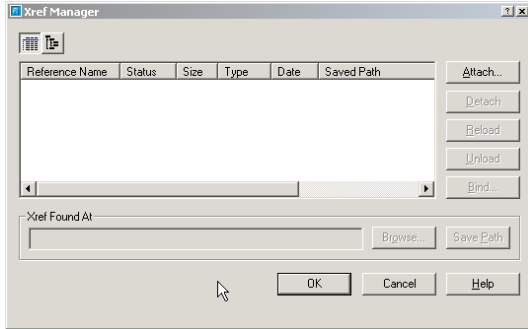
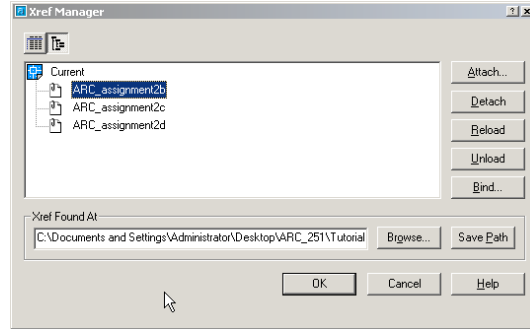


AutoCad Advanced Commands

EXTERNAL REFERENCE



[1] xref manager list view



[2] xref manager tree view

XREF<RET>

Pick the "Attach" button.

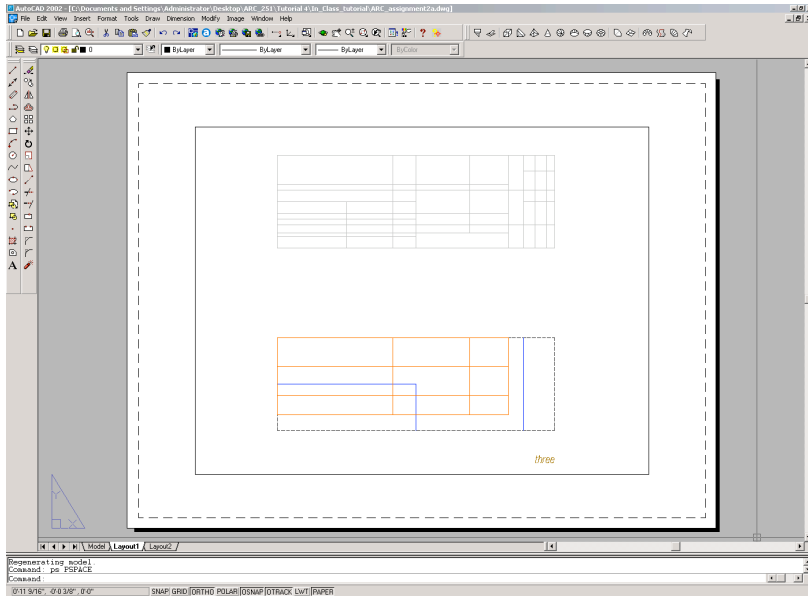
The "Select File to Attach" Dialogue box will appear. Find the drawing you want to attach on your computer and double-click on its name. You can change the folder or the drive to search for the file.

Remove the check mark from the box "Specify on screen." This will automatically position the XREF at the insertion point 0,0,0 and with a rotation angle of 0 (which is normally what you want).

The advantage of using XREFS instead of simply INSERTing a drawing file into the drawing you are working on is that whenever you open the drawing or plot the drawing, the updated and latest version of the attached drawing is shown within your drawing. These can be very useful for mechanical, electrical, and plumbing (so-called "MEP") drawings which would use the XREF of the architectural floor plan. Thus when the architectural floor plan changes, the MEP drawings will be automatically updated.

To allow automatic updating, you must have the XREF drawing on the same "path" (i.e., the same disk drive and sub-directory) on which it was originally attached.

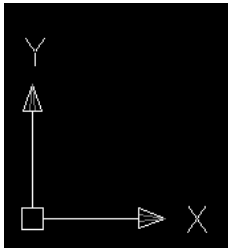
MODELSPACE vs PAPERSPACE



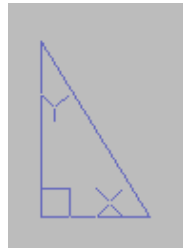
[3] paperspace view

You may wonder why you shouldn't just plot from model space. You can and many people do. But the advantage of plotting from paper space is that you can have many layouts from one drawing. You can even add detail views without having to copy and scale your geometry. This feature has been radically changed in AutoCAD 2000 and is much more versatile.

To toggle between the two spaces, you can double-click on the **TILE** square at the far right side of the status bar. You can also enter the command **TILEMODE** and set it to 0 for paper space and 1 for model space. When you do this, you will notice that the screen went blank and the UCS icon in the bottom left corner changed to a triangular icon. This new icon confirms that you are paper space.



[4] modelspace icon



[5] paperspace icon

When you are in paper space you can draw or insert a title block. In paper space you are still drawing at a 1:1 scale.

Once your title block is drawn, you can create a **floating viewport**. This is a 'window' into your model space. To create a viewport, type in **MV** (for Make Viewport) and then pick two points just as if you are drawing a rectangle. Use as much of your title block as possible.

As soon as your viewport is created, you will see all that you have drawn in model space appear to its fullest extents. The last thing you need to do is to scale your viewport for accurate plotting.

IDM2 School of Architecture
Professor Jeremy Ficca

To do this, you have to 'enter' your viewport. Do this by either typing MS (for model space) or double clicking on the square labeled **MODEL** on the status bar. You will notice that the familiar WCS icon appears in the bottom left corner of the viewport. If you have more than one viewport on the screen, left-click in the one that you want to scale. To scale a viewport, you just use the ZOOM command. Type in Z (ENTER)

SCALE	ENTER:
1/2" = 1'	1/24XP
1/4" = 1'	1/48XP
1/8" = 1'	1/96XP

At the command prompt, you must tell AutoCAD what scale you want the viewport to be. This coincides with the scale that you will plot at.

The table above gives you some sample scales. Take $\frac{1}{4}'' = 1'$ for example. First remember that $1' = 12''$. If you cross-multiply the 12 by the 4, you get 48. Therefore this scale will be at a 1:48 scale (ratio), or in other terms, your model will be $\frac{1}{48}$ th the size of real life on paper. To get AutoCAD to scale the viewport, you must type in 1/48XP. This means $\frac{1}{48}$ th times (X) in relation to paper space (P).

Figuring out what scale you require takes some calculation. You can see what your extents in model space are and then see what your viewport size is. You can also use trial and error to see what fits in your viewport. This can sometimes be quicker than calculating.

To sum this up, here are the basic steps required for using paper space layouts:

1. Finish your drawing (with dimensions) in model space.
2. Change to paper space. TILEMODE to 0 or double-click on TILE
3. Add a title block.
4. Create a viewport using the MVIEW (MV) command.
5. Enter your viewport by typing MS
6. Zoom in using a specific ratio by typing in Z (ENTER) ___/___XP (ENTER)
7. Leave your viewport by typing PS and return to paper space.

One thing that is very important to remember is that you should use paper space only for plotting. **Do not modify your model in paper space.** Return to true model space for any editing that you need to do.