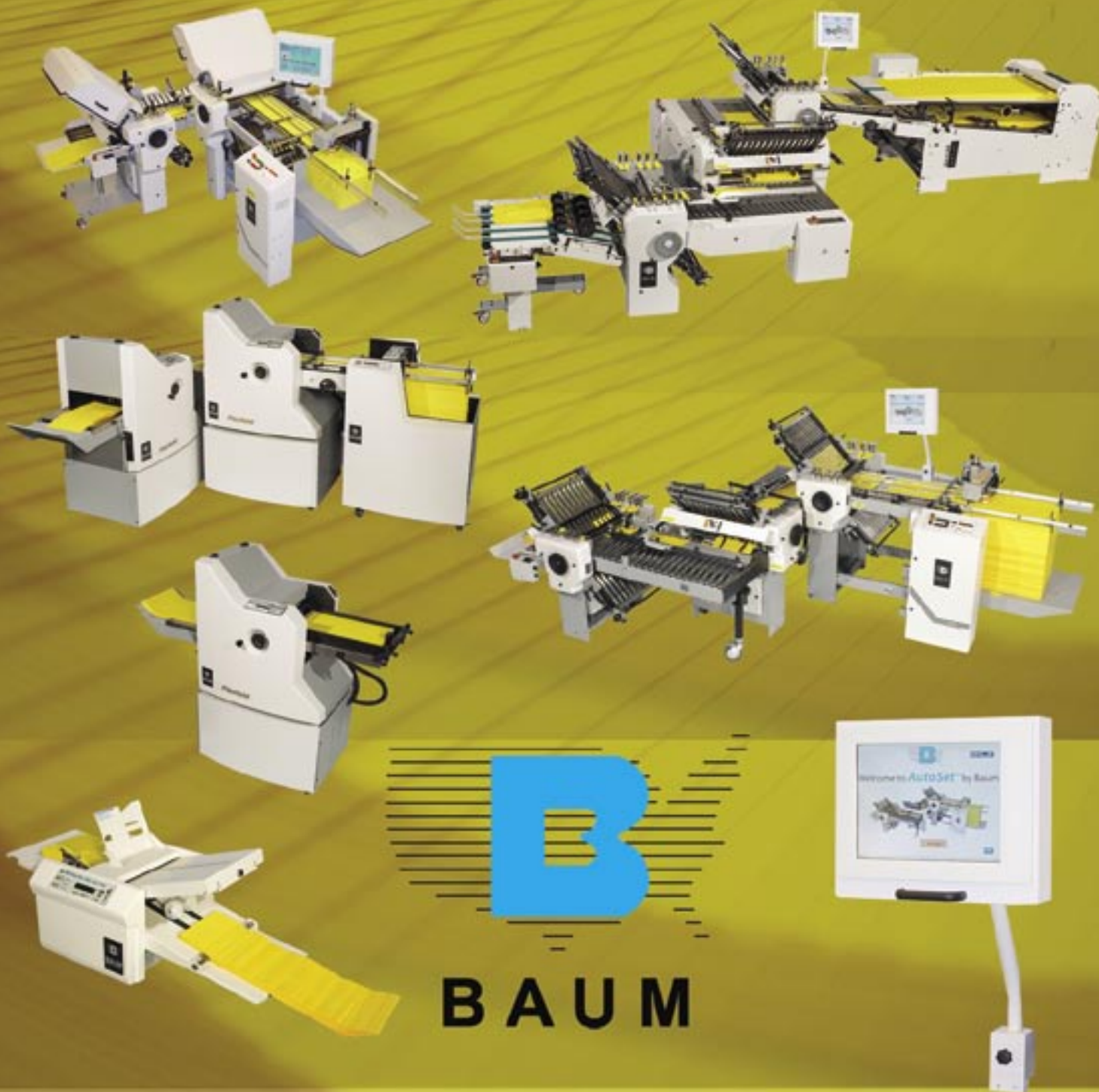


Guide for selecting automation in the folding process

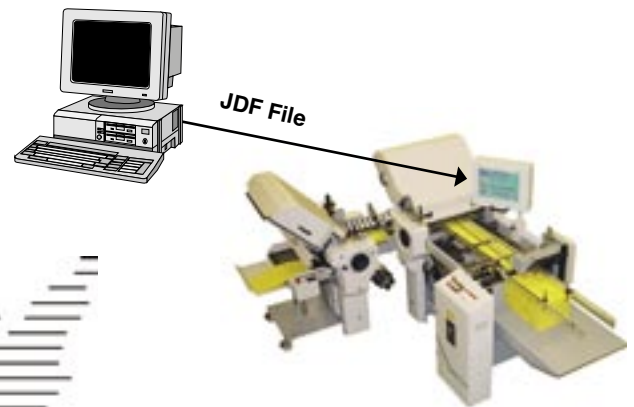


FOLDERS • CUTTERS • DRILLS • FINISHING • GENUINE PARTS

Guide for selecting automation in the folding process

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**Infomate, Automate
and Communicate!**

BAUM Solutions:

- ifold® • AutoSet™ •
- BaumConnect® • Flexifold® •
- AutoBaum™ B12 •



BAUM

FOLDERS • CUTTERS • DRILLS • FINISHING • GENUINE PARTS

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Why Automation?

The need for automating and or improving the folding process has become more prevalent today than ever before due to the following factors:

- Shorter run lengths can require more frequent setups. The emergence of digital short run printing has changed the imaging process but the need for bindery and folding is still there. Less setup time saves cost.
- Skilled bindery labor is harder to maintain due to lack of trained personnel and the depletion of a generation of bindery

operators. It is getting harder to find skilled personnel and be able to pay them a competitive wage to run older equipment.

- Off-shore and other outside sources are creating costing pressure that requires bindery work to be more cost competitive.
- The need to repeat jobs quickly with minimal setup is key to keeping costs low to remain competitive.
- Other forms of electronic advertising are competing with print and requiring lower costs to remain competitive.

How to determine what level of automation is required.

Automation can add considerable initial equipment cost to bindery equipment. Completion of a payback or return on investment plan is critical before purchasing automated equipment vs. manual setup equipment. Note that all processes required for folding can not be automated. Many automated bindery machines can claim a fast setup but is the setup accurate for a quality job?

1. A complete list of current and anticipated work for the folder should be made to determine if automation is needed. If you are running signatures for books and are making changes to the fold very seldom, automation may not pay for itself. If you are running several short run jobs with frequent changes, automation will pay for itself.
2. After determining that you have several setups, determine how many operators you currently use and how many you might be able to use if automation were added to the process.
3. Determine the skill levels of your operators and match their abilities to the automation to insure that the investment will pay.

It is important to completely evaluate all the needs for the equipment. All automated folders are not equal. Quick setup of foldplates and other guides etc is great for making creases in the paper.

You must also make sure of other applications for:

Scoring/ Slitting and Perforating

Can the folder score heavy stocks?

Can a wetscore be added?

Can pre-slitters be added on larger machines?

Can the fold plates all be set to deflect ?

Can a microperf be performed?

Can various gutter trims be performed?

Can waste from trimming be removed properly?

Can multiple-up work be performed with slitting?

Can edge trimming be performed in the 2nd or 3rd stations?

Automate and Infomate

It is great to have automated equipment, but can the automation alone provide the level of quality that is needed? The bindery has multiple processes that all must work together to provide a quality printed and finished product. Automated products can not automatically adapt to:

- Registration changes of sheets during imaging or printing
- Paper and ink stretch
- Variances in the guillotine cutting process.
(Squareness, draw etc.)
- Quality of paper, grain changes, etc.
- Operator errors

BAUM understands that you must provide more than just automation to provide quality. You must provide information or “Infomate” when you automate or simply “Infomate” a manual set up folder.

This is the key to the design of the BAUM ifold and AutoSet designs. An operator must know how to make a fold square,

or score paper, or perforate to name just a few of hundreds of items that are needed.

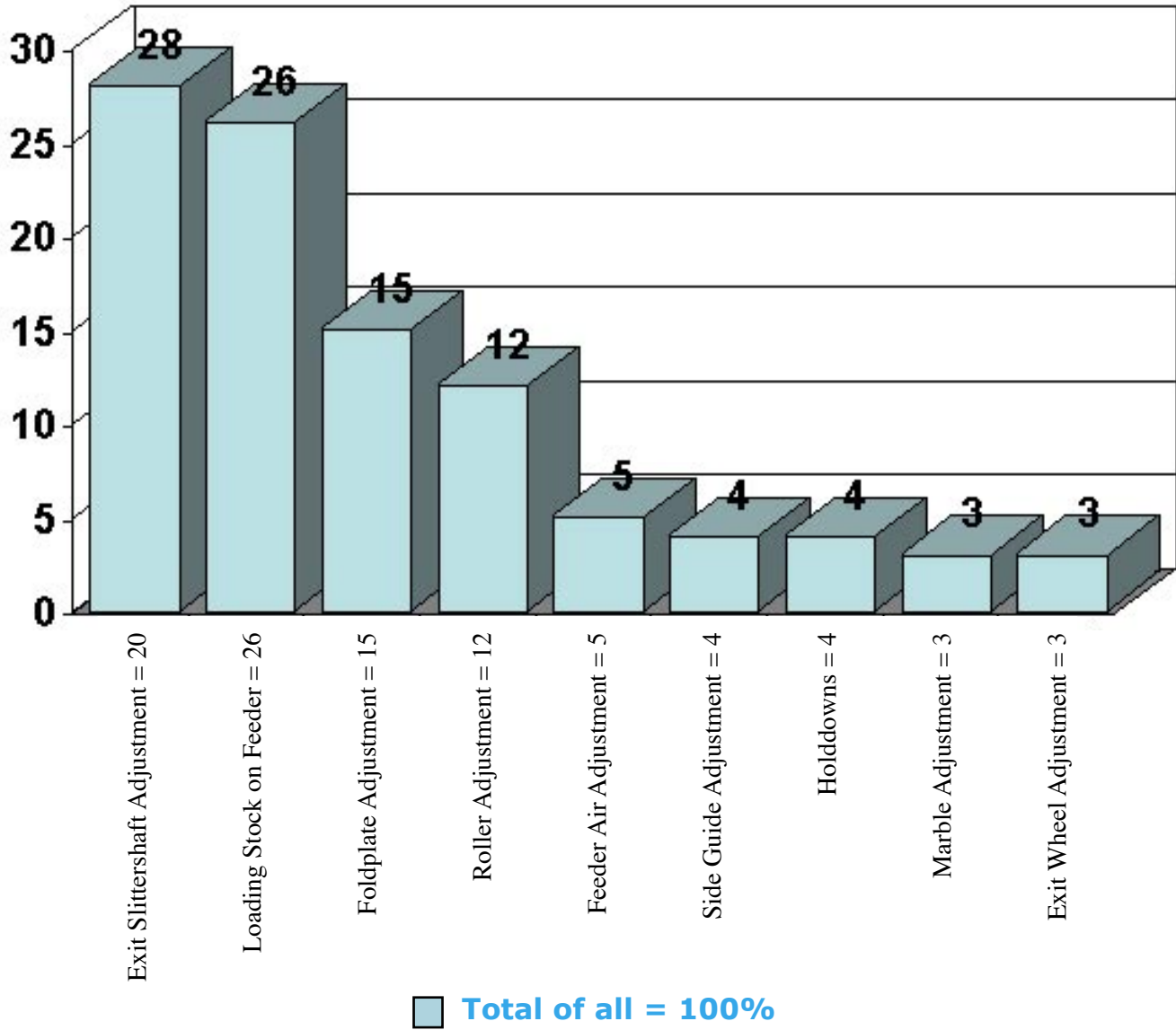
It can be difficult to repeat the same job time after time if one of the processes before folding can affect the consistency of the paper to be folded.

Automated equipment does not always inform the operator on simply how to load the paper. During the folding process, you need to know how to place the printed pages with the proper orientation to produce the correct fold. Automated products that fail to “Inform” the operator of this basic but very important fact will frustrate the operator and cause MORE setup time!

BAUM understands this need and provides the information and even includes a video of how to “fan” or add air to the paper for better feeding. BAUM even adds a friendly face to the sheet of paper on the ifold screen for the operator to see the head of the sheet.

Typical make-ready time of a non-automated folder.

Note that the numbers are percentages and not minutes. Uses typical older folder without ifold or AutoSet features



Slitter Shaft Setup & Loading Paper

You can see that the slitter shaft area is the most time consuming part of the folder setup if perforating, scoring, or slitting is required. **28% of total setup time.**

- Loading paper is the next highest. **26% of setup time**
- Fold plate adjustment settings. 15% of setup time
- Fold Roller pressure settings. 12% of setup time
- Feeder air adjustment 5% of setup time
- All other items are at 3% to 4% of the total time.

Slitter Shaft Setup

This area can be very complex, especially to the un-trained operator. Many operators do not know the capabilities of this area of the machine and are intimidated to utilize the accessories. Proper use of this area of the machine can greatly increase profit and provide substantial productivity gain.

BAUM Solution: All new “Cartridge” design that enables both shafts to be removed together. An alternate cartridge assembly can be used in place of another assembly to provide even faster setup. The ability to remove the shafts as a set and replace the shafts with a preset assembly can reduce the make-ready time by over 50%!



Exclusive Baum 20 removable cartridge assembly.

Loading Paper

The type of feeder depends upon the run length volume and type of stocks being fed. Loading a pile feeder requires down time from folding. It is also important to load the paper in the proper direction and to handle the stock correctly.

BAUM Solution: The BAUM 20 Pile feeder combined with the BAUM ifold tutorial provides the operator with the information they need to load the paper in the correct direction and even provides a video showing how to fan the paper to add air molecules to enable better feeding. The easy access to the BAUM feeder with the removable side guide enables greater access for the operator.



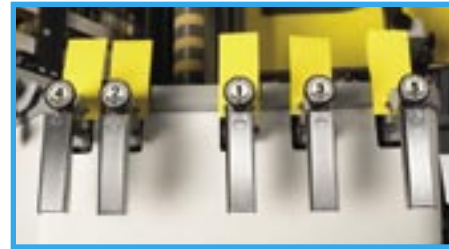
Fold Roller Pressure Settings Foldplate Adjustments & Feeder Air Adjustments

Fold Roller Pressure Settings

This is one of the most important areas of folding. It is also one of the most difficult to understand. The operator must know the paper path and the mechanical design of the machine to completely comprehend this. Improper settings can prematurely wear the folding rollers. Automated settings in this area are very sensitive in the right angle folding units and still require manual adjustment for special folds.

BAUM Solution: All BAUM folders are designed with our exclusive 1:1 ratio Baumsets. The BAUM ifold provides all of the information needed for the operator to know. The ifold automatically calculates and displays the number of thicknesses needed for the requested job. If changes are needed for special folds, the job in the ifold can be modified to save the information for the next time. Using ifold in this area is estimated to reduce setup by 8% and provides flexibility for special jobs.

Automation of pressure settings can not be used when installing segmented folding rollers for gluing applications. Movement of the segments from side to side can not be compensated with automated pressure devices. BAUM folders keep the manual settings to insure that a wider range of applications can be performed.



Foldplate Adjustments

This area again requires experience to know which fold plates to use and where to set the paper stops to get the correct fold length. Many operators do not know why there are multiple choices of foldplates and the ways to increase production using the correct selections.

BAUM Solution(s):

Manual Setup: The BAUM ifold provides all of the information needed for the operator to know. The ifold automatically calculates and displays the fold plates that can provide the highest productivity and the position to set each paper stop.

Automated Setup: The BAUM AutoSet provides all of the information needed and with the press of a button, moves each paper stop to its correct location in just seconds!



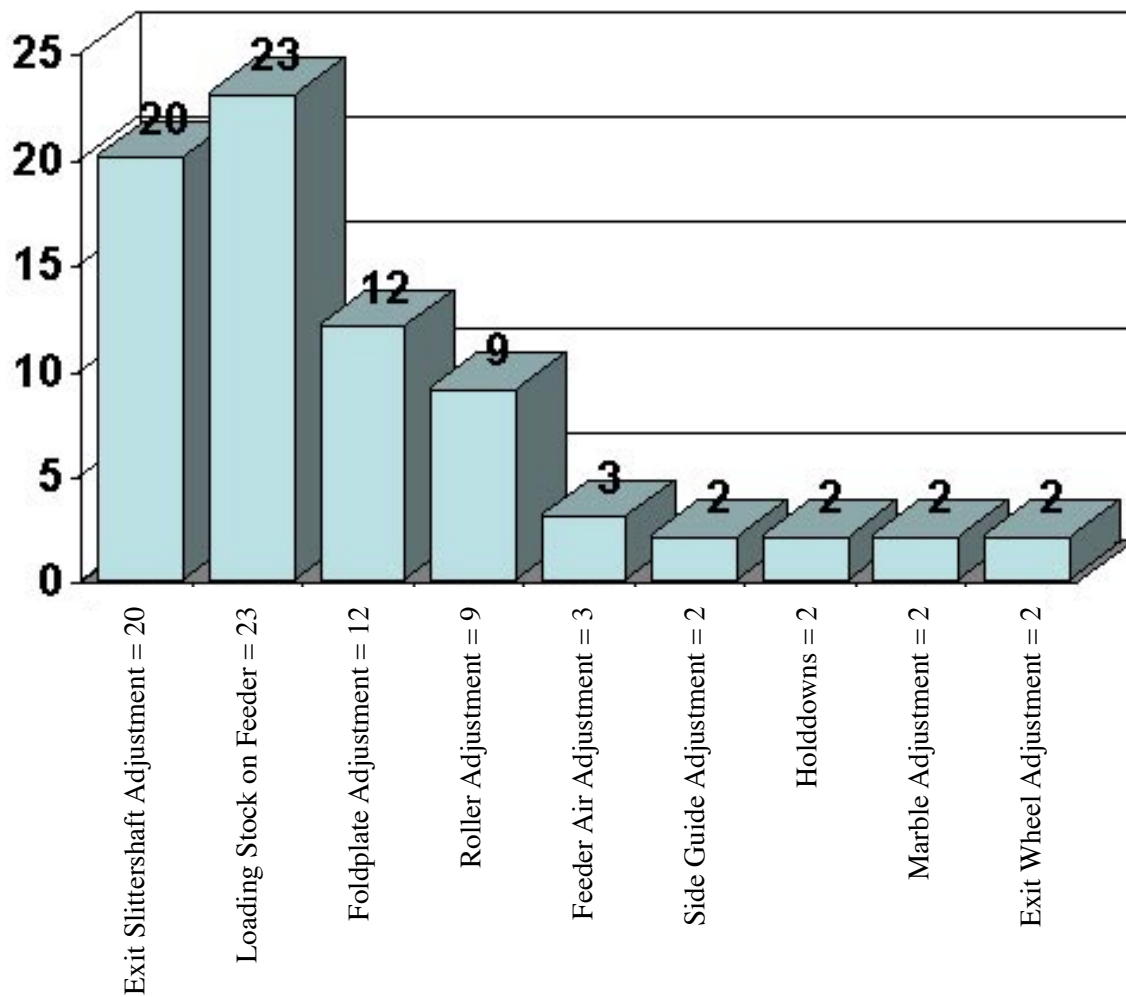
Feeder Air Adjustments

Different stocks require different settings and separation. The un-skilled operator can struggle with this area. Incorrect air settings will cause double-feeding, and mis-feeds.

BAUM Solution(s): The BAUM ifold provides all of the information needed for the operator to know. The ifold information is combined with the already exclusive patented BAUM double front blow bar with predetermined settings using our detent design to open the air holes needed for the width of paper on the feeder. The ifold provides the settings for the tubes and even has a video to show the operator how to set them!



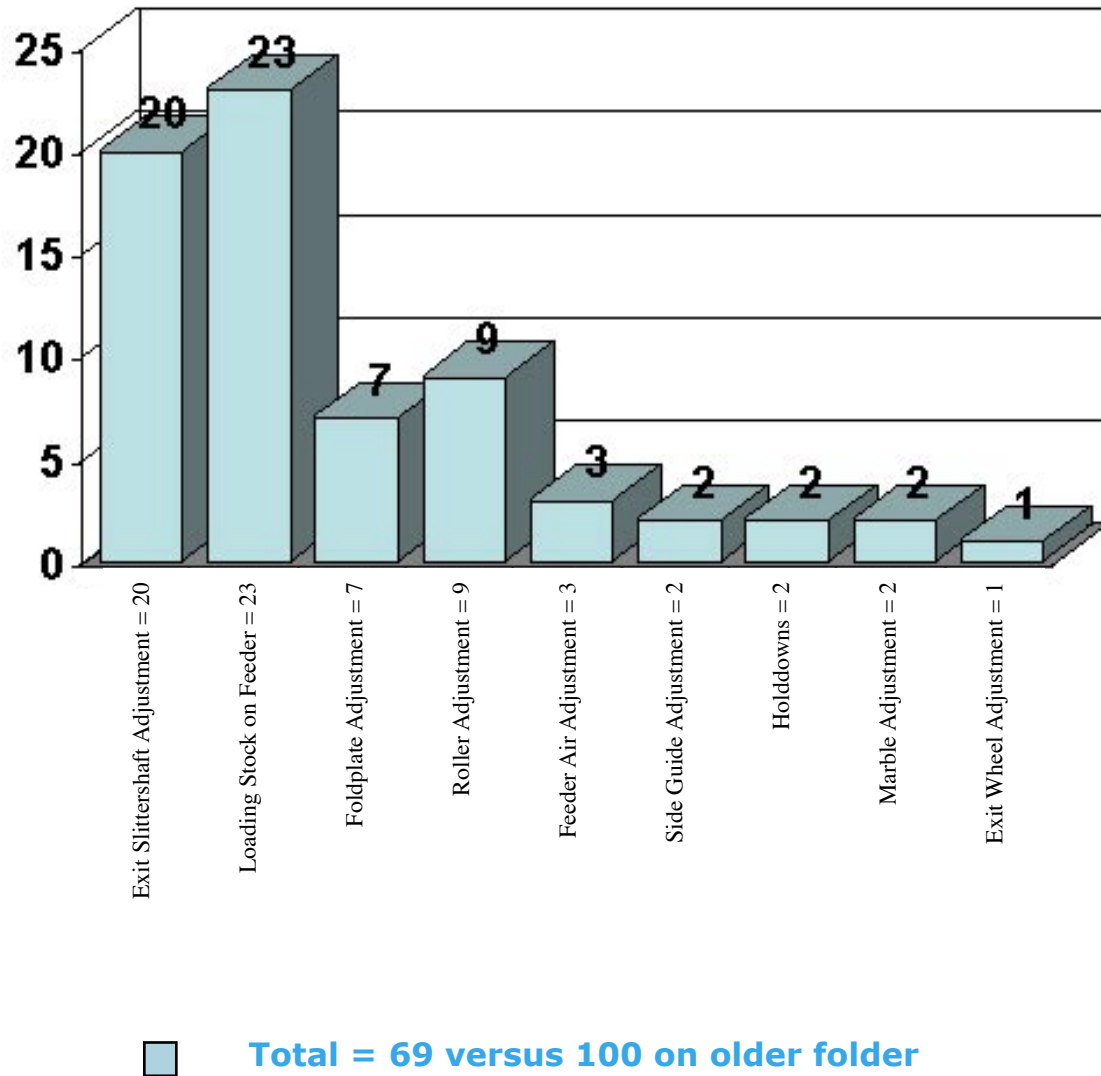
Typical make-ready time of a non-automated folder with BAUM ifold features



■ Total = 73 versus 100 on older folder

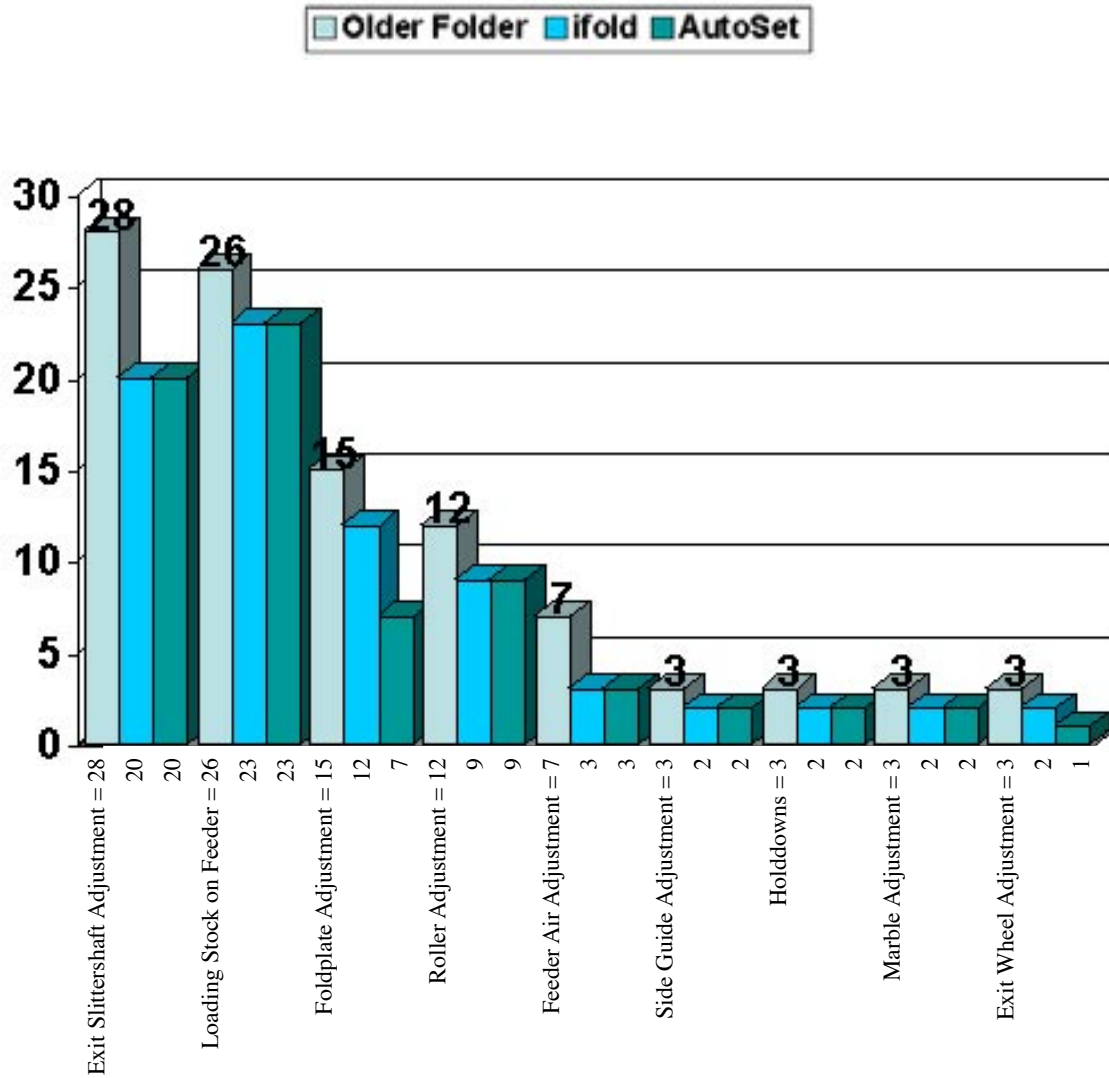
A 27% reduction of setup time is estimated using Baum ifold.

Typical make-ready time of a folder with BAUM AutoSet features



A 31% reduction of setup time is estimated using Baum AutoSet.

Overall Comparison



A 27% reduction of setup time is estimated using Baum ifold.

A 31% reduction of setup time is estimated using Baum AutoSet.

Cost Comparison

ifold®

Average cost per hour for folding: \$50.00
Average time savings in setup of 7 minutes x .83/min =
\$5.81 average savings per setup

**\$5.81 savings x 5 setups per day x 240 days
= \$6972 per year**

AutoSet™

Average cost per hour for folding: \$50.00
Average time savings in setup of 11 minutes x .83/min =
\$9.13 average savings per setup

**\$9.13 savings x 5 setups per day x 240 days
= \$10,956 per year**

Communicate

The need for improved productivity includes the ability to send files to the folder to provide setup and production monitoring information. BAUM now provides the capability to adapt the BAUM floor model folders to CIP4 technology using JDF.

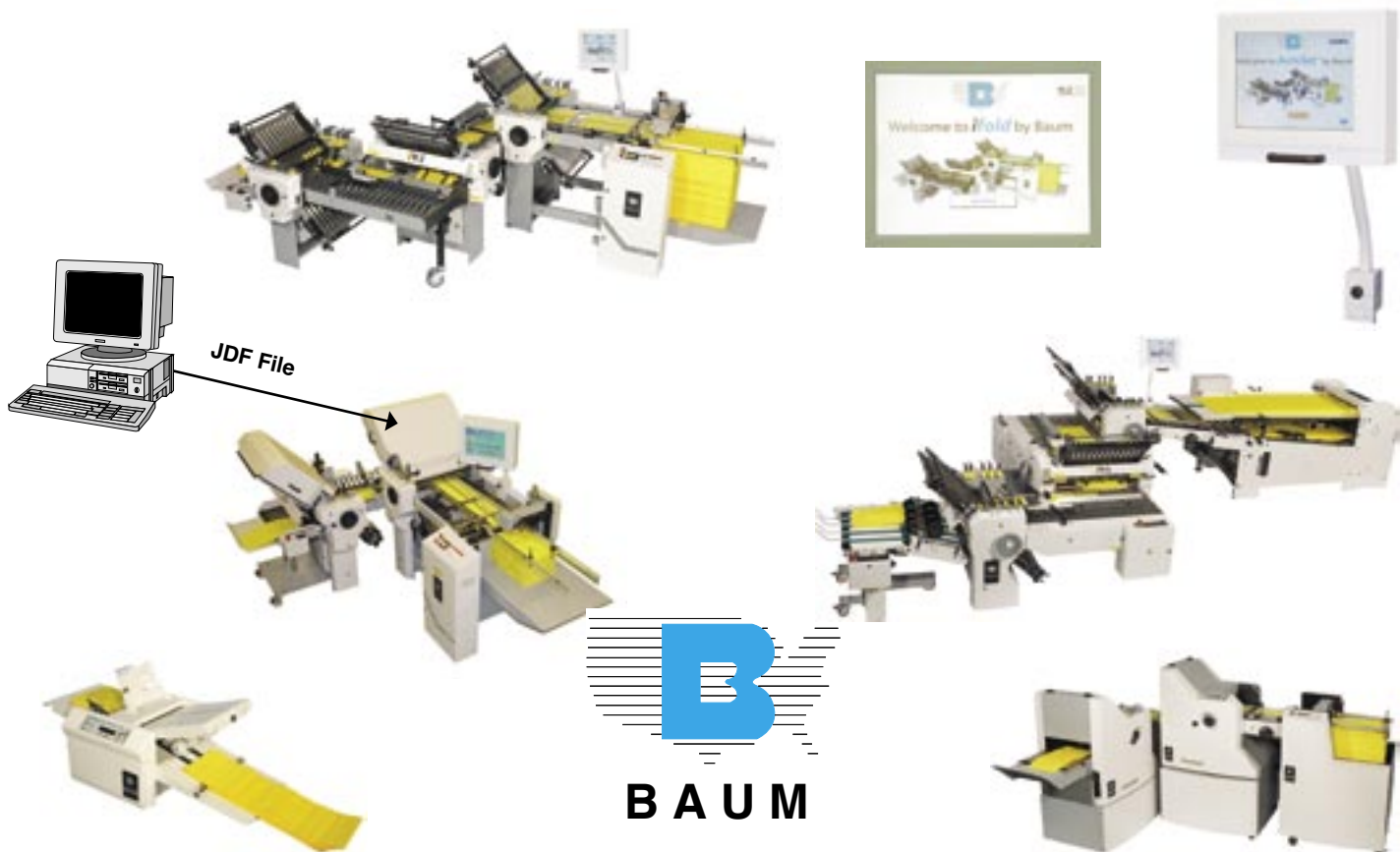
BAUM has more years of experience with folding and automated folding than anyone. This experience has lead us to the determination that there is a need for multiple levels of productivity improvement on folding machines.

BAUM gives the customer more choices to meet their needs in productivity gain with the ability to:

Infomate, Automate and Communicate!

BAUM Solutions:

**ifold® • AutoSet™ • BaumConnect™
Flexifold® • AutoBaum® B12**



ifold® - Information on Folding

What is ifold®?

BAUM developed ifold to provide a lower cost productivity enhancing solution to folding for customers that do not require automation but want to make the process easier on floor model folding machines.

ifold is an industrial touch-screen computer that is mounted to new BAUM ifold compatible floor model folders. ifold provides many features not found on other sophisticated automated folders.

ifold provides information at the machine 24/7 for all operators of all skill levels. Review the ifold brochure for more details.

ifold is only available on selected newer model BAUM floor model folders.

ifold can not be added to BAUM floor model folders that are not ifold compatible.

ifold is planned to be CIP4 and JDF compatible in the very near future.

ifold is patent pending and is the sole property of BAUM.

ifold® features

- Video presentations for all aspects of the folding process.
- Can save up to (100) jobs in memory
- User defined maintenance schedules with user defined alert
- 30+ preprogrammed folds
- Job Setup task list to track progress
- Fold production calculator
- (4) languages standard: English, German, French, Spanish
- Inch, Metric or custom paper size selection
- On-Screen parts and operation manuals
- And much, much more!

The introduction of ifold to the BAUM 20 Pile and Continuous feed folders also includes exclusive mechanical features found only on the BAUM 20 series. These mechanical changes include:

- NEW removable slitter shafts that are a cartridge design.
- NEW safety switches in the slitter shaft area to prevent the folder from operating when the shafts are removed.
- NEW combination fold plate is standard in the #2 fold plate position. Eliminate the need to lower the fold plate to change from open to deflect.
- NEW register rail design on non-operator side to support ifold option.
- NEW stylish operator and non-operator guarding that covers entire frame from top to floor.

Only the new register rail was added to the BAUM 15 and 18 models.

ifold is available on these ifold compatible newer models:

- BAUM 15 Pile Feed
- BAUM 18 Pile Feed
- BAUM 20 Pile Feed
- BAUM 20 Continuous Feed
- BAUM 26 Continuous Feed
- BAUM 30 Continuous Feed

Be sure to check with BAUM before quoting adding ifold to an existing customer installation!



ifold® Markets

ifold can be used in any market that has floor model folding machines and want to improve their productivity.

Small to large format customers with all types of imaging can benefit from ifold.

ifold is already installed in many markets including:

- Trade Binderies
- Universities
- Commercial printers
- Government agencies

ifold® Cost Justification

Daily cost vs. Payback timeframe

- \$19.16 per day for (1) year
- \$6.38 per day over (3) years
- \$4.79 per day over (4) years
- \$3.83 per day over (5) years.

Where else can you obtain a training, operation and maintenance aid for such an affordable price? Compare the cost of training to the cost of the ifold.

Where else can you find a 24/7 tutorial and production aid for such an affordable price?

Who is the Competition?

ifold is patent pending and has no competition! There is no other product on the market that meets the customer needs with the affordable solution that ifold provides.

ifold provides distinct benefits to the discriminating customer that can not justify automation but needs to improve folding productivity.

BAUMConnect™

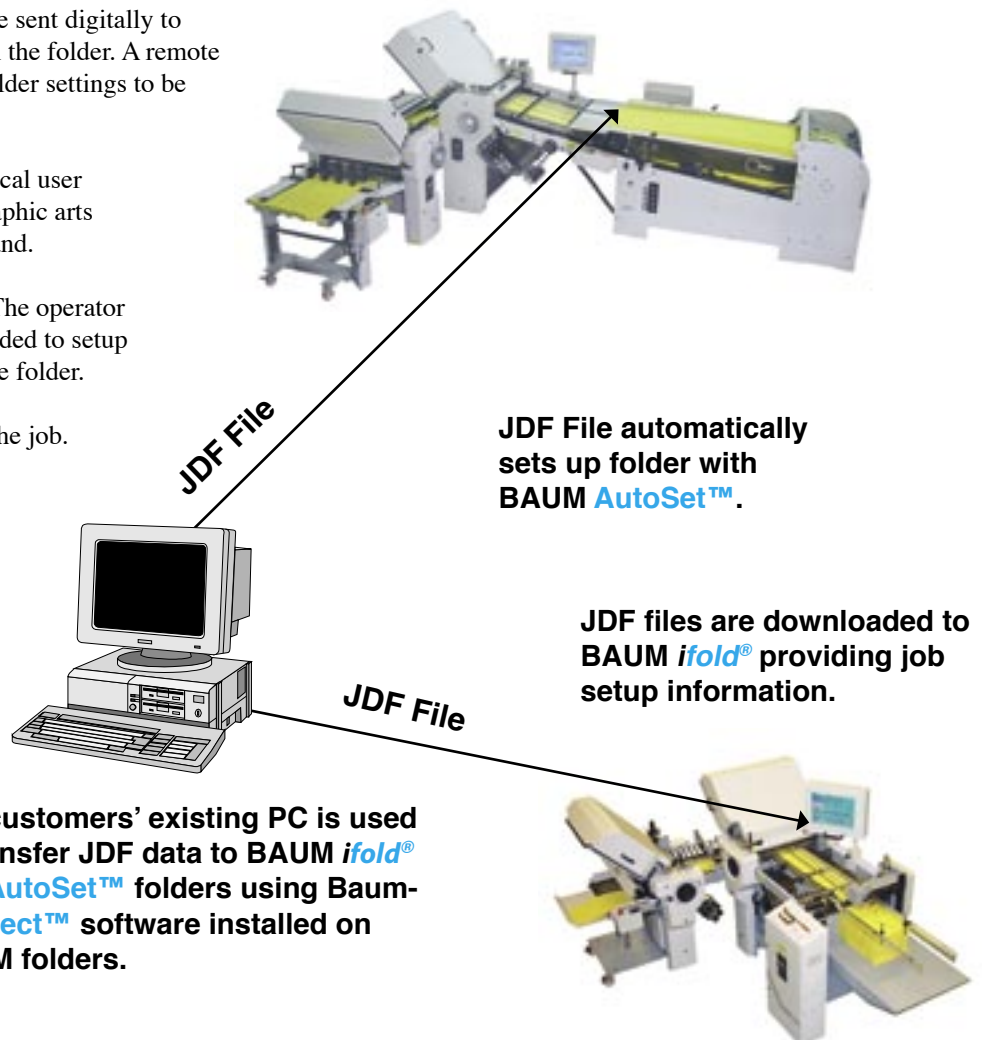
BAUMConnect is a unique software package for installation on BAUM floor model folders equipped with either BAUM ifold or BAUM AutoSet.

BAUMConnect Enables JDF job files to be sent digitally to the BAUM ifold and AutoSet computer on the folder. A remote computer can send files that contain the folder settings to be used for a defined job.

All interaction is through a friendly graphical user interface that gathers data in terms that graphic arts production staff will immediately understand.

ifold receives the data and stores the job. The operator can access the job and the information needed to setup and run the job at the ifold computer on the folder.

AutoSet also receives the data and stores the job. The operator can access the job and the information needed and can simply setup the job with the combination of automation and information.



AutoSet™ - Automation with Information

What is AutoSet™?

AutoSet was developed by BAUM to provide a more advanced setup capability for the operator through automation. AutoSet combines all of the features of ifold and then goes further by adding automation to the folding process.

AutoSet sets itself apart from other automated folders by providing true in-depth folding knowledge combined with automation. AutoSet is the only folder that truly teaches the operator how to setup, operate, monitor production, and maintain the folder.

AutoSet provides superior mechanical features combined with automation. The robust design of BAUM folders with proven longevity, combined with industrial quality electronics, make selection of the BAUM AutoSet an easy decision for the customer.

AutoSet™ Features

Features of AutoSet include:

- Automated setup of all fold plates
- Automated setup of delivery stacker wheels
- All features of ifold
- Removable adjustable slit shafts
- Floor guard underneath pile feed platform to prevent objects from being placed under platform and becoming trapped.
- Sound covers as standard equipment
- Mechanical setting of register and feeder side guide prevents operator error and damage to equipment from misplaced stacks of paper and foreign objects.
- Manual setting of gapsets using information provided by ifold removing all confusion on how many strips of paper to use and where. Manual setting of gapsets helps compensate for roller wear better than automated designs.
- Larger touch screen
- Exclusive “How To” videos
- Exclusive trouble-shooting aids complete with video
- Operator –defined text fields to store notes on jobs.
- Large-display counter and production rate



Flexifold® - Flexible Folding Solutions

What is Flexifold®?

Flexifold was developed by BAUM to provide a small format tabletop market solution for automated folding. Flexifold provides the ease of automated setup combined with a modular design that can grow with the customer.

Flexifold meets the needs of small format, short run folding applications. This folder has maintained many of the robust features of the popular BAUM 714XLT Ultrafold in a new attractive and functional design.

Cost Comparison

Flexifold

Average cost per hour for folding: \$50.00

Average time savings in setup of 6 minutes x .83/min =
\$4.98 average savings per setup

\$4.98 savings x 5 setups per day x 240 days =
\$5976.00 savings per year

**\$4.98 savings x 3 setups per day
x 120 days use per year =
\$1792.80 savings per year**

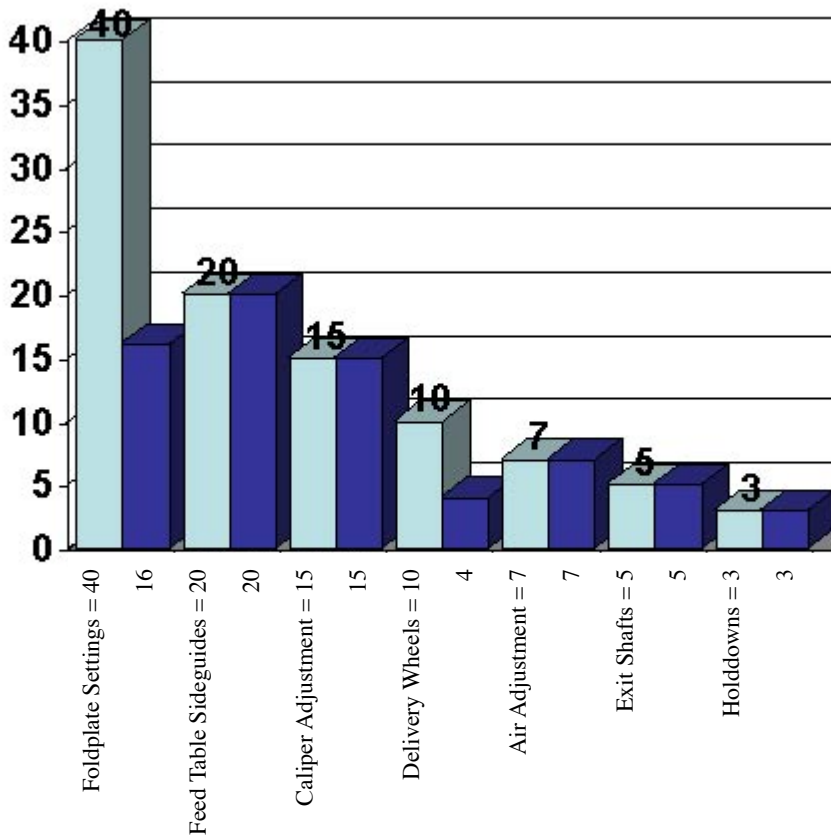
Flexifold® Features

- Modular design can grow with the customer and adapt to various different jobs.
- Selection of deep pile feeder with register table for top feed or short pile feeder with bottom feed capability for continuous operation.
- Automated 2nd station 8-page right angle folder.
- Automated fold plates and delivery stacker wheels
- Adaptable to multiple users
- Jam detection and diagnostic messages
- Pre-programmed and programmable fold settings
- Sound covers are standard
- Urethane fold rollers are standard
- Batch and total counter are standard
- Mobile base is standard
- One-Sheet test mode
- Production rate and job run time display
- Flow-thru paper path design
- Spring-loaded automatic gapsets using mechanical design



Typical make-ready time of a non-automated tabletop folder vs. Flexifold®.

Note that the numbers are percentages and not minutes. Uses typical older tabletop folder



Cost Comparison

Flexifold®

Average cost per hour for folding: \$50.00
 Avg. time savings in setup of 6 mins x .83/min
 = \$4.98 average savings per setup
 \$4.98 savings x 5 setups per day x 240 days
 = \$5976.00 savings per year

**\$4.98 savings x 3 setups per day
 x 120 days use per year
 = \$1792.80 savings per year**

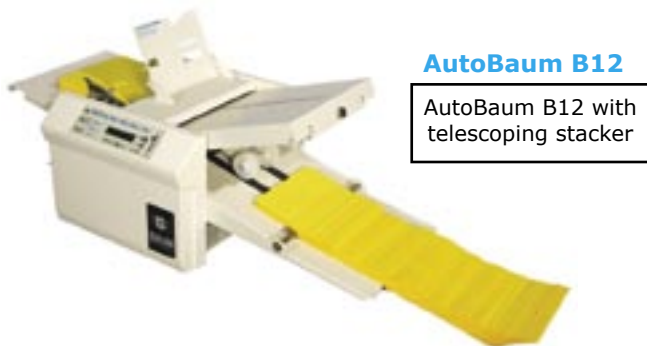
Manual Tabletop Flexifold

AutoBaum® B12 - Desktop Automated Folding Solution

What is the AutoBaum® B12?

The AutoBaum B12 was developed to provide a smaller format, lower volume, lower-priced solution for the smaller volume customers.

The AutoBaum B12 is a friction feed, automated desktop folder with many unique features. Many features are either not found on other folders or are offered as options.



AutoBaum B12

AutoBaum B12 with telescoping stacker

AutoBaum® B12 Features

- Pre-programmed for (6) popular folds
- Sensors in feed table for standard cut sheet sizes
- Exclusive telescoping delivery stacker holds up to 500 folded sheets.
- Dedicated multi-sheet feeder. Can feed up to 3 stapled or unstapled sheets and fold.
- Autobatch processing of sheets into sets
- Batch and total counter are standard.
- Cross-folding, second pass
- Variable speed control. Up to 12,500 pieces per hour of 11" long sheets
- Top feed friction feed system
- Custom fold memory of up to (9) custom jobs
- Jam detection
- Noise reduction covers
- Mechanical fine tuning for precise folds
- Handles paper sizes from 3.5x 5 to 12.25 x 17
- UL and CUL approved
- Made in the USA



Infomate, Automate and Communicate with Baum!



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