

1 Frequently asked questions

1.1 ***In-line or off-line operation?***

Does IBIS recommend operation in-line with the digital printer, or off-line from a pile feeder or near line from a roll unwinder and web-cutter?

Answer: There are many factors to consider in order to make this decision. However, as a general rule operation in-line with the printer/web cutter or the web unwinder/cutter is recommended if the booklet format size changes infrequently. Off-line operation from a pile feeder is recommended if a range of different book format sizes is needed.

In-line operation may be made more attractive with the use of the optional SBS-100 sheet buffer module.

1.2 ***In-line and off-line operation?***

Can a Smart-binder system be configured to run in-line with a digital printer, but also have the capability of being fed from sheets coming from other printers?

Answer: Yes. This is done by selecting the feeder option SB-097 which provides the ability to feed the machine from a sheet pile feeder while retaining the ability to alternatively run in-line from the web cutter.

1.3 ***Maximum and minimum book thicknesses***

What are the max and min book thicknesses that the Smart-binder can produce?

Answer: The maximum book thickness is 60mm (2.36mm"). However this is only possible with the SB-4 or SB-5 (using PB-600 perfect binder). The Smart-binder saddle-binder is limited to 10 mm (0.4") max book thickness when making A4 booklets, or about 7-8mm when making A5 booklets.

The minimum book thickness is one folded sheet (4 pages), but producing very thin books may require the maximum sheet input rate to be reduced in order to avoid exceeding the maximum Smart-binder output rate. Good quality paper stock, min 80 gsm (with grain parallel to spine), must be used if running single folded sheets (4 pages) through the Smart-binder to produce a document containing only 4 pages .

The use of options such as Loop stitching (LST-100), Folder (F-100 or RF-100), Center-knife option (CKN-100) and/or the Spine squaring option (SM-100) will reduce maximum book thickness.

1.4 ***Maximum Operating Speeds and Efficiencies***

What system operating speed and efficiency can be expected?

Answer: The maximum input web speed (in-line operation) is 130 metres/min without an extra buckle folder (4-page increments) or 150 metres/min for near line operation. This can be increased to 200 metres/min with extra F-100/F-101 buckle folder (8-page increments). The F-200 selective folder is available to enable high web speeds while retaining 4 page increments.

The maximum speed when running off-line (from a sheet pile feeder) is around 450-500 sheets/min (a sheet normally contains 4 –pages, but may alternatively contain 8 pages if the extra F-100/F101 folder is selected. The F-200 allows also for 12 page sheets).

The maximum Smart-binder cycling speed for saddle-stitching is 7,000 cycles/hour or 14,000 books/hour (2-up). The actual booklet output rate is the sheet input rate divided by the number of sheets in the book.

The system efficiency depends on the complexity of the system (how many different elements are in use). For the Smart-binder itself, plan on an operating efficiency of about 85%, unless it is being used to produce an unusual or difficult job which may reduce running efficiency. Efficiencies in excess of 90% are achievable with some in-line Smart-binders running straightforward job applications, since an in-line system requires no stops for sheet feeder reloading.

1.5 Perfect-Bound books (SB-4 or SB-5)

Can the Smart-binder produce perfect-bound books (using hot glue) and what advantages does the Smart-binder have over other systems when making these types of books?

Answer: The SB-4 can create ISG cold-glued signatures and collect these signatures together automatically in the SCF. Hot-glue is applied to the book spine and the cover is attached, resulting in very strong books. Because the signatures are pre-glued the spines do not need to be cut off in the binder clamp. This avoids dust/noise being created and makes the process more operator-friendly. The ISG cold glue may in some cases be better than hot-glue for use with hot, dry digitally-printer papers, but may not provide such good adhesion at hot-glue when using heavily coated papers.

The model SB-5 produces conventional perfect-bound books from stacks of loose sheets (hot-melt glue only).

1.6 Producing small format books in-line with a web printer

How can smaller book format sizes be best produced when running in-line with a digital web printer?

Answer: Small book formats can be easily produced in-line with a digital web printer by using a web which is double the book width (plus a little extra to allow for trim-off). However this web width may be much narrower than the printer maximum so it is more efficient to run the printer with a normal 'wide' web and fold the resulting large sheets more than once to produce a small book format. The folder option 'RF-100' rotates and folds each sheet prior to entry into the Smart-binder infeed in order to make small format books from a normal width printer web.

1.7 Light weight paper stock.

What is the lightest weight paper stock that the Smart-binder can handle?

Answer: Paper stocks as light as 40 gsm are possible, but sheets lighter than 50 gsm must be buckle-folded first using the optional in-line F-100/F-101 folder, before entering the Smart-binder infeed. The optional ASS-100 anti-static system is also recommended for lightweight sheets.

1.8 Personalised books

Can the Smart-binder produce personalised saddle-bound books with a constantly changing number of pages (without stopping for adjustment)?

Answer: Yes. The Smart-binder saddle-binder was designed to continually vary book thickness on-the-run and track each page using bar codes to ensure page sequence security. Each book can contain a different number of pages in between 8 and 200 (if using IBIS ISG cold glue system) or within a range of about 80 pages (if using wire stitching). The optional ASA-100 system allows for on-the-run stitch variation if make large changes in book thickness.

1.9 Personalised covers (or covers with cut-out windows).

Can the Smart-binder saddle-stitcher handle personalised book covers?

Answer: Yes. The Smart-binder cover feeder can be fitted with an optional Bar code reader (or 2D code reader) to ensure that each personalised cover sheet contains the same unique book ID number as the content sheets coming from the digital printer.

However, if cover sequence is lost then the operator must regain cover pile sequence manually which will cause extra machine down-time. It is sometimes preferred therefore to feed covers with cut-out windows which allow the personalised name and address to show through the window from the digital print on the first inside page.

Optional Cover-matching control systems are also available for the Sprint-binder perfect binder.

1.10 **ISG cold glue.**

What are the benefits and/or risks of using IBIS's unique ISG cold- glue system instead of wire staples to make saddle-bound booklets?

Multi-part answer:

1/ Cold gluing results in a much high page pull strength, particularly on the outside and middle sheets. (However, note that ISG glue strength may be reduced if using coated and non-absorbent papers).

2/ Cold glued books lie much flatter than wire-stitched books because wire-stitching crushes and opens up the book spine, and because the moisture in the cold glue weakens the glue fibres resulting in a much tighter 'set to the fold sheet folds. Flat lying books are extremely important if envelope-inserting these booklets after binding.

3/ Cold gluing is easier to use than wire-stitching because no adjustments are needed when changing book size or thickness.

4/ Cold glued books are easier to recycle compared with wire-stitched books

5/ Cold glued books look better and contain no risk of damage to a child's fingers (as can exist with wire staples).

6/ An optical sensor constantly monitors the glue application and stops the machine immediately if the glue is not being applied to the book

7/ The cold glue system requires less maintenance than stitching heads

Note: For these reasons many Smart-binder users **prefer to use ISG cold glue** instead of wire-staples.

Cost Comparison: wire stitching vs ISG cold gluing

Wire stitching

The cost of wire to produce 1000 wire-stitched booklets is about GBP £0.74 (GB Pounds). This cost does not vary much between a thin and a thick booklet.

ISG cold gluing

The cost of ISG cold-glue binding depends on the number of sheets in the booklet. The cost of Eukalin cold-glue (specification R5183-L50) needed to produce 1000 A4 booklets is as follows:

Number of sheets in booklet	Number of pages in booklet	Cost of ISG (GB Pounds)
4	16	£ 0.30
10	40	£ 0.90
30	120	£ 2.90

Note 1: If the booklets are A5 size then the cost of glue shown above is reduced by 30%

Note 2: The ISG cold glue system is easier and less expensive to maintain than the wire stapling system. This may offset the slightly higher glue cost compared with stapling when making thick booklets. Also, ISG glued booklets are stronger and lay flatter than wire stapled booklets

1.11 Multiple covers and insert-sheets.

Can the Smart-binder saddle-stitcher change covers automatically on-the run and/or feed insert sheets inside the book?

Answer: Yes the Smart-binder saddle-stitcher may be fitted with multiple cover feeders. Feeder #2 may be loaded with the next cover while the current cover is feeding from feeder #1.

Alternatively, the additional cover feeder may be used to feed a pre-printed insert sheet at any position inside the book.

Note: if the insert must be in the center of the book then there must be a gap large enough between sheets coming from the printer into which to feed the insert.

Note: any inserted sheets will be bound into the book. If a loose insert is required then this must be inserted into the book using a separate post-trimmer inserter machine.

1.12 Perforated sheets.

Can the Smart-binder saddle-stitcher produce books with tear-out pages?

Answer: Yes. The optional DMP-100 Dynamic micro-perforator system may be integrated just before the Smart-binder folder. This allows any sheet to receive a perforation (perf) line at any position parallel to the sheet flow direction. A bar-code digit on each sheet controls whether that sheet is to receive a perf line or not. Each perf wheel is individually controlled so a sheet may receive a perf line on one side, but not the other side, or both sides together.

1.13 Hole punching and drilling.

Can the Smart-binder produce books with holes?

Answer: Yes. Both hole drilling and (lower cost) hole punching modules are available to be connected on-line with the Smart-binder delivery.

1.14 Loop Stitching.

Can the Smart-binder produce books with loop stitches to fit into ring binders?

Answer: Yes. The standard wire stitched heads may be exchanged for loop-stitch heads. See sections 6.14 for more information

1.15 Book Stacking, wrapping and/or banding.

Can the Smart-binder be fitted with an automatic book stacker, bander and/or wrapper?

Answer: Yes. A variety of stacking, wrapping and/or banding modules are available for direct connection to the Smart-binder delivery.

1.16 Book squaring.

Can the Smart-binder produce saddle-bound books whose spines are subsequently pressed into a square shape?

Answer: Yes. IBIS's optional SM-100 module can press book spines into a square shape and can be fitted directly to the Smart-binder delivery. However this process is not recommended for books thicker than 3 – 4 mm and the maximum SM-100 throughput rate is 23 books/min.

1.17 Two-up production

Can saddle-bound booklets be made two-up by using a trimmer center knife and what are the restrictions when using the center knife?

Answer: Yes. The Smart-binder has an optional center-knife system which creates a single or double-cut (with center trim-out) in the middle of the book, resulting in two small format books being delivered side by side. The minimum book spine length when using the trimmer center knife is 97mm. The maximum book thickness when using the trimmer center knife is about 3- 4mm. If using the trimmer center knife when wire-stitching, then two extra stitch heads are normally required.

1.18 Minimum book format size.

What is the minimum book spine length and minimum book width?

Answer: For normal one-up production the minimum spine length is 210mm. When using the optional center-knife for 2-up production (see above), then the minimum spine length is 97mm. A special trimmer modification is needed for spine lengths in between 150 and 210mm.

The minimum book width is normally 120mm, but a special modification is available to reduce this to 89mm.

1.19 Maximum book format size

What is the maximum book spine length and width?

Answer: The standard Smart-binder can produce a maximum finished book size of 320mm (spine) x 230mm.

The stretched model Smart-binder model SB-XW is available to increase the maximum book size to 450mm (spine length) x 273mm (width).

1.20 Producing A5 booklets 2-up, or A4 landscape , or Tabloid size

Can the Smart-binder produce A5 booklets 2-up, A4 landscape or Tabloid newspapers?

Answer: The standard Smart-binder can produce A5 landscape booklets 2-up using the optional trimmer center-knife. The Smart-binder SB-X can produce A5 portrait booklets 2-up using the optional trimmer center-knife. The Smart-binder SB-W can produce booklets up to 273mm wide.

1.21 Trimmer waste removal.

What are the options for removing trimmer waste?

Answer: The normal waste removal system is a simple inclined conveyor which delivers the trim-off paper strips into a customer-supplied collection bin.

If the customer has a factory vacuum waste extract system, then it is preferred to connect the Smart-binder to this instead of using the normal waste conveyor. In this case we can supply a waste collection 'chute' with a circular outlet for piping connection to customers extract system.

1.22 Electrical power supply voltage.

What supply voltage is needed for the Smart-binder?

Answer: Any 3 phase voltage supply may be used, but voltages outside the 380 – 420 Volt range require the optional voltage change transformer to be selected.

1.23 Spine corner tearing on thick books.

How can the normal tearing of the spine corners be avoided when making very thick books?

Answer: The Smart-binder can be fitted with an optional book clamp system (Option TCA-100) that reduces or eliminates spine corner tearing. This assembly is customized to suit a particular book width, so the book width must be specified when ordering this option.

1.24 In-line connection to cut-sheet printers.

Can the Smart-binder be used in-line with cut-sheet printers?

Answer: Yes. The Smart-binder SB-1 range is intended for use with slower speed printers, such as cut-sheet printers. A sheet rotator and/or roller table may be needed in between the printer and the Smart-binder. Note: Cut-sheet printers normally deliver large sheets short-edge leading and small sheets long-edge leading. The Smart-binder must receive sheet long edge leading.

1.25 Sheet buffering when running in-line

When running a Smart-binder system in-line with a digital printer, then is it possible to 'buffer' the sheets so that the Smart-bidner input speed does not always have to be exactly the same as the Printer speed?

Answer: Yes, we offer the optional SBS-100 buffer for this purpose. This SBS-100 module allows some very thin booklets to be produced without reducing the in-line printer speed. It also allows the Smart-binder to stop and start (i.e to clear a jam) without stopping the in-line web printer.