

Duplo™ Duplo™

Duplo near-line finishing specifications

DSF-2000 Sheet feeder			SCC - Slit Cut Crease module		
Feed capacity	Main (upper) tray	2000 x 80 gsm sheets	Processing speed	Slit, cut & crease	25 sheets / min
	Secondary (lower) tray	600 x 80 gsm sheets		Slit & crease only	60 sheets / min
Paper weights (bond)	Main (upper) tray	60 – 280 gsm		By-pass	190 sheets / min
	Secondary (lower) tray	60 – 250 gsm	Sheet sizes	Minimum to DBM-500	Length 170 x Width 120 mm
Paper weights (art & coated stocks)	Main (upper) tray	80 – 280 gsm	Cutting & slitting	Minimum	4mm on any side
	Secondary (lower) tray	80 – 160 gsm		Maximum	25mm on any side (15mm slit at 60sheets / min)
Paper curl	60 – 130 gsm	– less than 10mm variation	Crease positions	greater than 80mm from lead or trail edge	
	130 – 280 gsm	– less than 5mm variation	Dimensions	Length	1320 mm
Paper Detection		Miss feed, Double feed		Width	610 mm
Optical mark recognition (standard)		Upper and lower side of sheet		Height	810 mm
		Count and check function		Weight	260 Kg
		Search for last function	Power	Single phase 230 VAC / 0.7 A	
Bar code reading (option)	(option)	Upper side of sheet			
		Verification for correct sheet sequence, all sheets present, no double sheets, insert from tray B			
Job tracking and reporting (option)		Automatic setup from job ticket			
		Reporting of booklets completed			
DCM-Kit (option)	(option)	Air knives for main and secondary feed trays, active anti-static bar			



near-line finishing systems
the future of print finishing

Specifications - Systems	DSF-2000 & DBM120 (sheet x sheet) Bookletmaker System	DSF-2000 & DBM-300 (sheet x sheet) Bookletmaker System	DSF-2000 & DBM500 Bookletmaker System
A4 sheet speed	maximum 120 sheets / min	maximum 150 sheets / min	maximum 190 sheets / min
A4 booklet production	maximum 40 books / min	maximum 60 books / min	maximum 75 books / min
A3 booklet production	maximum 30 books / min	maximum 52 books / min	maximum 65 books / min
Typical hourly production	sheets/ hour & equivalent printer speed	sheets/ hour & equivalent printer speed	sheets/ hour & equivalent printer speed
5 sheet A4	5800 sheets (= 194 ppm)	6920 sheets (= 230 ppm)	8700 sheets (= 290 ppm)
15 sheet A4	6280 sheets (= 209 ppm)	7050 sheets (= 235 ppm)	10300 sheets (= 345 ppm)
5 sheet A3	4500 sheets (= 300 ppm)	5760 sheets (= 385 ppm)	6600 sheets (= 440 ppm)
15 sheet A3	5400 sheets (= 360 ppm)	5900 sheets (= 393 ppm)	7500 sheets (= 500 ppm)
Programmes	10 pre-set sizes / 3 custom sizes	3 pre-set sizes / 5 custom sizes	12 job memories
Sheet sizes			
Minimum	Length 279 x Width 210 mm	Length 279 (1*) x Width 210 mm	Length 200 x Width 148 mm (2*)
Maximum	Length 457 x Width 320 mm	Length 450 x Width 320 mm	Length 470 x Width 320 mm
Booklet sizes			
Minimum	Length 140 (before trim) x Width 210 mm	Length 140 (before trim) x Width 210 mm	Length 100 (before trim) x Width 148 mm (3*)
Maximum	Length 229 (before trim) x Width 320 mm	Length 225 (before trim) x Width 320 mm	Length 235 (before trim) x Width 320 mm
Capacity (80 gsm)	20 sheets (with grain)	25 sheets	25 sheets
Stitch / Staple Type	2 x Staple (from 2 x5000 staple cartridge)	2 x Stitch (from 2 x wire reel) (4 Stitch heads optional)	2 x Stitch (from 2 x wire reel) (4 Stitch heads optional)
Trimmer option	DBM-120T	DBM-300T & DBM-400T	DBM-500T
Dimensions (including Trimmer)			
Length	3200 mm	Length 5000 mm including long stacker	Length 4800 mm
Width	750 mm	Width 750 mm	Width 750 mm including long stacker (4*)
Height	1020 mm	Height 1020 mm	Height 1020 mm
Weight	280 Kg	Weight 610 Kg	Weight 790 Kg
Power	Single phase 230V AC / 3.5 Amps	Single phase 230V AC / 15 Amps	Single phase 230V AC / 8 A

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*Note 1 DBM-300 sheet length of 210 mm possible with modification kit. Allows minimum book dimension before trim of 105 long x 210 mm wide
*Note 2&3 - optional CD kit 120 x 240mm available
*Note 4 - not including SCC module

Production rates are based on optimal operating conditions and may vary depending on stock and environmental conditions.
As part of our continuous product improvement program, specifications are subject to change without notice.

Duplo is a trade mark of the Duplo Corporation
Duplo has a policy of continuous improvement
and reserves the right to amend the above
specifications without prior notice



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near-line finishing systems the future of print finishing

offset, direct imaging, digital colour or mono...

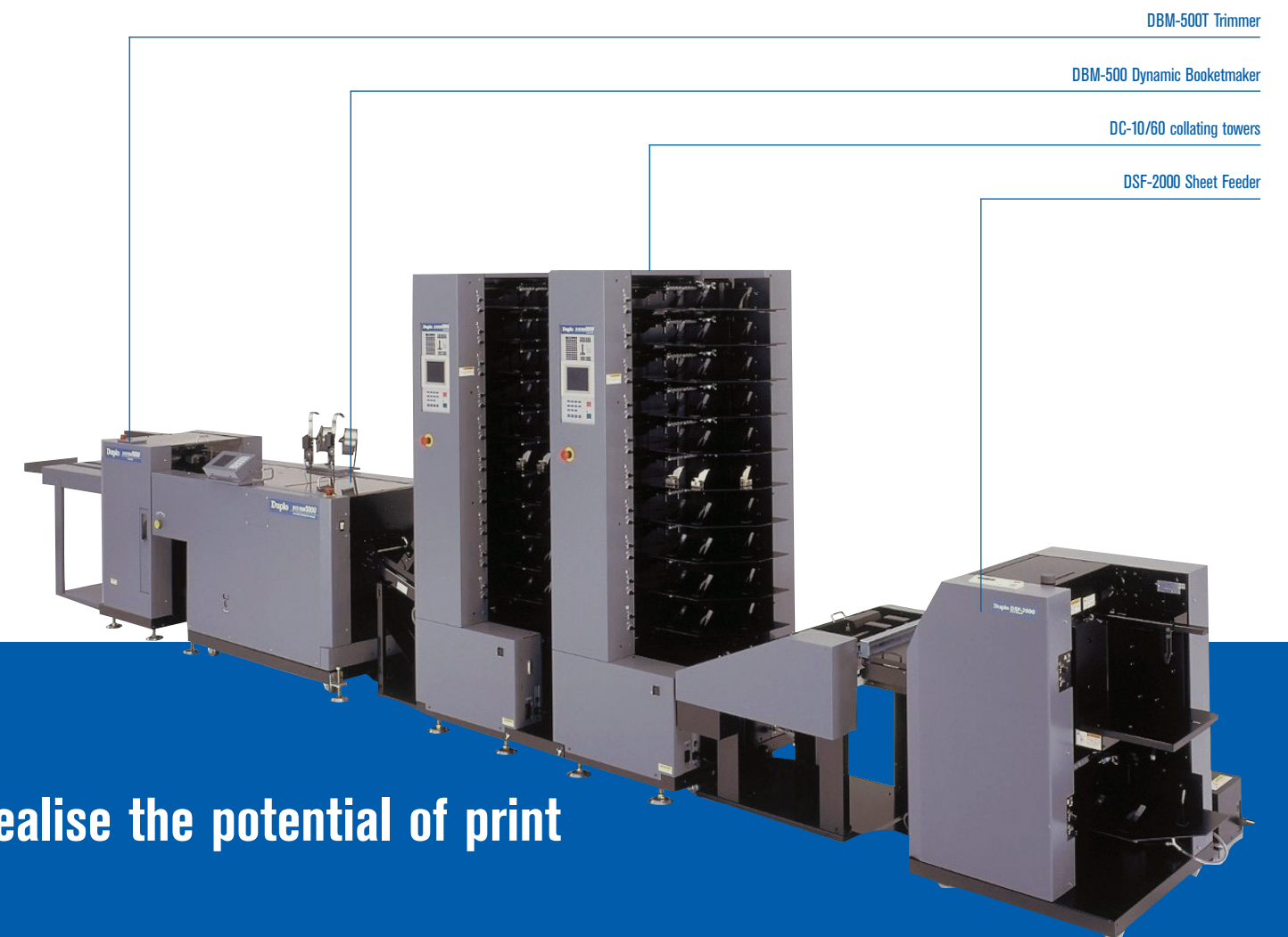
Never have there been so many choices available for printing. Sometimes the correct process is not easily identified, or the finishing equipment available is not suitable. With so many different options and often more than one device used in the same company or in-plant, managing the complete print and finishing process can be a very complex task. In such a fast developing industry, can you really know exactly which option will be available to you in the future? The Duplo DSF-2000 provides a simple solution to bring together the output from many different printing devices, whilst combining the best of both on-line and off-line production.

Duetto Dual-line finishing solution

The Duetto bookletmaking and collating solution incorporates up to three DC-10/60 collating towers, a DSF-2000 dynamic sheet feeder, DBM-500 bookletmaker and DBM-500T trimmer.

offset and digital

The Duetto system is the first of its kind to address both digital and offset print finishing requirements. The ability of the DBM-500 to handle set-by-set and sheet-by-sheet output with equal ease makes the system ideal for printers making the transition from offset to digital, allowing the incorporation of colour content and variable data into their finishing solutions. Printers once had to purchase two separate finishing lines for either offset or digital print, but now the Duetto is the first system to offer a combined offset and digital print finishing solution.



realise the potential of print



SCC - Slit / Cut / Crease module

The Duplo SCC (Slit / Cut / Crease module) is a unique product designed to simplify and enhance productivity by enabling the system to accept sheets directly from a press and output a complete finished booklet.

flexibility

Complementing the ability of the DSF-2000 to accept work produced from a wide variety of print engines, the SCC enables the system to produce complete, finished documents, efficiently and effectively by allowing the user to decide the most efficient means of producing the printed media. Whether the job requires mono printed pages on standard stock sizes or/and full colour printed sheets on oversize stock, the SCC uniquely processes the sheets in turn so they can be collated and finished in the Duplo bookletmaker. To do this it combines:

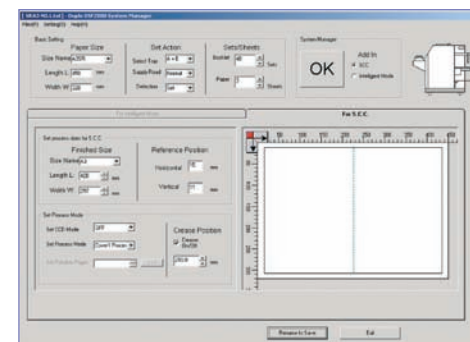
- Slitting knives to remove longitudinal borders
- Cross knife to optionally remove transverse borders or when the image is considerably smaller than the sheet
- Creasing tool using a male/female rule to produce a score line that will not crack when folded
- Bypass transport for fast handling of sheets which do not require pre-processing

These features are supported by a camera reading system which detects image drift, enabling production to be automatically calibrated for consistent and accurate finishing.

A simple application of the system would be for handling precollated full colour sheets from a digital press. The sheets are loaded into the main feed tray and as they are fed in turn, the sheets enter the SCC, have the white unprinted borders slit from both of the long sides and creased in the middle. They then pass to the bookletmaker where they are collated, stitched, folded and have a final trim on the open side to neatly finish the book.

A more complex application would be where the content pages are printed on a standard stock size (such as A3, 420x297mm) and the cover is printed in full colour on oversize stock (typically SRA3, 450x320mm). The SCC provides unique features to handle this job by accepting the different sized sheets from alternate feed trays in the feeder. To be most productive, the cover is fed first, so that as it is being creased and cut down from SRA3 to the same sheet size as the mono printed sheets (the content pages on A3) which are fed from the main feed tray and delivered through the bypass transport into the booklet maker. Once the content pages are collated, the cover is added to the top and it is stitched, folded and trimmed as before.

Of course, such a feature rich solution can be very complex to operate, but Duplo provides MS Windows based software to simplify operation and allow a clear and concise overview of the complete solution.



modular bookletmaking options for all production volumes

designed specifically for the needs of digital print

Duplo bookletmaking systems using the DSF-2000 Sheet Feeder deliver a win-win solution. Now you can print a job using the digital press that YOU want, whether it's on colour or mono, high or low speed, across one or multiple platforms, then, add sheets from another process, perhaps from an offset or DI press. Mono, colour, offset, even sheets from digital colour presses are accepted and fed with ease and reliability from the hugely flexible Duplo vacuum belt feed mechanism.

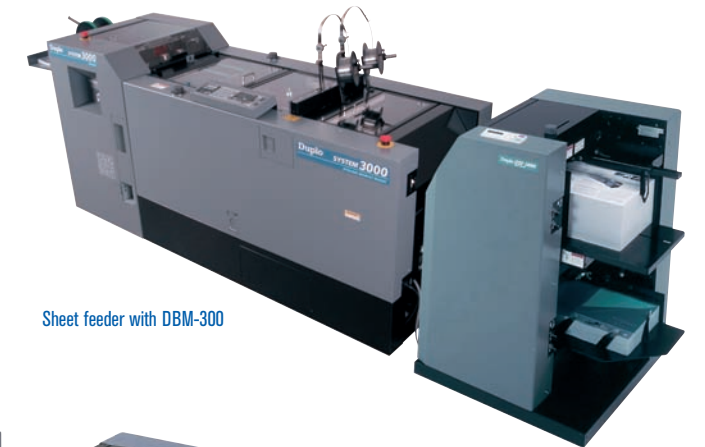
Sheets are accumulated in the Duplo bookletmaker, stitched and folded, then face trimmed in the optional DBM-120T Trimmer or DBM-500T Trimmer and delivered onto a shingle stacker. The book follows a straight paper path for reliable handling and is visible to the operator at all times, allowing (with the DBM-500 option) adjustments to be made on the fly without interrupting the run.

There are three bookletmaker options available, the DBM-120 stapler/folder for economy and simplicity, the DBM-300 mid-range stitcher/folder and then the DBM-500 stitcher/folder for high volumes of quality production at a higher speed.



Sheet feeder with DBM-120

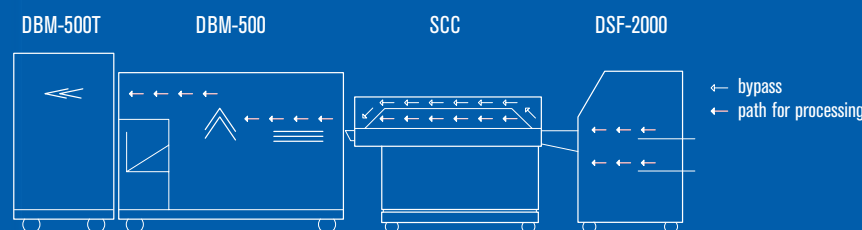
The ease of use of the complete system allows great flexibility and convenience for both long and short runs and reprints. The speed of the system is typically the same as (for A4), or double (for A3), that of a 180ppm high speed mono printer, or up to 6 times that of a typical 60ppm digital colour press.



Sheet feeder with DBM-300



Sheet feeder with DBM-500



Hand feed tray for DBM-300 & DBM-500



Hand feed tray for DBM-120



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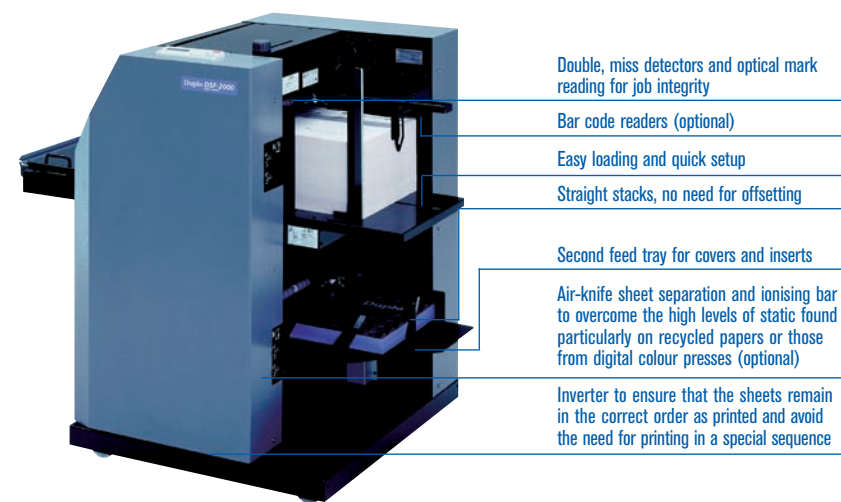
intelligent paper feeding

The Duplo near-line finishing solution begins with the DSF-2000 sheet feeder, which takes offset printed sheets and pre-collated sets from any digital print engine.

The Duplo DSF-2000 provides an efficient, productive and versatile solution for near-line finishing. The DSF-2000 functions independently of the printer, all it requires is straight stacks of sheets which are loaded into the two feed bins. For example, mono printed sheets from a high volume digital printer can be placed in the main feed tray, up to 2000 sheets at a time. Then, covers from an offset press are placed in the auxiliary feed tray below.

The DSF-2000 automatically detects the size of sheet, or the operator selects the settings from the simple control panel. Select START and the Duplo bookletmaker sets up to the new job format without requiring operator adjustments. It also produces the first set as a test to calibrate. If this is all correct, the operator starts the system, which from then on runs automatically, feeding the required sheets in sequence to the booklet maker.

The DSF-2000 manages the complete run, employing reliable double sheet and miss detection, plus optical recognition devices to detect the end of each document.



- Double, miss detectors and optical mark reading for job integrity
- Bar code readers (optional)
- Easy loading and quick setup
- Straight stacks, no need for offsetting
- Second feed tray for covers and inserts
- Air-knife sheet separation and ionising bar to overcome the high levels of static found particularly on recycled papers or those from digital colour presses (optional)
- Inverter to ensure that the sheets remain in the correct order as printed and avoid the need for printing in a special sequence

intelligence for new ways of printing...

Advances in technology and software have revolutionised the means by which printed documents can be delivered to customers and the content which they contain. Early adopters of digital print tackled applications for static, short run printing in black and white, then through the 1990s complexity grew to include versioning and personalisation as colour has become more affordable. With the opportunities presented by the internet growing, trends to increase business through adopting niche marketing and CRM (Customer Relationship Management) has again driven demand for more elaborate fully customized documents and unique 1:1 communications. The DSF-2000 delivers a scaleable architecture of intelligence to suit the complete range of applications and ensure that what you want is what you get.

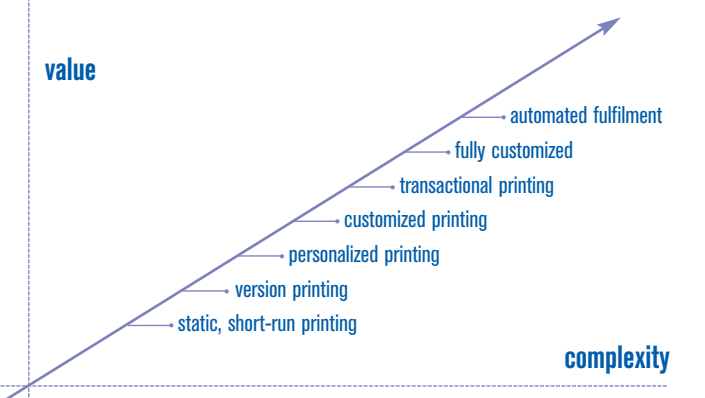
Whereas a conventional collator has the intelligence to check that every sheet has the same image and weight as the previous one (which is perfect for offset printing), the DSF-2000 is designed to handle pre-collated stock where the image and weight of every sheet can be different to that before it. At the simplest level, the Duplo features a teaching function to recognise the personality of each individual sheet, even when they are of varying stocks, a common requirement from today's digital colour presses that can typically pre-collate multiple stocks in one job. For greater security, the standard system includes a simple OMR (Optical Mark Recognition) device to detect the end of a document, even when each has a different number of sheets.

The bar-code based reading system can be used both with codes applied as fonts or generated by specialised programmes to suit the design and print application. Formats supported include common standards such as 2 of 5 and 39. The sequence of digits allow the system to validate that all sheets belong to each other, are in the correct sequence, there are no doubles or missing sheets, etc... even when documents are compiled from sheets drawn from both feed trays. If bar-coding is not suitable then alternative devices can be sourced from one of Duplo's partners and used instead to read text, OCR, glyphs and 2 dimensional codes.

As a final step in closing the workflow loop, a third reader can be located at the exit of the system to validate and record finished books. The data can be logged by the management PC and reported back to the customer's IT system for job analysis and generating any reprints required.

future ready...

As with all Duplo products, future needs and market trends are kept in mind during the design and development of new devices and this is especially true of equipment for the digital print industry. Duplo is one of the core developers of the UP3i (Universal Printer Pre- and Post-processing Interface) standard for this market and the Duplo DBM-500 Booklet Maker is the first product of its type to be UP3i compatible, making it complementary to the JDF standard developed by CIP4 allowing job tickets to be created and used across the business enterprise from job design, print and finishing to management and accounting functions. The combinations of automatic job set-up, flexible paper handling, intelligence and job reporting, make the Duplo near-line finishing systems an ideal solution to meet the demands of the market as these standards develop.



Feed



4 side trim



Crease



Collate



Stitch



Fold



Trim



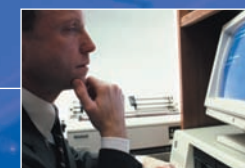
Increased integrity with bar code reader option



Automatic job setup through JDF/CIP4 Job Tickets *



Customer database



Job reporting

* under development