

Using Autodesk Inventor with the MicroScribe 3D

Inputting Data in Autodesk Inventor

Configuring MicroScribe Utility Software

MicroScribe Utility Software is a free utility from Immersion Corporation. It formats the XYZ data from the MicroScribe and emulates keyboard key presses to enter data into various programs able to accept keyboard data entry. The *Autodesk Inventor* Format String in MicroScribe Utility Software will allow you to input 2D data with the MicroScribe. MicroScribe Utility Software may be downloaded from <http://www.immersion.com/>

Any questions about these directions may be sent to microscribe_tech@immersion.com

To use MicroScribe Utility Software with Inventor:

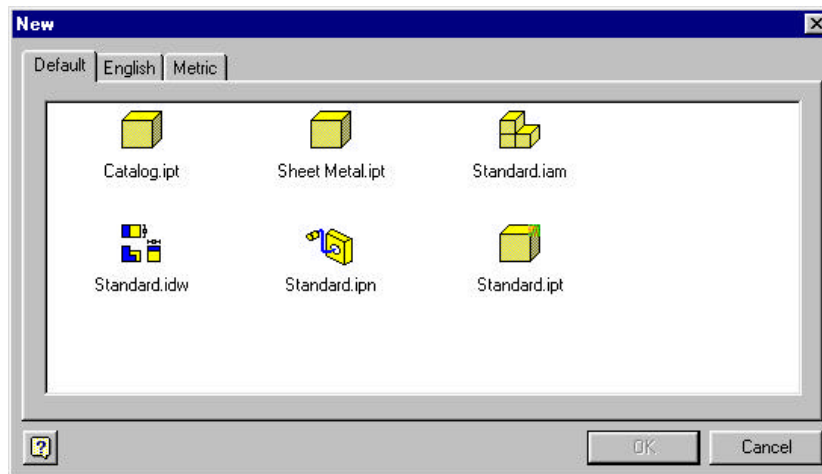
1. Launch MicroScribe Utility Software.
2. Click on the **Format Strings** icon.
3. From the *Select Format* list choose the *Autodesk Inventor* Format String.
4. Verify that the format string is as follows "%.4ft%.4fn". If it is not, follow instructions in the MicroScribe Utility Software help to change the format string to the one above.
5. Click *OK*.
6. Click on the **Reference Frame** icon.
7. Select either the **World Frame** or **Custom** option.
 - **World Frame** uses the default reference frame the MicroScribe establishes on start up.
 - **Custom** allows the user to define where the origin and X- and Y-axes are in the physical workspace. For more information of **Custom Reference Frames** see the help files of MicroScribe Utility Software.

The following is a list of sketch commands that can allow *"precise input"*.

| <u>Command Name</u> | <u>Coordinate Interpretation</u> |
|---------------------|----------------------------------|
| Line | Relative |
| Spline | Absolute |
| Center Point Circle | Absolute |
| Ellipse | Absolute |
| 3-Point Arc | Absolute |
| Center Point Arc | Absolute |
| 2-Point Rectangle | Relative |
| 3-Point Rectangle | Absolute |
| Point, Hole Center | Absolute |

Using each command:

1. Launch Autodesk Inventor.
2. Select **New** from the **File** menu.
3. The **New** dialog box will appear.



4. Choose any of the file types with an **.ipt** extension.
5. Select **Toolbar > Precise Input** from the **View** menu.
You are now ready to start sketching.

Digitize a Line: (Do not use this command)

Inventors' *"Precise Input"* dialog box interprets data in the **Line** command as **relative**. The MicroScribe uses **absolute** coordinates. Due to this difference, any digitized data will be incorrect.


It is not recommended to use the **Line** command with the MicroScribe.

Digitize a Spline:




1. Select the **Spline** icon.
2. If it is not visible click the down arrow next to the **Line** icon.
3. The **Spline** icon will now be available.
4. Start digitizing the spline with the MicroScribe.
5. You may use both the mouse and the MicroScribe to pick points for the spline.
6. Right click with the mouse and select **create** to complete the spline.

Digitize a Center Point Circle:


1. Select the **Center Point Circle** icon .
2. Place the stylus at the center point of the circle.
3. Digitize a point.
4. Move the stylus to any point on the diameter of the circle.
5. Digitize a point.
6. A circle will be created.

Digitize an Ellipse:


1. Select the **Ellipse** icon .
2. If it is not visible, click the down arrow next to the **Circle** icon.
3. The **Ellipse** icon will not be available.
4. Place the stylus at the center of the ellipse.
5. Digitize a point.
6. Move the stylus to a point defining major diameter.
7. Digitize a point.
8. Move the stylus to the point defining the minor diameter.
9. Digitize a point.
10. The ellipse will be created.

Note: Steps 6-9 can be reversed. You may select the minor diameter and then the major diameter if preferred.

Digitize a 3-point Arc

1. Select the **3 Point Arc** icon .
2. Place the stylus at the start point of the arc.
3. Digitize a point.
4. Move the stylus to the end point of the arc.
5. Digitize a point.
6. Move the stylus to any other point on the arc.
7. Digitize a point.
8. The arc will be created.

Digitized a Center point Arc

1. Select the **Center point Arc** icon .
2. If it is not visible, click the down arrow next to the **3-point Arc** icon.
3. The **Center Point Arc** icon will not be available.
4. Place the stylus at the center point of the arc.
5. Digitize a point.
6. Move the stylus to one end point of the arc.
7. Digitize a point.
8. Use the mouse to move the cursor and preview the arc direction.
9. Move the stylus to the opposite end point on the arc.
10. Digitize a point.
11. The arc will be created.

Digitize a 2-Point Rectangle: (Do not use this command)

Inventors' "Precise Input" dialog box interprets data in the **2-Point Rectangle** command as **relative**. The MicroScribe uses **absolute** coordinates. Due to this difference, any digitized data will be incorrect.

It is not recommended to use the **2-Point Rectangle** command with the MicroScribe.

Digitize a 3-point Rectangle:

1. Select the **3-point Rectangle** icon.
2. If it is not visible, click the down arrow next to the **2-point Rectangle** icon.
3. The **3-point Rectangle** icon will not be available.
4. Place the stylus at a corner of the rectangle
5. Digitize a point.
6. Move the stylus to one of the adjacent corners of the rectangle. (Not diagonally)
7. Digitize a point.
8. Move the stylus to a third (different) corner.
9. Digitize a point.
10. The rectangle will be created.

Digitize a Point, Hole Center:

11. Select the **Point, Hole Center** icon.
12. Place the stylus anywhere you want to create a point
13. The point will be created.

Using the Auto Plot Feature:

This feature allows users to capture data at defined intervals of distance. It is ideal for uniformly spacing points along a curve. It **only** works with the **Spline** command. For more information on using this feature see the help files of MicroScribe Utility Software.

Using the Scan Planes Feature: (Do not attempt to use)

The **Scan Planes** feature allows users to create 2D cross section curves of 3D objects. The user defines a series of virtual planes. Then, each time the MicroScribe stylus passes through one of the planes, data is collected.

Note: Due to the inherent workflow of **Inventor**, where the user is required to create 2D geometry on a series of sketch planes, it is **not possible** to use **the Scan Planes Feature of MicroScribe Utility Software**.