



Module 5

1. Global Options
2. Rotate and Move
3. Importing a Mesh



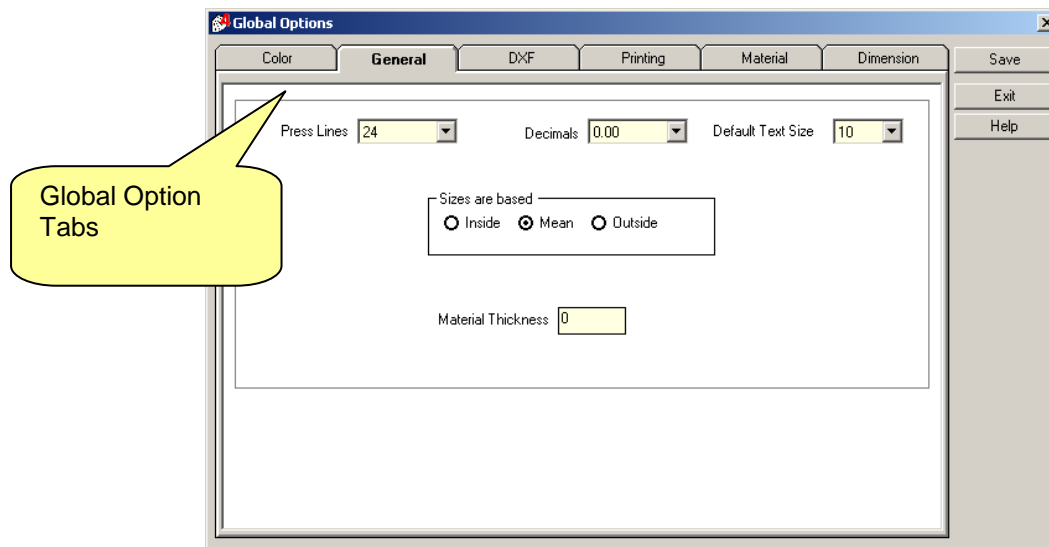
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Mackay QLD AUSTRALIA

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Global Options

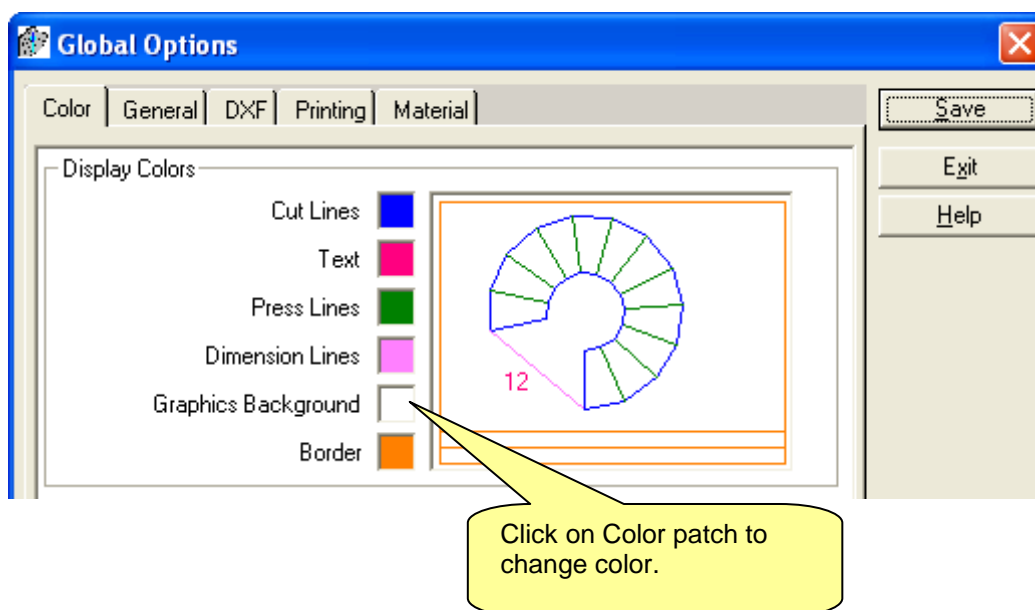
Global Options are settings for default properties, printing, display colors and others. The **Global Options** dialog is displayed by either selecting from the “**Tools**” pull-down menu or from the Right-Click pop-up menu (click the right mouse button while it is over the drawing).



The options are saved as a file on the hard disk and “read” each time the program is started. There are six groups of settings as shown on the tabs of the dialog box and their function is described below.

The Color and Display Options Tab

Controls the color of screen objects such as lines and text. For example, some CAD users prefer to work with a black background and select line colors that contrast to black. To change the background color:

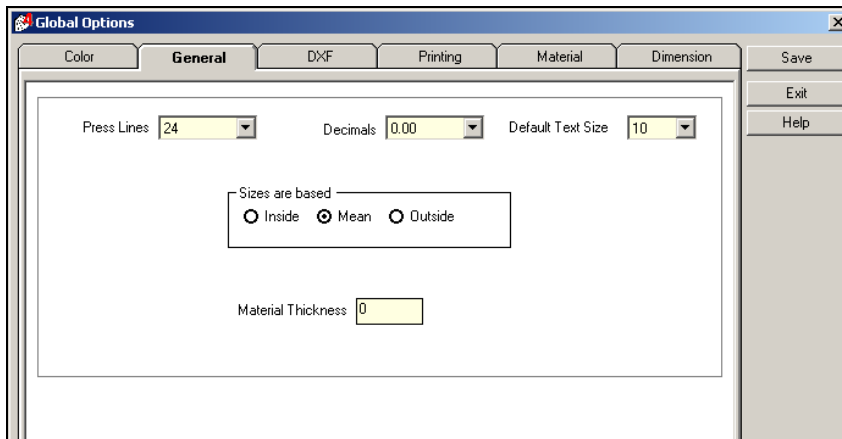




For example, to change the color of the Press Lines, click on the adjacent color patch to show the Color Selection dialog. Select the new color and click the “OK” button to apply the new color.

Repeat this process to change the object color of other objects as required.

The General Options Tab



The General Tab allows a default number of Press Lines to be set. If you find that you always set the number of press lines to 48, for example, set that as a Global Option and it will be the default number for each new shape.

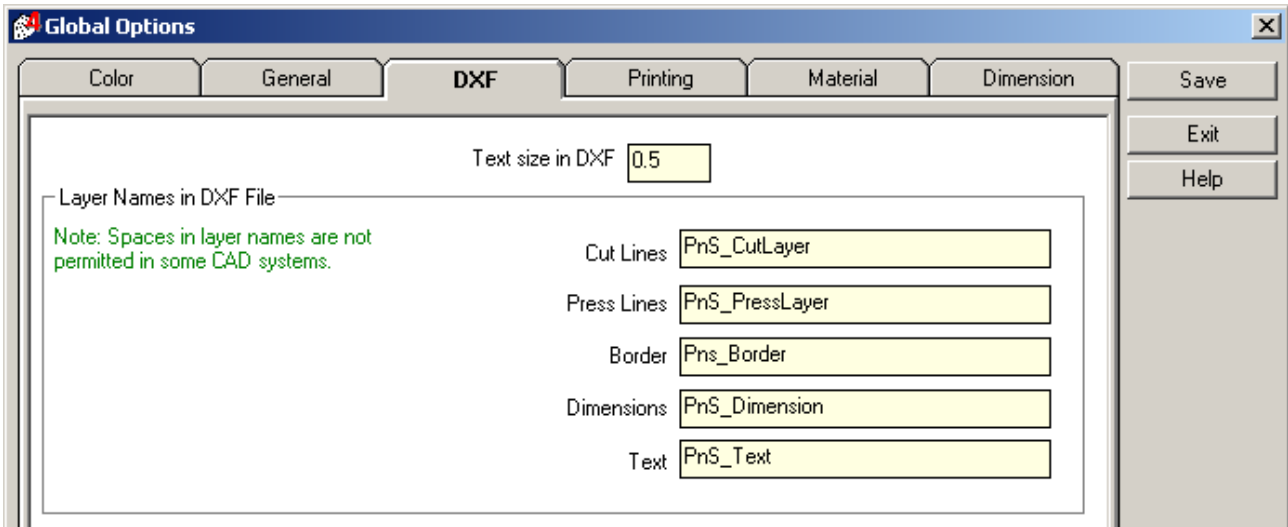
Similarly, you may also set the default text size and the number of decimal places for dimensions and other measurements.

Set the default value for the “**Inside/Outside/ Mean**” option and “**Material Thickness**” for each shape.

For example, if you usually use 5 mm thick material and sizes based on “**Inside**”, you may set these values as the defaults instead of 0.0 and “**Mean**”. You can, of course, always change it as you enter the shape parameters if there is an exception.

The DXF Options Tab

The DXF Tab sets options for exporting DXF files. It also controls how shapes are imported into to AutoCAD.

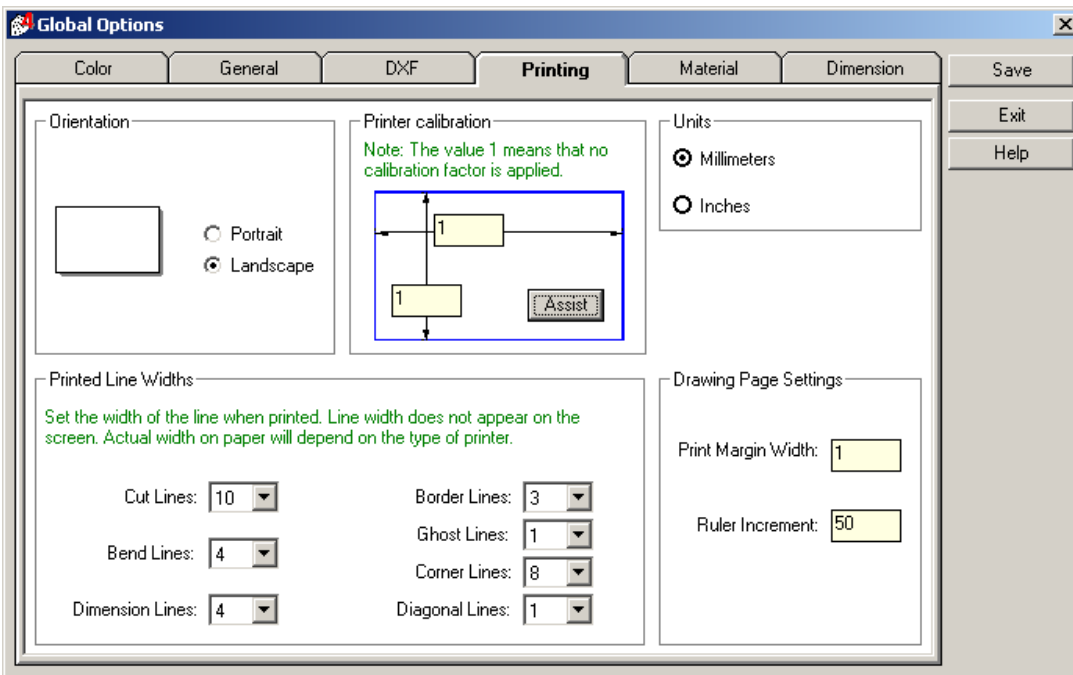


The text size in the AutoCAD DXF is measured in units of measurement (mm or inches), rather than font size. Set the “**Text Size in DXF**” value in the same units that you are using to enter the parameters of the shape.

The layer names will be used in the DXF file. You may enter your layer names here if you have a different layer naming convention or require specific layer names to suit a profile cutter.

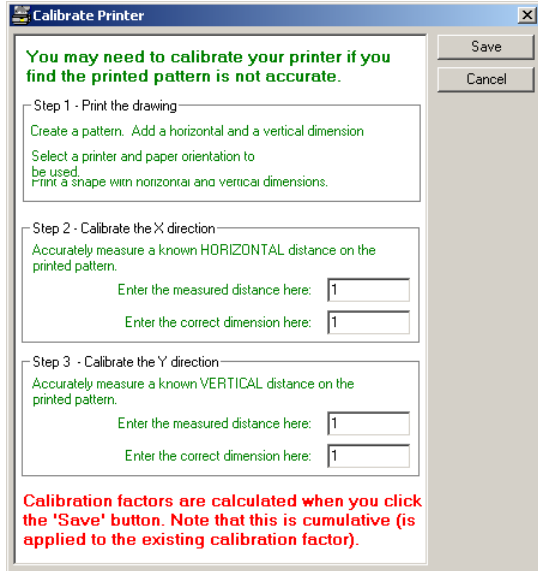
The Printing Options Tab

The Printing tab controls the default settings and appearance of the printed page. Frequently used settings such as page orientation, line width, units of measurement may be set as the “Default” value here.



Printer Calibration

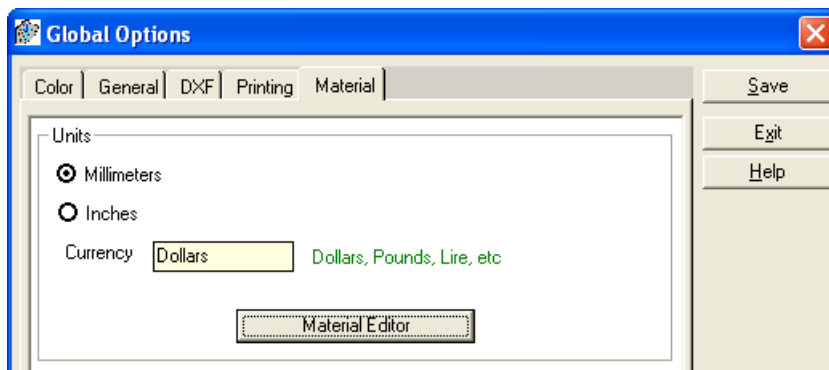
You may find that your printer consistently prints with a scale error in one or both directions. For example, your printer may print accurately in the direction that the printer head moves across the paper but has a small error in the direction that the paper feeds.



Printer calibration compensates for such errors. If the printer is accurate the calibration parameters will be set to 1. If the printed pattern is consistently undersize in one or both directions, enter a value slightly greater than 1.

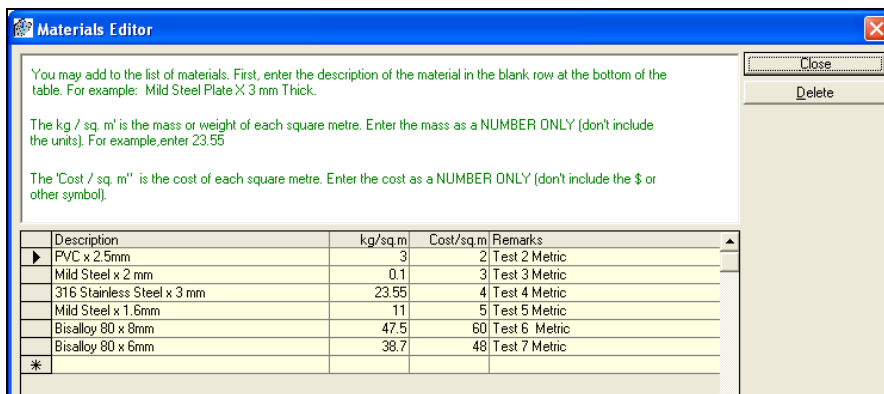
Click the “**Assist**” button for help in determining this value. Note that it may take several attempts to arrive at the correct calibration. Typical values will be quite small variations, such as 1.08 or 0.993. Large values generally suggest an error in the calibration value or a problem with the printer. Note that the calibration factor applied in this way are cumulative.

Material Options



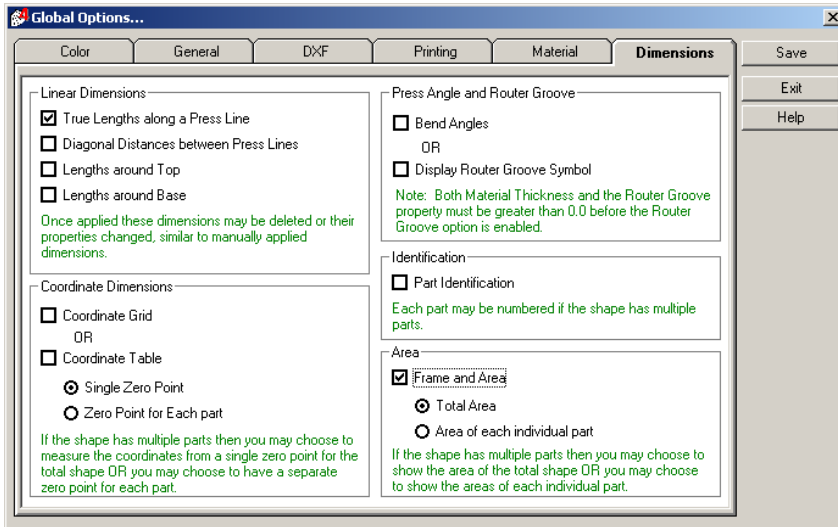
If you are carrying out calculations using area, mass and cost of different materials, these values must be set to get accurate results. Click on the “Material Editor” button.

Material Editor



Enter the properties of the materials being used. The materials shown below are examples only. Note that the materials table will be different if you are using “Units” set to millimeters rather than inches.

Dimension Options



Select Auto Dimensioning defaults. If you usually use the Frame and Area through Auto Dimensioning, you may apply these as default settings so that they are applied each time a pattern is developed.

Move and Rotate Pattern

You may wish to rotate or move a pattern so that it fits better on the available material. When patterns consist of multiple parts (for example, an Elbow) one part may be moved or rotated relative to the remaining parts. **Move and rotate may only be carried out in pattern view.**

The process for both moving and copying consists of three basic steps:

Select the pattern to be moved or copied

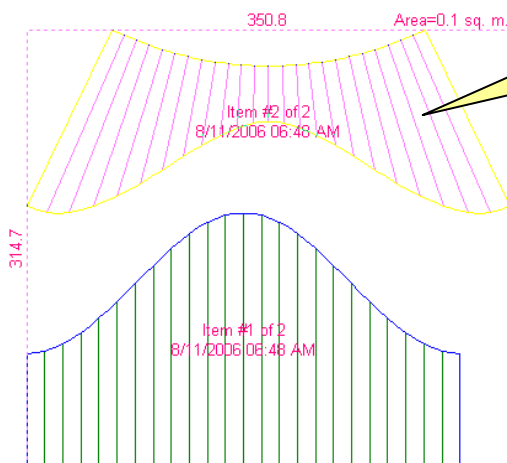
Click on a reference point on the object

Watch an image move or rotate on the screen and pick a second point at the required position or rotation.

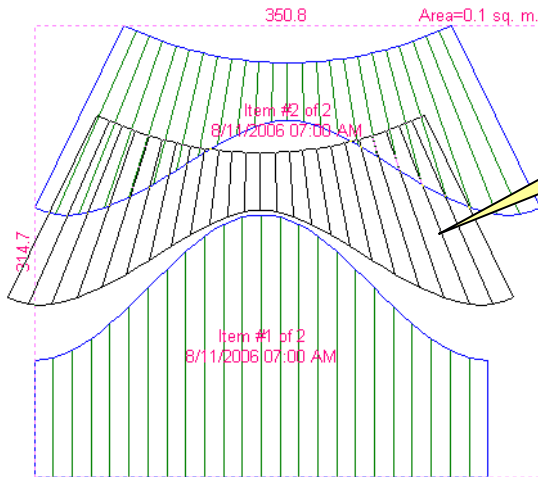


Move Pattern

First select the "**Move**" button on the tool bar.

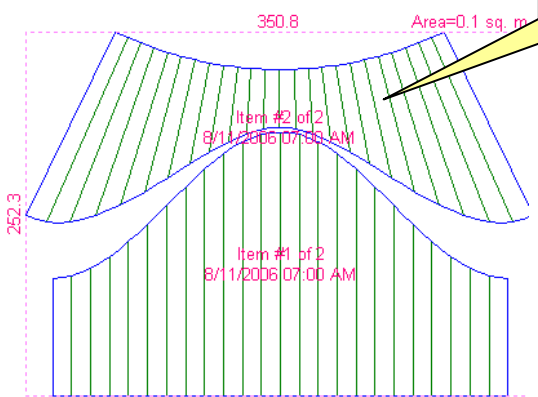


Move the cursor over the pattern. Each part will be highlighted (change color) as the cursor moves over it. Select the shape required to move by left clicking the mouse.



Drag to new location

The cursor will change to a "hand", click down with the left mouse button and drag the pattern to the new position.



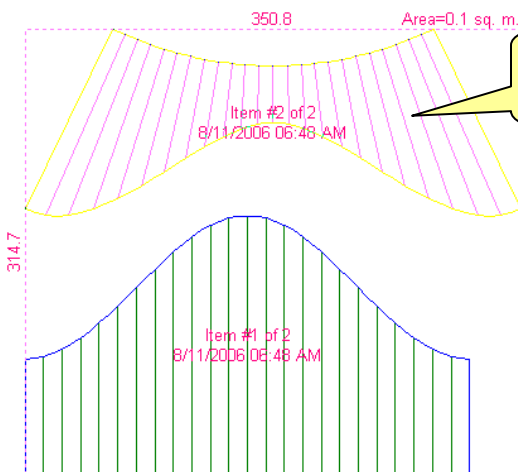
"Drop" in new position

Release the mouse button when it is correctly placed.



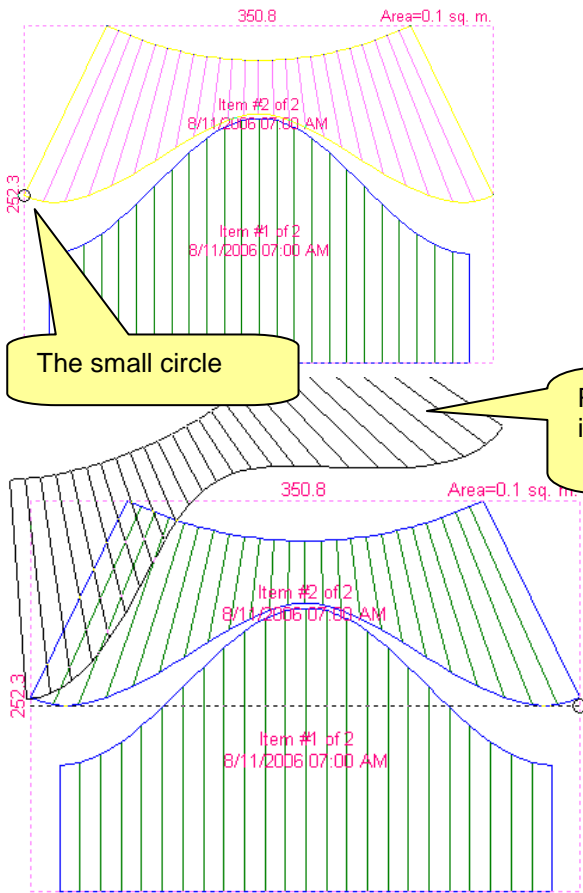
Rotate Pattern

Rotate a pattern around a point.



Pattern highlighted

Move the cursor over the pattern. Each part will be highlighted (change color) as the cursor moves over it. Select the shape required to move by left clicking the mouse.



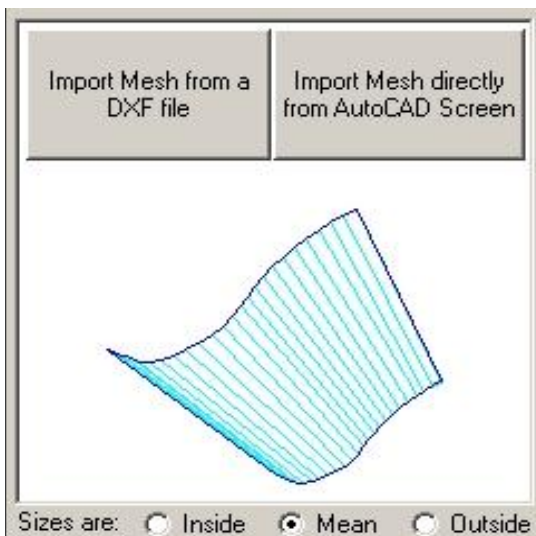
A small circle appears on the pattern. Move it until it is at the required **axis point** and press down with the left mouse button. Hold it down while you select a second point (**rotation point**).

Moving the mouse will cause the shape to rotate around the **axis point**.

Release the mouse button when the shape is at the required angle.

Note: The first and second points of rotation will automatically align themselves to 0 degrees and increments of 5 degrees measured from 0 (the X-Axis). Therefore, if you want points on the pattern to be horizontally or vertically aligned, **pick those points as the axis and rotation points**. The pattern will automatically snap those points to the closest 1-degree increment.

Imported Surface Mesh



A surface mesh can be imported from AutoCAD. It may be selected directly from the AutoCAD screen (full AutoCAD only) or imported as a DXF from a compatible CAD program. The surface mesh may be created in AutoCAD or may have been created in Plate 'n' Sheet and exported to AutoCAD as a 3D wire-frame model and modified.

Notes: This category is used to import a mesh from AutoCAD or compatible CAD program. The mesh must be a **“Ruled Surface”**.

ruled surface is a mesh consisting of straight lines in one direction and may be curved in the other direction.

While other types of mesh may be created in AutoCAD (Edgesurf, Revsurf, etc), the Ruled Surface is the only one we know can be produced by pressing or rolling to shape with standard metal working machinery.

The mesh must have a start and an end edge. If the mesh is created by meshing between two closed shapes (such as circles) this is NOT the case. A small break may have to be made in each closed shape before meshing it to define the start and end edges.

You may import the mesh by using one of the following methods:

A *Import directly from the AutoCAD screen:*

You may select the mesh object directly from the AutoCAD screen. It must be already created and visible on the AutoCAD screen. The AutoCAD version must be 2000 or later and must be the full AutoCAD program (that is, not AutoCAD LT).

- 1 After clicking the button labeled "Import Mesh from AutoCAD" in Plate 'n' Sheet you will be prompted to select a mesh object from the AutoCAD screen. You will receive an alert if a suitable AutoCAD is not running.
- 2 Otherwise, make AutoCAD the active window by clicking its icon on the Windows taskbar, leaving Plate 'n' Sheet running in the background.
- 3 The AutoCAD command line will now be prompting you to select a mesh. Select it by clicking on one of the mesh lines with the left mouse button.
- 4 Next, click the Plate 'n' Sheet icon on the taskbar and the mesh will be imported into the Plate 'n' Sheet session. It may not be visible until you select a view and 'zoom extents'.

B *Import the mesh from an existing DXF file.*

Use this method if you don't have an AutoCAD version as described above. The mesh may be created in any CAD program with this capability and saved or exported as a DXF file.

- 1 Click the "Import Mesh from DXF file" button and select a DXF file.
- 2 The import program will scan through the DXF and find the first suitable mesh, ignoring all other entities and additional mesh objects.
- 3 Select a view and zoom extents to see the mesh.
- 4 The most reliable results will therefore be achieved by selecting a single mesh object for DXF translation in the CAD program used to create it. In AutoCAD this means using the 'Entities' or objects option of the DXFOut command.

Once the mesh has been imported it can be unfolded. Plate 'n' Sheet Professional will triangulate the shape, adding press lines where required (if a face is twisted).