BatchBan Cutting

Optimization Software for Flat Glass Fabricators

Unlike batch based optimization software, BatchBan Cutting optimizes sheets of glass one at a time, right before cutting.

The optimization sequence accounts for all orders in queue, giving precedence to rack priority to keep a non-stop flow of completed racks moving to the next operation.

The dynamic optimizer reacts seamlessly to changes to increase cutting yield and minimize waste.

Dynamic Optimization

Reacts seamlessly to any changes in the order sequence to deliver optimal yields and a constant flow of completed racks

Unlike batch based optimization software where an entire batch of orders is optimized all at once, BatchBan Cutting optimizes only one sheet at a time, right before the sheet is about to be cut. This dynamic approach to layout optimization allows any changes in the order or priority in the desired rack sequence to be accommodated. The result is increased yield, minimized waste and a constant flow of completed racks.

Cutting Equipment Independent

Seamlessly integrates with any cutting platform, regardless of the manufacturer

BatchBan Cutting can be integrated with any cutting platform, regardless of the manufacturer. The software can be seamlessly added to new or existing equipment, without the need to invest in new equipment.

Automated Offal Usage

Identifies, stores and reclaims offal in a faster, more efficient manner than traditional optimizers

Offal, commonly referred to as scrap or remnant, is identified, stored, and tracked as a normal stock sheet would be utilized. These commonly neglected sheets are often preferred and therefore utilized faster than with traditional optimizers. The priority on these sheets means offals are less likely to become unusable due to expiration or physical damage, resulting in larger savings.

More Features >

BatchBan Cutting

Instant Recuts

Reproduces recuts effortlessly and intelligently, saving time and increasing yield

Dynamic optimization allows for recut pieces to be reproduced automatically and immediately after being requested. Recut pieces are produced within the next few ensuing sheets after being entered into the system. This means, that there is no more need to track pieces that break at the cutter, saving you time, and increasing cutting yield. This is due to the fact that the optimizer is able to position these recut pieces in place of what otherwise would have ended up as scrap.

Remote Remakes

Remakes can be initiated from anywhere in your facility providing you with real-time tracking and control

Remakes can be entered in real-time from anywhere within your facility via HP3's Order Entry System automatically or added manually prior to optimization. These pieces will be considered during the next optimization cycle, giving the optimizer more pieces to choose from and subsequently resulting in a better yield. Users save not only time tracking remakes, but also money by reducing scrap.

Rack Biasing

Pieces are optimized according to their rack priority, giving precedence to pieces that will facilitate constant rack flow

In order to ensure that there is a non-stop flow of completed racks leaving the cutter, the dynamic optimizer biases pieces based on their rack priority. The higher the user defined priority of a piece, the faster it will be produced. The user no longer has to wait for an entire batch to be completed prior to moving the racks to the next operation. At any given time, there is a constant flow of racks being filled and leaving the cutting station. This feature provides for a much leaner manufacturing process.

Dynamic Rack Priority

Rush orders are quickly and seamlessly accommodated without sacrificing yield

The priority of each rack can be dynamically changed at any time. During production, when a rush order comes in, the new racks are imported and assigned the highest priority. The optimizer will immediately begin producing pieces for the newly imported racks. This will ensure that rush orders are completed in a timely fashion and can increase cutting yields since racks with similar glass types can be grouped closer together.

Shape Nesting

Pieces are nested in the unavoidable, waste areas of larger shapes when possible to increase yield

BatchBan Cutting automatically attempts to place pieces in the unavoidable-waste area of larger shapes in order to further increase the cutting yield.

Low Priority Stock Integration

Stock pieces, commonly referred to as low priority, are integrated and used when possible

Many fabricators carry stock in some products. These are items in which they sell enough to justify a stock, but they are not necessarily high priority. We refer to these stock pieces as low priority, or filler pieces. During optimization, the software will place as many of these low priority pieces as possible on the sheets in order to improve the cutting yield.

Look-Ahead Feature

Rare pieces are selected and utilized when a sheet yield falls below a user-defined level

Pieces with a low priority are often bypassed for optimization and often called rare pieces. When the yield for a particular sheet is below a user-defined level, the optimizer will utilize rare pieces to increase the yield. This is accomplished by a special "Look-Ahead" feature.

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Batch Style Cutting

Optimization Software for Flat Glass Fabricators

Batch Style Cutting is a schedule-based, glass cutting optimization package that uses a sophisticated layout generation algorithm to deliver high yields in an easy-to-use platform.

HP3's Batch Style Cutting offers flexible control over the batch prior to optimization, giving users the opportunity to accommodate high priority jobs or jobs that may produce poor yields. Cycle times are reduced and yields are increased.

HP3's Batch Style Cutting can be integrated with a number of manufacturer's equipment, making the transition seamless without the need to invest in new cutting equipment.

Cutting Equipment Independent

Seamlessly integrates with any cutting platform, regardless of the manufacturer

Batch Style Cutting can be integrated with any cutting platform, regardless of the manufacturer. The software can be seamlessly added to new or existing equipment, without the need to invest in new equipment.

Flexible Batch Control

High priority orders or orders projected to produce a bad yield can be combined to shorten cycle time and increase yield

Entire or partial batches can be combined before optimization in order to handle high priority orders, or orders that produce bad yields. This allows for shorter cycle times for your orders and further increases cutting yields.

Glass Stock Prioritization

Priority can be placed on specific stock sizes to keep costs down

By allowing users to prioritize the different stock sizes for each glass type, they are able to favor one stock size more than another. This enables the user to use more of stock sizes that are less expensive on a per-square-foot basis.

More Features >

Batch Style Cutting

Remote Remakes

Remakes can be initiated from anywhere in your facility providing you with real-time tracking and control

Remakes can be entered in real-time from anywhere within your facility via HP3's Order Entry System automatically or added manually prior to optimization. These pieces will be considered during the next optimization cycle, giving the optimizer more pieces to choose from and subsequently resulting in a better yield. Users save not only time tracking remakes, but also money by reducing scrap.

Automated Offal Usage

Identifies, stores, and reclaims offal in a faster, more efficient manner than traditional optimizers

Offal, commonly referred to as scrap or remnant, is identified, stored and tracked just as a normal stock sheet would be utilized. These commonly neglected sheets can be given priority and therefore utilized quickly. The priority on these sheets means offals are less likely to become unusable due to expiration or physical damage, resulting in larger savings.

Extensive Shape Library with Shape Nesting

Flexible shape handling capabilities give fabricators advantage in product offerings

Batch Style Cutting can accommodate most major vendors' shape libraries, as well as DXF shapes. This gives fabricators the advantage to offer customers new products and therefore attract new business.

DXF File Cutting Capability

Simple DXF shapes can be utilized and optimized with HP3's Batch Style cutting package

Low Priority Stock Integration

Stock pieces, commonly referred to as low priority, are integrated and used when possible

Many fabricators carry stock in some products. These are items in which they sell enough to justify a stock, but they are not necessarily high priority. We refer to these stock pieces as low priority, or filler pieces. During optimization, the software can place as many of these low priority pieces as possible on the sheets in order to improve the cutting yield.

Microsoft SQL Database for Greater Data Integrity

Reliable, redundant data storage and retrieval for higher productivity

Microsoft SQL provides reliable and redundant data storage and retrieval which allows for less downtime and higher productivity. If a customer doesn't already have a version of Microsoft SQL, a free version of Microsoft SQL Server Express is included with the installation.

Edgework

Flexible options available for custom edgework

Customers can create their own Edgework Type (names). Once a name and value is created, such as ¼," they can select how many sides need edgework added. For example 2L2S means all the way around – 2 long sides and 2 short sides, whereas 1L2S would mean 1 long and 2 short. All scenarios can be selected from 1L or 1S to 2L2S. You still create the ordered piece in the true dimension needed and the edgework is added to those dimensions automatically.

Reports

A number of standard reports are available. Below are a few of the most common reports–

- Glass Usage (Yield) Report
- Schedule Summary Report
- Rack Report
- Recuts and Remakes Report
- Low Priority Glass Report
- Purchased Glass Report
- Unscheduled Orders Report

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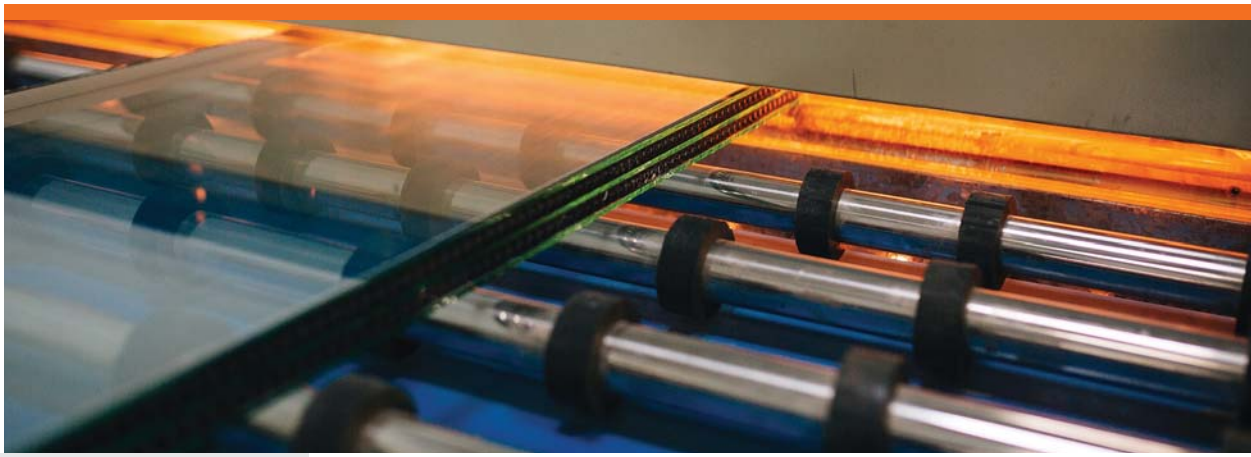
BatchBan Tempering

Optimization Software for Flat Glass Fabricators



BatchBan Tempering is a patented tempering software and the industry's first true dynamic layout and production optimization software.

Designed to work with any tempering furnace, BatchBan Tempering uses a state-of-the-art layout optimization algorithm that enables users to utilize a much higher percentage of their furnace bed, while keeping in mind such considerations as the importance of roll wave consistency and glass piece positioning due to varying temperature profiles.

The dynamic software optimizes only one furnace bed at a time, with a priority on completing racks to maintain a steady flow of racks leaving the tempering process.

BatchBan Tempering can enable your company to save money on energy costs while improving the overall manageability of your tempering operation and assuring the highest yield possible for each furnace cycle.

Tempering Equipment Independent

Seamlessly integrates with any tempering furnace, regardless of the manufacturer

BatchBan Tempering is designed to work with any manufacturer's tempering furnace, new or existing, making the transition to BatchBan Tempering as seamless as possible. There is no need to invest in new equipment. Users have direct access to all the necessary production data needed to achieve optimal efficiency for their tempering process.

Dynamic Optimization

Reacts seamlessly to any changes in the order sequence to deliver optimal yields and a constant flow of completed racks

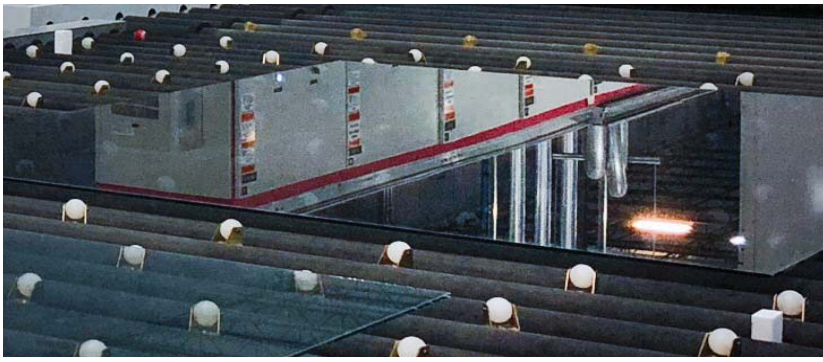
Unlike batch based optimization software where an entire batch of orders is optimized all at once, BatchBan Tempering optimizes only one furnace load at a time, right before the pieces are to be seamed. This dynamic approach to layout optimization allows for the set of pieces that need tempered to be changed and/or reordered to increase tempering yield and keep pace with the ever-changing mix of orders. The result is increased yield, minimized waste and a constant flow of completed loads.

Layout Optimization

Patented layout optimization algorithm ensures maximum yield

The software implements a state-of-the-art layout optimization algorithm that enables our customers to utilize a much higher percentage of their furnace bed, while also keeping in mind such considerations as the importance of roll wave consistency and glass piece positioning due to varying temperature profiles.

More Features >



BatchBan Tempering

Instant Remakes

Reproduces remakes effortlessly and intelligently, saving time and increasing yield

Glass pieces that have been damaged or destroyed during the tempering process can easily be made available for cutting by simply clicking on the item in the layout. Once the pieces have been recut, they can easily be added back to a tempering schedule at anytime. This means, that there is no more need to manually reschedule the pieces to be recut, saving you time, and increasing the cutting yield.

Rack Biasing

Pieces are optimized according to their rack priority, giving precedence to pieces that will facilitate constant rack flow

In order to ensure that there is a non-stop flow of completed racks leaving the tempering process, the dynamic optimizer biases pieces based on their rack priority. The higher the user defined priority of a piece, the faster it will be tempered. The user no longer has to wait for an entire batch to be completed prior to moving the racks to the next operation. At any given time, there is always a complete rack leaving the furnace, and at the same time we begin producing pieces for another. This feature provides for a much leaner manufacturing process.

Dynamic Rack Priority

Rush orders are quickly and seamlessly accommodated without sacrificing yield

The priority of each rack can be dynamically changed at any time. During production, when a rush order comes in, the new racks are imported and assigned the highest priority. The optimizer will immediately begin producing pieces for the newly imported racks. This will ensure that rush orders are completed in a timely fashion and can increase cutting yields since racks with similar glass types can be grouped closer together.

Look-Ahead Feature

Rare pieces are utilized when a projected sheet yield falls below a user-defined level, increasing tempering yield

In order to achieve the highest yield possible for each furnace bed load, the optimizer uses a feature commonly referred to as a "look-ahead" feature. The number of racks the software is permitted to look ahead is a setting that can be adjusted as needed by the customer. The look-ahead feature allows for pieces that normally, based on their rack priority, would not be selected for optimization to be looked at and selected in order to get a higher yield. If the yield for a particular furnace bed load is below a certain user-defined level, the optimizer will automatically select rare pieces and, by doing so, increase tempering yield.

Once tempered, rare pieces are stored in a holding rack, or rare rack, that is displayed on the HMI screen. The software keeps track of each individual piece and layout, as they go through the tempering process starting at seaming through staging, all the way to the unloading of the furnace.

Enhanced Security

Access to sensitive information can be controlled by the implementation of user defined levels

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Reliable, redundant data storage and retrieval for higher productivity

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Supported Processes

Interfacing Capabilities for Flat Glass Fabricators

"HP3's technical support is tremendous. The ability for their team to connect to our system and fix the issue keeps the downtime to a minimum."

–Dana Hawkins, Ventana USA

Barcode Scanning

In most facilities, it is crucial for production to know where every piece of glass is at any given time. HP3 offers barcode scanning which provides fabricators with the ability to track every unit of glass throughout the facility. Whether the barcode is printed on a label or laser marked on the glass, HP3 can help you track it.

Edge Seaming Integration

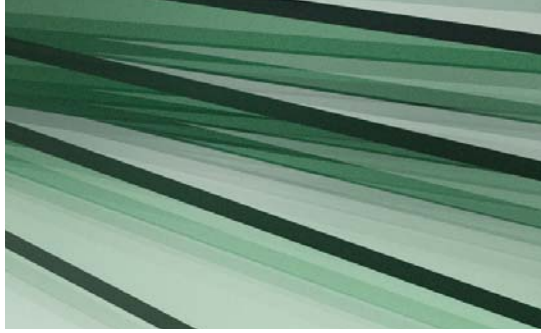
HP3 Edge Seaming Integration software is most commonly used in conjunction with tempering software and laser marking software. Once a furnace bed load is optimized, HP3's Edge Seaming Integration software provides operators with a piece-by-piece display of the sequence in which glass should be loaded on the furnace bed. A layout of the piece to be edge seamed, along with dimensions, rack, slot and sequence number are displayed. Once a piece has been seamed, the operator engages a footswitch or pushbutton to display the next piece information.

IG Line Integration

HP3's Order Entry System stores a large volume of detailed information regarding each piece of glass, spacer, pane type, grid data, gas type, etc. that make up an IG unit. To bridge this information for downstream IG processing, HP3 takes this information and generates ASCII text transfer files. These files can be adjusted based on the IG Line provider's data requirements and made available. HP3 effortlessly communicates the information necessary for seamless processing, start to finish.

More Features >





Supported Processes

Laser Marking Integration

In most cases, tempered glass for architectural applications is required to have a permanent identification label that includes the manufacturer and the safety glazing standard with which it complies. Some companies sandblast this information while others use a laser marking system to place the permanent label. Although this code identification may be a static mark, HP3's Laser Marking Integration software can be used to pass data variables to the laser marking system, such as glass dimensions, barcode, or any unique identifier requested by the customer. The software displays the orientation and the location to be marked for operators. The marking process can be integrated into a continuous line with sequential breakout pattern or completed rack(s) based.

Order Entry System

Our web-based Order Entry System (OES) allows users to manage all production data including orders, racks, schedules, remakes, glass stock, low priority items, purchased items, reports, customers, shifts, settings, and users. This simple, straight-forward system is used to import data from an existing customer order entry system or manually enter data, necessary for other HP3 Software products such as BatchBan Cutting, BatchBan Laminating and BatchBan Tempering.

Production Monitoring

HP3's Production Monitoring software is used as a visual tool for plant floor managers, supervisors and operators, providing a real-time snapshot of important production data. Information such as real-time square footage cut is displayed, giving operators an idea of how they are performing against their shift goal. Goals can be set and tailored to each individual shift. This visual tool not only keeps operators on schedule but also brings a touch of competitiveness onto the production floor, driving each shift to outperform the others and exceed their goals.

Real-Time Feedback

In many cases, customers have their own inventory system or ERP system already in place. These systems often require information to be passed from HP3 Software back to their software. For these customers, it is common for HP3 to generate Transaction Files to keep inventory and/or tracking systems up-to-date in real-time.

Real-Time Transaction Files can contain anything from details of the glass, including type, dimensions, ID, yield percentage, and more, to individual order details, including dimensions, rack/slot assignment, etc. These files can be generated from any process in the facility done by HP3.

As long as the data exists in the database, it can be passed through a transaction file.

BatchBan Laminating

Optimization Software for Flat Glass Fabricators

BatchBan Laminating software is designed to work with any manufacturer's laminating line to optimize the laminating process.

The software utilizes a state-of-the-art layout optimization algorithm which provides all the necessary production data for enabling customers to utilize a much higher percentage of their interlayer material. As a result, customers can reduce the number of interlayer roll widths they need to keep in stock.

As racks are imported by the clean room operator into the system, the optimizer creates a Data Exchange Format (.DXF) file and sends the information to the interlayer material cutter. Monitor displays at the load, assembly, and offload stations guide operators through the laminate sequence. Once a unit is complete, the operator triggers a label to be printed for the unit.

Laminating Equipment Independent

Seamlessly integrates with any laminating line, regardless of the manufacturer

BatchBan Laminating can be integrated with any laminating line, regardless of the manufacturer. The software can be seamlessly added to new or existing equipment, without the need to invest in new equipment.

Reduces Number of Roll Widths Needed

BatchBan Laminating can reduce the number of interlayer material roll widths required on hand

Enhanced Security

Access to sensitive information can be controlled by the implementation of user-defined levels

Microsoft SQL Database for Greater Data Integrity

Reliable, redundant data storage and retrieval for higher productivity

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BatchBan Autoclave

Optimization Software for Flat Glass Fabricators

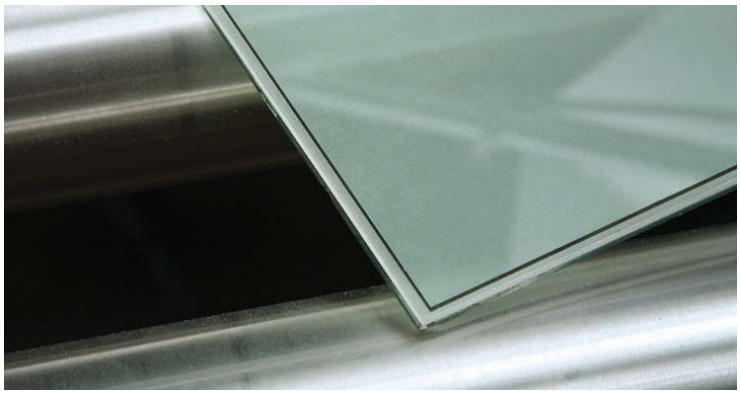
During the autoclave process, keeping track of what is in the autoclave is often a challenge. Many times the person loading the autoclave for a cycle is not the same person who will be unloading the autoclave.

This can lead to confusion and downtime while sorting which pieces belong where. Along with BatchBan Laminating software, HP3 can also optimize the autoclave racking process, providing better control and tracking of the products.

Optimal Loading and Layout Sequence

HP3's BatchBan Autoclave software determines the optimal loading and layout sequence to maximize each cycle based on rack height, width, depth, load capacity of the racks, and square footage the autoclave is capable of handling in a cycle.

This software package requires HP3 BatchBan Laminating software ideally. In special circumstances, HP3 can implement the software using bridge files that can import data from a customer's existing order entry system into HP3's Order Entry System.



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Calculating True Yield

Optimization Software for Flat Glass Fabricators

In the glass industry, it's common to subtract the trim value from the overall square footage of a sheet of glass prior to calculating the overall yield. Some suppliers consider this "unavoidable waste" and therefore deduct it from their calculation. Doing so causes the yield to appear higher than it actually is.

At HP3, we understand the importance of your bottom line and the need for transparency in your data.

In order to evaluate profitability, all data, regardless of whether it is considered "unavoidable" or not, needs to be considered. Our software uses the most basic calculation possible. We take the total square footage produced and divide that number by the total square footage consumed to give you an honest and **True Yield**.

Are your yields truly what's being reported?

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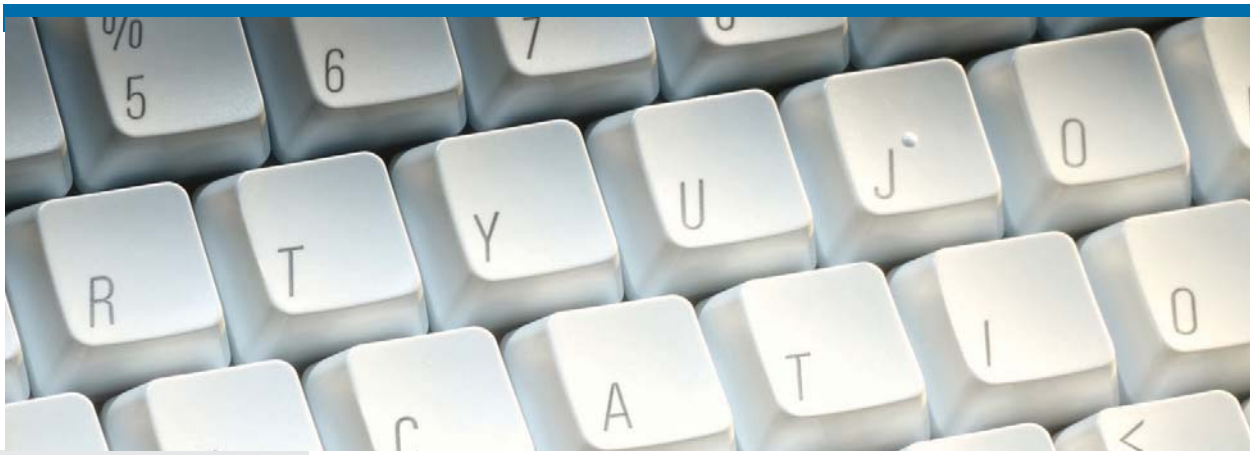
Order Entry System

Interfacing Capabilities for Flat Glass Fabricators



Our web-based Order Entry System (OES) allows users to manage all production data including orders, racks, schedules, remakes, glass stock, low priority items, purchased items, reports, customers, shifts, settings, and users.

This simple, straight-forward system is used to import data from an existing customer order entry system, or manually enter data, necessary for other HP3 Software products such as BatchBan Cutting, BatchBan Laminating and BatchBan Tempering.

Easy Accessibility and Operation with No User Limit

Users can access and manage HP3's OES from anywhere on their network once installed; There is no limit to the number of network users, nor a yearly licensing fee

Seamless Integration with Existing OES

Data is transferred through bridge files and stored in a Microsoft SQL Database

Enhanced Security

Access to sensitive information can be controlled by the implementation of user defined levels

Microsoft SQL Database for Greater Data Integrity

Provides reliable and redundant data storage and retrieval which allows for less downtime and higher productivity

Flexible Racking

User can define custom racking or perform third party racking instructions

Effortless Management of Remakes

Remote remakes can be initiated effortlessly saving both time and money

Extensive Shape Library

HP3's shape library contains over 150 shapes and can also accept DXF files as well as other suppliers' shape libraries

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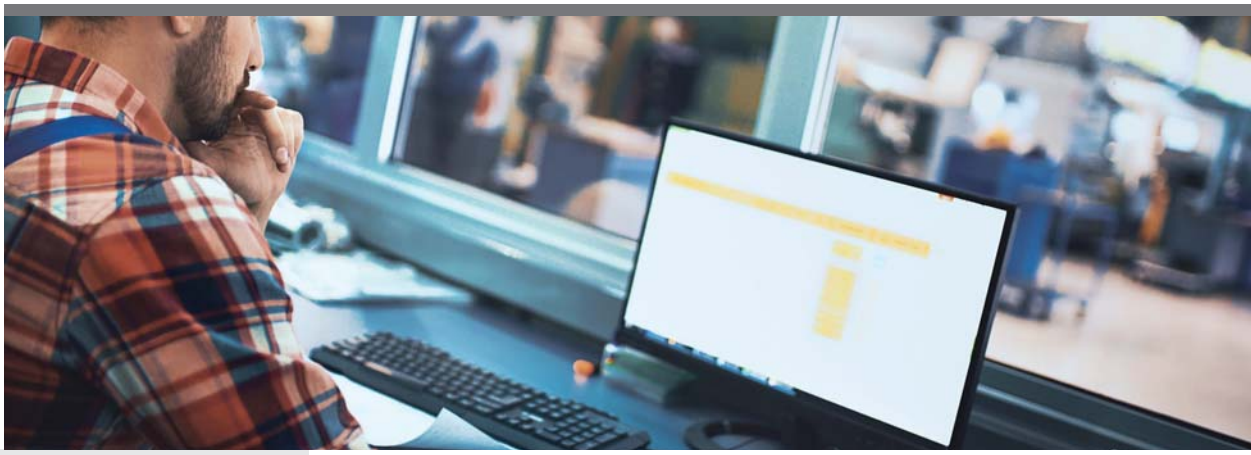
Flexible Packages

Custom Solutions for Flat Glass Fabricators



"HP3 is accommodating to the customer, by either listening to their needs or helping make the product meet up to that need! Everybody that we have talked to has been so great to work with from the set-up to maintenance."

–Jenny Thurnau
Hayfield Window & Door

HP3 Software understands every customer has their own techniques, processing requirements and methods to operating their facility. Standard software packages that lack flexibility can hinder productivity, causing unnecessary downtime and frustration.

We are focused on providing solutions that not only improve your bottom line but do so seamlessly, while adding value to your overall operation. Whether it is customizing reports, adding invoicing capabilities, or providing transaction files for real-time data, **HP3 can customize a software package to fit your needs.**

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