

Vector & Bitmap

G1

Bitmaps - Where the computer remembers the position and colour of every point or pixel of the image

1. **Vector Graphics** - Where the computer remembers the position, type of object and style of object in an image.

This is easier to understand if you see some examples.

Bitmaps

The images on the right and below are bitmap graphics.

On the right is obviously a photograph and is saved as a 'jpg' filetype.' jpg' bitmaps are best when the image is a photograph:



Below are two types of 'gif' bitmap graphics. The first is a simple image using less than 256 colours. The second is animated. 'gif' bitmap images are best for these types of images. Gif images have the

advantage that they may have a transparent background. Try dragging the chess piece over the text on this page to see how a transparent background could be useful.



When a bitmap graphic is magnified you begin to see that it is made up of separate blocks of colour called **pixels**. The image below shows what happens:

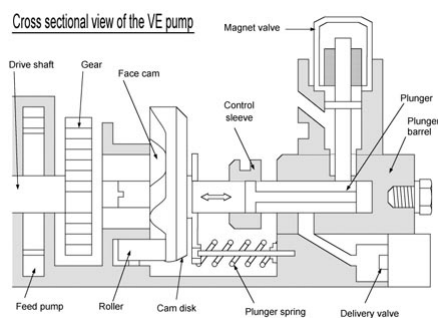


There are a number of programs available for editing bitmap graphics. The table below shows some of them.

Program	Advantages	Disadvantages
MS Paint	Free with your computer	Very limited features
Adobe PhotoShop	Very powerful, lots of features, new features (plugins) may be added. Used by professional graphic designers	Very expensive. Needs a powerful computer with lots of memory.
PaintShop Pro	Very powerful, lots of features, new features (plugins) may be added. Moderate cost.	More technical features, (which you probably would never use), are missing.

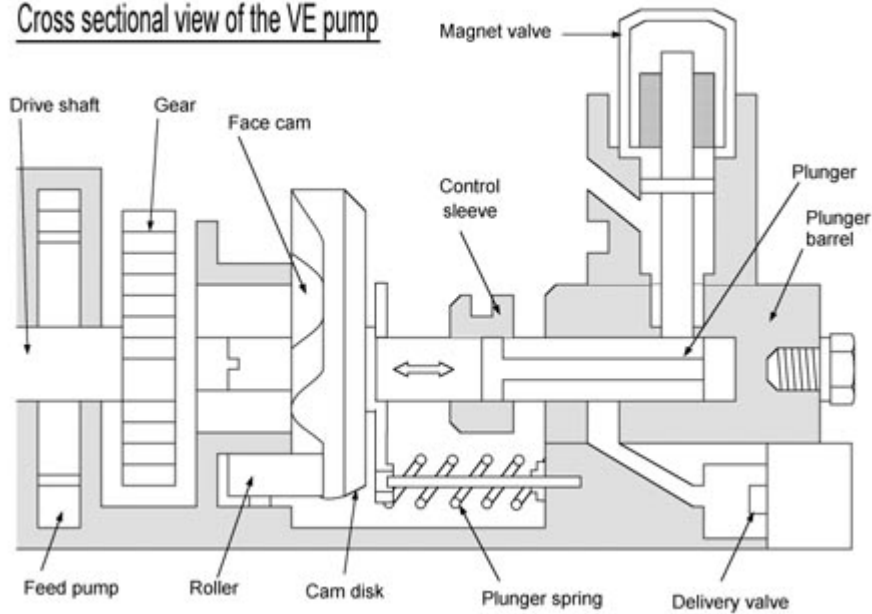
Vector graphics

The second type of graphic you need to be aware of are 'vector' graphics. Below you can see an example:



When a vector graphic is magnified it gets bigger without losing detail:

Cross sectional view of the VE pump



Vector graphics are not good at handling a large range of colours but are excellent for showing detail. The more detail they contain the bigger the file is. Its possible to add a **lot** of detail.

Program	Advantages	Disadvantages
MS Word	The Draw tools are part of Office/Works. Good for quick drawing additions to Word documents.	Very limited features
Macromedia Freehand	Very powerful, lots of features. Used by professional graphic designers. Moderate cost.	
Macromedia Flash	A vector art program used to produce animations. Sound can be added.	Easy to get too involved with your project. Flash is addictive! Some Flash 'swf' files can be HUGE!
PaintShop Pro	Easy to use once you discover the hidden vector graphics editing tools. Easy to incorporate bitmaps.	Most people think PSP is a bitmap only program and overlook it as a vector graphic editor.
Adobe Illustrator	Very powerful, lots of features Used by professional graphic designers.	Expensive. Needs a powerful computer with lots of memory.
Corel Draw	Very powerful, lots of features, new features (plugins) may be added. Moderate cost. Good documentation and extras	Takes a lot of space if you install everything. Not as easy to use as Freehand.