

## Digital Technology – Adding Value to Finishing

The digital technology that has impacted almost every facet of our everyday life is beginning to have its effect also in the printing and packaging supply chain.

The Highcon™ Euclid and Beam digital cutting and creasing machines deliver differentiation that printers, converters, brand owners and retailers have been waiting for. By bringing the advantages of digital technology to post-print, Highcon transforms “finishing” into a value adding process.

When we look at the end-to-end processes, prepress is now almost completely 100% digital. The uptake of digital printing may be far less – but it is growing at a rapid 20% year over year. By 2018 digital printing will equal 50% of the global offset sector, higher in the more mature print regions<sup>1</sup>. It's only the post-press section that has remained analogue, retaining the need for highly skilled employees, high expenses, and a time-consuming, complex supply chain.

### Short runs

The result of the digital era is the arrival of a wave of change in the way we buy things. Broadcast messages are proving to be less effective than targeted, customized messaging. This is shown in the “suggestions” we get when we search on the Internet, when we visit social media sites, when we stop at our corner store for a magazine or when we pick up a box from the shelf. We are now tempted by hundreds of variations of everything and look for the one that most fits our own self-perception.

### Segmentation

The means to achieve this segmented, mass customized approach is short runs – of print, packages, deliveries, everything along the chain.

Market segmentation now, whether by region, language, season, age or gender requires ever shorter runs but at an even more demanding pace.

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<sup>1</sup> The Future of Offset vs Digital Printing to 2018 Smithers PIRA, 29<sup>th</sup> April, 2013

Time to market becomes critical if your segmentation is seasonal for example. The product lifetime of packaging is shortening all the time.

Frequent – and often rapid – changes like these mean that converters are having to fight harder and harder satisfy and retain their brand owner clients and put up with their increasing demands for time to market, alongside last minute marketing driven changes.

### *Local*

Globalization is a fact of life, but there is also a renaissance of local, smaller scale artisanal producers who up until the advent of digital technology were unable to meet the Minimum Order Quantities required by any packaging manufacturer.

### *The die-cut form as bottleneck*

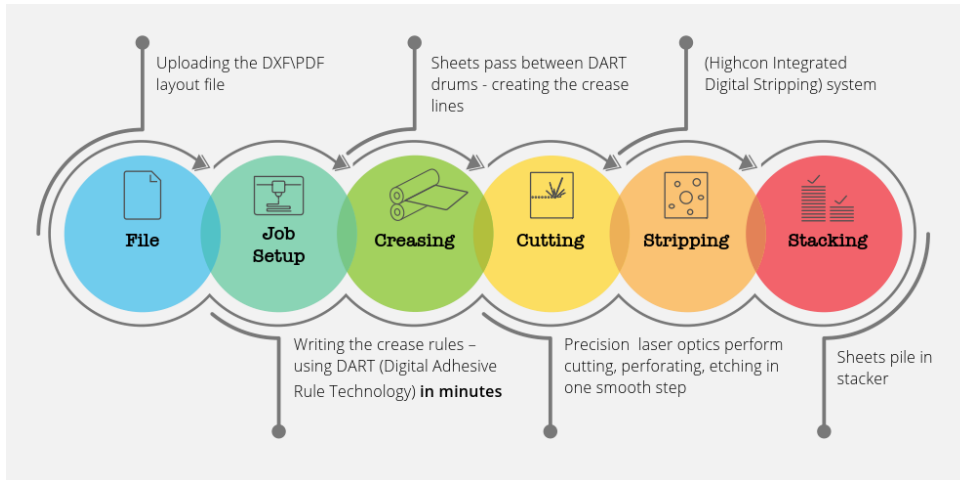
The primary bottleneck in the packaging finishing process is the creasing and cutting because of the need for a die - this slows the whole process down. Window patching, cold foil, and folding and gluing can all be done in-house by the converter, but they lose control when they send out for the die. The price of the die, the timing of delivery, the transportation all depend on an outside supplier. And if you should need any changes to the die – which is frequently the case – you have to go through the whole cycle again. And once it's all completed, the setup time on the die cutting machine, not to mention the storage in vast warehouses, is both expensive and not very friendly to the environment.

### *The solution*

The answer is a digital solution, which performs in-house, independent of an external supply chain, matches the quality of the analogue process, but will be faster, cleaner, greener, smarter, and more profitable.

The Highcon™ Euclid and Beam digital cutting and creasing machines were designed to solve just these issues and were conceived out of an understanding of the need for digital technology for folding carton converting.

The first revolution in this machine is the separation of two processes of cutting and creasing. The conventional die covers both processes in one. But the different parts of the processes have different needs. In general the creasing does not have to change that often, but the cutting can and should. The limitations that caused them to be implemented together on the die are removed with digital technology, allowing each to shine in their own way.



### Creasing

Creasing is carried out by the Highcon patented Digital Adhesive Rule Technology, DART. The creasing data from the DXF file is sent to the special DART canister which releases resin onto a Highcon DART foil in the form of rules that once cured, will produce hard raised lines.

### Cutting

The cutting is done by an array of high-powered CO2 lasers combined with scanners and advanced optics, which perform the cutting design laid out in the software. The laser can produce etching effects, variable cutouts, perforations (like zipper tears), scoring, and numerous other effects.

### Production process

In production, sheets pass from the feeder along the conveyor to the DART station. Underneath the DART upper drum, on which the foil has been wrapped and written, is a second drum covered with a blanket-like counter. As the sheets pass through between the two drums, the crease is made.

Each sheet then passes automatically along the conveyor to the cutting station and on to the stacker. The Euclid handles up to 2,250 B1 sheets (76cm x 106cm; 30in. x 42in.) or 2,750 B2 sheets ( 29 in.) per hour<sup>2</sup> depending on the crease line length, type of substrate and job complexity.

### Variable data cutting

The cutting can be made using variable data for each single sheet. This opens up a whole range of new applications, limited only by the imagination of the designer. The precision of the laser cutting also makes it possible to cut much smaller details than conventional analogue cutting – unique to the Highcon systems.

### Stripping

The Highcon Euclid comes with a built-in waste stripping mechanism that automatically removes the waste from the smallest internal cutouts produced on the sheets by the lasers. The optimized cutting algorithms, together with a new substrate handling system, ensure completely clean cuts that are essential for intricate cutouts. All the small particles drop into an easily removable chamber. This module removes the need to buy, setup or store a separate stripping tool, and further advances the productivity of the machine.

Finally, of course, jobs are simply stored on a memory stick, not in a warehouse.

### About Highcon

Highcon is a private company founded in 2009 by Aviv Ratzman and Michael (Miki) Zimmer, with key investors including Landa Ventures, the investment company owned by the Indigo N.V. founder Benny Landa, JVP, Go Capital and others.

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- with Productivity Boost option