

The difference between the two methods is that the headright zero co-ordinates are at the leading edge of the paper as it enters the printer. For book printing purposes, this is more suitable, as facing pages may be adjusted on either side of the central fold line without having to use negative values for a positive sideways movement.

The second, 'head-right' method, slides the entire text area upwards the whole length of the head-up paper, and then swings round 90 degrees clockwise to the right. The PostScript zero co-ordinate has moved to the top left hand corner of the paper and 'north' now points to the right across the width of the paper.

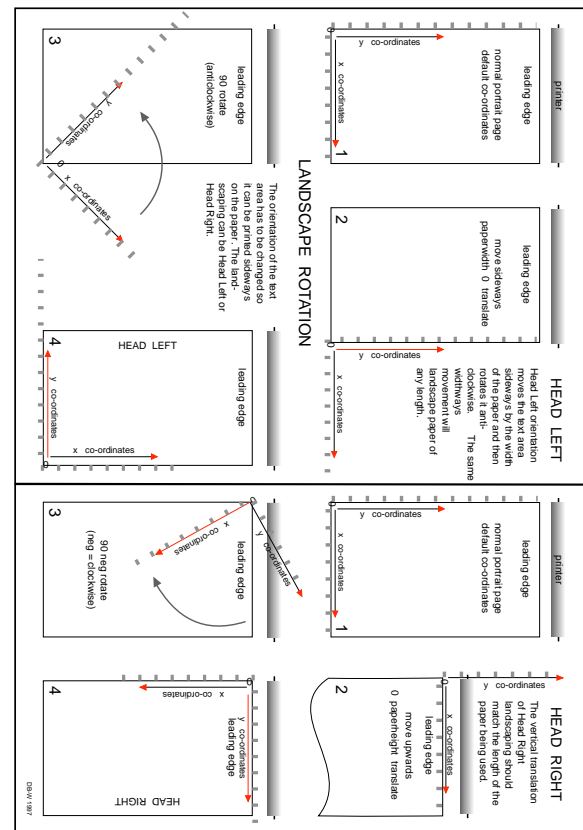
When printing on landscaped paper, the text area (not the paper) is rotated 90 degrees, so that the lines of text are printed sideways. There are two ways of doing this. To landscape 'head-left' imagine the normally upright text area moving sideways to the right hand edge of the paper and then rotating 90 degrees anti-clockwise to the west. The left hand side of the text area now runs along what was originally the bottom of the paper and the PostScript zero co-ordinate has moved to the lower right hand corner.

**Headleft or Headright?**

The PostScript page description language measures distances from the bottom left hand corner of a vertical sheet of paper, with the longer left hand side of the paper pointing to the 'north'. Just to be awkward, most word processor and desktop printing software transfers the zero to the upper left hand corner and measures downhill, so that the first line of text is always at the top of the computer screen or sheet of paper of any size.

Changing the orientation of the paper is confusing. The difficulty is that we normally think of the paper as rotating from head-up portrait into landscape, whereas in fact it is the text area that is instructed to slide or rotate over a sheet of paper of almost any length.

**Orientation**



Four methods of expulsion:  
 1. Printing side up in tray; pages stacked printed side up.  
 2. Printing side up in tray; pages stacked printed side down.  
 To print the reverse, the stack is flipped over.  
 3. Printing side down in the tray; pages stacked printed side up.  
 To print the reverse, pages have to be turned individually.  
 To print the reverse, the stack is flipped over.  
 3. Printing side down in the tray; pages stacked printed down.  
 To print the reverse, pages have to be turned individually.  
 If the printer expects pages as in two and four a straight through path may be available by opening a rear door or shutter. If this isn't possible, cut a piece of half round plastic guttering to the width of the discharge opening, wedge it in place and catch the printed sheets in a cardboard box as they curl backwards out of the machine.

After the first pass, the printed sheets of book pages may need shuffling back into their correct order if they emerge from the printer in reverse sequence, although some printer drivers do allow backward order printing, provided every page has a PostScript %%Page header. Use the manual feed or multipurpose tray for the second printing so that mistfeeding can be spotted before any pages go awry. There are

**Printing Order**

If two sheets are drawn in, do not attempt to drag them out, but let them go through the machine and at the same time draw any remaining sheets in the gripper feed. Usually the accompanying one only needs reinserting in the manual feed for normal printing to resume. Sometimes a sheet will crumple and jam in the machine, usually because the paper is damp. If the jam is part-way through the toner unit, remove the unit and tear the toner-covered part of the paper away from the sheet before pulling it out of the machine. If you don't do this, unused toner is smeared over all the feed rollers and marks succeeding sheets of paper for some time.

machine and it emerges as a finished job. Two-pass duplexing uses external mechanical reversal after the first side has left the laser. The process is useful for printing multiple copies, but not particularly beneficial for printing books in sequential pages.

First, the PostScript file has to be electronically rearranged and the pages re-ordered so that the front and back page pairs are selected alternately. Secondly, the amount of money needed for the duplexing mechanism and the necessary additional printer memory is much better spent on a small folding machine. This cuts the time to produce a book block ready for binding by about 90%.

**Toner**

Learn how to fit long-life OPC drums and refill your own cartridges. The average refilled cost per impression is about 75% less than a new one. I have one cartridge on its third refill approaching a total of 17000 impressions; still good for text, line drawings, and halftones. Ask for matching empty cartridges from anyone who throws them away and refill them. To save dismantling, you can bore a refilling hole, when you know where, using a piece of half-inch copper tube, suitably heated.

The gripper may offset toner on the page margin when printing the back pages if your front side text is too near the edge of the paper. If possible, leave three-quarters of an inch margin for 2up two-sided printing, although this is not always practicable with Letter paper and you may need to feed the sheets individually!

From time to time, run your fingers over the printed page. If you can feel significant ridges and bumps of toner, then use your printer utility software to reduce the amount being spread by the distribution roller. It is invariably set much too high.

UK readers can get bottled toner, long-life OPC drums, and refilling info from: Big Bear Systems, Toner Warehouse. Freephone 0800 376 9922

fold backwards

fold forwards and queue as a single from the other side

