *MUS* . Set the format strings in *MUS to Mastercam (2D)* or *Mastercam (3D)*. The (2D) string will only capture XY data. The (3D) string will capture XYZ data.
5. Click on the *Reference Frame* icon in *MUS*, second from the left in the top row . Choose the *Custom* option.
6. Place the MicroScribe stylus where you would like the origin of your physical workspace to be. Click with the left foot pedal or hand switch to define the origin. A green check mark will appear next to the *Origin* label.
7. Place the MicroScribe stylus in the direction you would like the positive X-axis to be in relation to the origin. Click with the left foot pedal or hand switch to define the X-axis direction. A green check mark will appear next to the *X Direction* label. If the green check mark does not appear and a red X is shown near the bottom, you must select a new position for the X Direction.
8. Place the MicroScribe stylus in the direction you would like the positive Y-axis to be in relation to the origin. Click with the left foot pedal or hand switch to define the Y-axis direction. A green check mark will appear next to the *Y Direction* label. If the green check mark does not appear and a red X is shown near the bottom, you must select a new position for the Y Direction.
9. The green arrow near the bottom right will verify that you have defined a valid *Reference Frame*. If a red X appears select the *Origin* button again and redefine the three points.
10. Click *OK* to use the *Custom Reference Frame* just defined.

## Set-up Mastercam:

1. Start *Mastercam Design* from the programs menu or by double clicking the desktop icon.
2. To ensure proper units, click on *Screen* in the main menu in Mastercam, then *Configure* in the *Screen* menu to display the *System Configuration* pop-up window. Here you can change the *Current Configuration File* to *English* units or to *Metric* units, whichever you chose in *MUS*.
3. Set the GS-view construction plane to *Isometric*. This is done by clicking the *Gview*:

*Isometric* icon .

4. Although the *Construction Plane* can be set to your own preferences, the *Isometric* view is the easiest view to visualize an entity. Set the *Construction Plane* to 3D by clicking the



*Cplane (3D) Icon*

5. Pressing *Alt + G* will enable the grid parameters pop-up window. Click on *Active Grid* and/or *Visible Grid* and make desired selections to activate the grid.

### Digitizing Data into Mastercam:

1. In the main Mastercam menu click on *Create*.
2. Click on any one of the features in the *Create* menu:
  - Point*
  - Line*
  - Arc (circle)*
  - Spline*
3. Your choice will be dependent on what you are digitizing. Creation of each entity type is explained below.

### To Create Splines:

1. Choose *Splines* from the *Create* menu, and then click on *Manual*.
2. The type of *Spline* can be changed by clicking on *Type*. Every time you click *type* it will toggle between *P* for *Parametric* and *N* for *NURBS*.
3. *Sketch* will automatically be selected after you click *Manual*.
4. Before starting to input points move the mouse cursor into a view port.
5. Place the MicroScribe stylus tip where you would like to input points. Each time the foot pedal or hand switch is clicked a point on the *Spline* will be input.
6. To close the *Spline*, place the last point with the mouse. The cursor will automatically snap to the start point of the *Spline*. Press the *Escape* key to finish the command.
7. To tumble the view in Mastercam click the *Gview (Dynamic)* icon , click on the grid; use the mouse to change the orientation of the view. Click the mouse once more to finish the command.
8. Use the *Fit* icon  to center what you have digitized.

### To Create Lines:

1. From the main menu select *Create*, and then select *Line*.
2. From the *Line* menu you can select several different line options. The most common line types to digitize with are the *Endpoints* line and the *Multi* line.
3. Once you have selected your line type, the *sketch* command will be chosen automatically.
4. Begin digitizing the line, to close a section use the mouse to snap the final point.
5. To complete the line, press the *Esc* key.

### To Create Points:

1. From the main menu select *Create*, and then select *Point*.
2. From the *Point* menu, you can choose several options to create points. The common point option to digitize with is the *Position* command.
3. Choose *Position*, the *sketch* command will be chosen automatically.
4. Digitize the required points, then press the *Esc* key to complete the feature and to return to the main menu.

### To Create Arcs/Circles:

1. From the main menu, click on *Create*, and then click on *Arc*.

2. From the *Arc* menu choose the appropriate feature either being an *arc* or *circle*. Arc options include *Polar*, *Endpoints*, *3Points*, and *Tangent* arcs. The circle options include *2 pts*, *3pts*, *pt+radius*, *pt+diameter*, and *pt+edge*.
3. Digitize the required points for the entity, when completed press the *Esc* key.

**To Create Surfaces in Mastercam:**

1. Choose *Surface* from the *Create* menu.
2. From the *Surface* menu you can choose several different methods to surface an entity. Your choices are *Loft*, *Coons*, *Ruled*, *Revolved*, etc. To create a surface using a common group of curves select *Loft* from the *Surface* menu.
3. Select the required curves, in order, to create the desired surface or select one of the modes available in the *Loft* menu to create the surface. Select *Done*, and then select *Do it*.
4. When completed the surface will be generated.