

This document is a subset of the MapScenes Training Manual available from Vector Research. ([www.vector-research.com](http://www.vector-research.com)) The actual manual is in excess of 380 pages and is provided in a 3-ring binder in full colour. This document, and the complete manual are Copyright ©2001 by Vector Research. All Rights Reserved.

# Understanding MapScenes Parts Libraries and Symbol Creation

## **Creating a Symbol and Creating a Library Entry for the new Symbol**

The process of creating a Symbol in MapScenes is a complex procedure, but the result is well worth it. For the purposes of this document, the terms Part, Symbol, Block, and Cell are interchangeable and your choice of term will likely be determined by your exposure to other CAD products.

The Technical Description is divided into several themes.

1. Creation of the Symbol
2. Defining the Symbol
3. Saving the Symbol
4. Creating a Bitmap Preview
5. Adding a Symbol to a Parts Library

## Technical Description

### Creation of the Symbol

A Symbol in MapScenes is simply a drawing with a defined insertion point. Thus, any drawing can be inserted into another drawing, but a Symbol will have a pre-defined Insertion Point.

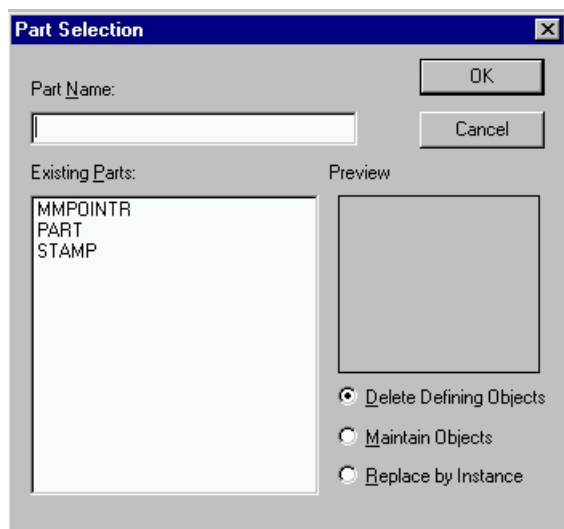
The creation of the Symbol will not be analyzed here in great detail, mainly because it's the same as creating any drawing. It is sufficient for our purposes here that you understand the difference between a Symbol and a Drawing.

### Defining a Symbol

Once your Symbol is created to your satisfaction, choose

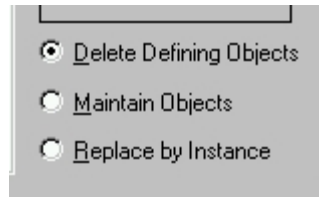
Symbols | Define Symbol

This will cause the following dialog to be displayed.



Enter a name for your new Symbol. A Symbol can only be defined with an upper case name, but it doesn't matter whether you use lower case of upper case letters. MapScenes will enter whatever you type as upper case only.

Once you have named the Symbol, you can choose one of the three options on the right hand side of the dialog box.



The options are:

### **Delete Defining Objects**

This option, when selected will cause the items that make up your Symbol to be deleted from your drawing when you create the Symbol. The Symbol still exists as an internal Symbol in that drawing, but it is no longer a visible entity in your drawing.

### **Maintain Objects**

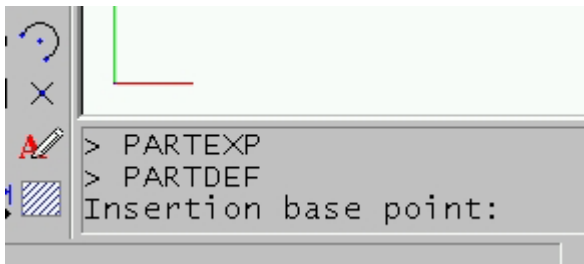
Selecting this option will cause the objects that you have included in your definition of your new Symbol to be left untouched when the Symbol is defined. In addition, the Symbol is now available as an Internal Symbol in your current drawing.

### **Replace by Instance**

This option deletes the defining objects and replaces them with an instance of the Symbol. In addition, the Symbol is now available as an Internal Symbol in your current drawing.

Click on OK.

MapScenes will ask you to set the "Insertion Base Point". (This appears in the Command Buffer.)

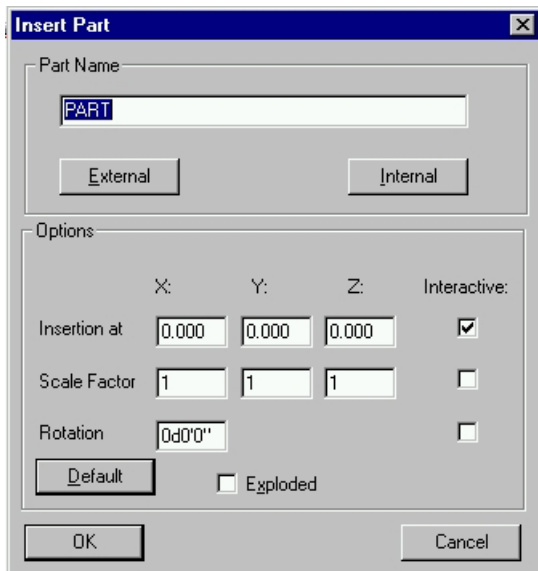


Select a point on your Symbol to be used as the Insertion Base Point.

MapScenes will then ask you to “Select objects:”. Use the normal selection process to select all of the items that you wish to include in your Symbol. When you are done, press “ENTER” or right click in the drawing window to complete the selection.

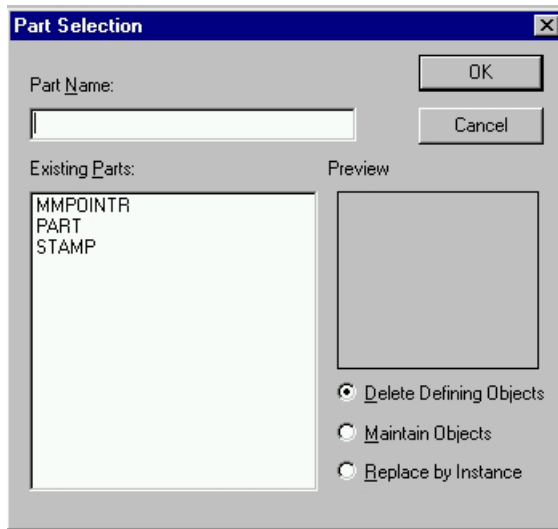
The Symbol has now been defined. Depending on your choice of option as outlined above, the defining parts may still be visible, or they may not.

The Symbol is now available within this drawing. If you choose Symbols | Insert Symbol..., you will see the “Import Part” dialog box as shown below.



The “Import Part” dialog has several options. The first section is called “Part Name” and this section allows you choose the Part that you want to insert. You can choose one of two buttons; External, or Internal. The part that we just defined is only available from within this drawing, so it is considered an “internal” part.

If we click on “Internal”, we will see a new dialog box that allows selection of an internal part.



In this dialog, we can choose from one of the parts available within this drawing. When we choose one of the parts the preview box on the right shows us what the part will look like.

If we would choose “External”, we would be presented with a dialog box that would allow us to browse the folders on the computer looking for a file to insert. Remember that we can insert any drawing into our current drawing, the difference between a drawing and a Symbol being that a Symbol has a user-defined insertion point.

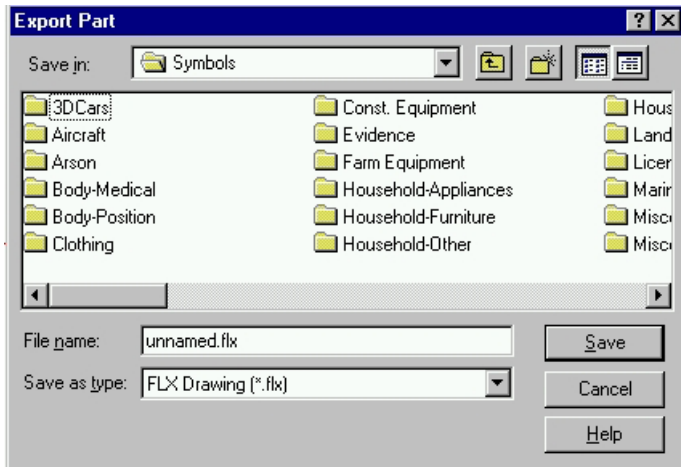
### **Saving the Symbol**

The act of writing a Symbol file is the first step in creating a Symbol for use in additional drawings. Once this is completed, the Symbol file will be available for insertion into any active drawing.

In order to save a Symbol file, you must have defined or used the symbol in the active drawing. The Symbol may be defined separately from this command, or it may be done on the fly with the Write Symbol File command.

Select Symbol | Write Symbol File...

This will cause the dialog box on the following page to be displayed.



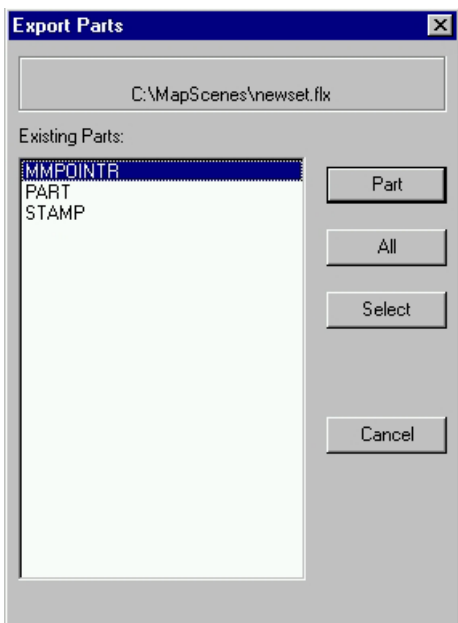
Navigate to the folder that you want to save the Symbol in.

*TIP: Due to the way that the Parts Library system works in MapScenes, it is best to use the MapScenes/Symbols folder for your symbols.*

Then, type in a name for the Symbol. (Note that the type of file is a drawing, or \*.flx.)

Click on “Save”

Next, the Export Parts dialog will show. This dialog allows you to select the “Symbol” that you want to Export.



The top of the dialog box displays the name that the new Symbol will be saved as.

The next section of the dialog shows the components of the current drawing that are available to be saved as a new Symbol.

On the right are four buttons. They are; “Part”, “All”, ”Select”, and “Cancel”.

If we are saving a Symbol that has been previously defined, we would choose “Part” after selecting the appropriate Symbol from the list. The Symbol would then be saved and available to any active drawing.

Choosing “All” will cause the entire current drawing to be saved as a Symbol.

If we select “Select”, MapScenes will allow you to select the components of the drawing that you want to use for your Symbol. In this case, MapScenes will first ask for an Insertion Point. Once this point has been defined, MapScenes will prompt you to begin selecting components of the symbol. Once you have finished selecting parts, right-click the mouse or press enter. The Symbol will then be saved.

Clicking on the “Cancel” button will cause MapScenes to exit the “Write Symbol File” command and nothing will be saved.

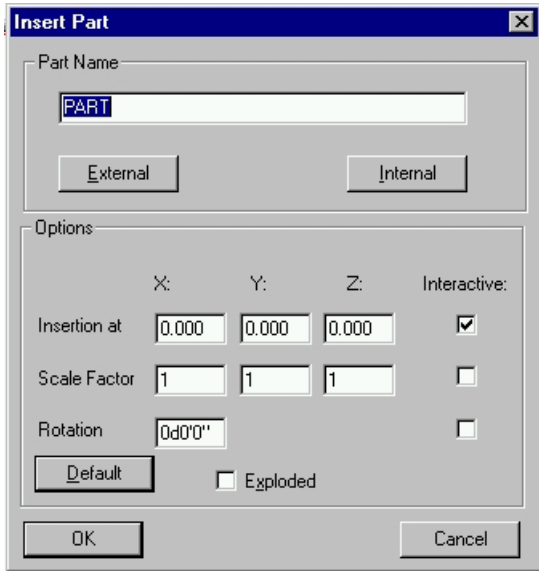
Once the Symbol has been saved, we can use this Symbol in any drawing. Unfortunately, when MapScenes saves a Symbol in this manner, it doesn’t create a bitmap for the preview box. This is simple to fix.

### **Creating a Bitmap Preview**

To create a Bitmap Preview, we have to open and save the Symbol file as a drawing. First, let’s confirm that a Preview Bitmap was not created.

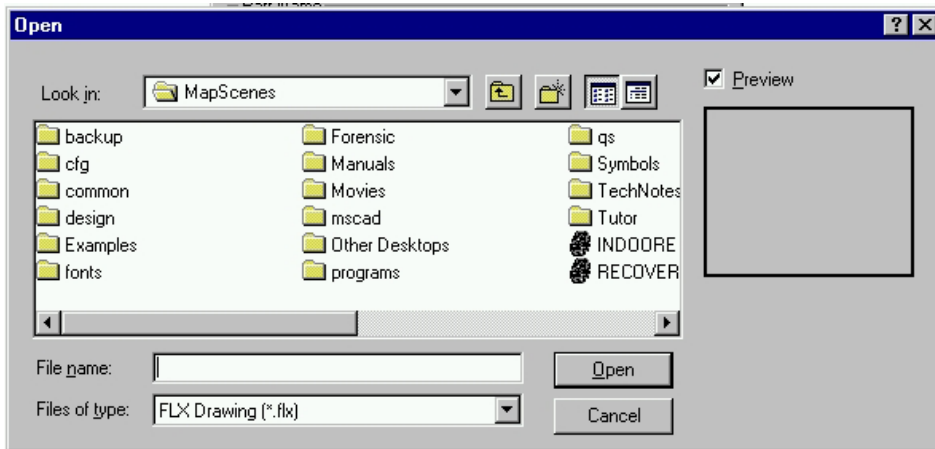
Choose Symbol | Insert Symbol

The following dialog appears.



Choose the “External” button.

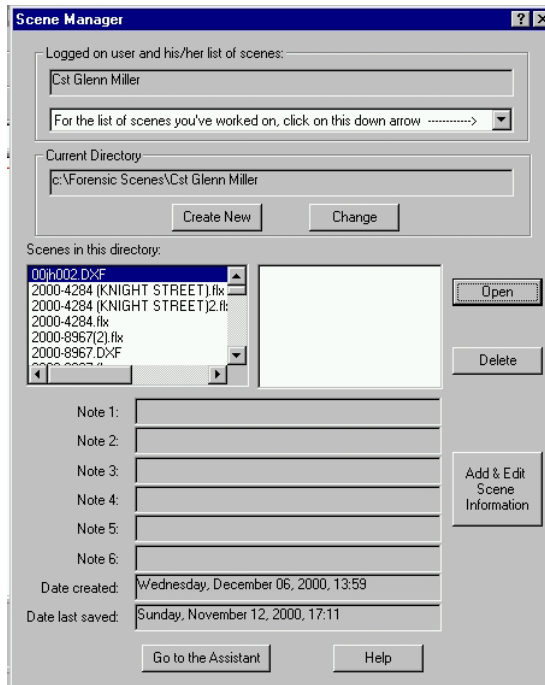
MapScenes will then display;



Navigate to the folder that your Symbol was saved to and select it. Ensure that the “Preview” box is checked and note that there is no preview displayed when your recently saved part is selected.

Select Cancel on the “Open” dialog, and Cancel again on the “Insert Part” dialog.

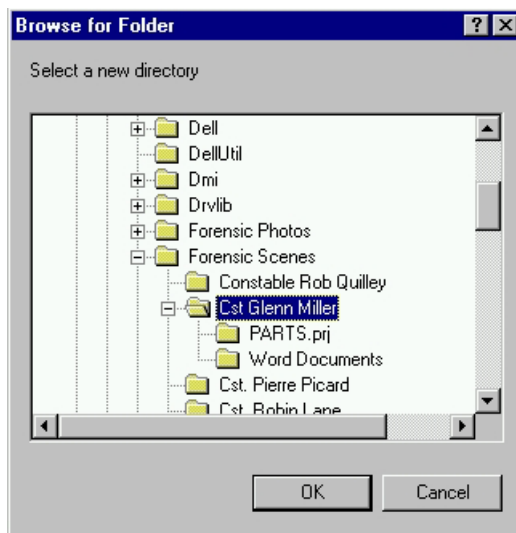
Select File | Open Scene



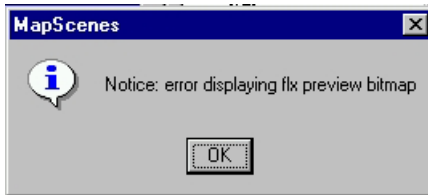
The “Scene Manager” dialog is displayed. In order to select the file that we just saved, we must first change folders to the Symbols folder, as MapScenes opens, by default, in the Forensic Scenes folder for the current user.

In the section labelled “Current Directory”, choose “Change”.

This causes the “Browse for Folder” dialog to be displayed.



Navigate to and select the MapScenes/Symbols folder. Immediately upon selecting this folder, you will likely see a new dialog titled “MapScenes” with the message, “Notice: error displaying flx preview bitmap”.



Click OK.

Ensure that the correct file is selected in the “Scenes in this Directory” section. You may have to click OK on the error message dialog again.

Choose “Open”

This will open the file that you selected.

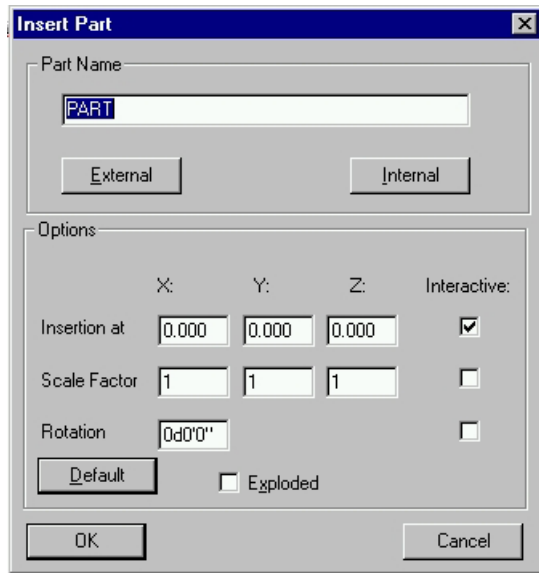
Once the file has loaded, Close the Assistant if it opened, and Choose File | Save

This action will cause MapScenes to create the Preview Bitmap.  
Close the file.

Now we can see the Preview Bitmap when we select the Symbol in the Insert Part dialog.

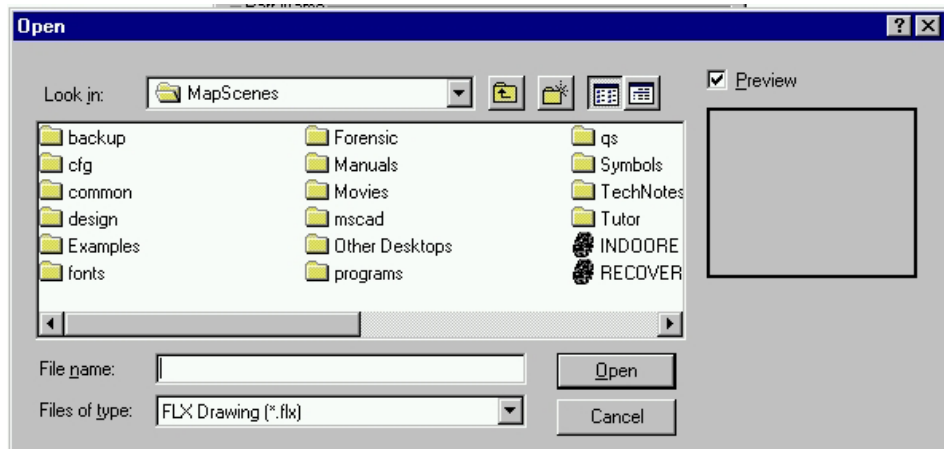
Choose Symbols | Insert Symbol

The Insert Part dialog appears.



Click “External”

The Open Dialog appears.



If the Open dialog is not pointing to the MapScenes\Symbols folder, navigate to that folder now. Select the Symbol you just saved.

Note that the Preview BitMap now displays.

### **Adding a Symbol to a Parts Library**

In MapScenes, Symbols may be inserted in many ways. They can be inserted as an Internal Part, as an External Part (a file on the hard drive available to any active drawing), or as part of a Parts Library.

The advantage of using a parts library is that Symbols may be automatically scaled to compensate for differences in measuring systems, or for other purposes.

For example, if a particular Symbol was created in the US measurement system, it would become too large if inserted into a metric drawing, as MapScenes creates drawings as units. If you created a car 15 units long in a drawing that was using the US measurement system, and then imported that car into a metric drawing, the car would be imported as a 15 unit long vehicle, but the car would now measure 15 metres long, which would be over three times too large.

Using a Parts library to dynamically scale these Symbols allows the free exchange of Symbols across borders. If your acquaintance in Germany had created a Symbol of a VW Golf GTI in metric, it could be imported through a parts library with a scale factor, and still be scaled appropriately for your drawing using US measurements.

MapScenes uses a multiple menu system to facilitate this functionality. When you tell MapScenes that you are creating a drawing in US measurements, MapScenes will load the US menus. If you are creating a drawing in metric, MapScenes will load the metric menus. There are four menus available to MapScenes, a basic and advanced menu for each measurement system.

The main difference between the metric and US menus is that the metric menus point to metric Parts Library files and the US menus point to US Parts Library files.

A Parts Library file is simply a text file read by MapScenes which tells it how to load the Library dialogs that allow the preview and selection of a Symbol for insertion. The act of selecting the appropriate library, by going to Symbols | MapScenes Symbols → and then choosing one of the library entries—causes MapScenes to load that Library file and then display all of the Symbols entered in that library.

The user can then select the symbol and have it inserted.

In order to add a Symbol to a Parts Library, we have to first ensure that the Symbol file has been saved to the MapScenes\Symbols folder.

Next, select Symbols | Symbol Library Setup

MapScenes will display the following dialog box and ask you to choose the library file that you wish to edit.

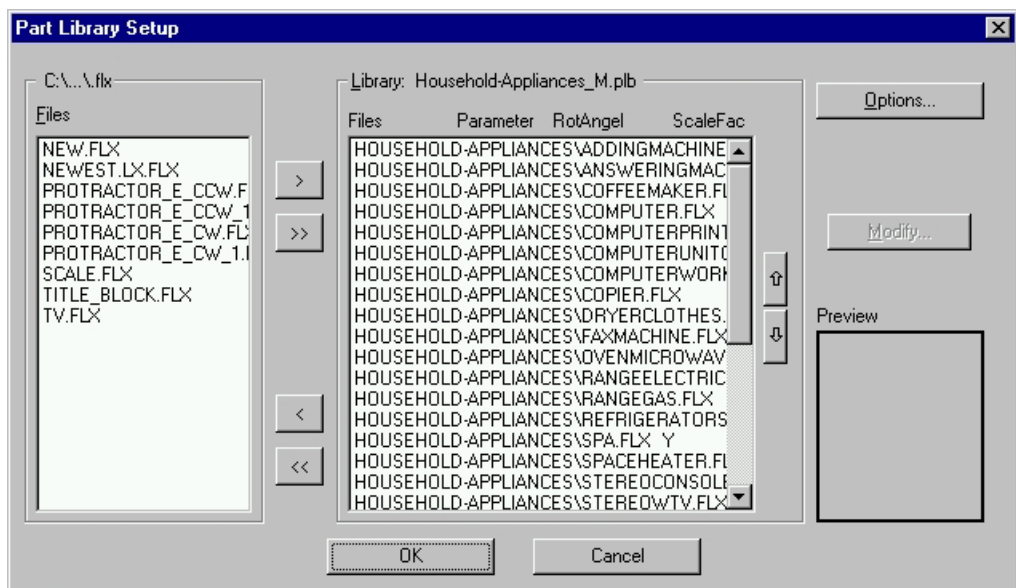


MapScenes library files use the .plb extension. If you are in the MapScenes\Symbols folder, scroll to the right and you will see a number of files with the .plb extension.

Select the file that you want to add your Symbol to. Remember that the files with a name followed by \_M are the metric Parts Libraries. If you want to modify a metric library, choose this one. Otherwise, choose the file without the underscore followed by the upper case M.

TIP: If you add a Symbol to a Parts Library and then are unable to find the part that you added when browsing the library, you either chose the wrong library, or you have the wrong menu system loaded.


Once you select a library, you will see the “Part Library Setup” dialog.



The white box on the left contains the Symbols that are available to be added to the library. MapScenes looks at the .flx files in the folder, and then compares this list to the list of files already contained in the library (the files in the second white box). The files that exist in the folder, but are not contained within the library are deemed available to be added to the library and are then displayed in the white box on the left.

***TIP: MapScenes Parts Library Setup looks in the folder that the Parts Library is located in when it looks for files to add to the library. There is no way to change this default action at present. Thus, since the parts library is located in the MapScenes \Symbols folder, MapScenes will only display uncommitted .flx files that are also in the MapScenes \Symbols folder.***

MapScenes will not move the file once you add it to a parts library. It will simply reference the Symbol from it's present location.

Select the file that you want to add from the white box on the left, and click on the  button to add it to the list on the left.

NOTE: It will be added to the bottom of that list, and will thus be the last Symbol available as you scroll through the list.

To the right of the second white box, are two arrow buttons – one pointing up and one pointing down. To change a Symbol's position in the list, simply select that Symbol's name and click the up or down buttons.



Other options such as the scale factor can also be set here. To access these options, click on the “Modify” button on the right. If the “Modify” button is grayed out or “unavailable” select another Symbol name and then the one you want again.

When you click the “Modify” button, the Preview window is replaced with a check box and a scale and a rotation input box. First, make sure that the “Insert Parameters Activated” check box is selected, and this will allow input into the other two boxes.

The rotation can be determined here by simply entering the desired value. The same method determines the scale factor.

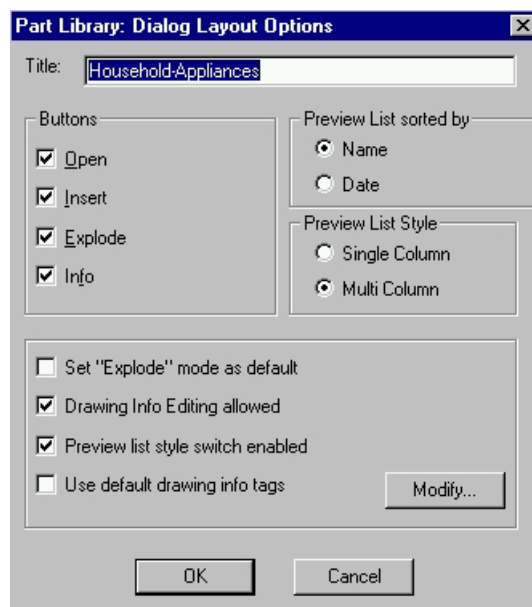
***TIP: The scale factor to change a US drawing (feet) to metric is 0.03, to change a drawing from inches to metres is 0.0254, and the factor to change a metric drawing to feet is 3.28.***

Once you have entered the values that you want to use, **you must click on the “Apply” button or the changes will be lost as soon as you select any other button.** The Apply button appears in the same spot the “Modify” button was located.

**NOTE: If you do not follow this process and select the “Insert Parameters Activated” check box, the Symbol will be sized dynamically by the mouse pointer upon insertion.**

There is one more option available on the Part Library Setup dialog box. This button accesses options that affect the entire library. These options are accessed by clicking on the “Options” button.

Selecting the “Options” button causes MapScenes to display the “Part Library – Dialog Layout Options” dialog box.



The first part of this dialog allows you to set the Title of the Parts Library when the library preview dialog is displayed. The next portion, along the left side, determines which buttons are available to the user when they browse the library. On the right, we can set the Preview list to be sorted by date or alphabetically, and below that, we can choose whether nine pictures are displayed in the Preview List (multiple column), or three (single column).

Below that are four important options. The first, “Set “Explode” mode as default” causes Symbols to be exploded upon insertion into their constituent parts by default. The next option determines whether MapScenes allows the User to modify the Symbols information boxes.

Next is the “Preview List Style Switch enabled”. This determines whether users are permitted to switch between the single or multiple column Preview views.

The final option determines whether MapScenes overrides all of the drawing info tags with a standard set.

Click OK to cancel this dialog and OK to Cancel the Part Library Setup dialog.