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AUTOMATION IN PRINT FINISHING

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Handraulic immediately comes to mind when we speak of automation in print finishing. Scalpels, scissors and steel rules still find a prominent place in most finishing departments. The increased use of "Cardboard Engineering" in POS over the years has made the finishing department a key element in a printers' product offering.

A more recent interesting development by substrate suppliers is the supply of material cut precisely to size and delivered just in time (JIT). Major suppliers to our industry have invested in more finishing equipment, this gives them added value and will reduce processing and waste for the printer. JIT keeps the printers stock holding to a minimum. Whenever you are having to resize stock that is coming to you as a printer speak with your substrate supplier to see if they can provide it cut to the precise size that you require. You may be surprised at the savings it can make in processing and wastage costs and whilst the guillotine is cutting your sheets prior to printing it is stopping goods going out the door.

Of course specialist print finishers still provide a key service to the industry. The ability to respond quickly or offer a service that can be an extension of your production is an invaluable resource to large and small printers. Some companies can be paranoid about outsourcing such work but why not, they are happy to buy in litho prints. If these subcontractors spilt the beans to one of your competitors they would be out of business before they could say wobblers. It makes sense to use their skills as an addition of your production.

Cutting, creasing, folding, drilling, punching, laminating, mounting and forming are some of the post print operations that are part of the printers armoury. Finishing allows the printer to produce a finished product not just a print. Providing a total solution to a client has to be an attractive proposition to both parties. It is the ingenuity of screen printers that make them unique. Years of dealing with the capriciousness of screen printing have given them required skills of innovation and problem solving. Digital technology is having a really positive influence on this area.

Walk into a finishing shop and there can be the appearance of total chaos dozens of people working at tables and on machines; mountains of product and packaging. Road going containers backed onto loading ramps swallowing hundreds of packages others disgorging vast quantities packing tubes and flat pack boxes. Many European languages spoken by temporary workers who are in the department to cope with the surges of work as major advertising campaigns are launched on the high street join the cacophony of machines. I have been known to be critical of the methodology applied by some screen printers in how they run their print shops. A stroll through to finishing may be a useful



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journey. If the person who runs the finishing department can bring order to this apparent chaos and ensure the correct packages filled with varied contents can arrive at hundreds of customers on time in good order, then running a print shop could be a doddle. I would chew nails in preference to managing a finishing department.

The masters/mistresses of the finishing department need extraordinary organisational skills, the ability to negotiate with a rabid dog and a temperament that is bomb proof. Corporal Jones they are not, more like a cross between Lord Nelson, Nelson Mandela and Jimmy Saville. In spite of their skills and best efforts they can all be undone by, a tail back on the M25, a hailstorm in Heckmondwike or Cleckheaton Carnival. For all you Southerners Heckmondwike and Cleckheaton are small towns in West Yorkshire and for all you Northerners the M25 is where Southerners get lost when driving to Newcastle.

As well as the organisational, personnel and logistical aspects of the finishing department there is the range of equipment that is available. Much of this equipment is serious engineering, 300 ton presses need piling to sit on the production floor.

In times past screen printers automation in finishing stopped at a well-used Crossland Platen that would crease and die cut various material. Now however the marriage of screen, digital, litho and even flexo has meant that printers are moving into fully automatic Platen Cutting and Creasing Machines that will run up to 7000 sheets per hour. Often the printed sheets have to be mounted on board before they are fed into the platen. This is particularly the case where the economies of scale can be achieved by mounting litho print paper onto heavy board. Even then this is not as simple as it may seem. Whenever you are dealing with paper, board and water based glue you have to control the condition of all elements of the mounting process. Ambient conditions can dramatically affect the condition of all three elements. Printed stock and the board should be maintained at constant moisture content. Pallets of materials must be kept wrapped and if necessary have their moisture content checked. Finishing shops suffer from that eternal ambient control disruption device, a roller shutter door. Keep the substrate you will be processing at the furthest point from the roller shutter door as possible. Also be wary of putting it in the hot air flow from the unit heating system. Simply aim to maintain the condition of the substrate and process it as quickly as possible.

The printer can make the finishing departments job far more difficult if the position on the sheet is not maintained. Sensible companies give the printer both a proof and a cutting sheet to allow the position of the print to be checked at before and during the print run. It is much cheaper to do it right first time.

Guillotines and Health and Safety are synonymous simply go to: -
<http://www.hse.gov.uk/pubns/indq282.pdf>

It tells you how to deal with the potential hazards of a guillotine.



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I simply have to recount a true story told to me by an eminent expert in all things to do with Health and Safety. He was in a company discussing carrying out an audit of their Health and Safety procedures and was speaking to the Finishing Shop Manager about the topic when, over his shoulder, he saw an individual reaching underneath the guillotine blade. Stunned into silence the frozen expression on his face made the manager look round. "What the heck is happening over there, that guillotine is live?" "Oh it's maintenance, the interlocks some times stick and he is just freeing them up!" The next person to whom the expert was speaking was the Managing Director.

All equipment can present a hazard but common sense is not enough to protect you because sense is not a common as you may think as the incident above indicates. There are similar regulations that apply to hand fed platens. The Digital and Screen Printing Association (DSPA) has the resources that can help its members. For others it is your local Health and Safety Executive and the Factory Inspector.

For small and sample runs flatbed digital cutter plotters have transformed turn round times and enabled printers to stimulate volume business, there is nothing better than a salesman returning a couple of days after receiving a brief with a full size model of the POS display to seal the contract for a promotion.

Like all things digital how this technology will grow will depend on demand and the amount of money manufacturers are willing to invest in development. Already digital cutters can deal with material 60 mm thick. Flexible materials are often roll-fed. Resolution 0.01 mm with speeds up to 1000 mm per second, obviously if you are cutting a 60mm thick substrate it will be nowhere near that, but creasing and kiss cutting thin materials can be up near there. The software normally determines the cut profiles but if you want to spend some more then camera-guided systems are pretty clever and fast. Even in the best-operated digital systems there can be stretch on the image and these cameras will compensate for such deviation.

Seeing the combination of digital printers and digital finishing equipment working in unison can be like poetry in motion particularly if the run length is relatively short. For longer runs the platen and the guillotine will take some replacing and the steady pace of a multi-ton platen sounds like quality engineering.

Finishing like printing is on the upward curve of digital technology with digital workflow removing some of the headaches for the departmental manager but there are still lots of boxes and people to stuff them just keep the aspirin handy.