

## MicroScribe: Using MicroScribe in Pro/ENGINEER on PC Systems

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The following documentation is intended for those wishing to use Pro/ENGINEER with MicroScribe desktop digitizing systems. It guides users from point collection in Excel to importing the points into Pro/ENGINEER. MicroScribe Utility Software (MUS) is needed to capture XYZ data from the MicroScribe for collection into Excel. Information on MUS can be found on the Immersion website:

<http://www.immersion.com>

This document assumes that your MicroScribe is correctly connected and communicating with your computer and that MUS is installed. Any questions about this process may be e-mailed to [support@immersion.com](mailto:support@immersion.com).

### Collect points from the MicroScribe using MUS and Excel

1. Launch MUS.
2. From the *Format Strings* menu, choose Excel.
3. Launch Excel. Be sure it is the active window by clicking in a cell.
4. Input points from the MicroScribe. The points will appear as XYZ values.
5. Save the Excel file as Text (Tab delimited) using the *Save As* option from the *File* menu.
6. Close Excel.

### Rename the file with a .pts extension

1. In Windows Explorer choose *Folder Options...* from the *View* menu
2. From the *View* tab be sure that *Hide file extensions for known files types* is NOT checked.
3. In Windows Explorer right click on the name of the txt file saved in Excel, then choose *Rename*.
4. Rename the file with .pts extension. An error message may appear advising that changing the extension may make the file unusable. Ignore this alert and click *OK*.

### Create a Datum Point Array in ProEngineer

1. Launch Pro/ENGINEER. Start a *Part* from the *New* menu.
2. Read the points into Pro/ENGINEER using *Feature; Create; Datum; Plane; Default*. Select or enter the name of the ".pts" file.; *Done*.
3. Choose *Create; Datum; Point* from the menu.
4. Choose *Offset Csys* from the *DATUM POINT* menu.
5. Pro/ENGINEER displays the *POINT ARRAY* menu, which has the following options:
  - *Without Dims* (recommended)--Create a non-parametric datum point array. The system does not assign names or modifiable dimensions to individual points in the array. This option is recommended when the number of points is large.  
Note: The values in a non-parametric datum point array can be changed using *Redefine*, *References*. However, the number of points in the array can only be added by using *Enter Points*.
  - *With Dims*--Create a parametric datum point array that can contain up to *100 points*. NOTE!
6. Choose *Set Crd Sys* to select or create a coordinate system. The system displays the *GET COORDS* menu. (for more information, see *Coordinate Systems* in the Pro/ENGINEER help).
7. Set the coordinate system type by selecting *Cartesian* from the *SET CSYS TYP* menu
8. Choose one of the *DTM PNT ARR* menu options:
  - *Read Points* (recommended)--Read coordinates of the datum points from a file. Enter the name of an ASCII file that contains rows of offsets in the appropriate format, or the name of an IGES file. The ASCII file format can contain point numbers in the first column. When the system reads the file, these numbers are ignored.

The ASCII file should be formatted so the three coordinates for each point are on one line. If more than three numbers are on one line, the system assumes the second, third, and fourth are the coordinates of interest. This means that you can number datum points, if desired. You can separate the coordinates using spaces or tabs, and the coordinates can be integers or floating-point numbers. *The file name should end with the extension ``.pts``.*

- *Enter Points*-- At the prompt in the Message Window, enter the directional offsets (X, Y, and Z; r, theta, and Z; or r, phi, and theta) for one or more datum points.

The datum point array table will not be saved to disk unless you subsequently save the points using the option Edit Points in this menu, or Output in the PNT ARR TBL menu. In this case, these points appear in the NAMES menu name list when you choose Redefine or Modify and select by name. Once added to an array table, these points also appear in table arrays for the Modify or Redefine commands.

- *Edit Points*--Use the system editor to enter rows of offsets for each datum point in the array, then exit from the editor. Pro/ENGINEER saves the array table for this array of points in a disk file named coordsysname.pts.#, where # is the version number that is automatically updated each time you write the file.

You can use any combination of these techniques for the current coordinate system. When a datum point array is created, the system immediately displays points that have been successfully read or entered (before you select Done) as white X's without tags.

9. If desired, you can set up a new coordinate system and specify more points by repeating Steps 6 through 8.
10. When you have finished, choose *Done*. The system displays the datum point names in yellow and displays their tags in white. In the feature information, Pro/ENGINEER displays a table of the coordinate system names and the offsets of the points for the datum point array.