



**c.p. bourg®**

The Print Finishing Experts

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## Genius by Design: C.P. Bourg Brings Collating and Finishing into the Digital Age

Few machines reflect the genius of their inventor as well as the C.P. Bourg BST Suction Tower Collator and BDF Document Finisher. Each machine revolutionized key finishing functions when it was introduced, and each continues to be highly successful in its own right. Together, they have proved the most successful product combo of the many designed by Christian Pierre Bourg and produced by the company with his namesake.

Prior to the mid-1980s, analog offset printing was king and most of the paper stock for print was bond. During those years, collating, binding and finishing were separate functions that occurred out of sight, away from print production.

With the rise of 4-color process, the booming printing industry during the 1980s experienced a dramatic shift away from uncoated papers like bond and toward coated stocks that held printer's dots more crisply and produced sharper-looking printed products with significantly more visual appeal.

### ***Consummate Engineering, with a Marketing View***

Although these "shiny" papers were a dream for making colors "pop" off the printed page, they proved nightmarish for collators. Coated stocks have a lower coefficient of friction than their boring, uncoated cousins, and their slicker nature wrought havoc with the friction-feed mechanisms that had flourished when bond prevailed.

The problems facing collating and finishing weren't acceptable to Christian Pierre Bourg. A consummate engineer equipped with a marketing mentality of listening to the consumer, Bourg resolved to remedy the problems of collating coated papers, and set his engineers to work building what quickly became the most successful collator in history.

The heart of any collating system is its feed mechanism, and it was clear the friction rollers commonly used to move paper through the machine were the offenders. Led by Bourg himself, the engineering team pioneered a technique that virtually eliminated friction as a factor.

The Bourg BST Suction Tower collator introduced in 1993 was the first to use suction coursing through six perforated air belts to transport sheets along a document path. This "vacuum belt" technology – still at the forefront today – features bidirectional airflow from twin turbines that creates a buckling effect to lift sheets and transfer them into the transport mechanism.

In addition to eliminating the rubbing or marking of sheets, the vacuum belt technology also prevents porous paper bleed-through and enamel sticking – the leading causes of double sheet feeding. The Bourg BST Suction Tower collator, still innovative today, accommodates a wide variety of paper weights and sizes – even light NCR – without marking or skipping.

And the BST doesn't sacrifice speed for gentility. The latest-version BST-10d+ collates up to 5,500 document sets per hour and offers a dual output option that can feed sets into a stacker, send sets on

for further finishing, or mix the output flow simply by selecting an option on the convenient color touchscreen.

### ***Fresh Thinking Finds it Way to Finishing***

While development at C.P. Bourg was proceeding on the BST, another tectonic shift was rocking the printing industry. The digital xerographic printers that arrived on the printing scene in the early 1990s relied on fused toners instead of absorptive inks. With toner-based print, scuffing or friction could easily rub toner right off the page and bad folds could cause cracking.

The suction tower technology Bourg developed for the BST instantly met this added challenge, unique in its ability to accommodate coated stock as easily as it could fused toner.

The emergence of digital printing, with its in-line ability to produce and collate printed sets, also thrust back-end finishing for the first time front and center, and charged it with the responsibility of producing every collated, bound and finished set perfectly – without scuffs, dropped pages, sloppy folds, poor trims or missed stitches.

The new demands of digital also provided the impetus for Bourg to extend the work he had started with the BST collator guided by the same customer-centric philosophy and meticulous engineering principles that marked development of the Bourg BST.

Prior to the arrival of digital printers, offset-printed documents were finished in large lots by specialized machines on long production lines. Separate machines handled each function in series – one for stitching, another for folding and a third for trimming.

In addition to the knowledgeable craftsmen who operated them and specialized tools required for making adjustments with every job changeover, these monoliths often consumed a great deal of electrical energy and real estate on the factory floor.

The “old standards” of finishing made the perfect marriage with a purely offset printing process. But digital workflows demanded new thinking and fresh ideas.

### ***Finishing Takes Center Stage***

In the early 1990s, customer feedback on such issues came fast and furious, and Christian Pierre Bourg was all ears. Demand was growing for a simpler solution to finishing and booklet making, driven by timesavings, simplicity and waste reduction.

In 1992, development at the C.P. Bourg factory began on a compact, automatic finishing unit that could stitch, fold, and trim – and that could be paired with the increasingly popular Bourg BST Suction Tower collator. In 1997, when the Bourg BDF Document Finisher arrived on the market as a fully automated booklet maker combining all three finishing functions in one compact, self-contained unit, it took the market by storm.

Many of the functions developed for the BDF are still relevant today, both in their uniqueness and excellence in design.

One of these is a low-friction paper transport developed by Bourg engineers with a unique lugged belt that gently pushes the collated set to each of the three finishing functions without scuffing or marking – a design move that makes the BDF perfectly suited for finishing jobs printed by offset or digital means – or by both. Another is a by-pass feature enabling the BDF to just stitch documents.

BDF stitching heads are equipped with a patented self-threading stitching wire cassette that holds up to 50,000 stitches and allows for simple, tool-less spool changes. The stitcher can place top- edge- corner- or saddle stitches precisely in the location the operator selects from a simple menu on the

BDF control panel. The BDF is also remarkable in its ability to automatically detect the rare missed stitch – one of many Bourg “firsts.” And it is still alone in accommodating document size changes from 11 by 17-inch booklets down to 6 by 6-inch CD documents simply selected on the operator’s touch-screen control panel, without tools.

The folding section represented another Bourg-pioneered industry “first.” Instead of lifting the sheets, which caused booklets with several pages to lose registration as they separated from the head and tail stops, the industry’s first horseshoe-shaped paper path allowed sheets to lay flat, directly touching four stainless steel fold rollers. This innovative transport allowed for sharp, square folds with perfect centering and registration of booklets of up to 55 sheets.

After folding, booklets pass into the trimmer unit, which again reflected a Bourg-developed industry first. The technique features two micro-thin blades that act like scissors to precisely cut each paper face to within 1/250<sup>th</sup> of an inch. The technique offers the additional benefit of sharpening both blades every time a cut is made, allowing hundreds of thousands of booklets to be trimmed before blades are replaced.

Predictably, every printed set emerges from the Bourg BDF Document Finisher exactly as expected – accurately stitched and, if the job calls for it, perfectly folded and precision-trimmed.

### ***The Best of Both Worlds***

The Bourg BDF Document Finisher and the Bourg BST Suction Tower collator reflect other design philosophies championed by Christian Pierre Bourg.

Take simplicity, for example. Job size changeovers on other manufacturers’ systems require the use of tools. But since the BST and BDF were designed as fully automated and modular systems, once you program your selection on one system, both will automatically change to accommodate the new job dimensions in less than a minute. And programming is a snap: the operator can choose from any of 10 job feature sets stored in memory, each with different parameters that can be modified to match unique job requirements, simply by touching an icon on a touchscreen interface.

Or efficiency. The Bourg BDF is built on a durable uni-chassis design using all-metal parts and enclosed in an insulated, noise-dampening cabinet. Both it and the BST are fully grounded to eliminate any chance of static electricity. And both are powered by standard 110-volt current, for easy installation and economical operation.

In keeping with Bourg’s philosophy of expandability, up to five 10-pocket BST towers can be linked, allowing customers to buy only as much collating capability as they need.

The BST/BDF combination is, even today, superbly well suited to work in environments that include offset or digital workflows, or both types. The BST even offers the flexibility needed to collate sheets printed on an offset press with one or more digitally-printed pages, then send collated jobs into the BDF at an assigned speed to mesh with the BDF output at rates up to 4,200 finished documents per hour.

All of which leaves little wonder as to why the Bourg BST-10d+ collator and the Bourg BDF document finisher factor prominently among C.P. Bourg’s most successful products, with thousands installed worldwide.

The genius is all in the design.

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