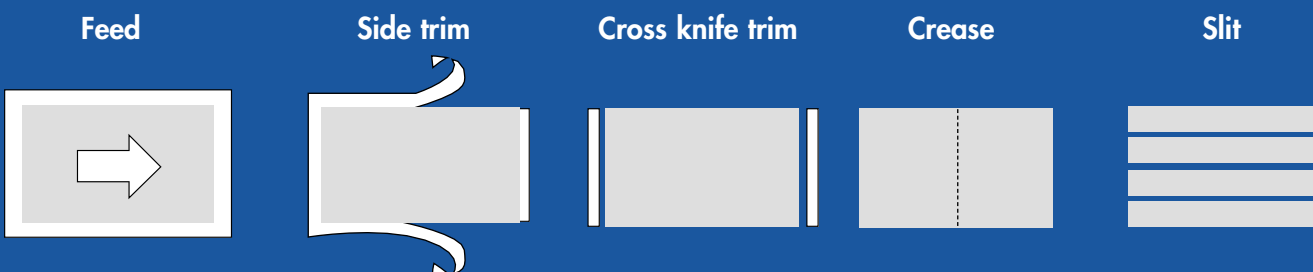


SPECIFICATIONS

INPUT PAPER SIZE		DC-545HCEX	
Minimum	210 mm wide x 210 mm long	Minimum	Nominally 110 to 250 gsm
Maximum	320 mm wide x 650 mm long		Note : lighter weights possible subject to paper curl Note : heavier weights possible subject to crease pressure required
INPUT PAPER WEIGHT			
FINISHED PAPER SIZE		Minimum	Business card size 50mm wide x 90mm long (90mm is in feed direction)
SIDE TRIMMERS			
Number	2 x rotary side trimmers	Number	4 x rotary slitting knives
Side trim accuracy	Programmable 0.1mm steps, minimum 3mm +/- 0.5 mm maximum over width of 320 mm	Slitter accuracy	Programmable 0.1mm steps
SLITTERS			
Number	4 x rotary slitting knives	Tolerance	+/- 0.5 mm maximum over width of 320 mm
CROSS KNIFE TRIMMER			
Number	1 x cross knife	Number	1 x creasing rule across (width) paper direction
Maximum programmable	10 cuts	Maximum programmable	4 creases, minimum distance to first crease 90mm
Lead edge trim	Recommended minimum 3mm	Accuracy	Programmable to 0.1 mm steps
Trail edge trim	Recommended minimum 3mm	Tolerance	+/- 0.7 mm maximum over length of 650 mm
Accuracy	Programmable to 0.1 mm steps		
Tolerance	+/- 0.7 mm maximum over length of 650 mm		
CREASER			
FEEDER			
Capacity	100 mm		
Type	Air knife separation / Top feed / Belt suction		
Speed	Maximum 1440 creases per hour		
POWER SUPPLY			
Voltage	Single phase 230V AC		
Current	0.6 A		
MACHINE DIMENSIONS (MM)			
Length	1585 mm		
Width	580 mm		
Height	960 mm		
Weight	110 Kg		



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E-DC545EXBR



DC-545HCEX - Cutter / Creaser



an innovative solution for finishing digital print

Duplo™

Duplo™

DC-545HCEX - Cutter / Creaser

UNIQUE INNOVATIVE MULTI-FUNCTION

The Duplo DC-545HCEX delivers a package of brilliant and innovative features combined into one device specifically for the users of digital colour presses. Now, one machine can deal with all of these common requirements, in one pass:

- Fast automatic make ready
- Trimming the unprintable border from four sides
- Cutting the sheet to the finished size
- Creasing ready for folding
- Compensation for image drift

THE DRIVE FOR DIGITAL PRINT

Studies have shown that the addition of colour into documents is a means of increasing understanding, reader response rate and the overall quality and value of the document. Customer demand to do this with ever shorter turnaround times, whilst perhaps also incorporating personalised information, is fuelling the huge growth in the demand and use of digital colour presses. In return, the presses are becoming increasingly faster and of higher quality and run lengths are increasing. The result is that more and more users are having to tackle the problems of finishing digitally printed papers.

► PAPER HANDLING

The process of fusing the toner to the page uses increased heat, oil and pressure in the printer engine, with the result that when the paper is introduced to the natural environment of the print room, it curls in protest. Unlike the inks used in offset printing, which are absorbed into the paper fibres, toner lays on the surface of the paper. This makes it very susceptible to being scratched away by subsequent paper handling. In addition, the 'plastic' nature of the toner helps to generate static, making the sheets of printed paper stick together. These three factors make any handling of sheets after digital printing a potential nightmare.

The Duplo DC-545HCEX overcomes the static in the sheets by using an air knife to cut them apart, lifting and separating each individually. In addition, the specially developed vacuum belt design picks up and supports the sheet over a large area, overcoming the effects of the curl and presenting it flat into the feed nip roller. The sheets are fed from the top of a stack so that each can be handled gently and separately, without the weight of a stack of paper above it pushing down and increasing the dangers of rubbing and marking. The interior of the unit uses highly polished smooth surfaces to reduce the risk of scratching the image.

► IMAGE DRIFT

Although some digital presses have now achieved a very good level of CMYK registration, they have not yet achieved the consistency of image positioning on the sheet. Due to mechanical and paper handling limitations in the digital presses, a drift of +/- 1mm is common. When the issues of perfecting (back to front registration) are also considered, the actual position of the image can be considerably different to the intended position.

The DC-545HCEX boasts the innovative feature of being able to read the printed image and automatically adjust and compensate for the problem of image drift. This means the machine will position the trim, slit and creases in the intended position every time, registered to the image, not the sheet. This reduces waste and ensures the highest quality and optimum productivity. Registration is made against a small symbol which can be simply drawn into the original application (even when it is a PDF), or generated automatically where the job data is JDF (CIP4) compatible.



► JOB SET-UP

Any finishing process employed for digitally printed work, needs to complement the short runs and fast turnaround times for which digital presses are ideal.

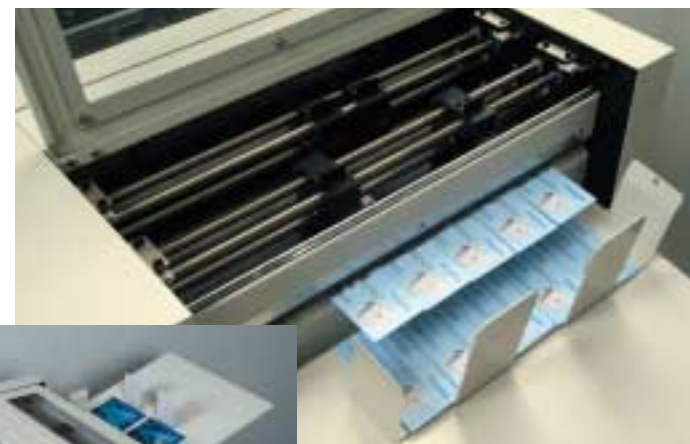
Continuing the Duplo tradition of combining ease of set up, automation and job recall from the machine memory, the DC-545HCEX employs a number of features for operator convenience. A message display leads the operator through the steps required for programming, while a keypad provides for easy entry of the settings which are then stored in the machine memory. Up to 80 jobs can be stored for instant recall. If required, a small bar code representing the job number can be added to the sheet (as simply as any font) and this is read when the sheet starts to feed. The DC-

545HCEX recalls the job and automatically sets all of the cutting and creasing devices to the desired positions, adjusting as necessary to suit any image drift. Finally, the paper feed is so flexible and accommodating over a wide range of stocks, that adjustments need only to be made for wide variations in materials. Combined with auto set-up through the bar-code feature, the operator can confidently load a range of different jobs into the feeder, press START and walk away.

► SHEET SIZES

The range of sheet sizes that can be accommodated by a digital press are limited. Printing a small format image such as a greetings card, postcard or business card, requires the image to be repeated two or more times on a larger sheet. This is also standard practice for using an offset press, but digital presses are used for producing much shorter runs or even a personalised 'run of one'. Such a demand means that often, the finishing techniques developed for offset printing are not compatible and the end result is a very labour intensive finishing task.

The Duplo DC-545HCEX uses the cross knife to remove any gutters between the smaller images; up to 10 cut positions can be memorised for each job. In addition, it has four rotary knives which can slit the trimmed sheet into smaller pieces, even business card size. Sheets are fed from a small pile - which can contain many different jobs, the DC-545HCEX works through them one at a time, treating each in a unique and different way as necessary. HC means High Capacity, so it can be left to run unattended, even where the pile contains different stock types and weights.



► TONER CRACKING

When a piece of paper is bent or folded, the fibres on the outer surface are stretched while those on the inner surface are crushed. Unlike ink which is absorbed into the paper fibres, toner is fused to the surface; but while paper fibres can stretch, the hard toner material cannot. The result is unsightly cracking and the paper shows through. The same problem occurs even when a rotary scoring tool is used because it 'ploughs' the toner and cracks it.

This is the greatest challenge for users of digital colour presses and the DC-545HCEX incorporates a creasing rule to crush the paper fibres in one smooth continuous line. This process is proven to be the best way to treat reliably digitally printed papers prior to folding and is particularly effective when the fold has to be across the grain. As with all the slit and trim positions, the location of up to 4 creases can be programmed to within steps of 0.1 mm.

► UNPRINTABLE BORDER

It is usually not possible to print to the very edge of the sheet, so typically, a page will possess a 5mm white unprinted border around the page which must be trimmed away to reveal a full bleed image. For an A3 leaflet, this will mean printing on an SRA3 size sheet.

The Duplo DC-545HCEX has two rotary knives that remove the unprinted border along the sides of the sheet, discarding them into a large waste bin in the cabinet beneath. An additional cross-knife cuts across the sheet, removing the head and tail borders.