FeneTech, Inc.
FeneVision® Opti-Glass User Manual

FeneVision® Opti-Glass User Manual

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Overview

FeneVision Opti represents an integrated glass optimization system that maximizes yields when cutting and batch tempering glass, as well as an application that integrates with glass loading machinery. Graphical patterns are displayed within FeneVision OPTI, and both reports and glass labels can be generated. This unique system handles rectangular or standard shapes, but also allows users to optimize any non-standard shapes, such as digitized templates and DXF files generated from FeneVision CAD. The system can operate in either 'Batch' or 'Dynamic' optimization mode. Additionally, FeneVision Opti can interface to many manufacturers' cutting lines.

In **FeneVision Opti-Glass**, cutting patterns are graphically displayed, with the system handling both standard shapes and a wide variety of shapes available in the FeneVision Shapes catalog. The application provides both reports as well as glass labels. Glass releases created in Opti-Glass are processed in Opti-Break or Opti-Temp.

Using Opti-Glass

The standard use of Opti-Glass can be described as a simple four-step process:

1. Import schedules released in Core.
2. Create glass releases for production.
3. Optimize glass releases.
4. Process glass releases in Opti-Break.

The following sections describe how to perform each of these steps.

Starting

Double click on the Opti-Glass icon to start the application.

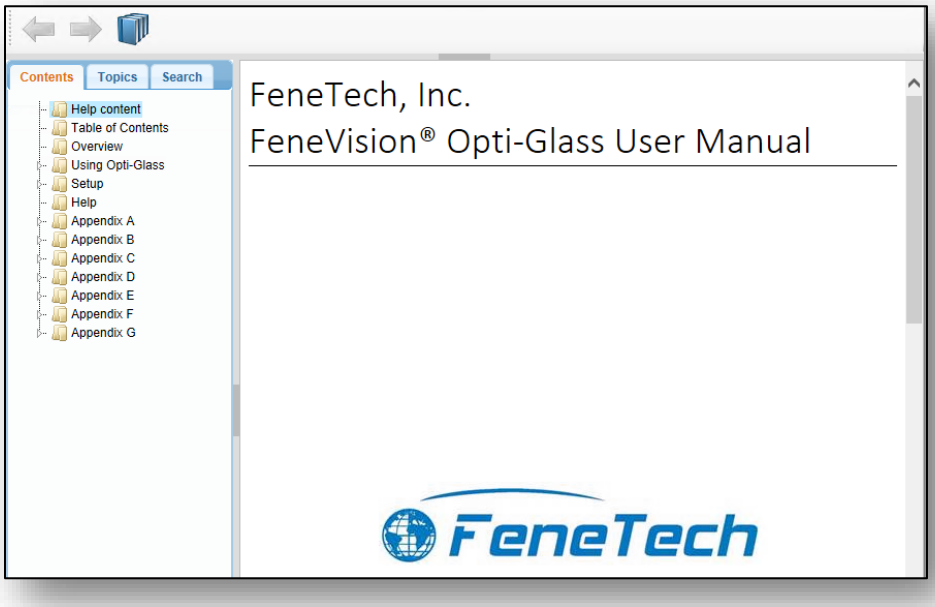
Home Page

The 'Home Page' takes the user to the Opti-Glass homepage. The default home page shows the Opti-Glass application logo. Alternatively, the home page can be configured to be another web page such as FeneVision Business Intelligence (BI). This home page is typically set during the FeneVision software implementation. Contact FeneTech for assistance if a change to the home page is required.

The ‘Home Page’ also offers an online ‘Help’ option that displays the User Manuals for the most current version of the FeneVision Opti applications, and an about screen.

Help

The Help option allows users to reference the user manual while completing tasks in Opti-Glass.

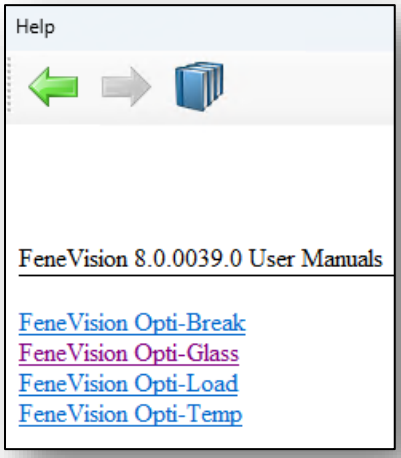


At the top of the screen are buttons that provide additional navigation options. The right / left arrows can be used to return to a previous page or move forward a page.

The following tabs provide different ways to explore the manual:

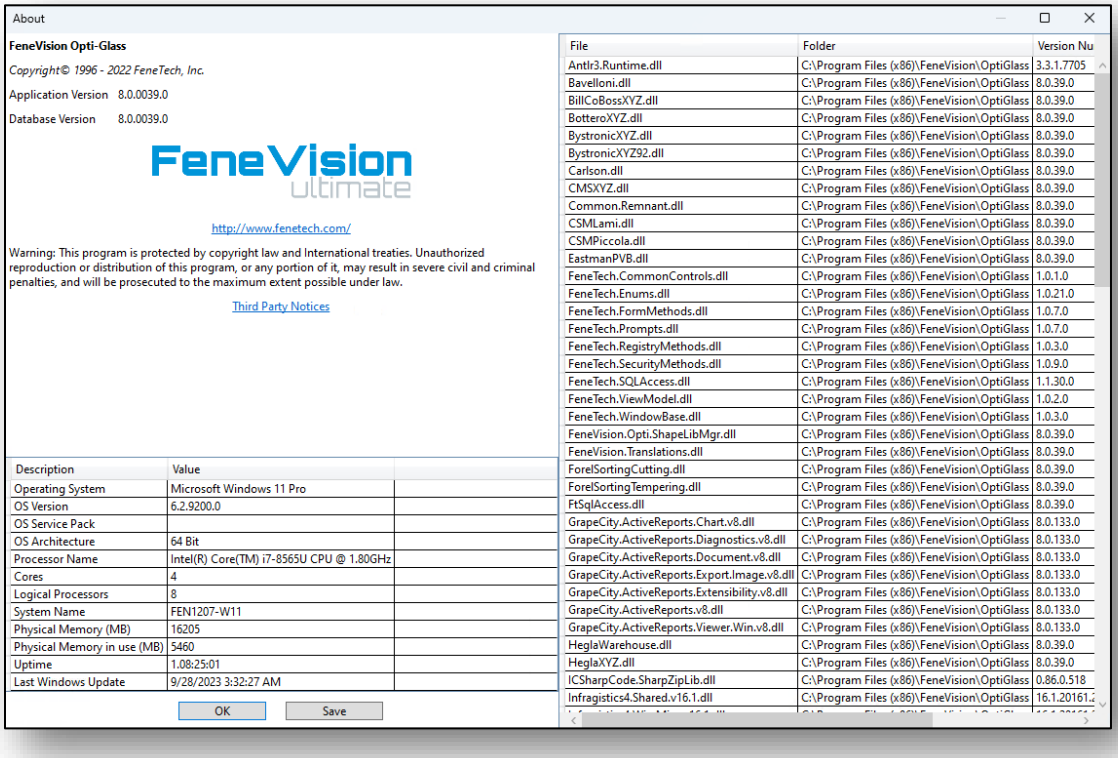
- **Contents –** Provides a tree-style navigation system through the manual.
- **Topics –** Provides an alphabetical list of major topics covered in the manual.
- **Search –** Provides a custom search ability and returns areas that match the keys words provided.

Use  to navigate to a list of other related FeneVision manuals that may be useful as a reference.



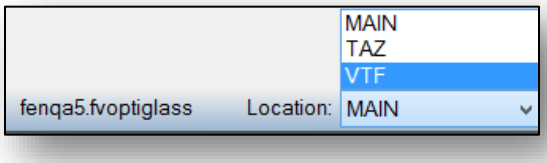
About

The application version number and the database version number are shown within the 'About' screen. The application version number should match the database version number.



Locations

If more than one location exists in FeneVision Core, the locations will also carry over to Opti-Glass. At any time, the user can select the location drop-down in the bottom right corner. By changing the location, all screens in Opti-Glass will reflect the information for the selected location only.



Note: Opti-Break and Opti-Temp do not have a location drop-down, as their location is defined by the machine selected, which is associated with a location through Opti-Glass.

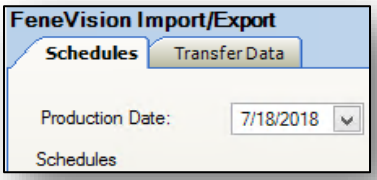
Import

Selecting 'Import' from the main menu on the bottom left side of the screen opens 'Import' menu that allows users to

- Import production schedule information from FeneVision Core.
- Transfer setup data from Core to Opti-Glass.
- Run test optimizations.
- Search for orders.

Import

The 'Import' page is divided among two tabs: 'Schedules' and 'Transfer Data'.

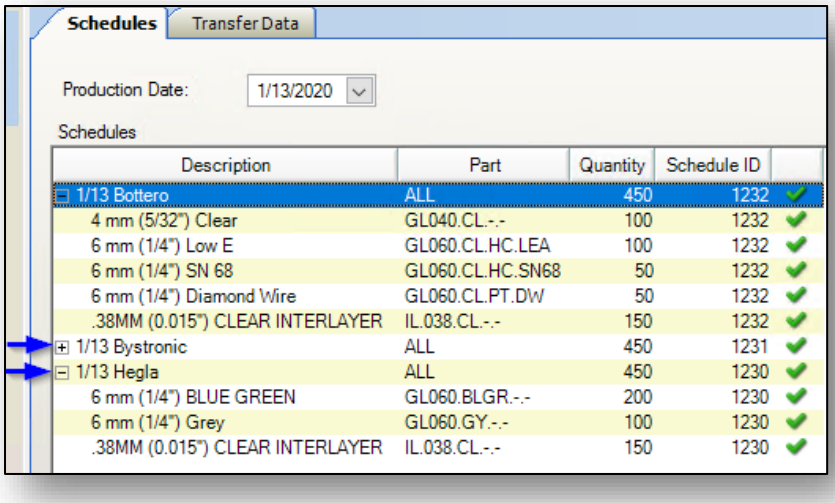


Schedules

The 'Schedules' tab displays all the schedules that have been released from Core. Expanding a schedule by selecting the '+' in the 'Description' column displays all the glass parts that are on the schedule in addition to their quantity. The  in the last column indicates that this schedule has been successfully imported into Opti-Glass. Core is typically configured to import these schedules automatically upon 'Schedule Release'; however, if they do not, the user can manually import and remove schedules here by using the 

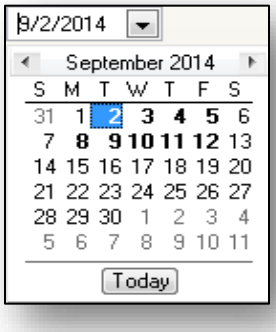
buttons at the bottom.

Note: Schedules cannot be removed from Opti-Glass if any glass on the schedule has been added to a glass release.



Production Date Filter

Only schedules released to the day selected using the 'Production Date' filter will be displayed. Dates displayed in bold in the 'Production Date' filter indicate that at least one schedule is released on that day.



Columns

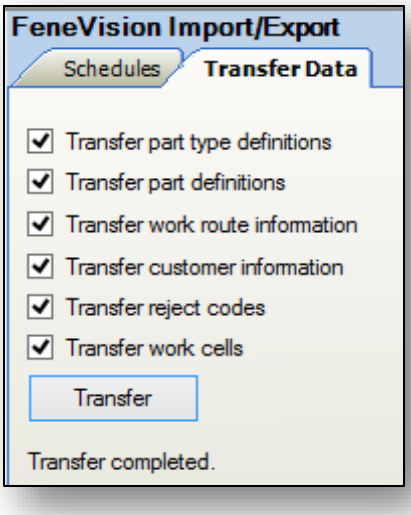
The following columns exist in the 'Schedules' tab in the 'Import' screen:

- **Description –** For 'Schedules' this is the schedule description form Core. For 'Parts', it is the part description from Core.
- **Part –** For 'Schedules' this will display as 'ALL'. For 'Parts', this will be the part number from Core.
- **Qty –** Quantity of pieces on the schedule or for the specific glass type on that schedule.
- **Schedule ID –** Schedule ID from Core.

Note: Schedules that are currently imported into Opti-Glass cannot be unreleased in Core. If the Core user attempts to do this, the application will prompt that the schedule is locked by Opti-Glass. To prevent this, the schedule must be removed from this screen first.

Transfer Data

The 'Transfer Data' tab allows the user to sync data from the FVMaster database (Core) to the FVOptiGlass database (Opti-Glass). Check items to be transferred then select 'Transfer'.



The following checkboxes exist in the 'Transfer' tab of the 'Imports' screen:

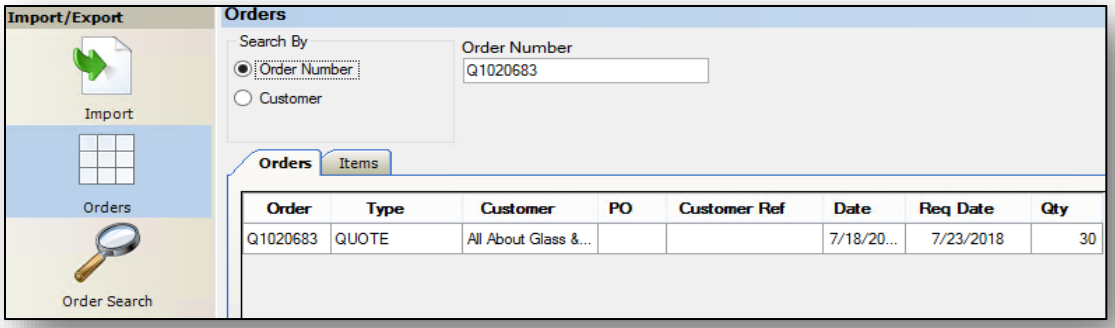
- **Transfer part type definitions** – Syncs part type assignments from Core to Opti-Glass. For example, if glass part types were assigned to a new glass part in Core, the new assignment will sync to Opti-Glass.
- **Transfer part definitions –** Syncs part information for any parts that have the glass part type assigned. For example, if the dimensions are updated on a part in Core inventory setup, the change will be synced.
- **Transfer work route information –** Syncs the work route configuration from 'Work Route Setup' in Core.
- **Transfer customer information –** Syncs customer name, site data, and addresses from 'Customers' setup in Core.
- **Transfer reject codes –** Syncs reject codes and station assignments from Core to Opti-Glass.
- **Transfer Work Cells –** Syncs the production work cell configuration from 'Work Route Setup'. Syncing work cells is necessary to populate the 'Work Cell' field displayed on the 'Racks Tab'.

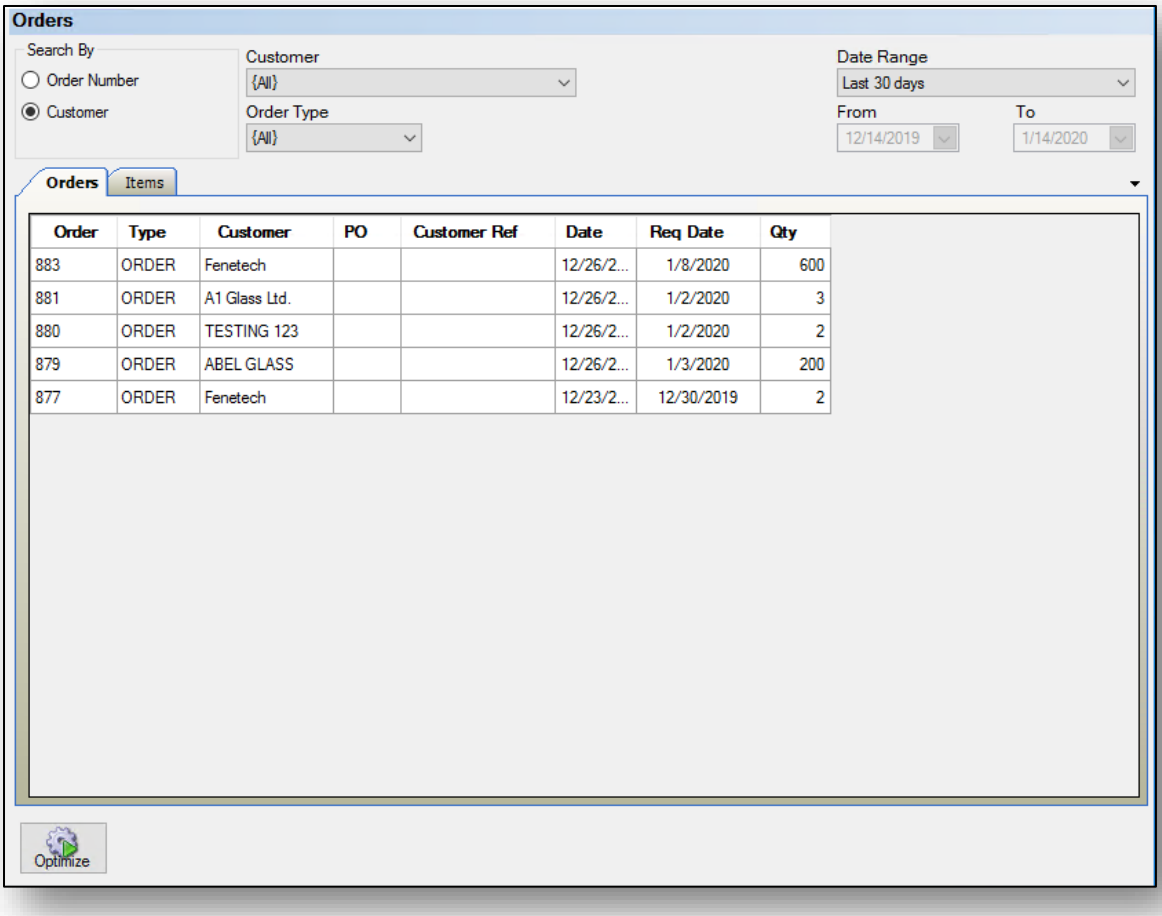
  Note: If changes are made to work route information, these should be synced as soon as possible; otherwise, some data may fail to import.

Orders

The 'Orders' page allows the user to create a test optimization for customer quotes or orders that have not yet been released to production and imported from Core into Opti-Glass. For an order to show up here it must contain at least one manufactured glass part.

Note: The Orders page will only appear if using FeneVision Opti-Glass in conjunction with FeneVision Core.





The following fields exist in the header of the 'Orders' tab of the 'Import' dialog:

- **Search By**
  - **Order Number –** Selecting 'Order Number' returns exact matches of orders under the 'Orders' column.
  - **Customer –** Allows for a search for orders using the following filters:
    - **Customer –** Filters the list of orders by customer name. Customer list comes from Customer Setup in Core.

- **Order Type –** Filters the list of orders by order type. Available order types are 'Quote', 'Order', 'Credit', 'Invoice Only', 'Manufacturing', 'Forecast', and {All}. See Core user manual for descriptions.
- **Date Range –** Filters the list of orders by order date in Core.
- **Custom Date Range –** When 'Custom' is selected from the Date Range drop down the 'From' and 'To' dropdowns become active so that the user can specify the desired date range.

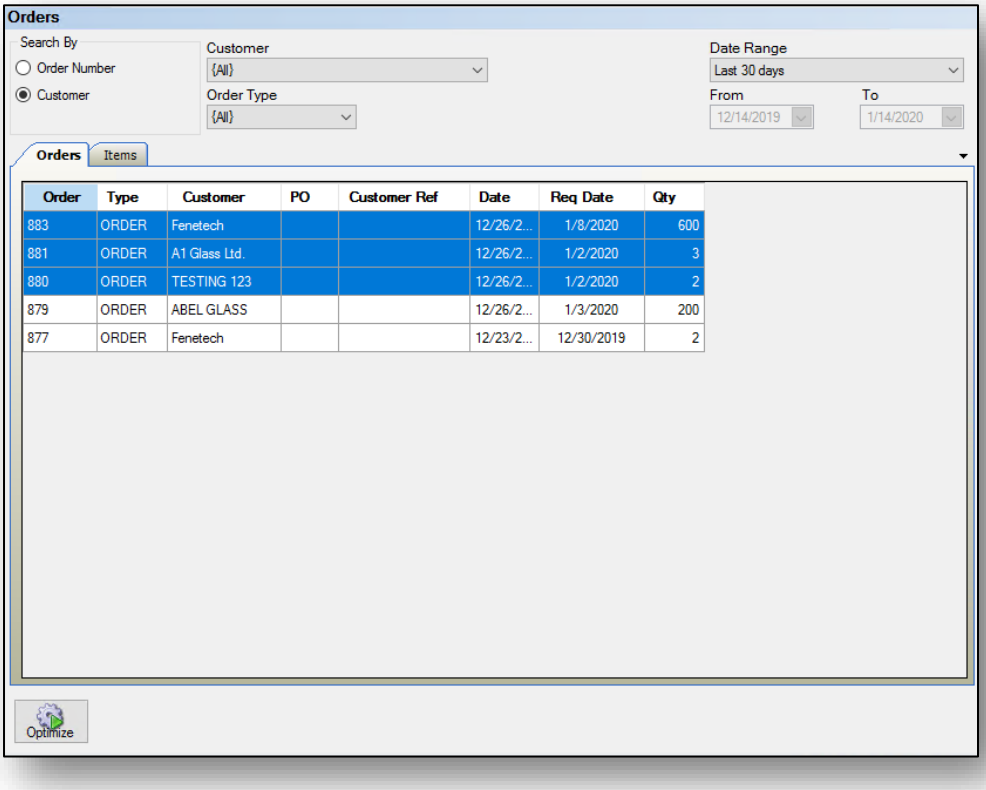
The following columns exist in the grid of the 'Orders' tab of the 'Import' dialog:

- **Order –** Order number from Core.
- **Type –** Order Type from Core.
- **Customer –** Customer from Core.
- **PO –** PO Number from the order in Core.
- **Customer Ref. –** Customer Ref from the order in Core.
- **Date –** Order Date from the order in Core.
- **Req. Date –** Required Delivery Date from the order in Core.
- **Qty –** Total number of lites on the order for this location.

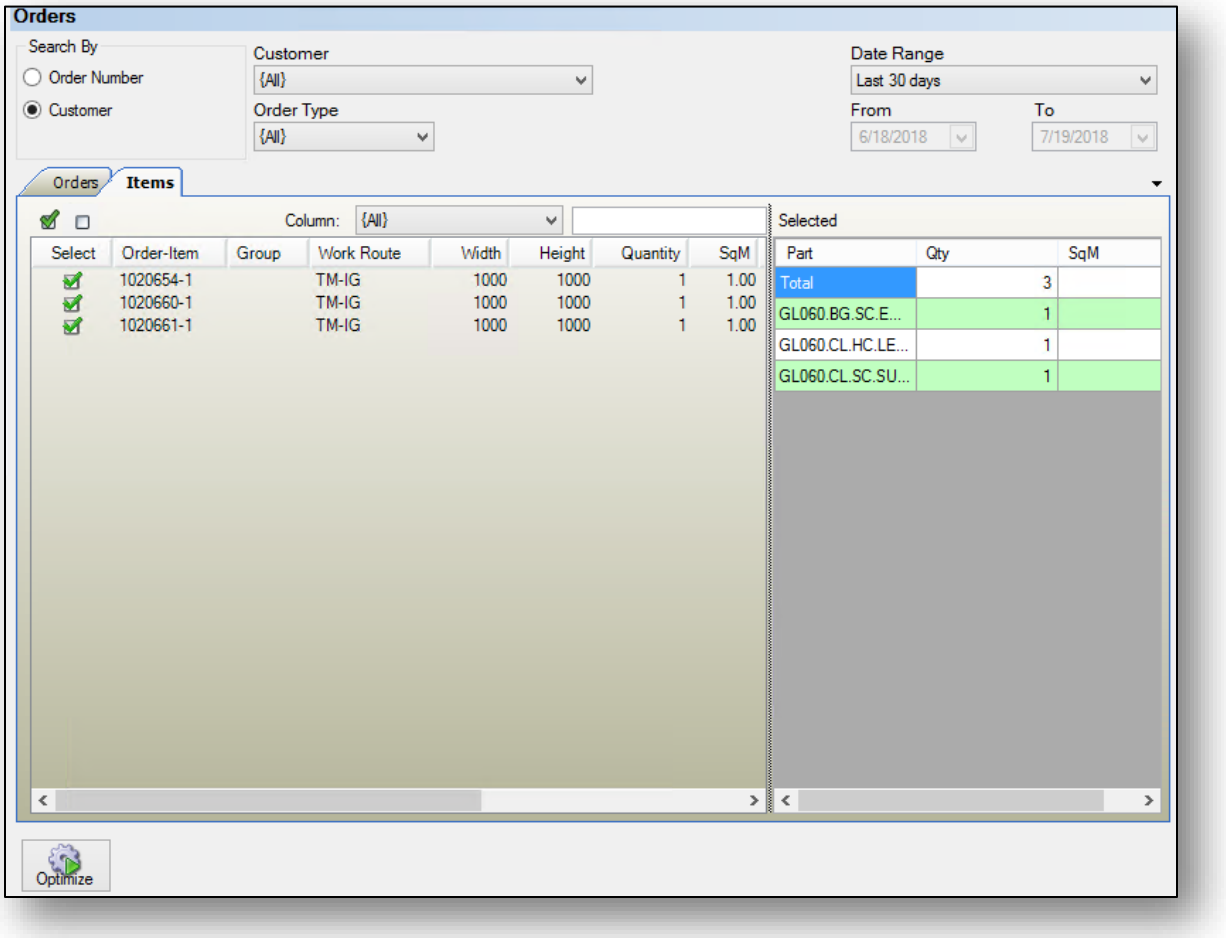
Creating a Test Optimization

To create a test optimization, complete the following:

1. Navigate to 'Import/Export' >> 'Orders'.
2. Select the desired orders/items.
   a. If using the Orders tab, highlight the orders to test. More than one order can be selected by holding SHIFT or CTRL.



b. If using Items tab, check which items are to be tested.

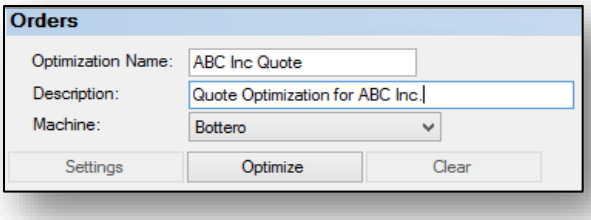


Note: Using the column filter and search box will help to narrow down the items list. This is particularly helpful when trying to optimize by line item group or work route.

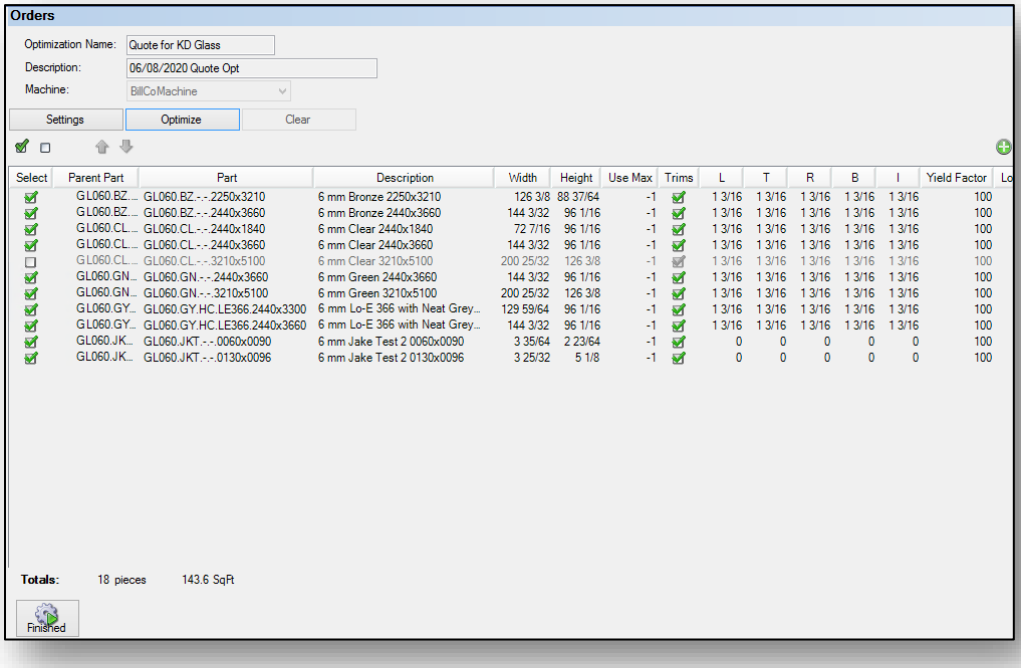
3. Once orders are highlighted, select 'Optimize' at the bottom right of the 'Orders' tab.

   Note: Selecting 'Optimize' takes the user to a test optimization screen. To return to the list of orders, select 'Finished' *at any time during the next few steps.*

4. Enter an 'Optimization Name' (optional), 'Description' (optional), and 'Machine' (required). Select the 'Optimize' button.



5. Select the glass types to use when optimizing. To change settings, select the 'Settings' button. The fields in the 'Settings' screen are the same as the ones the user will see in the 'Settings' screen in 'Glass Cutting' >> 'Optimization'.

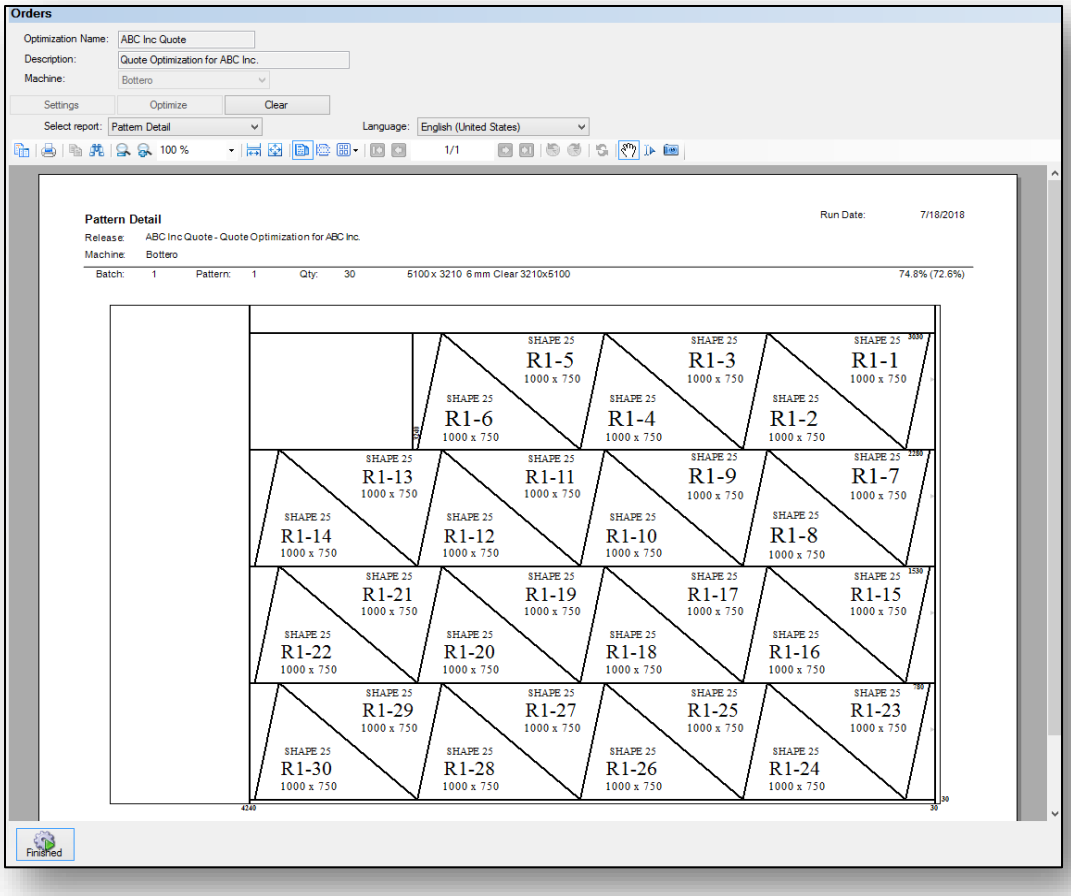


Note: Use Max will always show as -1 to ensure best results on the test optimization.

Users may also use the green plus button to add additional stock sheets during quote optimization. These stock sheet part numbers will end in the postfix, 'Test-X', where x is an incrementing number.

6. When finished configuring 'Settings', select 'Optimize'.

7. Once the test optimization is complete, the user can view the reports for this optimization. All Opti-Glass reports can be viewed with the exception of label reports, since those require production data.

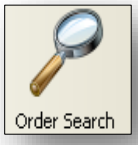


8. Use the ‘Clear’ button to clear and redo the optimization without clearing all settings.
9. When the test optimization is complete, and reports have been reviewed, select ‘Finished’ to return to the list of orders.

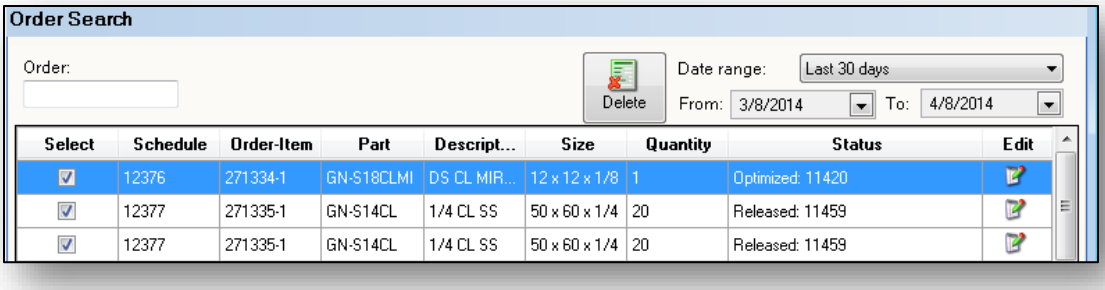
   Note: Test optimizations are not saved and cannot be run through production. Once ‘Finished’ is selected, the optimization is gone.

Order Search

The ‘Order Search’ screen displays all orders that have been imported into Opti-Glass over a given date range.



Selecting ‘Order Search’ takes the user to the ‘Order Search’ dialog.



The following fields exist in the 'Order Search' screen:

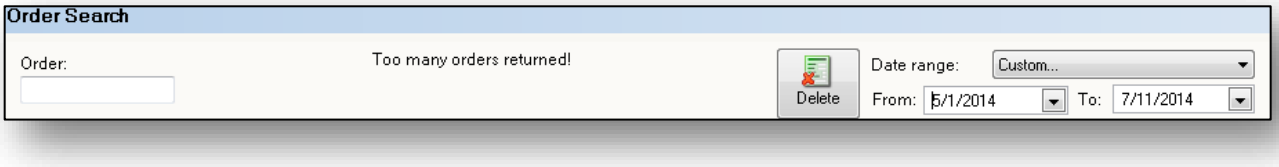
- **Order –** Searches for all orders meeting the criteria of what is entered into the field.

  Note: The Order Search screen is blank by default. Only after completing the Order field does a list of orders show.

- **Delete** – Removes the selected order(s) from Opti-Glass.

Filters

- **Date Range –** Filters the list of orders by Order date in Core.
- **Custom Date Range –** When 'Custom', is selected from the 'Date Range' drop-down, the 'From' and 'To' calendars activate so the user can specify the desired date range. If the filters are set so that more than 1000 orders are returned in the search, the user will see the following message at the top of the 'Order Search' screen:



Note: In order to expedite the search and yield a more complete list of orders, users may want to narrow the date range on the search filters once this message appears.

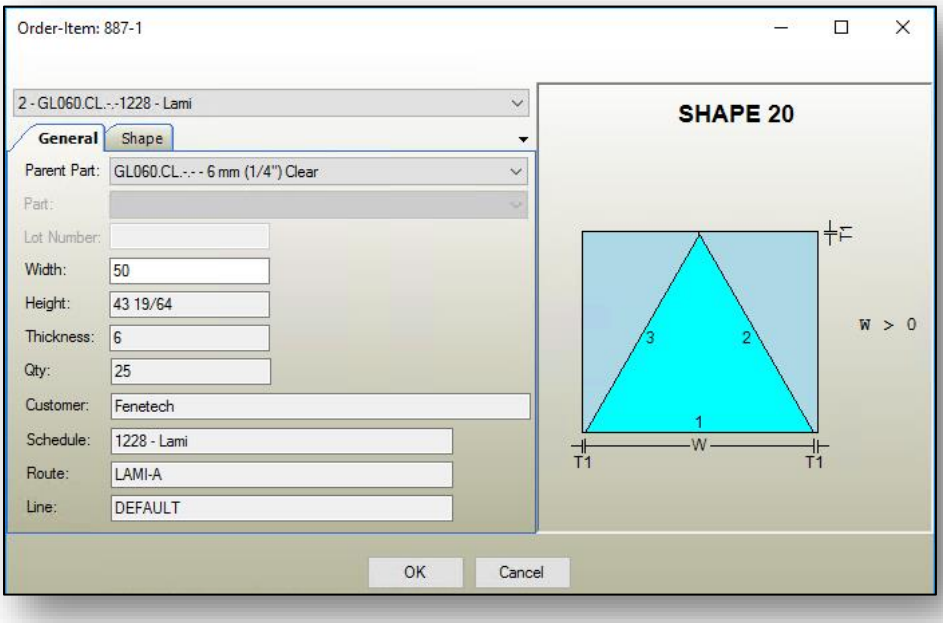
Columns

- **Select –** Checkbox to select orders. Selected orders can be deleted or pulled back (see below for description).
- **Schedule –** Schedule number from which the order was released in Core.
- **Order-Item –** Order number – Line item number from 'Order Entry' in Core.
- **Part –** Part number from Core.
- **Description –** Part description from Core.
- **Size –** Dimensions (W x H x T) of the glass part from the bill of material evaluation in Core.
- **Quantity –** Number of lites of glass on the order from in Core.
- **Status –** Shows if the order is imported, optimized, released, or pulled back.
  - **Imported –** Orders that are imported but not associated with a release. Orders deleted from this state will be removed from the Opti-Glass Database.
  - **Released –** Orders that are on a release but have yet to be optimized. Orders designated as 'Released' cannot be deleted.
  - **Optimized –** Orders that are on a release and optimized. Orders deleted from this state will be marked as 'Pulled Back' and designated with a light gray color (default color) on the patterns.

- **Pulled Back –** Optimized orders that have been deleted.

  Note: If the order is optimized or released, any releases containing lites from the order are also listed in the 'Status' column.

- **Edit –** If an order was entered incorrectly and it cannot be deleted, selecting  in the edit column will allow the user to edit the glass type, dimensions, shape, and edgework. These changes will not affect the order in Core nor adjust the capacity plan, so any orders edited like this should be manually tracked through production. These changes should be made carefully by a user familiar with the product bill of material.



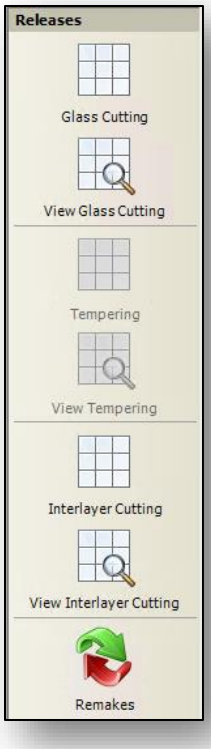
- **Delete –** Orders can be deleted through this screen by selecting them and selecting the 'Delete' icon at the top. If the order is 'Imported', deleting it removes it from Opti-Glass. Orders that are 'Optimized' will be marked as 'Pulled Back' when the user attempts to delete them. Orders that are 'Released' cannot be deleted or pulled back.

*Note: Each order in the 'Order Search' screen is separated by lites; therefore, orders for IG units will appear multiple times. For example, if an order exists for a double-glazed IG, with a quantity of 5, the screen will show **two** lines for that order with a quantity of 5 regardless of whether the glass type is the same.*

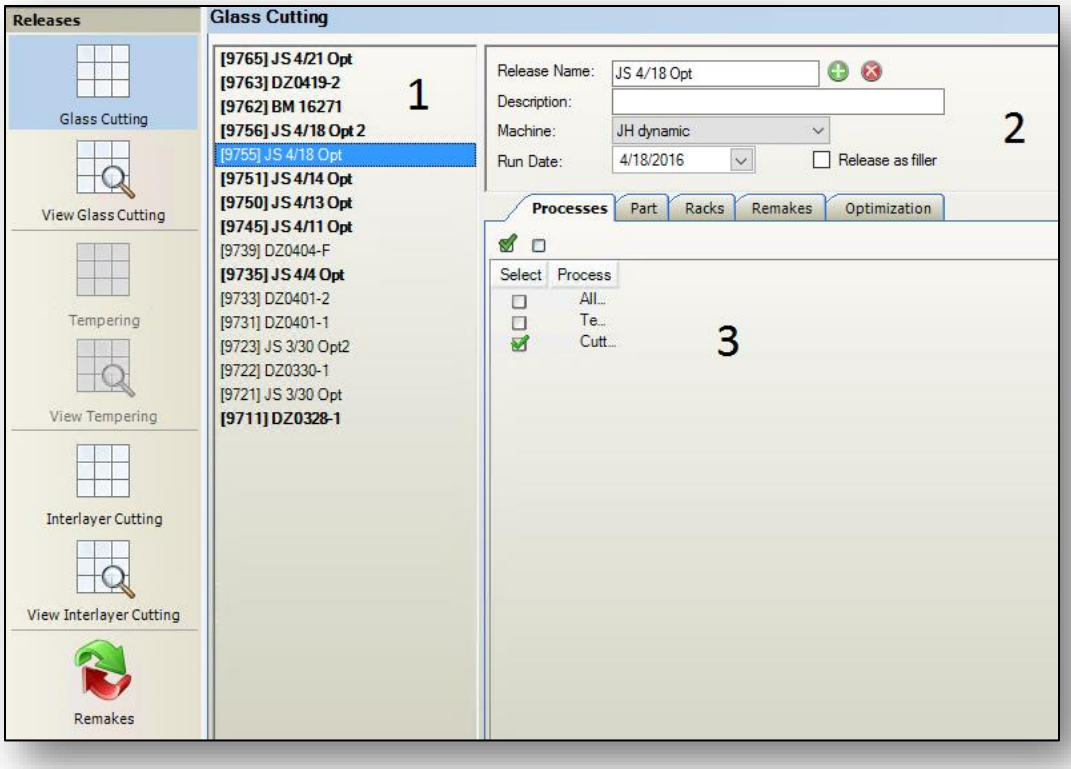
Releases

Glass Cutting

Selecting 'Releases' in the main menu on the bottom left of the screen opens the 'Releases' menu that allows the creation of optimization releases and the viewing of optimization results for both cutting and tempering machines.



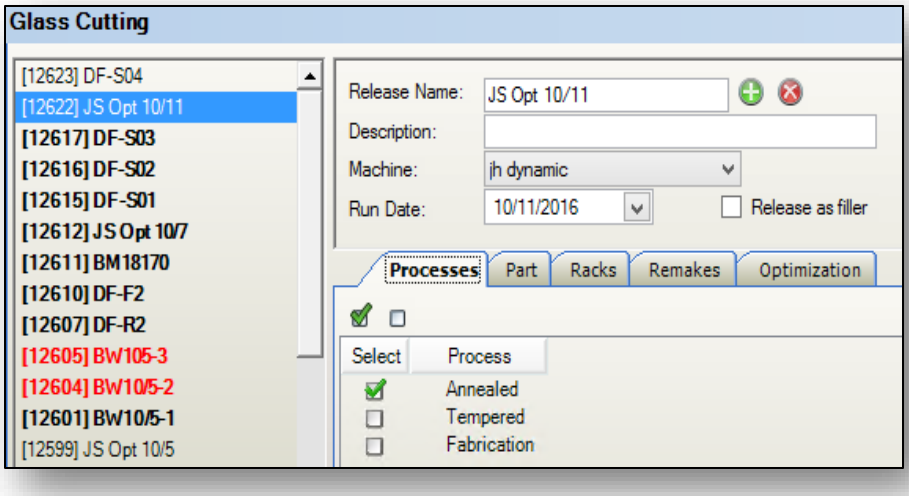
Selecting ‘Glass Cutting’ in the ‘Releases’ menu reveals the ‘Glass Cutting’ screen where releases can be created and optimized.



The image above shows the 'Cutting' screen divided into three major sections.

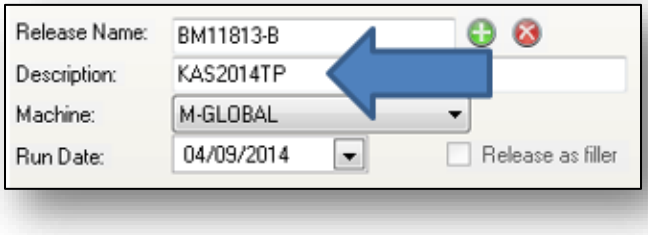
To create a new release, complete the following:

1. Select 'Releases' in the main menu to open the 'Releases' menu.
2. Select 'Cutting' in the 'Releases' menu. This screen allows the user to create new releases or edit any existing releases that have not yet hit production.

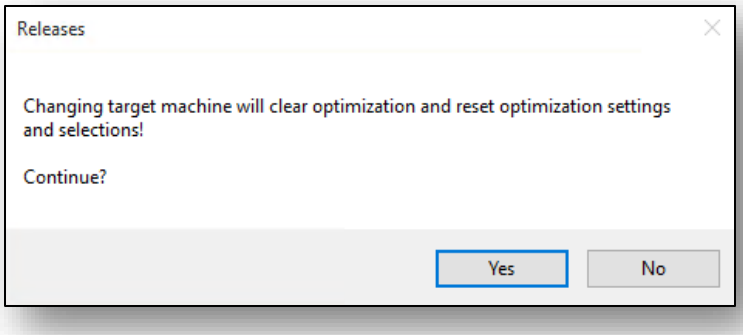


3. Select 'Add'.
4. Enter in the new release name, along with a description *(optional)* of the release. The description will be seen by the cutter and assists the cutting operator in deciding what to run.

   Note: Users may choose to name the description by describing the process type (TP, IG, HS, etc.), the date, the glass type, or the batch type. Release names typically contain these elements but can be unique to each manufacturer.



5. If multiple machines are available, select the cutting machine that will process the release. This will make sure the optimization uses that machine's settings in generating the patterns. At any point in creating a release, this machine selection can be changed. If the machine is changed after processes, glass and units have been selected, the following message will display:



a. Selecting 'No' will cancel the switch to the new machine.
b. Selecting 'Yes' will change the machine and update the release to use the new machine settings.

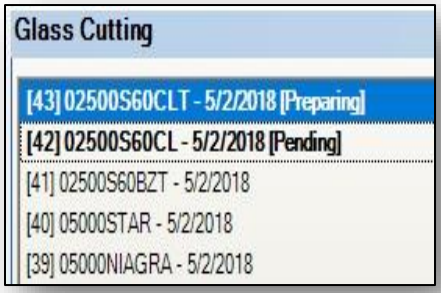
6. Enter the intended 'Run Date' for the release. This information is displayed to the machine operator so that proper priority will be given to releases when deciding what to run next.

Glass Cutting Releases List

The **first section** from the image above shows all releases that are not optimized or have not reached production. The releases appear as '[ReleaseID] Release Name'. Once a release is optimized, users will see it in **bold.** Once any of the release's patterns have received a production status, the release will disappear from this screen. Production statuses occur when the release is run in Opti-Break or when the user manually marks patterns complete in 'View Glass Cutting'.

Note: Releases will also disappear from this screen if a store piece is consumed on another release. This prevents used store pieces from being deleted by clearing a release.

Users may use the releases list to select multiple releases at once by selecting one release, then using SHIFT or CTRL to select other releases. This gives the user the ability to right-click and optimize multiple releases. After the user clicks optimize, the items will be individually validated, and placed in the optimization queue. This means that if there are any validation errors, they will appear upon the validation of the specific release in the list. After all validation errors are passed, the first item in the list will be selected, regardless if it was queued up or not.



Release Header

The **second section** in the 'Glass Cutting' screen is the 'Release Header' displaying the information about a release.

- **Release Name –** Name of release provided by the user.

- **Description *(optional)* –** Description of the release provided by the user.
- **Machine –** Cutting table that will process the release. Drop-down is populated from Machine Setup.
- **Run Date –** Date the release is expected to be run through production.
- **Release as Filler *('Dynamic Mode' only)* –** When in 'Dynamic Mode' checking this will mark the release as filler. When the user runs production at the cutting table (using FeneVision Opti-Break), glass from filler releases will be pulled onto the patterns to fill excess space. See 'Dynamic Mode' in the 'Filler Functionality' section for more.
-  – Add or delete releases.

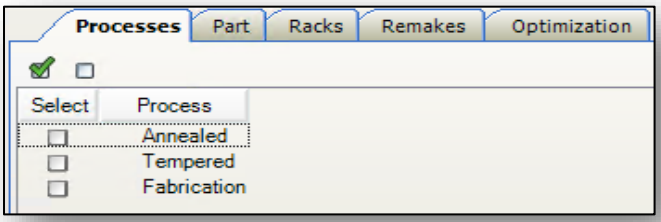
Release Details

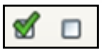
The **third section** of the above image shows the release details. This section outlines what the user sets up to be included on a release and optimizes the release. For a description of how to create and optimize a release see the 'Create New Release' section.

The release details section is divided among five tabs described below.

Processes Tab

In the 'Processes' tab, the user selects what processes will be included on the release.



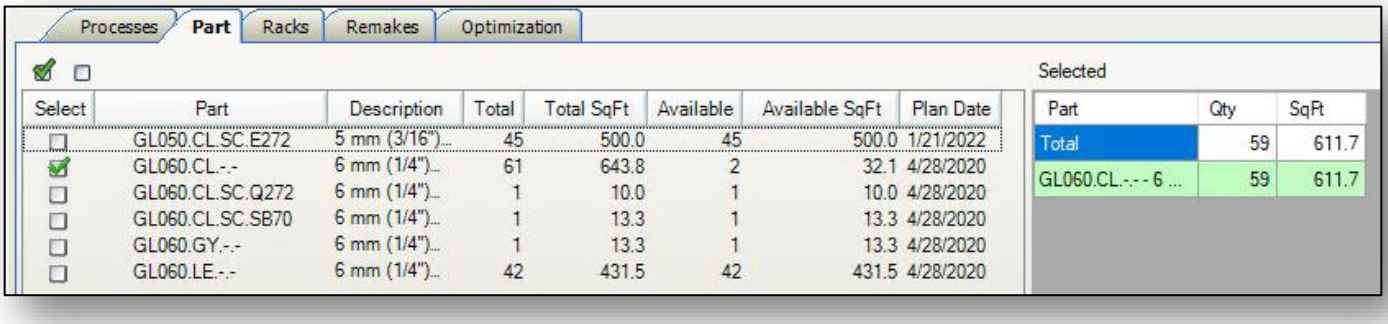
- **Select –** Check box to include or exclude process from release. The  allows the user to select or de-select all processes.

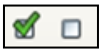
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Process –** Available processes. These are typically configured by FeneTech during implementation of the FeneVision system. Contact FeneTech for assistance in adding or removing processes.

Part Tab

In the 'Part' tab, the user selects what glass types to include on the release. This tab will be filtered to show only glass types that fall under the processes that have been selected in the 'Process Selection' tab.



- **Select –** Checkbox to include or exclude glass type from the release. The  allows the user to select or de-select all glass types.

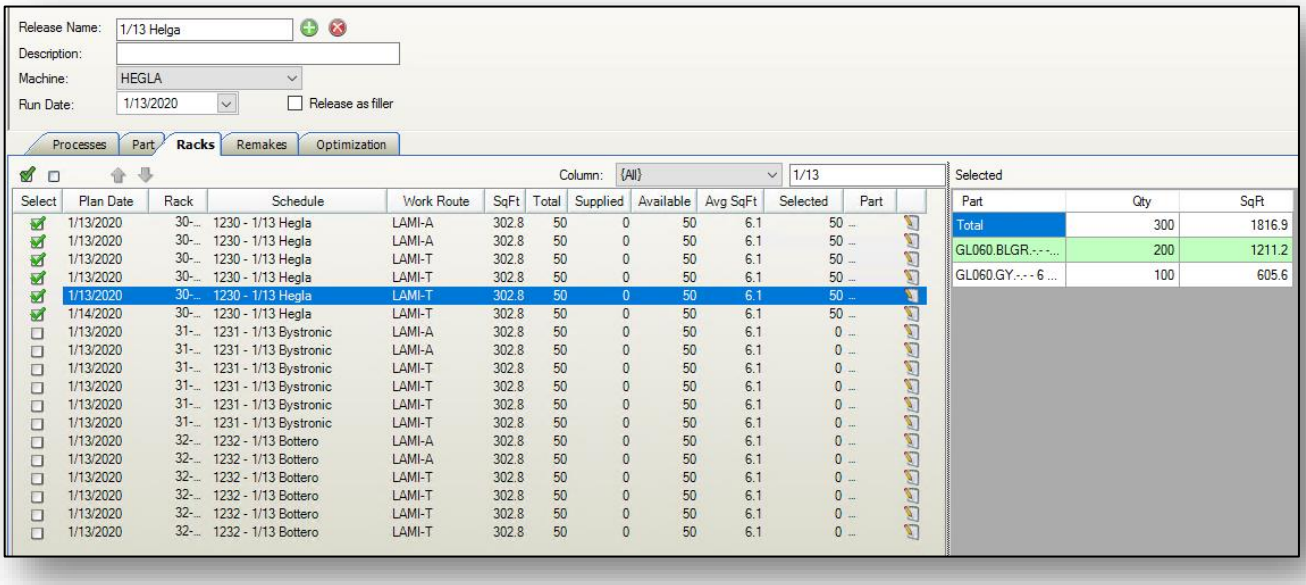
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Part –** Part number from Parts setup in Core.
- **Description –** Part description from Parts setup in Core.
- **Total –** Total number of lites for this. Sum of 'Available' lites and lites currently selected on this release.
- **Total SqM (SqFt) –** Total area of glass for the selected part. Sum of 'Available' lites and lites currently selected on this release.
- **Available –** Number of lites not selected on any releases.
- **Available SqM (SqFt) –** Area of glass not selected on any releases.
- **Plan Date –** Shows the earliest capacity plan date for this glass type to be cut. This allows the person building the release to see how urgently each glass type needs to be cut.
- **Selected –** Number of lites selected on the current release.

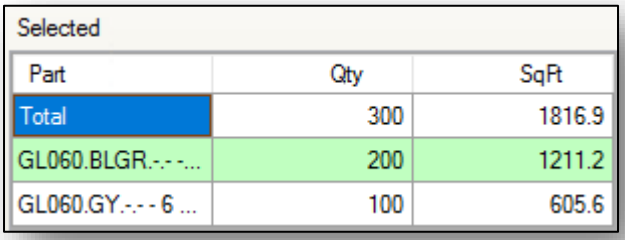
  Note: Disabled glass types will appear gray and are unable to be selected. Glass types can be enabled/disabled via the 'Inventory' screen on the 'Default Data' tab or per machine in 'Machines' screen on the 'Inventory' tab. See 'Default Data Tab' or the 'Inventory Tab' for a more detailed description.

Racks Tab

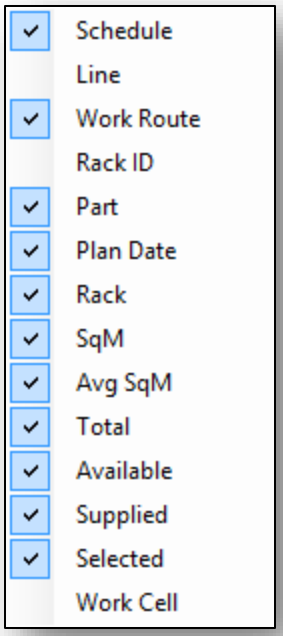
On the 'Racks' tab, the user selects which racks to include on the release. Only racks containing the glass types that are selected on the 'Part' tab will appear here. Glass racking is pre-determined during the Core schedule release process.



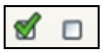
On the right side of the screen, Opti-Glass provides the user with the total number of pieces currently selected on the release, as well as the parts selected, and the total square feet (meters) to help with balancing work between lines. This grid is visible in all the tabs except the Optimization tab but won't display any information unless a part is selected in the Racks or Remakes tabs.



The following columns are available in the 'Rack Selection' screen.



Right click anywhere within the grid to see a complete list of available columns. Note that 'Select', 'Filler' ('Batch' mode only), and the end-column cannot be hidden.

-  – Select or deselect all.
-  – Move racks up and down to re-sequence according to priority.
- **Select –** Checkbox to include or exclude rack from the release. A green check indicates the full rack will be included on the release. A gray check indicates that some lites from the rack will be included and some will not.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Filler ('Batch' mode only) –** If checked the rack will be used in the release as filler.
- **Plan Date –** Planned date to cut the rack. This date is generated one of two ways:
  1. During 'Work Route Release' from Core, if 'Rack by Plan Date' is checked, the rack's plan date will match the capacity plan.
  2. If 'Rack by Plan Date' is not checked the rack's plan date will be the date to which the schedule is released.

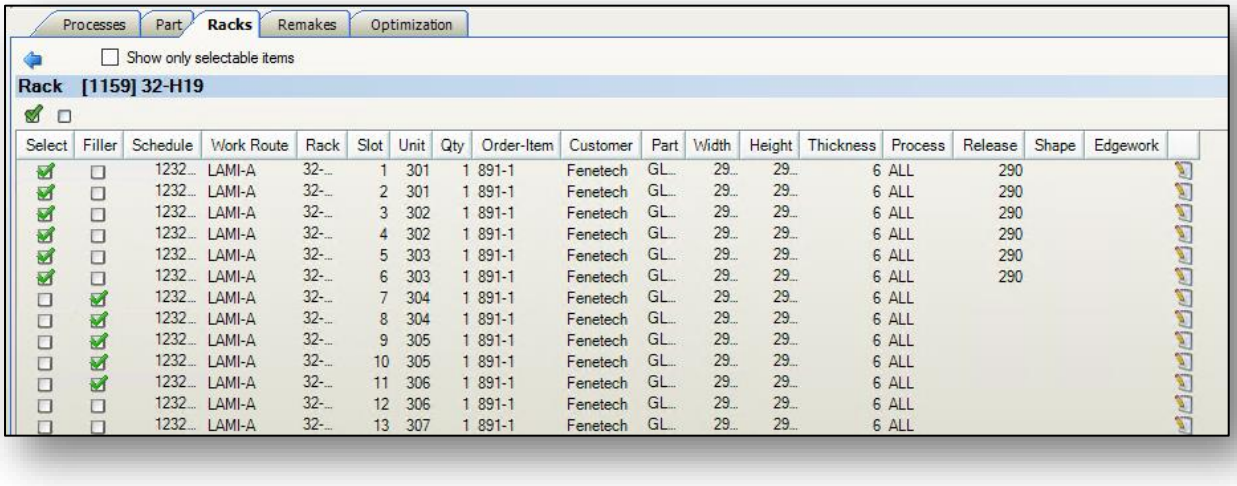
- **Rack ID (hidden by default) –** Opti-Glass internal rack ID. This does not match the rack ID generated through Core.
- **Rack –** Rack tag comprised of the last one to five digits of the 'Schedule ID / Container' prefix from Core.

  Note: The number of digits is determined via the RackTagSchedIDDigits parameter set in FeneVision Core. By default, it is set to the last two digits of the schedule id.

- **Schedule –** 'ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line like the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.

- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- **Area (SqFt or SqM) –** Total area of glass on the rack. Calculated based on the dimensions of the glass lites on the rack.
- **Total –** Total number of lites on this rack of the selected glass types.
- **Supplied –** Number of lites on the rack for the selected glass types that are supplied and do not need to be cut.
- **Available –** Number of lites on the rack for the selected glass types that are not on a release.
- **Avg SqFt (or SqM) –** The total area divided by the number of lites on the rack that are available.
- **Selected –** The number of lites on the rack for the selected glass types that are on this release.
- **Part –** Identifies the part(s) assigned to the rack. If there are multiple glass parts on the same rack, a comma delimited list will show all parts.
- **Work Cell *(hidden by default)* –** The first production work cell the rack will go through.
-  **–** Allows the user to manually select lites from the rack to include on the release. Selecting this icon will take the user to the 'Rack Details' screen.

Rack Details



Select	Filler	Schedule	Work Route	Rack	Slot	Unit	Qty	Order-Item	Customer	Part	Width	Height	Thickness	Process	Release	Shape	Edgework
☑	☐	1232...	LAMI-A	32-...	1	301	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☑	☐	1232...	LAMI-A	32-...	2	301	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☑	☐	1232...	LAMI-A	32-...	3	302	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☑	☐	1232...	LAMI-A	32-...	4	302	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☑	☐	1232...	LAMI-A	32-...	5	303	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☑	☐	1232...	LAMI-A	32-...	6	303	1	891-1	Fenetech	GL...	29...	29...	6	ALL	290		
☐	☑	1232...	LAMI-A	32-...	7	304	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☑	1232...	LAMI-A	32-...	8	304	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☑	1232...	LAMI-A	32-...	9	305	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☑	1232...	LAMI-A	32-...	10	305	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☑	1232...	LAMI-A	32-...	11	306	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☐	1232...	LAMI-A	32-...	12	306	1	891-1	Fenetech	GL...	29...	29...	6	ALL			
☐	☐	1232...	LAMI-A	32-...	13	307	1	891-1	Fenetech	GL...	29...	29...	6	ALL			

Note: Lites appear grayed out if they are included on another release.

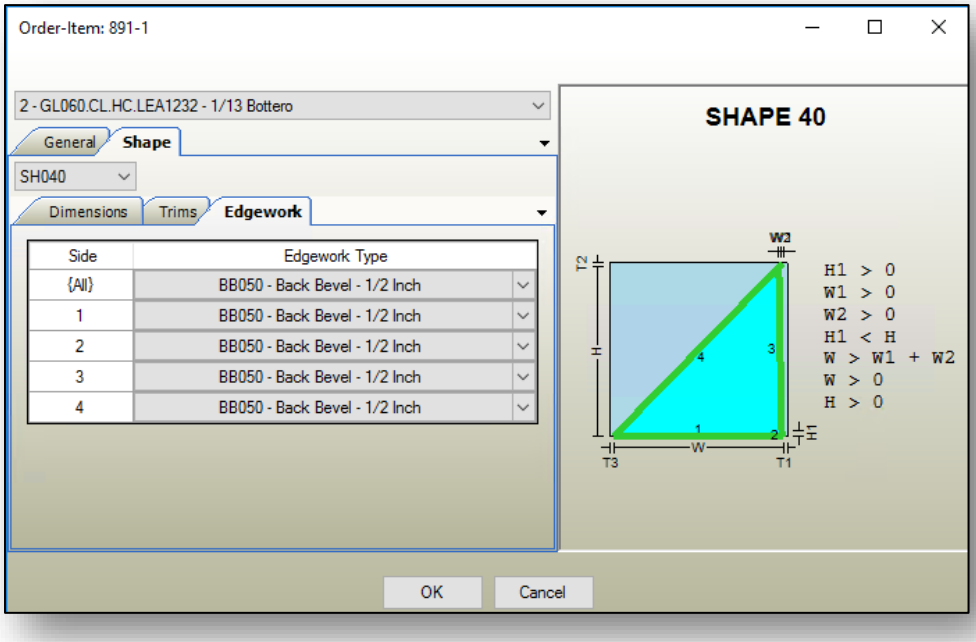
The following columns exist in the 'Rack Details' screen. Use the 'Back' icon to return to 'Rack Selection'. Select the 'Show only selectable items' checkbox to show only units that can be selected. If part of the rack is on another release, those units cannot be selected here. These units will appear grayed out if this is unchecked and disappear if this is checked. Use the  buttons to select all or unselect all.

- **Select, Filler, Schedule, Line, Work Route, Rack, and Rack ID –** See the descriptions in the 'Racks' section.
- **Slot –** The position the lite will be placed on the rack once it is cut. For stacked racks, it will read 'SideStack.Postion' meaning that if it reads '12.3' it means 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Qty –** Quantity for this unit. The value in this column will always read as '1'.
- **Order-Item –** 'Order number - line item number' from Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Part –** Part Number from Core.
- **Width –** Width of the lite from Core.

- **Height –** Height of the lite from Core.
- **Thickness –** Thickness of the lite from Core.
- **Process –** Process under which this particular lite falls.
- **Release –** Release on which the lite has been optimized. If the lite is on a different release, the user cannot select it here.
- **Shape –** Shape Number and shape dimensions of the lite. This is derived from the option structure configured on the product in Core. For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.
- **Edgework –** Displays all edgework codes applied to this lite. This value originates from option structure in 'Order Entry' in Core.
-  – If an order was entered incorrectly and the schedule cannot be pulled back, selecting  will allow the user to edit the glass type, dimensions, shape, and edgework. These changes will not affect the order in Core nor adjust the capacity plan, so any orders edited in this manner should be manually tracked through production.

  Note: These changes should be made carefully by someone very familiar with the BOM (bill of material).

Selecting  will reveal the 'Order-Item' screen.



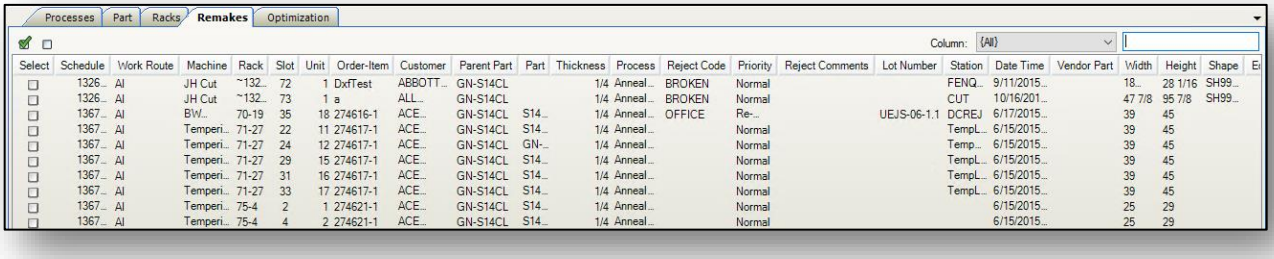
Two tabs exist in the 'Order Item' screen.

- **General Tab –** The 'General' tab allows the user to edit general information regarding the part shown in the 'Order Item' header.
- **Shapes Tab –** The 'Shapes' tab allows the user to edit dimensions, trims, and edgework for the shape shown on the right side of the screen.

Note: Visible columns can be edited in 'Racks' and 'Rack Details' by right clicking on a column header. It will bring up a menu that shows all the column names with check marks next to what is displayed. Unchecking or checking these modifies what is being displayed.

Remakes Tab

In the 'Remakes' tab, the user selects what remakes to include on the release. Only the remakes for the glass types that are selected on the 'Part' tab will appear.



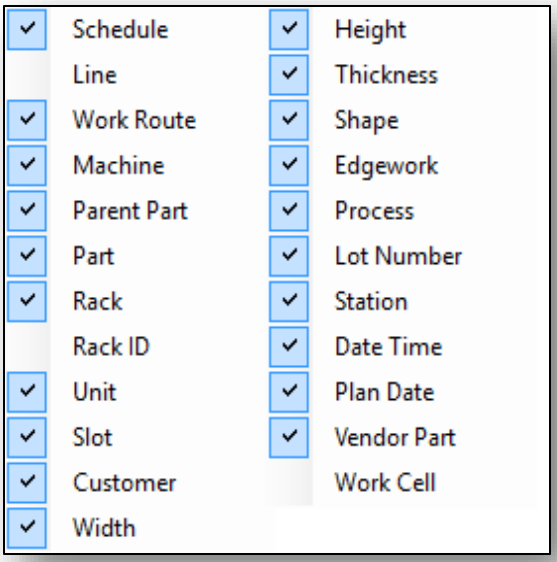
The following columns exist in the 'Remakes' tab. Select  to select / de-select all remakes shown in the grid.

- **Select –** Checkbox to include or exclude remake from the release.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Order-Item –** 'Order number - line item number' from Core.
- **Reject Code –** 'Reject Code' assigned when the lite was rejected (not required). To get a reject code from FeneVision Opti-Temp or Opti-Break, the station must have assigned 'Reject Codes'.
- **Priority –** 'Reject Priority' selected when the lite was rejected (not required). To get a priority from Opti-Temp or Opti-Break the station must be assigned 'Reject Codes' (not required).
- **Reject Comment –** Comment entered when the lite was rejected. To get a reject comment from Opti-Temp or Opti-Break the station must be assigned 'Reject Codes'.
-  – Delete the remake. Deleting a remake does not change the status of the lite on the original release.

To see a list of other available column headings, right click anywhere in the 'Columns' header.



- **Schedule –** 'ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line like the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.
- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- **Machine –** Cutting machine where the lite was originally cut. The machine is assigned to the lite when it is accepted or rejected at Opti-Break. If the lite was rejected in Opti-Temp, the 'Remakes' dialog will display the cutting machine. If the lite was cut using a different machine than the one it was optimized with, it will still be assigned the machine that cut it.
- **Parent Part –** This indicates the parent part for the glass type of the remake. The parent part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part –** Part Number from Core.
- **Rack –** Rack tag comprised of the last two digits of the 'Schedule ID / Container' prefix from Core.
- **Rack ID –** Opti-Glass internal rack ID. This does not match the rack ID generated through Core.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Slot –** The position the lite will be placed on the rack once it is cut. For stacked racks, it will read 'SideStack.Postion' meaning that if it reads '12.3' it means 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Width –** Width of the lite from Core.
- **Height –** Height of the lite from Core.
- **Thickness –** Thickness of the lite from Core.
- **Shape** – Shape Number and shape dimensions of the lite. This is derived from the attributes configured on the product in Core. For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.
- **Edgework** – Displays all edgework codes applied to this lite. This value originates from attributes on the order in Core.
- **Process –** Process under which this particular lite falls.

- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.
- **Station –** 'Station ID' where the rejection occurred.
- **Date Time –** Time of the rejection.
- **Plan Date –** Plan date associated with the original release. Manual remakes will not receive a 'Plan Date' as it was not processed in Core.
- **Vendor Part –** Alpha-numeric identifier of the 'Vendor' part. This is different from the 'Part' number because parts could potentially have the same ID. The 'Vendor Part ID', however, distinguishes the same parts that are from different vendors.
- **Work Cell (hidden by default) –** The first production work cell the remake will go through.

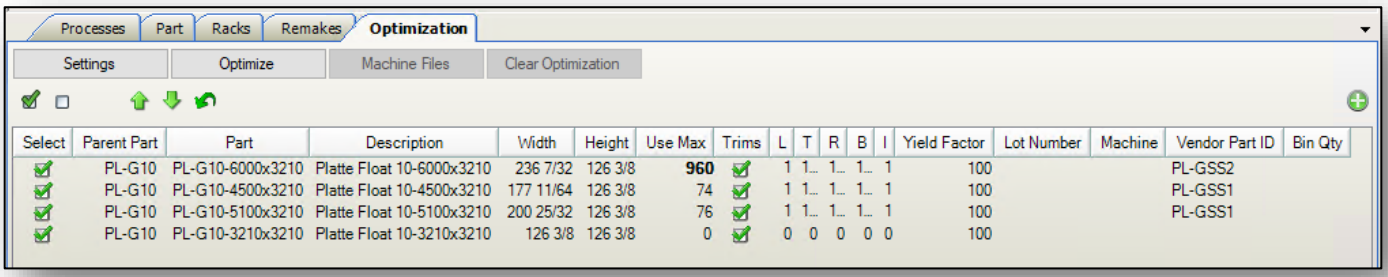
Optimization Tab

In the 'Optimization' tab, the user selects which stock sheets to use and how many sheets to allow the optimizer to use. This is where the optimization of the glass sheets actually occurs. The following two sections describe the 'Stock Sheets' grid and the 'Settings' dialog.

Stock Sheets Grid

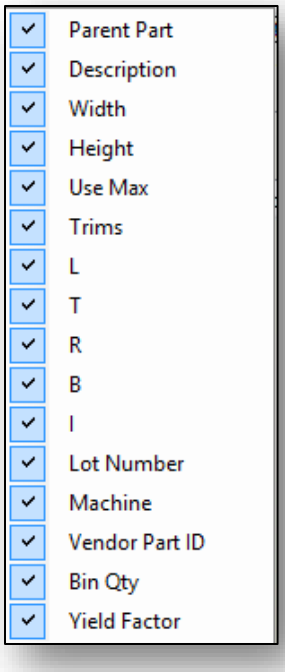
The image below displays the 'Stock Sheets' grid before optimization takes place. Shown are the stock sheets that are available to be used for optimization, which are determined by the particular glass types on the release and the particular glass types that are enabled on the machine.

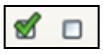
Note: This grid displays 'Stock' sheets. Additionally, in 'Batch' mode, 'Restock' sheets are also displayed.



Select	Parent Part	Part	Description	Width	Height	Use Max	Trims	L	T	R	B	I	Yield Factor	Lot Number	Machine	Vendor Part ID	Bin Qty
☑	PL-G10	PL-G10-6000x3210	Platte Float 10-6000x3210	236 7/32	126 3/8	**960**	☑	1	1...	1...	1...	1	100			PL-GSS2	
☑	PL-G10	PL-G10-4500x3210	Platte Float 10-4500x3210	177 11/64	126 3/8	74	☑	1	1...	1...	1...	1	100			PL-GSS1	
☑	PL-G10	PL-G10-5100x3210	Platte Float 10-5100x3210	200 25/32	126 3/8	76	☑	1	1...	1...	1...	1	100			PL-GSS1	
☑	PL-G10	PL-G10-3210x3210	Platte Float 10-3210x3210	126 3/8	126 3/8	0	☑	0	0	0	0	0	100				

The following columns are available in the 'Stock Sheets Grid'. These can be customized by right clicking on any of the column headers and selecting the desired heading. The image below represents an optimization being run in 'Dynamic' mode only.



-  – Select or deselect all.
-  – Move stock sheets up and down to re-sequence according to priority.
-  – Reset Use Max value to available Quantity. Visible only when a line is selected where the Use Max has been changed (shows in bold).
-  – Opens a menu that allows the user to create a new stock sheet.
- **Select –** Checkbox to indicate with which stock / restock sheets to make available to the optimizer.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Parent Part –** This indicates the 'Parent' part for the 'Stock/Restock' sheet. The 'Parent' part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part (fixed column) –** Identifies the part from the 'Inventory' settings screen. This is the stock sheet that will be used during optimization. The 'Part' column could display as 'Parent' if the user is looking at a parent part, or it could display as 'Child' if the user is looking at a child part. Additionally, the column could be blank if it is a 'Restock / Store' part.
- **Description –** Part description from the 'Inventory' menu under 'Settings' in the 'Glass' tab. This is initially configured in Core for the glass part.
- **Width –** Width of the stock sheet from 'Inventory Settings' screen.
- **Height –** Height of the stock sheet from 'Inventory Settings' screen.
- **Use Max –** How many sheets the optimizer can use. Defaults to the 'Quantity On Hand' minus 'Quantity Allocated' for that glass part. Setting this to '-1', will allow the optimizer to use unlimited sheets. Comes from 'Inventory Settings'. If this is changed the Qty. will show in bold to denote it has been changed.

Note: When using a machine in Dynamic mode, the quantity allocated is ignored, and use max will show the quantity on hand.

- **Trims –** Checkbox to indicate if specified stock trims will be applied to this stock / restock sheet.
- **L –** Left trim. Amount of trim to use on the left side of the sheet.
- **T –** Top trim. Amount of trim to use on the top of the sheet.
- **R –** Right trim. Amount of trim to use on the right side of the sheet.
- **B –** Bottom trim. Amount of trim to use on the bottom of the sheet.
- **I –** Internal trim. Assures that no two scores are within a certain distance of each other. Would be set to the size of the narrowest piece that can be safely broken out.

  Note: Trims default to what is set in the 'Default Data' tab of 'Inventory Settings' for that glass type. These settings can be overridden here on a per-release basis.

- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user. In the 'Optimization' tab, users will only see a lot number for store and restock pieces. It will be set at the time that piece is broken out.
- **Machine –** Cutting machine that generated the restock piece. This will be blank for stock sheets.
- **Vendor Part ID –** Alpha-numeric identifier of the vendor part. This is different from the part number in that parts could potentially have the same number; the 'Vendor Part ID', however, distinguishes two of the same parts from different vendors.
- **Bin Qty –** Quantity of stock sheets in the 'Inventory' bin that are assigned to the machine. Bins can be assigned for the entire machine and can be overridden for individual stock sheets in the 'Inventory Tab' in 'Machines' settings.
- **Yield Factor –** When an optimization can choose from multiple stock sizes, this setting is used to determine how it should balance between getting the best yield and picking the preferred stock sizes. The Yield Factor is a percentage greater than 0 and less than or equal to 100. The higher the value the more likely that stock size is to be used. For example, maybe an optimization will get a 3% yield improvement if it uses the smallest stock size available, but in doing that it would require cutting twice as many sheets. So, the marginal yield improvement is not worth the decrease in productivity caused by extra drops. Setting it to 100 effectively makes that stock size the 'preferred' stock size. If two stock sizes have the same Yield Factor the one that obtains the higher yield will be used.
  - **How It Works –** When optimizing the optimizer actually optimizes the release on all stock sizes. Then it determines the 'Weighted Yields' of each optimization to determine which to use. 'Weighted Yield' = (Actual Yield / 100) * (Yield Factor / 100).

    For example, assume there are two stock sizes. Stock Size A is 100x144 and Stock Size B is 72x96. So, A is 100 SqFt and B is 48 SqFt.

    Now say a release is optimized that has that has 90 SqFt of glass total. Assume the optimizer comes up with the following optimizations.
    - 1 pattern of Size A: Yield = 90%
    - 2 patterns of Size B: Yield = 93.8%.

    If the Yield Factor is equal on these two sizes it will choose to use size B because it obtained a better yield. However, you may prefer it uses Size A to save labor and time.

Now let's say that the Yield Factor is 100 percent on Size A and 95 percent on Size B. The optimizer would first find each size's 'Adjusted Waste' like this.

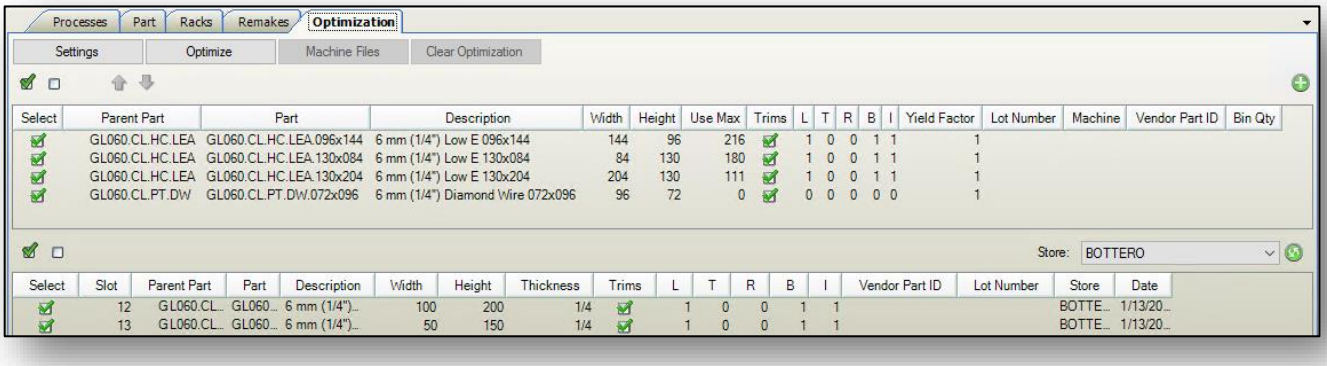
- Size A: Weighted Yield = (90/100) * (100/100)
  - Result = 0.90
- Size B: Weighted Yield = (93.8/100)*(95/100)
  - Result = 0.8911

Because the 'Weighted Yield' of Size B is less than the 'Weighted Yield' of Size A, Size A will be used.

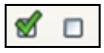
Note: This value is set based on the default value from Inventory Setup; however, during the optimization, this field can be overridden.

Note: When syncing parent / child relationships from CORE, the default 'Yield Factor' will be set to 100.

- **Store Sheets –** When running in 'Batch Mode', a second grid appears at the bottom of the table that displays all available store sheets. For this to appear, the following settings must be in place:
  1. Machine must be in 'Batch' mode
  2. 'Consume Store' must be checked in the release 'Settings'
  3. Store Sheets' of the glass types selected on the 'Glass' tab must exist.



The following columns are available in the 'Store' selection pane:

-  – Select or deselect all.
- **Store –** Drop-down to filter what store pieces are shown based on their store location.
- **Select –** Checkbox to indicate which store sheets to make available the optimizer.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

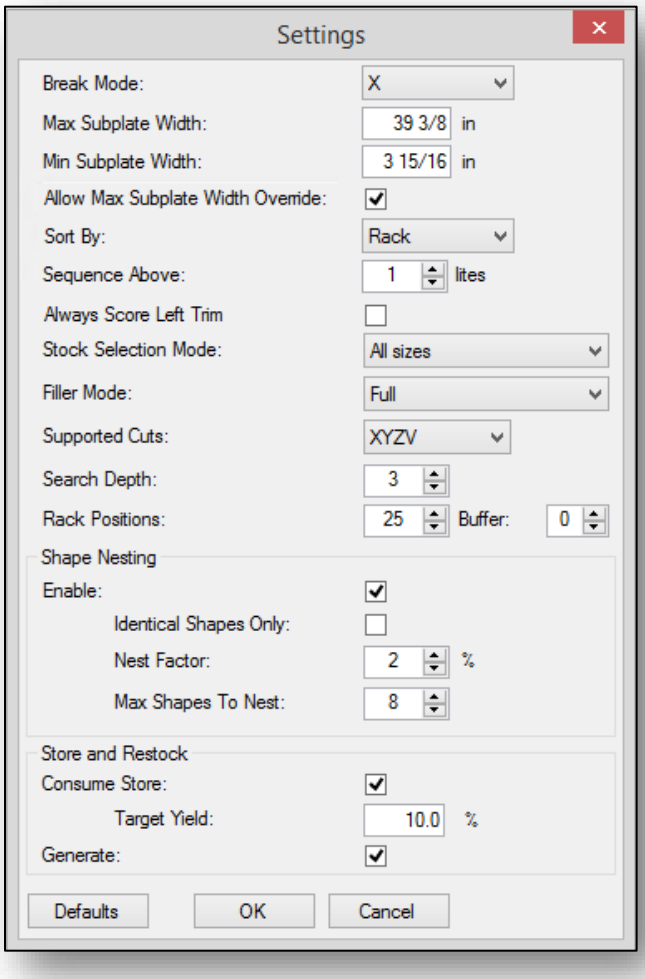
- **Slot –** Store slot where the 'Store' sheet is currently assigned. This gets assigned when it is generated on an optimization and can be viewed in the 'Stores' dialog on the 'Settings' tab.
- **Parent Part, Part, Description, Width, Height, Thickness, Trim, L, T, R, B, I, and Vendor Part ID –** See the descriptions under 'Stock Sheets Grid'.

- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user. In the 'Optimization' tab, users will only see a lot number for store and restock pieces.
- **Store –** Identifies the remnant piece's store location.
- **Date –** Identifies the date the remnant piece was added to the 'Store' location.

Settings

If the user needs to make changes at the release level, the following settings can be reconfigured before optimization.

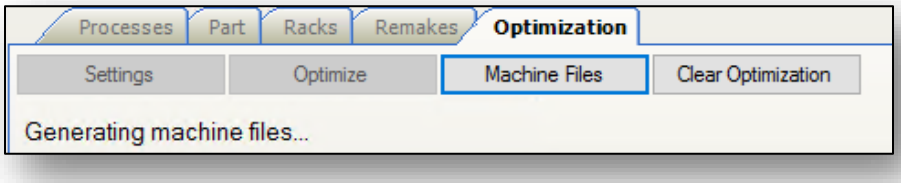
- Settings – Machine settings are saved in the 'Settings' screen for each release. These are saved when the optimization is created; thus, any changes to 'Machines' setup will not change the settings on existing releases. Select the 'Settings' button to access the following dialog:



- Default – Selecting this button will reset all the fields to the current settings on the machine.
- OK – Saves changes to the settings and closes the Settings window.
- Cancel – Closes the Settings window without saving.

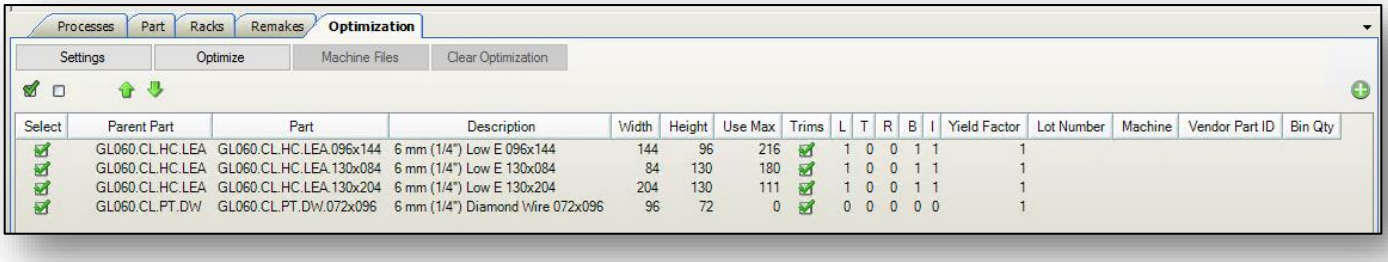
Note: See machine settings in the setup section for more information regarding the individual settings.

-  – Select all or unselect all from the available stock sheets list.
-  – Selecting 'Optimize' will optimize the release (enabled before optimization).
-  – Selecting 'Machine Files' generates machine files for the release and outputs these into to machine file directory set in 'Machines' setup on the 'Interface Tab'. Once the machine files are generated, a progress bar will display notifying the user that the machine files have been generated successfully. Select the 'Close' button then returns the user to the pattern detail screen. (enabled after optimization)



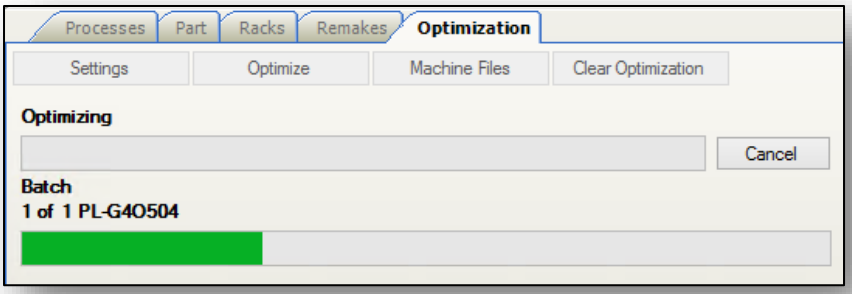
-  – Selecting 'Clear Optimization' undoes the optimization (enabled after optimization). If machine files have been generated clearing, the optimization will delete them.

Once the 'Settings' screen has been configured and saved, the user is ready to optimize.



To optimize:

1.  – Indicates the stock sheets that have been selected for optimization.
2. Select the 'Optimize' button to begin the optimization. During the optimization, the progress bar will appear, indicating the progress and the total yield of the optimization.



The top progress bar represents the overall progress (i.e. Validating, Optimizing, Save, etc.). While the bottom progress bar shows the current part and batch progress. The text above the bottom bar shows the batch and part it's optimizing.

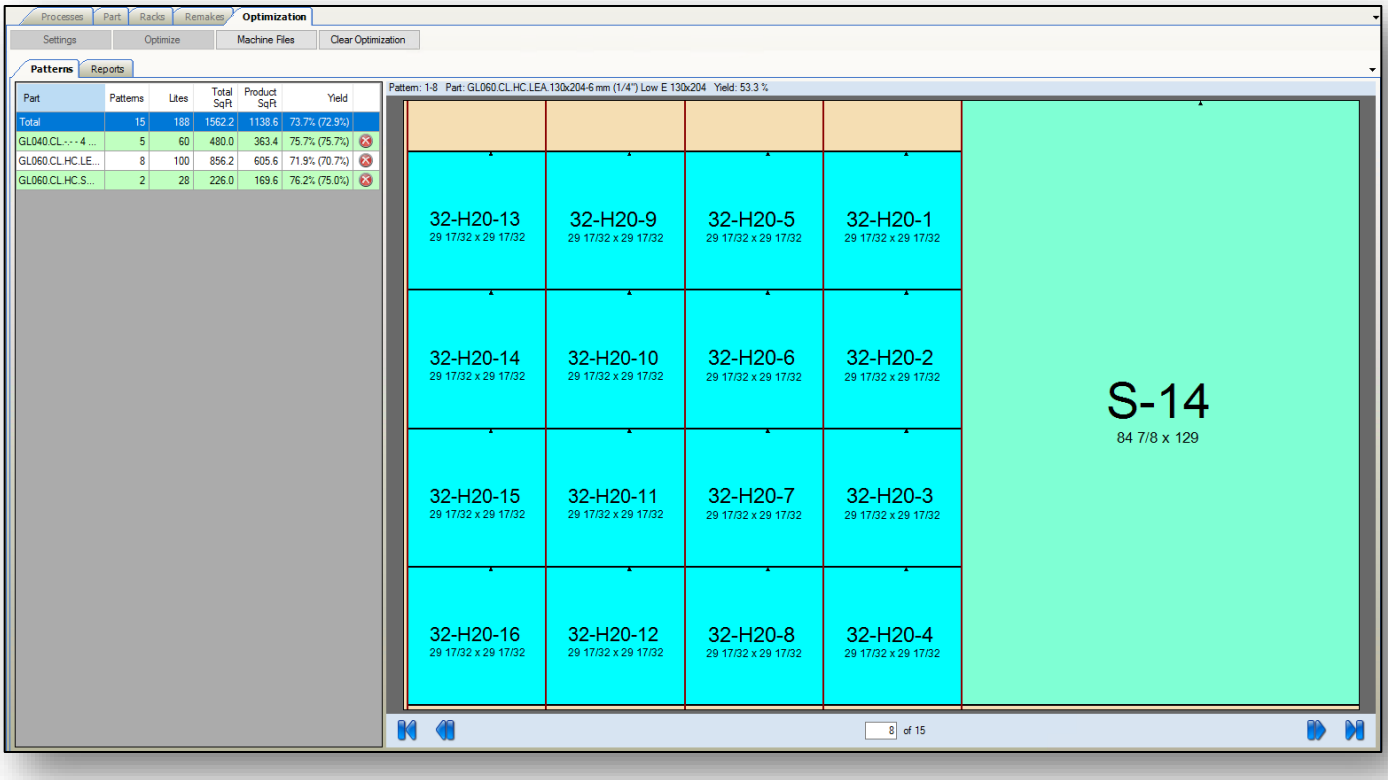
Note: While one release is optimizing, additional releases can be created and put into a queue to optimize. The system will only optimize one release at a time, but when the first release is complete, the next release in the queue will automatically begin, until all releases in the queue have been optimized

In batch mode, at the end of an optimization, patterns are sequenced to minimize the amount of work that the machine will do to complete the release based on the following rules:

1. Batch
    a. Parent Part
    b. Stock Size
2. Store consumption
3. Restock consumption
4. Machine Load Sequence
5. Same stock sizes as last batch

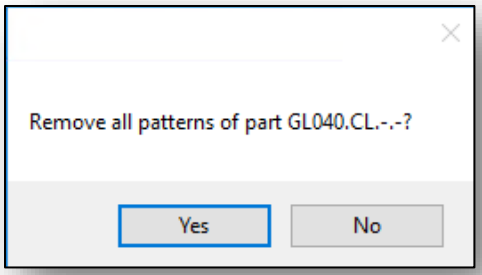
Patterns Tab

Once optimization is completed, the 'Optimization' tab will separate into the 'Patterns' and 'Reports' tabs as shown in the image below.



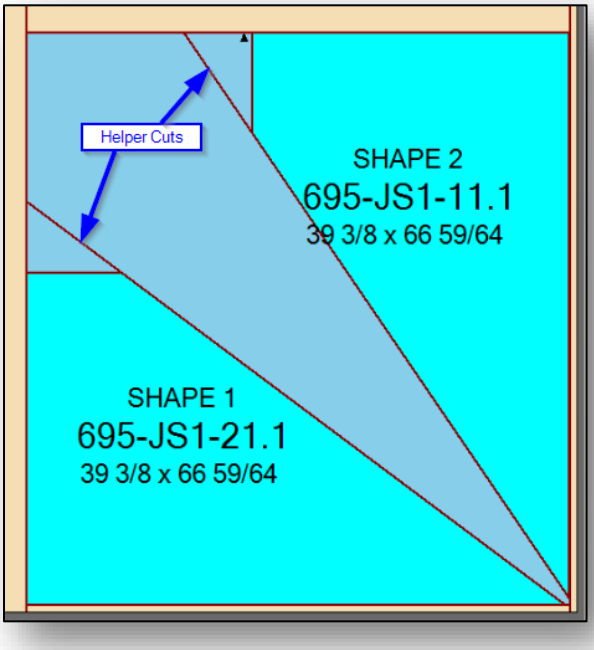
The grid on the left displays the glass types that were used in the optimization. If the user selects an individual glass type from this grid, the pattern viewer on the left updates to only show the patterns for that glass type. The grid contains the following columns:

- **Part –** Part identifier for the glass type. This will be the 'Parent Part'.
- **Patterns –** Number of patterns for the glass type.
- **Lites –** Number of lites for the glass type.
- **Total SqFt (SqM) –** Total square feet or square meters of glass used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the lites.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).
-  – This deletes all patterns for a glass type from the release. Selecting 'Delete' will prompt the user with the following screen:



The image on the right wil show the user the optimization that has been created. Users can use the back and forth arrows at the bottom of the screen to scroll through the patterns. The image will show the unit information, dimensions, and if appicable, the shape.

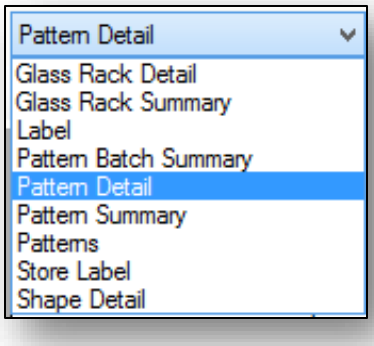
Note: When using shapes, there may be additional 'helper cuts' shown. These cuts will go the full length of the stock sheet, instead of just showing the pattern shapes. This helps the user see the full cut associated with the shapes.



Reports Tab

Once a 'Glass Cutting' release is optimized the 'Reports' tab will appear. The user can select the desired report from the 'Select Reports' dropdown.

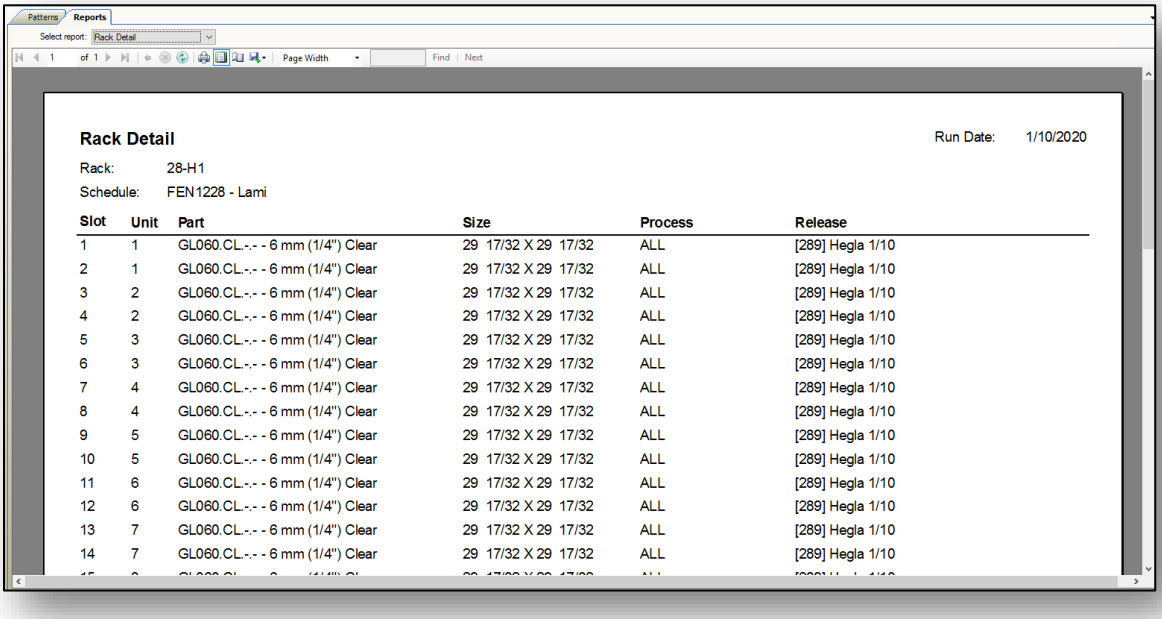
The image below represents the list of reports for 'Glass Cutting' machines.



Note: Custom SQL reports can be added to this drop-down menu utilizing "system report" functionality. Contact FeneTech for assistance in adding or removing reports from this dropdown.

Rack Detail

The 'Rack Detail' report provides details for each unit on the rack. It will generate the details for every rack on the selected release. To view this report, go to the 'Optimization' tab then to the 'Reports' sub tab. Select 'Rack Detail' from the dropdown list.



Rack Detail Run Date: 1/10/2020

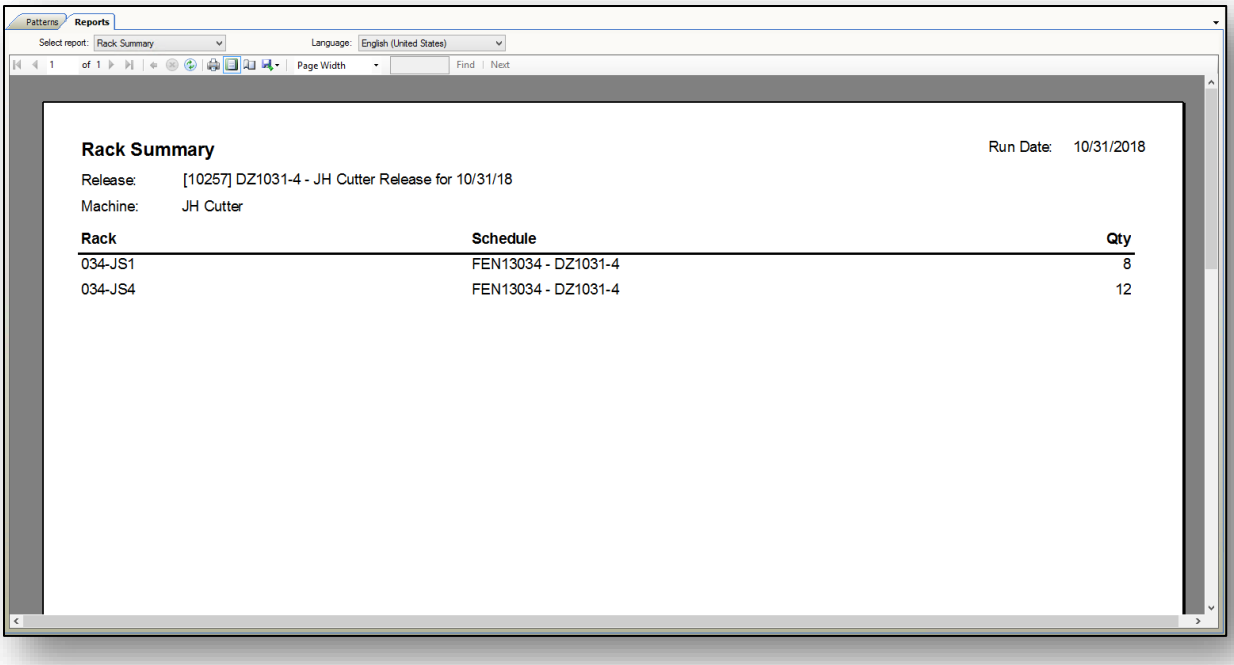
Rack: 28-H1

Schedule: FEN1228 - Lami

Slot	Unit	Part	Size	Process	Release
1	1	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
2	1	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
3	2	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
4	2	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
5	3	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
6	3	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
7	4	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
8	4	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
9	5	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
10	5	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
11	6	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
12	6	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
13	7	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10
14	7	GL060.CL.-.- - 6 mm (1/4") Clear	29 17/32 X 29 17/32	ALL	[289] Hegla 1/10

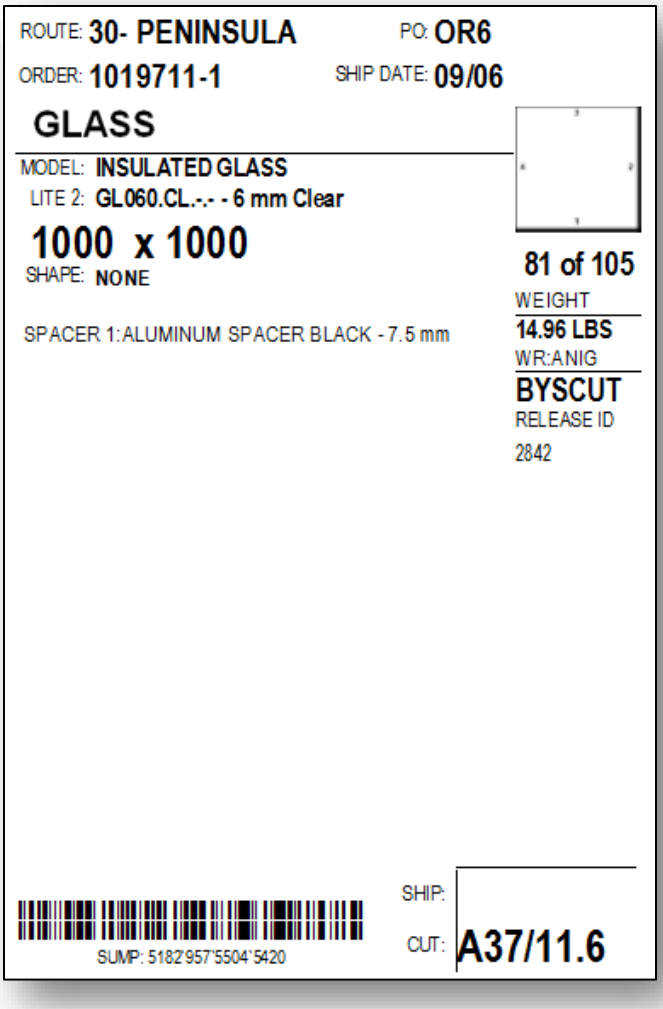
Rack Summary

The 'Rack Summary Report' shows the different racks on a release, the number of lites on each rack, and the production schedule associated with the rack. To view this report, go to the 'Optimization' tab then to the 'Reports' sub tab. Select 'Rack Summary' from the dropdown list.



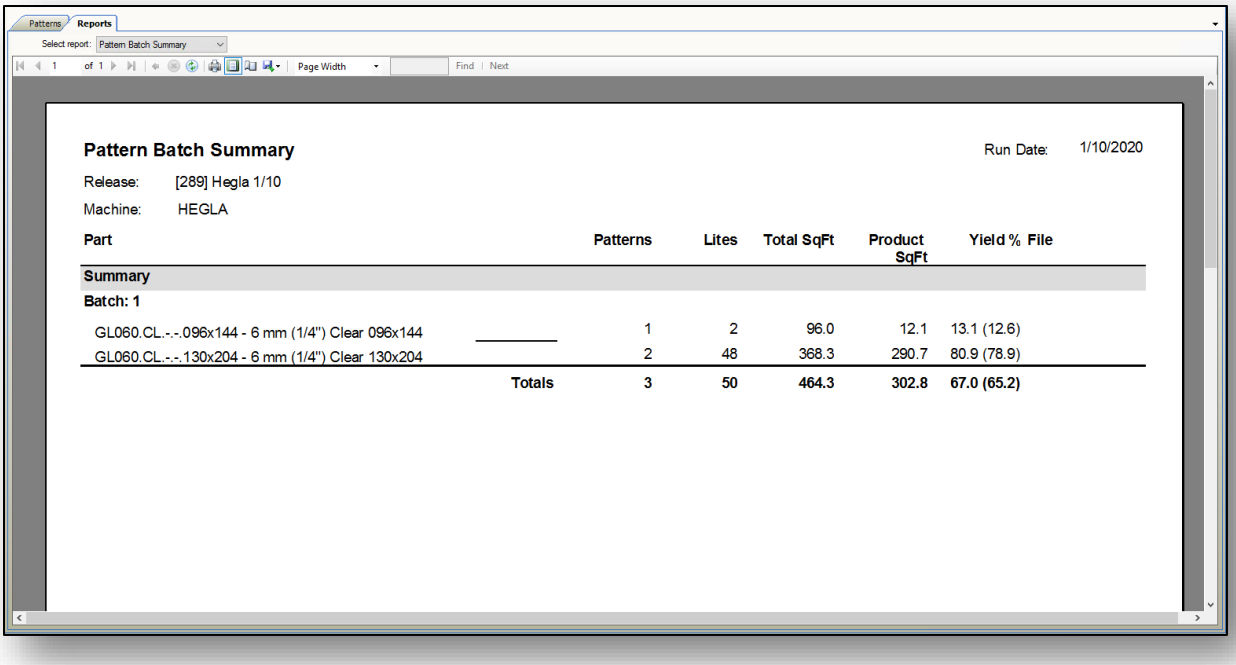
Label

The 'Label' is placed on the lite at the breakout station showing the workflow for the lite. If the lite is a remake the word 'REMAKE' will appear in the middle of the label. To achieve this, a label report needs to be set up in 'Reports' setup in Core. The image below represents an example of a label.



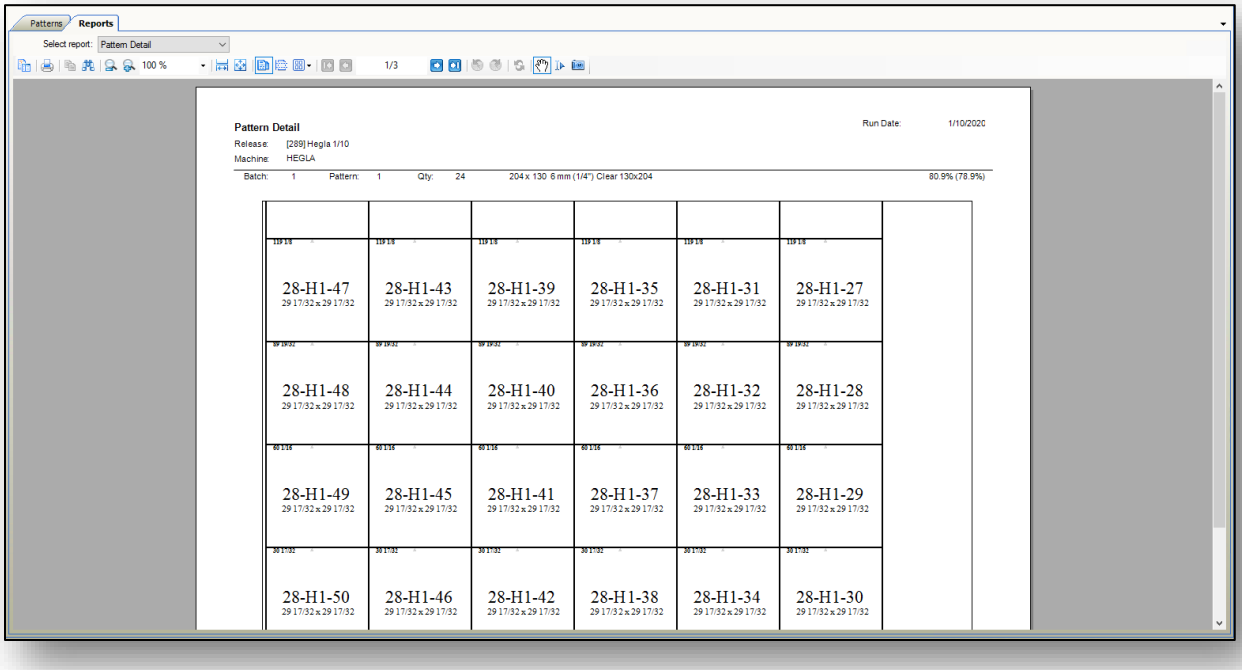
Pattern Batch Summary

The 'Pattern Batch Summary' shows the same information as the 'Pattern Summary' except that *batches* are clearly grouped. An example of the 'Pattern Batch Summary' report follows.



Pattern Detail

The 'Pattern Detail' report allows the user to view each pattern and provides the user with some basic information for each pattern, such what stock sheet will be used and the pattern yield. The 'Pattern Detail' report shows the same information as the 'Patterns' report; however, only one pattern is shown per page.



The followng information is visible in the ‘Pattern Detail’ report:

In the header

- **Run Date –** Date the release is expected to be run through production. Set in ‘Releases’.
- **Release –** Release name.
- **Machine –** Cutting table that will process the release. This is selected in ‘Releases’ when the release is first created.

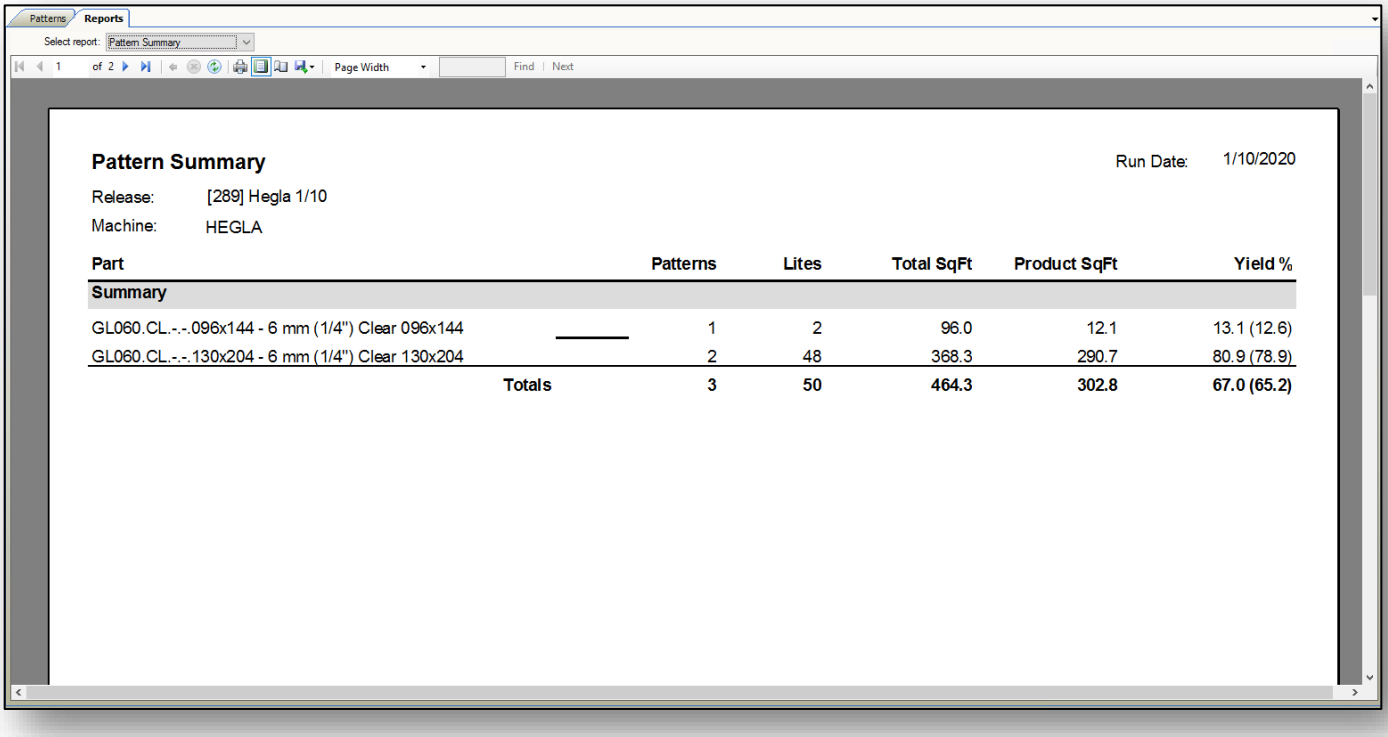
In the body

- **Batch –** Batch number of the pattern shown.
- **Pattern –** Identifying information about the pattern including part and dimensions.
- **Qty –** Number of lites on the pattern.
- **Stock Sheet –** The stock sheet being used for the optimization
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).
- **Date / Time –** Date and time the report was accessed.

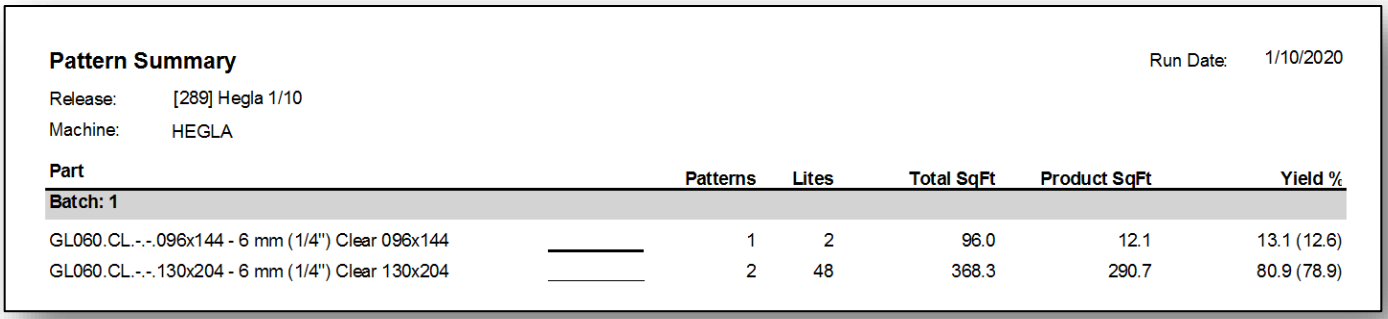
Pattern Summary

The ‘Pattern Summary’ report summarizes the release by displaying the glass types, the number of patterns per glass type, the lites on the patterns, material used on the patterns, material that goes toward the lites, and the yield.

The report first displays a summary of all batches.



The following pages display each individual batch.



Pattern Summary Run Date: 1/10/2020

Release: [289] Hegla 1/10

Machine: HEGLA

Part	Patterns	Lites	Total SqFt	Product SqFt	Yield %
Batch: 1					
GL060.CL.-.-.096x144 - 6 mm (1/4") Clear 096x144	1	2	96.0	12.1	13.1 (12.6)
GL060.CL.-.-.130x204 - 6 mm (1/4") Clear 130x204	2	48	368.3	290.7	80.9 (78.9)

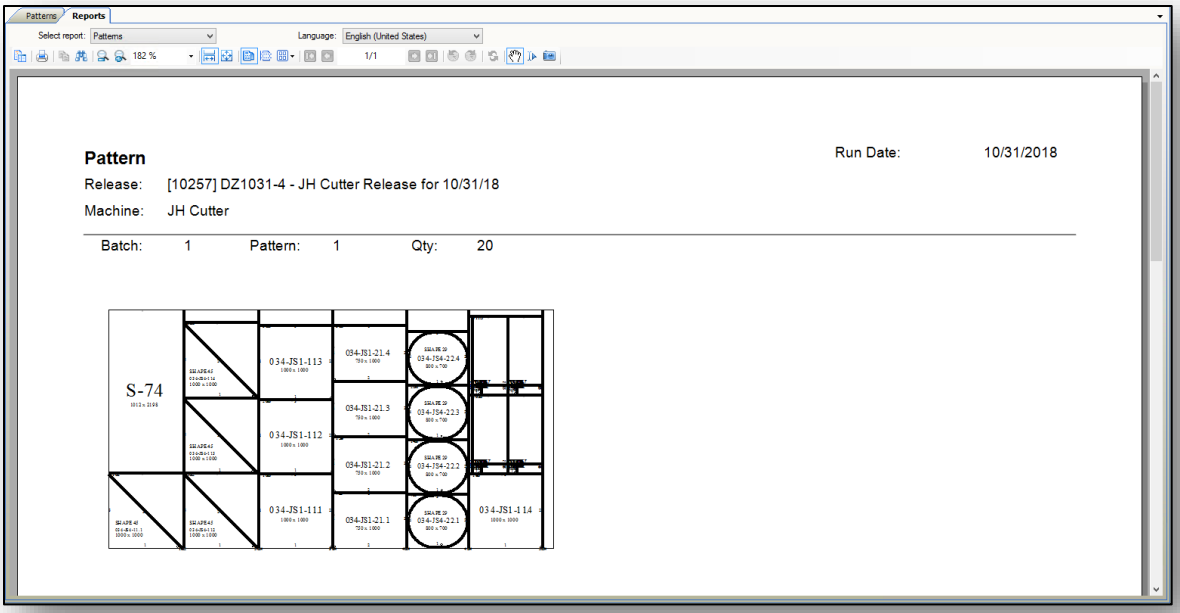
Note: If two instances of the same part are shown, Opti-Glass will not group these together because they are contained in different batches.

The following information is detailed in the 'Pattern Summary' report:

- **Part –** The part number of the glass being used on the optimization originating from Core.
- **Patterns –** The number of patterns generated for this particular part.
- **Lites –** Number of lites that are optimized on these patterns.
- **Total SqFt –** Total square feet (or meters) of the sheet(s) being used.
- **Product SqFt –** The raw material (square feet or square meters) taken up by the lites.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).

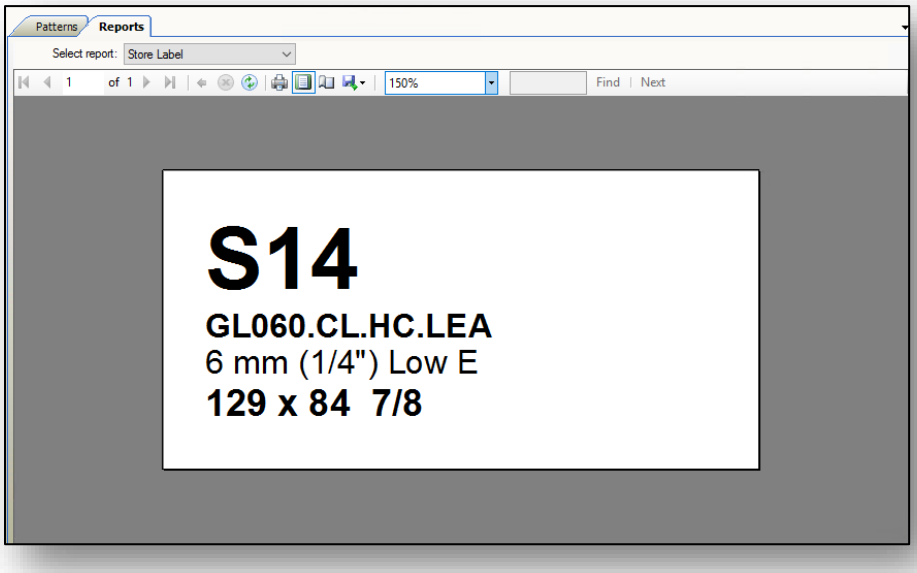
Patterns

The 'Patterns' report shows the same information as the 'Pattern Detail' page; however, six patterns are displayed on the screen at a time.



Store Label

'Store Labels' are placed on store pieces to indicate to which 'Store' rack the piece should be taken.



The values on the store label example represent the following:

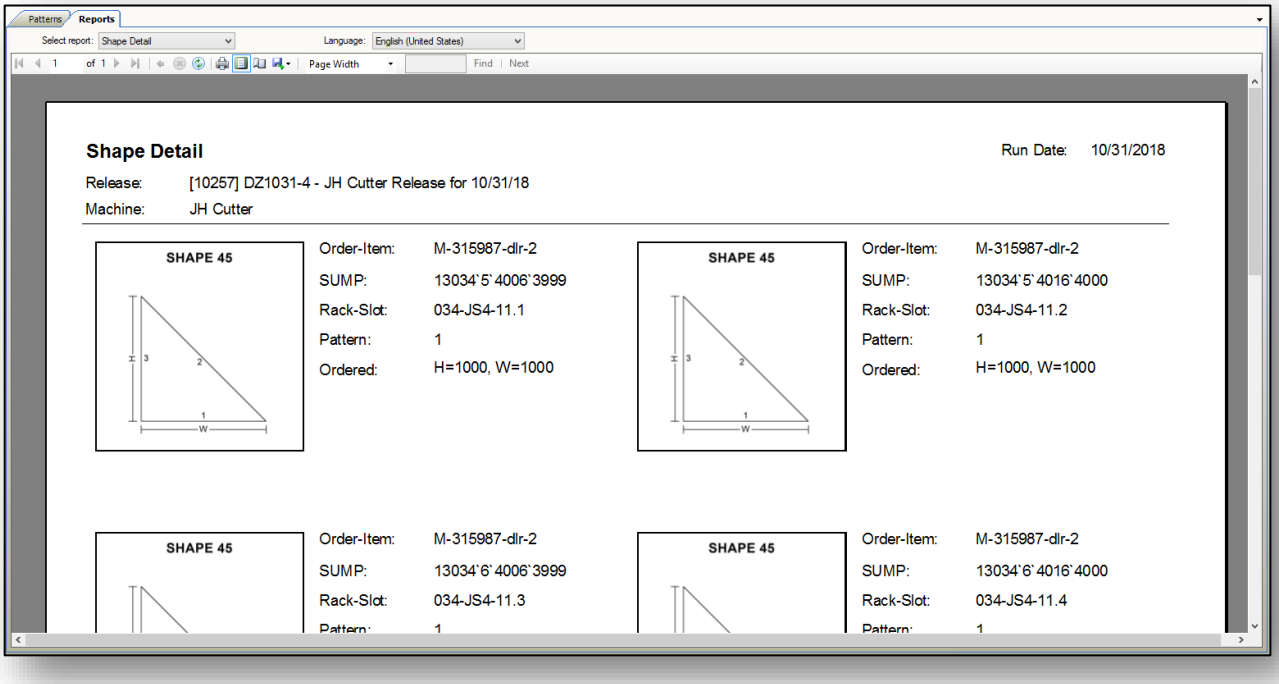
- **S –** Represents that this lite is a 'store' lite.
- **14 –** Store slot where this piece will be placed.
- **Gl060.CL.HC.LEA –** Represents the part number.
- **6 mm (1/4") Low E**– Represents the part description.
- **129 x 84 7/8 –** Dimension of the store piece.

Note: Store labels are only generated for Offline Store. They are not necessary for Online Store or Restock.

Note: While store labels can be generated via Opti-Glass before or after accepting a pattern, store may change if using dynamic mode in Opti-Break. Therefore, store labels can also be generated via Opti-Break

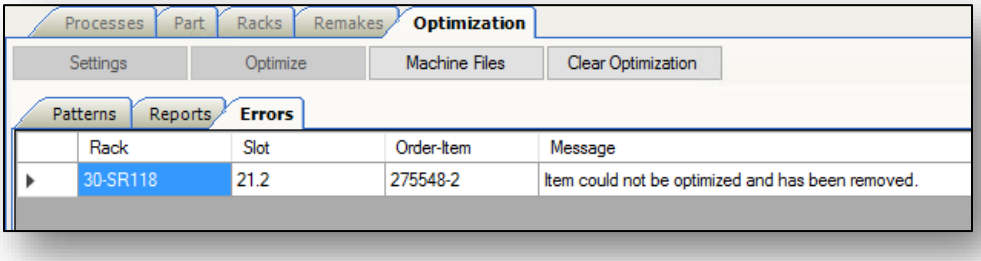
Shape Detail

The 'Shape Detail' report displays all shapes on a release that are not DXF shapes. A picture of the relevant shape with generic shape parameters is shown for each record, and each record displays the ordered shape parameters as well as the adjusted shape parameters after edgework adjustments, if applicable. The records are sorted by pattern, then SUMP.



Errors Tab

If an error is encountered during an optimization the 'Errors Tab' will appear to the right of the 'Reports Tab' displaying the errors. Any release containing errors will appear in red in the release list in 'Glass Cutting' and 'View Glass Cutting'.



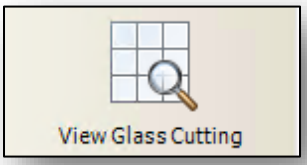
Note: When an optimization begins the optimizer first performs validations (verifies everything can fit on the stock, DXF files can be read, etc.). If an error is encountered during the validations, then the user is immediately prompted, and optimization

does not occur. The 'Errors Tab' will only appear if an error occurs after these validations are completed. If an error occurs, contact FeneTech for assistance.

View Glass Cutting

The 'View Glass Cutting' screen allows the user to:

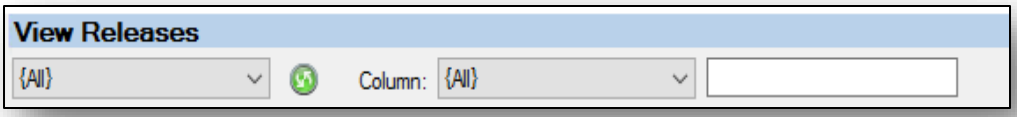
1. View releases.
2. Set releases complete or not complete.
3. Reset a release's status so that they can be run through FeneVision Opti-Break again, if necessary.
4. Reset a pattern's status to return all items to their "uncut" status.
5. Print reports associated with a selected release.
6. Generate machine files for a selected release.



The left side of the screen displays a list of releases with optimized releases in bold.

Filters

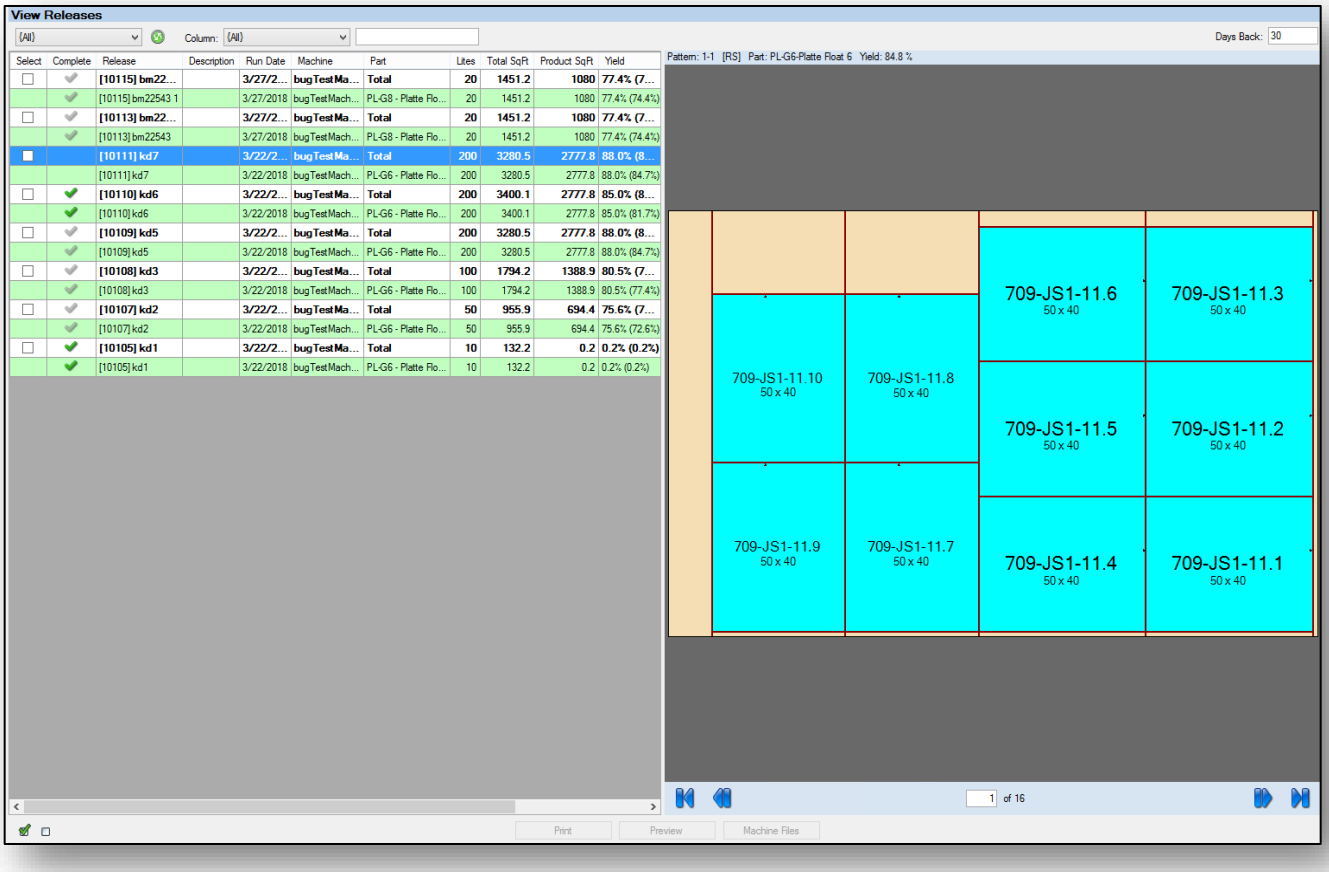
In the top left of the screen, a drop-down exists that allows the list of releases to be filtered based on release status. Selecting 'All' will display releases that are complete, being processed, and not yet started. Selecting 'Not Started' from the drop-down will filter the list to display only releases and glass types that have not yet had any lites accepted or rejected. Additionally, the list of releases can be filtered further by selecting a column and entering criteria in the text box associated with the column drop-down.



Days Back

Filters the list of releases to include only optimized releases whose run date falls within the number of days back specified.

The View Releases menu displays each part used in the optimization in the grid to the left and the pattern of the selected optimization as they will appear at the breakout station to the right.



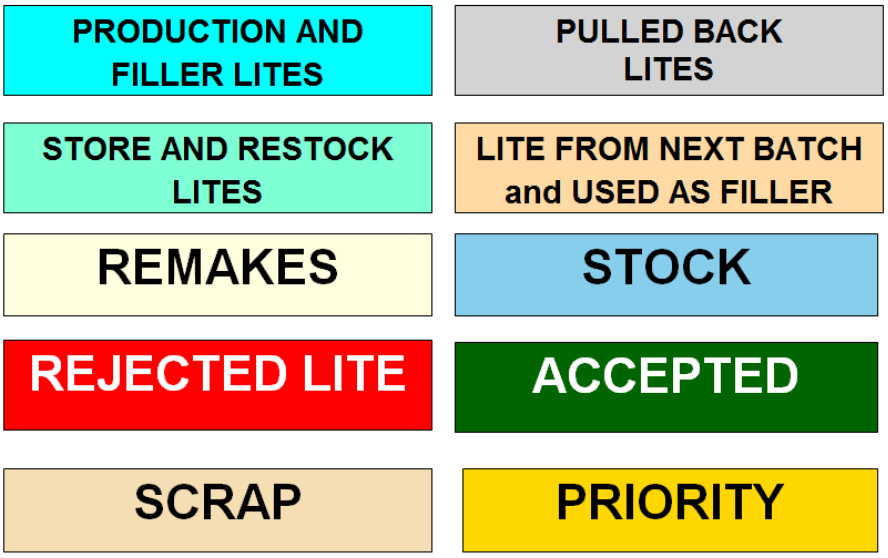
The grid on the left displays the glass types that were used in the optimization. If the user selects an individual glass type from this grid, the pattern viewer on the right updates to only show the patterns for that glass type. The grid contains the following columns:

- **Select –** Allows the user to check off multiple releases then print reports or generate files for all checked releases at one time.
- **Complete –** Completed patterns and releases will display a green check. A gray checkbox indicates that part of the release is complete but not all of it.
- **Release –** The release number and the release name.
- **Description –** The description of the release.
- **Run Date –** Date the release is expected to be cut.
- **Machine –** Glass cutter machine name.
- **Lites –** Number of lites for the glass type.
- **Part –** Part identifier for the glass type. This will be the 'Parent Part'.
- **Release ID –** The release number.
- **Total SqFt (SqM) –** Total square feet or square meters of glass used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the lites.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).
- **Patterns –** Number of patterns for the glass type or for the entire release.

- **Locked By –** Displays the Station ID currently viewing the release.

Note: Clicking and holding the mouse over a lite will magnify the lite tag and dimensions of the lite.

Lites will appear in different colors on the 'Patterns' tab. Lite colors can be customized. The following default colors are available:



- **Aqua** – Used to indicate 'Production' and 'Filler' lites.
- **Aquamarine** – Used to indicate lites that are 'Online Store', offline 'Store', and 'Restock'
- **Light Yellow** – Used to indicate 'Remakes'.
- **Red** – Indicates the lite has been rejected.
- **Wheat** – Used to indicate scrap.
- **Light Gray** – Used to indicate pulled back lites.
- **Goldenrod** – Used to indicate the beginning of the next batch.
- **Sky Blue** – Used to indicate scrap around shapes.
- Dark Green – Indicates the lite has been accepted.
- **Gold** – Priority *(Obsolete).*

Note: The list above displays the default colors that correspond to the status of the lites on a pattern. It's possible to customize the colors shown. Contact FeneTech for more information regarding customizing pattern colors.

The bar across the top of the patterns provides the user with information about the current pattern.

- **Pat 1-3 –** Designates that '1' is the batch and '3' is the batch pattern. Indicates the batch / batch pattern currently being displayed.
- **144 x 108 –** Indicates the dimensions of the stock sheet used for the current pattern.

- **S14CL108 –** 1/4 CL SS 108 X 144 - Indicates the Part Number – Part Description from 'Inventory Setup' in Opti-Glass.
- **87.1% (86.8%) –** Indicates the current pattern's yield followed by the current pattern's yield including trim as scrap. This value will be less than the first value if the trim is not '0'. The two values will be the same if the trim is '0'.

Right Click Options

To access the following options, the user can either right click on a pattern or right click on list of releases on the left side of the 'View Glass Cutting' screen.

The following options are available when right-clicking on a release on the left side of the screen:

- **Settings –** Displays a read-only settings screen for the optimized release.
- **Set All Complete –** Completes all patterns on the selected release. With 'Real-Time Inventory' disabled, the 'Relieve Inventory' screen will appear when 'Set All Complete' is selected.
- **Set Not Complete –** Changes completed releases to not be complete. This does not affect the status of the lites on the release. If 'Real-Time Inventory' is enabled, this will replenish inventory. If 'Real-Time Inventory' is disabled inventory is not replenished.
- **Reset All Status –** Resets the status of all lites on the release that is currently selected. This will make all patterns available to run in Opti-Break again. No inventory transaction occurs.
- **Move (only available when right-clicking on a parent part) –** Allows the patterns associated with the selected glass type to be moved to a new release.
- **Delete (only available when right-clicking on a parent part) –** Deletes all patterns from the release for the selected glass type.

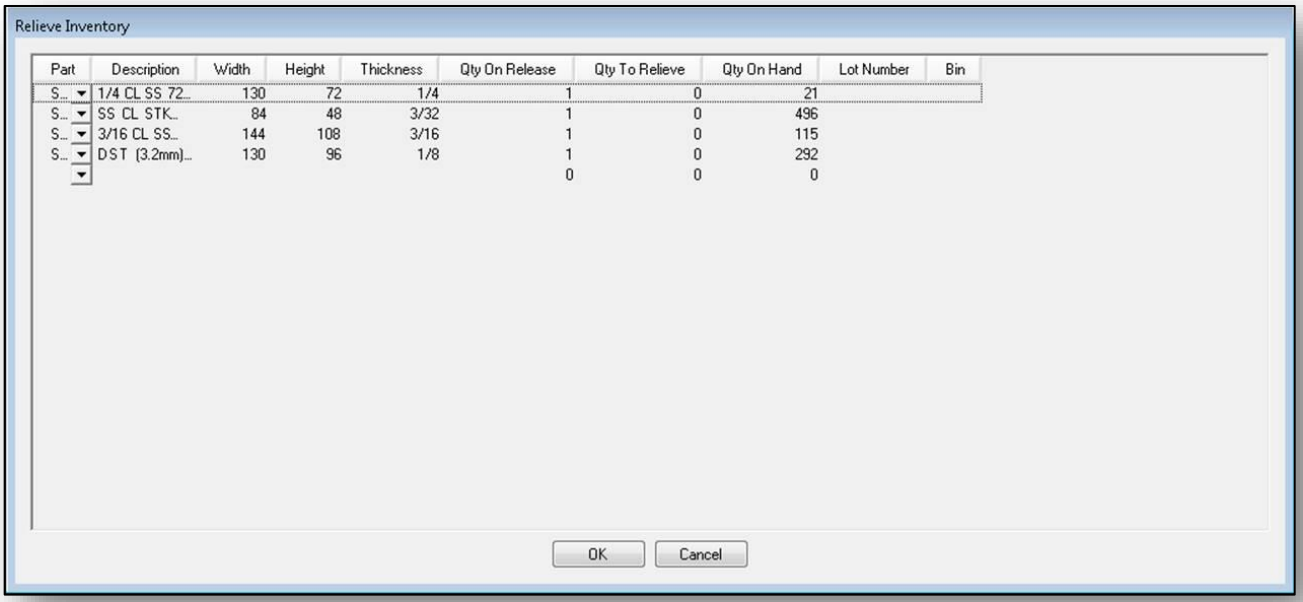
The following options are available when right-clicking on a pattern on the right side of the screen:

- **Show Print View –** Changes the pattern so that it appears in black and white with distance from the origin marked on each cut, as it will appear on the 'Pattern Detail' report.
- **Set Pattern Complete –** Sets all lites on the currently displayed pattern complete. No inventory transaction occurs.
- **Reset Pattern Status –** Resets the status of all lites on the pattern that is currently displayed. No inventory transaction occurs.
- **Delete Pattern –** Deletes the currently selected pattern from the release. Lites from deleted patterns will be available to optimize in new releases. Patterns cannot be deleted from releases that are set as complete.

  Note: Deleting patterns should be done carefully.

Relieve Inventory

The 'Relieve Inventory' screen appears when the user selects 'Set All Complete' on a release with 'Real-Time Inventory' off. This screen does not appear if 'Real-Time Inventory' is on.



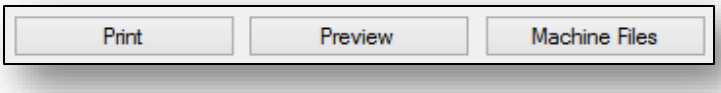
- **Part –** Shows the glass part being relieved. The part shown originates from 'Inventory' under the 'Settings' menu.

  Note: The arrow in this column is disabled for the glass parts on the release because the user is not allowed to change the glass type at this point. This arrow is enabled on the blank line to allow the user to manually enter another glass type to relieve. An example of when this would be useful is if the wrong glass sheet is cut and then the user realizes the mistake.

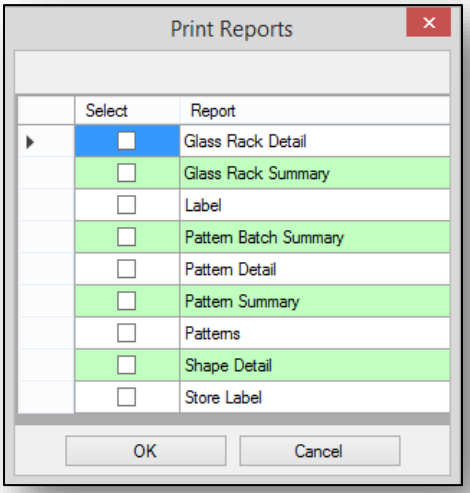
- **Description –** Part description from 'Inventory' under the 'Settings' menu on the 'Glass' tab (read only).
- **Width –** Width of the stock sheet from 'Inventory' under the 'Settings' menu (read only).
- **Height –** Height of the stock sheet from 'Inventory' under the 'Settings' menu (read only).
- **Thickness –** Thickness from 'Inventory' under the 'Settings' menu (read only).
- **Qty On Release –** Number of patterns of this glass type on the release (read only).
- **Qty Already Relieved -** Number of patterns already relieved for this release (read only).
- **Qty to Relieve –** Number of sheets to relieve. This field can be edited. When 'OK' is selected, this indicates the number of sheets that will be relieved from inventory.
- **Qty On Hand –** Number of sheets available in inventory.
- **Lot Number –** Lot number associated with the stock sheets that will be relieved. If the release has been run through Opti-Break this field will be filled with the Lot number selected when it was run. If more than one lot number is used for a glass type, there will be separate records for each lot per part. If the release has not been run through Opti-Break, this will default to being blank and the user must specify the lot. If more than one lot is used the user will need to add more lines via the drop down on the bottom row. The lot number is required for all parts that have 'Lot Tracking' enabled in Core or for all stock sheets if 'Lot Tracking' is enabled for the machine.
- **Bin –** Inventory bin (configured in Core) from which the stock sheets are pulled. It is possible for a lot number to be split across multiple Bins and for multiple lot numbers to be in one bin. The Bin is required for all parts that have Lot Tracking enabled in Core.

Reports and Machine Files

At the bottom of the View Releases menu reports can be printed and previewed. Machine Files can be generated as well.



Selecting 'Print' will display a list of the reports also available from the 'Optimization' tab in glass cutting. One or more reports can be selected to print.



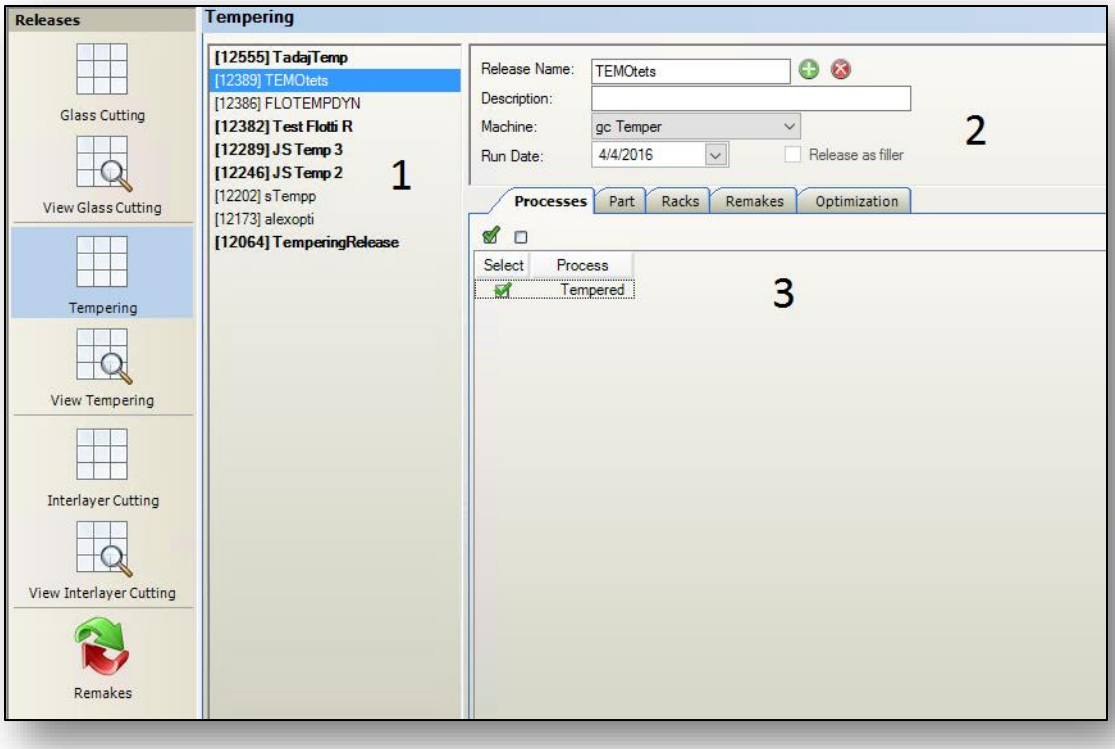
Selecting 'Preview' will display a list of the reports also available from the 'Optimization' tab in glass cutting to be previewed.

Note: 'Preview' is disabled if more than one release is selected.

Selecting 'Machine Files' will generate machine files for the selected release.

Tempering ('Batch' and 'Batch w/ Exit Racks' modes only)

Parts that have the tempering attribute selected in Core can have their 'Tempering' layouts optimized in Opti-Glass. This 'Tempering' screen is supported in batch tempering mode.



Tempering Releases List

The **first section** from the image above shows all releases that are not optimized or have not reached production. The releases appear as '[ReleaseID] Release Name'. Once a release is optimized, users will see it in **bold.** Once any of the release's patterns have received a production status, the release will disappear from this screen. Production statuses occur when the release is run in Opti-Temp or when the user manually marks patterns complete in 'View Tempering'.

Release Header

The **second section** in the 'Tempering' screen is the 'Release Header' displaying the information about a release.

- **Release Name –** Name of release provided by the user.
- **Description (optional) –** Description of the release provided by the user.
- **Machine –** Tempering table that will process the release. Drop-down is populated from Machine Setup.
- **Run Date –** Date the release is expected to be tempered.
- **Release as Filler ('Dynamic Mode' only) –** Not applicable for tempering releases.
-  – Add or delete releases.

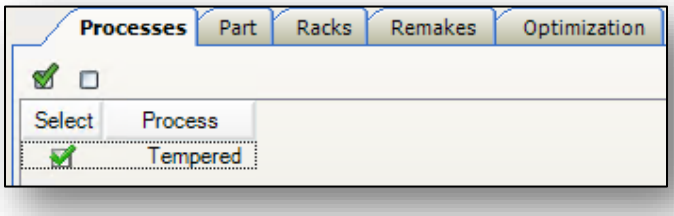
Release Details

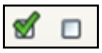
The **third section** of the above image shows the release details. This section outlines what the user sets up to be included on a release and optimizes the release. For a description of how to create and optimize a release see the 'Create New Release' section.

The release details section is divided among five tabs described below.

Processes Tab

In the ‘Processes’ tab, the user selects what processes will be included on the release.



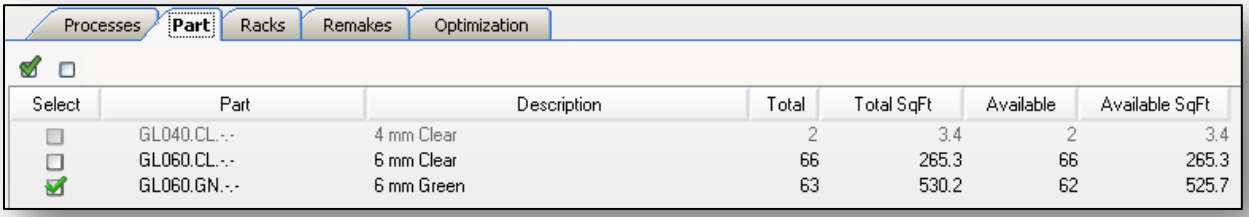
- **Select –** Check box to include or exclude process from release. The  allows the user to select or de-select all processes.

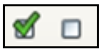
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Process –** Available processes. These are typically configured by FeneTech during implementation of the FeneVision system. Contact FeneTech for assistance in adding or removing processes.

Part Tab

In the ‘Part’ tab, the user selects what glass types to include on the release. This tab will be filtered to show only glass types that fall under the processes that have been selected in the ‘Process Selection’ tab.



- **Select –** Checkbox to include or exclude glass type from the release. The  allows the user to select or de-select all glass types.

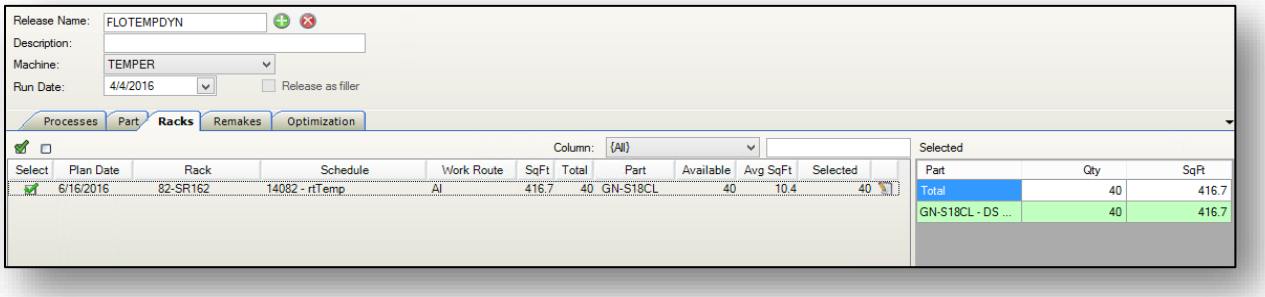
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Part –** Part number from Parts setup in Core.
- **Description –** Part description from Parts setup in Core.
- **Total –** Total number of lites for this glass type. Sum of ‘Available’ lites and lites currently selected on this release.
- **Total SqM (SqFt) -** Total area of glass for the selected part. Sum of ‘Available’ lites and lites currently selected on this release.
- **Available –** Number of lites not selected on any releases.
- **Available SqM (SqFt) -** Area of glass not selected on any releases.
- **Selected –** Number of lites selected on the current release.

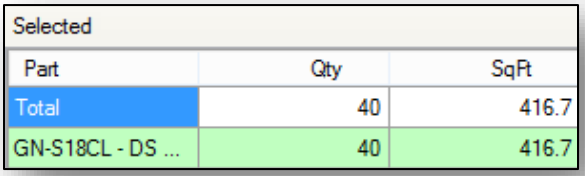
Note: Disabled glass types will appear gray and are unable to be selected. Glass types can be enabled / disabled via the 'Inventory' dialog on the 'Default Data' tab or per machine in 'Machines' screen on the 'Inventory' tab. See 'Default Data Tab' or the 'Inventory Tab' for a more detailed description.

Racks Tab

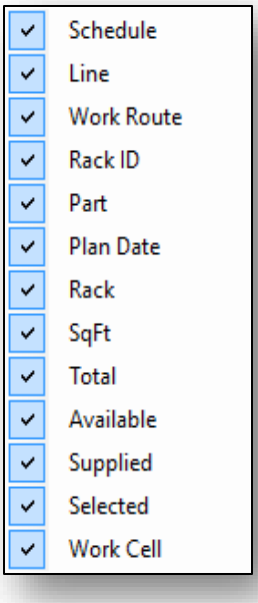
On the 'Racks' tab, the user selects which racks to include on the release. Only racks containing the glass types that are selected on the 'Part' tab will appear here. Glass racking is pre-determined during the Core schedule release process.



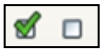
On the right side of the screen, Opti-Glass provides the user with the total number of pieces currently selected on the release as well as the parts selected, and the total square feet (meters) to help with balancing work between lines. This grid is visible in all the tabs except the Optimization tab but won't display any information unless a part is selected in the Racks or Remakes tabs.



The following columns are available in the 'Rack Selection' screen.



Right click anywhere within the grid to see a complete list of available columns. Note that 'Select', 'Filler' ('Batch' mode only), and the end-column cannot be hidden.

-  – Select or deselect all.
-  – Move racks up and down to re-sequence according to priority.
- **Select –** Checkbox to include or exclude rack from the release. A green check indicates the full rack will be included on the release. A gray check indicates that some lites from the rack will be included and some will not.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Plan Date –** Planned date the rack will be cut (not tempered). This date is generated one of two ways:
  1. During 'Work Route Release' from Core, if 'Rack by Plan Date' is checked, the rack's plan date will match the capacity plan.
  2. If 'Rack by Plan Date' is not checked the rack's plan date will be the date to which the schedule is released.

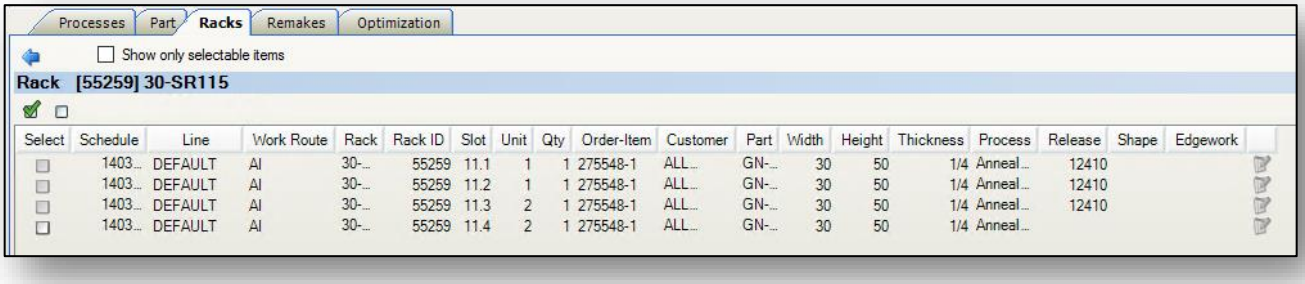
- **Rack ID (hidden by default) –** Opti-Glass internal rack ID. This does not match the rack ID generated through Core.
- **Rack –** Rack tag comprised of the last one to five digits of the 'Schedule ID / Container' prefix from Core.

  Note: The number of digits is determined via the RackTagSchedIDDigits parameter set in FeneVision Core. By default, it is set to the last two digits of the schedule id.

- **Schedule** – 'ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line like the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.
- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- **Area (SqFt or SqM) –** Total area of glass on the rack. Calculated based on the dimensions of the glass lites on the rack.

- **Total –** Total number of lites on this rack of the selected glass types.
- **Supplied –** Number of lites on the rack for the selected glass types that are supplied and do not need to be cut.
- **Available –** Number of lites on the rack for the selected glass types that are not on a release.
- **Avg SqFt (or SqM) –** The total area divided by the number of lites on the rack that are available.
- **Selected –** The number of lites on the rack for the selected glass types that are on this release.
- **Part –** Identifies the part(s) assigned to the rack. In the case there that multiple glass parts on the same rack, a comma delimited list will show all parts.
- **Work Cell (hidden by default) –** The first production work cell the rack will go through.
-  – Allows the user to manually select lites from the rack to include on the release. Selecting this icon will take the user to the 'Rack Details' screen.

Rack Details



Select	Schedule	Line	Work Route	Rack	Rack ID	Slot	Unit	Qty	Order-Item	Customer	Part	Width	Height	Thickness	Process	Release	Shape	Edgework
☐	1403...	DEFAULT	AI	30-...	55259	11.1	1	1	275548-1	ALL...	GN-...	30	50	1/4	Anneal...	12410		
☐	1403...	DEFAULT	AI	30-...	55259	11.2	1	1	275548-1	ALL...	GN-...	30	50	1/4	Anneal...	12410		
☐	1403...	DEFAULT	AI	30-...	55259	11.3	2	1	275548-1	ALL...	GN-...	30	50	1/4	Anneal...	12410		
☐	1403...	DEFAULT	AI	30-...	55259	11.4	2	1	275548-1	ALL...	GN-...	30	50	1/4	Anneal...			

Note: Lites will appear grayed out if they are already included on another release.

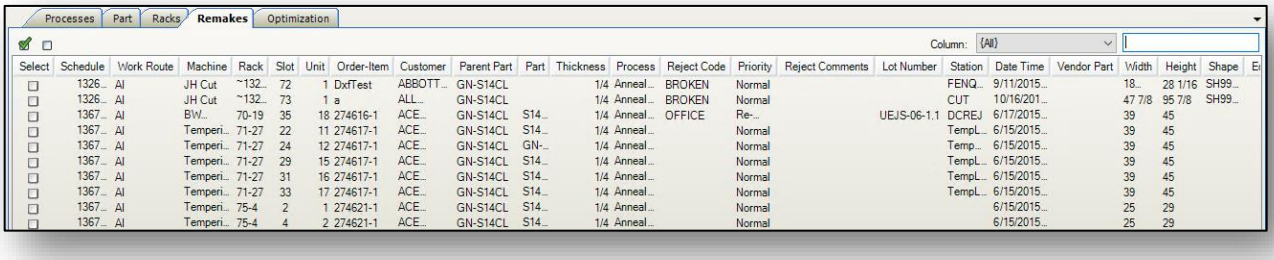
The following columns exist in the 'Rack Details' screen. Use the 'Back' icon to return to 'Rack Selection'. Select the 'Show only selectable items' checkbox to show only units that can be selected. If part of the rack is on another release, those units cannot be selected here. These units will appear grayed out if this is unchecked and disappear if this is checked. Use the  buttons to select all or unselect all.

- **Select, Schedule, Line, Work Route, Rack, and Rack ID** – See the descriptions in the 'Racks' section.
- **Slot –** The position the lite was be placed on the rack when it was cut. For stacked racks, it will read 'SideStack.Postion' meaning that if it reads '12.3' it means 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Qty –** Quantity for this unit. The value in this column will always read as '1'.
- **Order-Item –** 'Order number - line item number' from Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Part –** Part Number from Core.
- **Width –** Width of the lite from Core.
- **Height –** Height of the lite from Core.
- **Thickness –** Thickness of the lite from Core.
- **Process –** Process under which this particular lite falls.
- **Release –** Tempering release the lite is currently assigned to. If the lite is on a different release, the user cannot select it here.
- **Shape –** Shape Number and shape dimensions of the lite. This is derived from the attributes configured on the product in Core. For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.

- **Edgework –** Displays all edgework codes applied to this lite. This value originates from attributes in Core.
-  – Editing the order-item is not allowed within a tempering release so this icon is always disabled in 'Rack Details' within Tempering releases.

Remakes Tab

In the 'Remakes' tab, the user selects what remakes to include on the release. Only the remakes for the glass types that are selected on the 'Part' tab will appear.



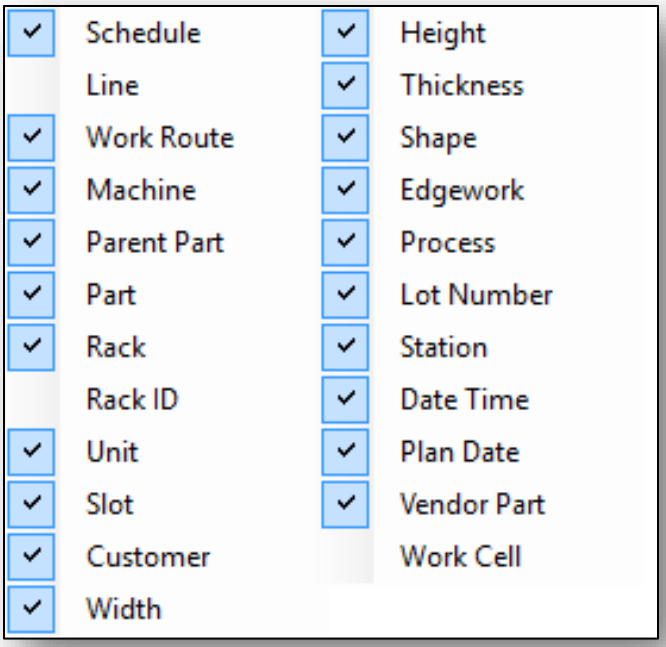
The following columns exist in the 'Remakes' tab. Select  to select / de-select all remakes shown in the grid.

- **Select –** Checkbox to include or exclude rack from the release.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Order-Item –** 'Order number - line item number' from Core.
- **Reject Code –** 'Reject Code' assigned when the lite was rejected (not required). To get a reject code from FeneVision, Opti-Temp, or Opti-Break, the station must have assigned 'Reject Codes'.
- **Priority –** 'Reject Priority' selected when the lite was rejected (not required). To get a priority from Opti-Temp or Opti-Break, the station must be assigned 'Reject Codes' (not required).
- **Reject Comment –** Comment entered when the lite was rejected. To get a reject comment from Opti-Temp or Opti-Break the station must be assigned 'Reject Codes'.
-  – Delete the remake. Deleting a remake does not change the status of the lite on the original release.

To see a list of other available column headings, right click anywhere in the 'Columns' header.

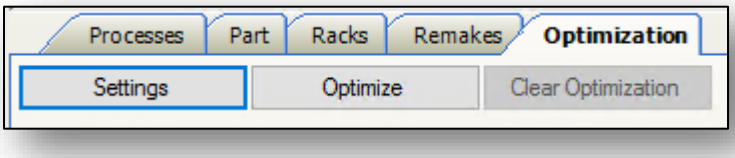


- **Schedule –** 'ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line like the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.
- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- **Machine –** Tempering machine at which the lite was originally tempered. The machine is assigned to the lite when it is accepted or rejected at Opti-Temp. If the lite was rejected in Opti-Break, the 'Remakes' screen will display the tempering machine it was optimized with. If the lite was tempered using a different machine than the one it was optimized with, it will still be assigned the machine that tempered it.
- **Parent Part –** This indicates the parent part for the glass type of the remake. The parent part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part –** Part Number from Core.
- **Rack –** Rack tag comprised of the last two digits of the 'Schedule ID / Container' prefix from Core.
- **Rack ID –** Opti-Glass internal rack ID. This does not match the rack ID generated through Core.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Slot –** The position the lite was be placed on the rack when it was cut. For stacked racks, it will read 'SideStack.Postion' For example, '12.3' indicates 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Width –** Width of the lite from Core.
- **Height –** Height of the lite from Core.
- **Thickness –** Thickness of the lite from Core.
- **Shape –** Shape Number and shape dimensions of the lite. This is derived from the attributes configured on the product in Core. For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.
- **Edgework –** Displays all edgework codes applied to this lite. This value originates from attributes in Core.
- **Process –** Process under which this particular lite falls.

- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.
- **Station –** 'Station ID' where the rejection occurred.
- **Date Time –** Time of the rejection.
- **Plan Date –** Plan date associated with the original release. Manual remakes will not receive a 'Plan Date' as it was not processed in Core.
- **Vendor Part –** Alpha-numeric identifier of the 'Vendor' part. This is different from the 'Part' number because parts could potentially have the same ID. The 'Vendor Part ID', however, distinguishes the same parts that are from different vendors.
- **Work Cell (hidden by default) –** The first production work cell the rack will go through.

Optimization Tab

Once the release is set up as desired the user can switch to the 'Optimization' tab and optimize the release.

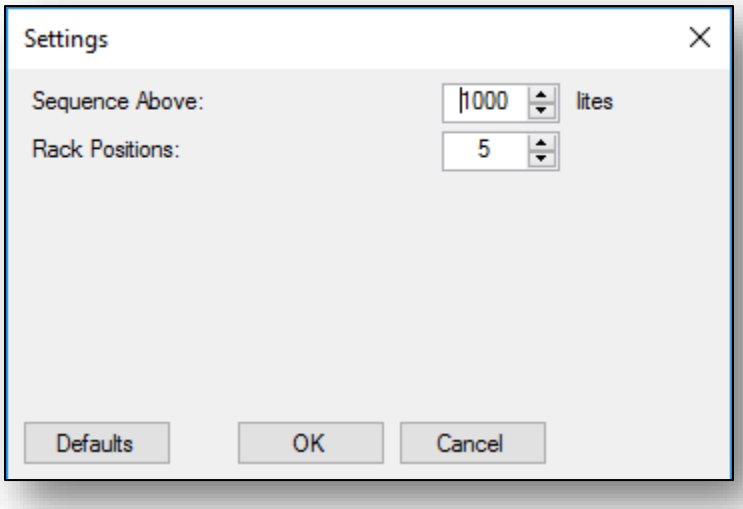


Settings

If the user needs to make changes at the release level, the following settings can be reconfigured before optimization.

- 

– Machine settings are saved in the 'Settings' screen for each release. These are saved when the optimization is created; thus, any changes to 'Machines' setup will not change the settings on existing releases. Select the 'Settings' button to access the following dialog:



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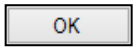
– Selecting this button will reset all the fields to the current settings on the machine.
  - 

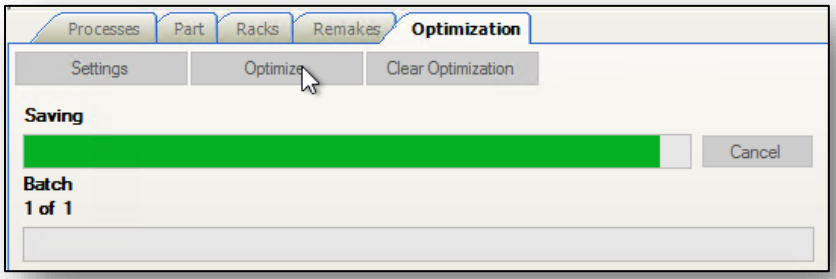
– Saves changes to the settings and closes the Settings window.
  - 

– Closes the Settings window without saving.

Note: See machine settings in the setup section for more information regarding the individual settings.

Once the 'Settings' screen has been configured and saved, the user is ready to optimize.

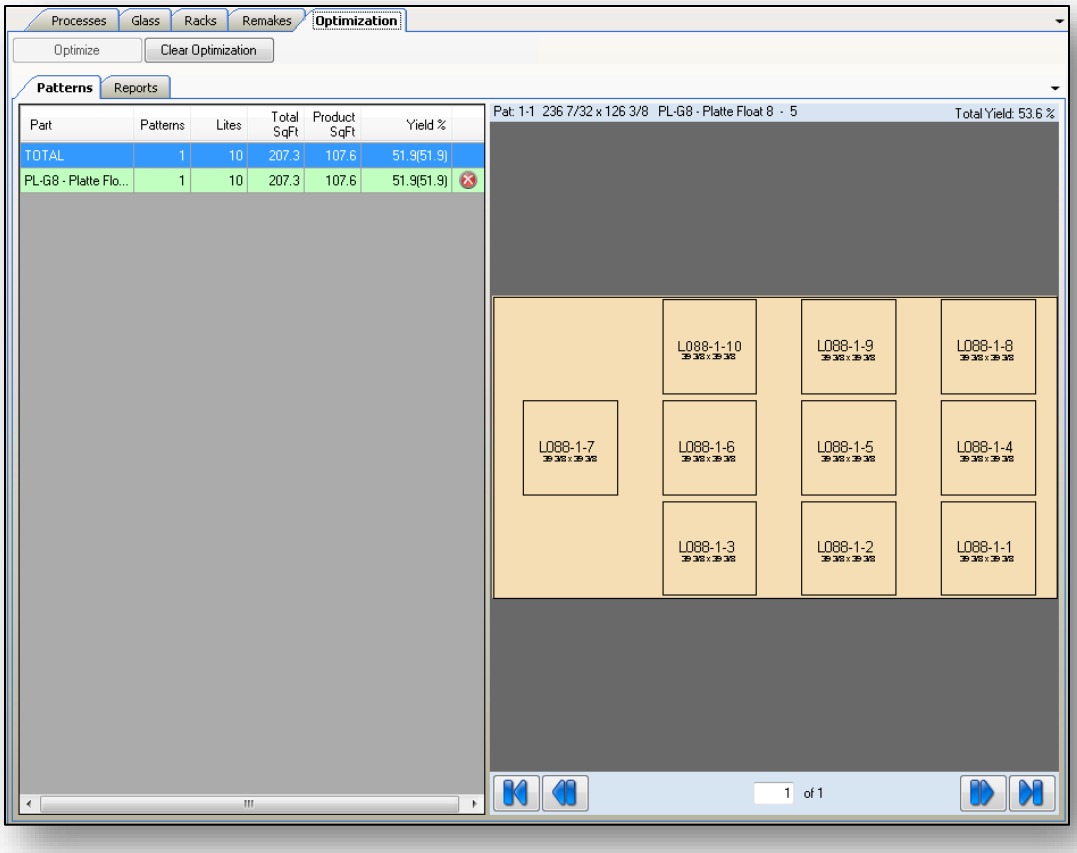
To do this, select the 'Optimize' button to begin the optimization. During the optimization, the progress bar will appear, indicating the progress and the total yield of the optimization. After an optimization is complete, the 'Clear Optimization' button will become enabled.



Patterns Tab

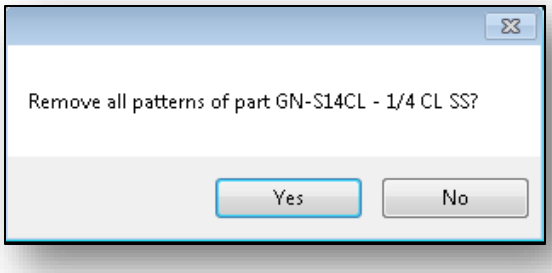
Once a 'Tempering' release is optimized the 'Patterns' and 'Reports' tabs appear. The 'Patterns' tab displays

1. On the grid to the left, each glass type that exists on the release.
2. On the grid to the right, the patterns of the selected release as they will be arranged on the tempering bed.



The 'Patterns' tab in 'Tempering' contains the following fields:

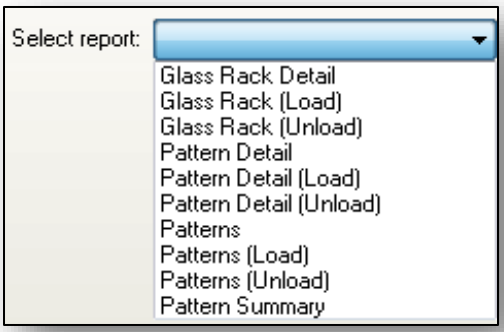
- **Part –** Part identifier for the glass type. This will be the 'Parent Part'.
- **Patterns –** Number of patterns for the glass type.
- **Lites –** Number of lites for the glass type.
- **Total SqFt (SqM) –** Total square feet or square meters of glass used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the lites.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).
-  – This deletes all patterns for a glass type from the release. Selecting 'Delete' will prompt the user with the following screen:



Reports Tab

The 'Reports' tab is also only available after the release has been optimized. The user can select the desired report from the 'Select Reports' dropdown.

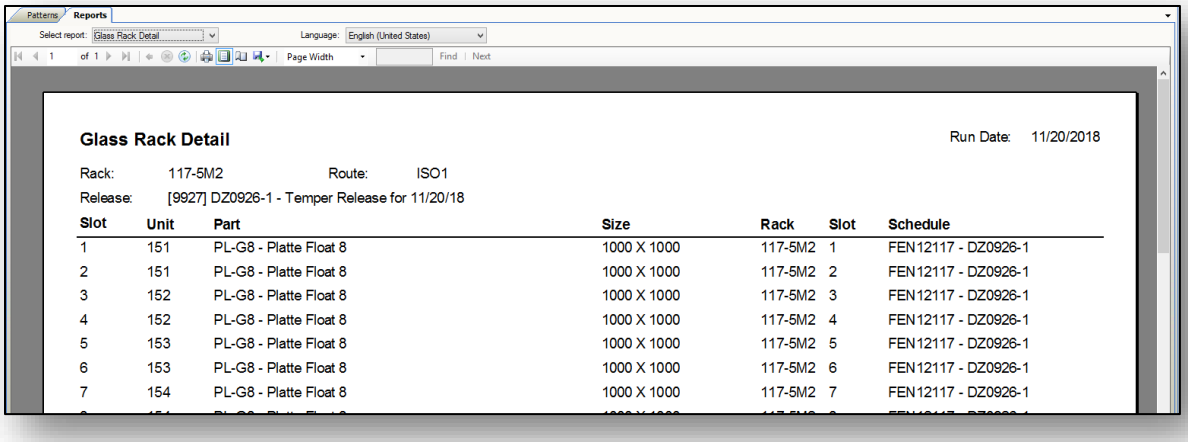
The image below represents the list of reports for 'Tempering' machines. Before a release is even created, a lite will be placed on a set of racks generated at the 'Work Route'. Then, once a 'Tempering' release has been created, two *more* sets of racks are generated—the 'Load' racks at the 'Cutting' station and at the entrance of the 'Tempering' station, and the 'Unload' racks (present only when running an optimization in 'Batch w/ Exit Racks' mode) that will be at the exit of 'Tempering'.



Note: Contact FeneTech to add or remove reports from this dropdown.

Glass Rack Detail

The 'Glass Rack Detail' report outlines details about each unit that is ready for tempering. This report always shows the production rack generated from Core. If the tempering machine is in 'Batch' mode, this report will match the 'Glass Rack (Unload)' report because 'Batch' mode does *not* generate new exit racks. If running in 'Batch (w/ Exit Racks)', this report can be used to help merge the exit rack with the rack generated through Core, if desired.



In the header

- **Rack –** Original rack on which the release can be found. This rack is the one generated in FeneVision Core. This will differ from the 'Load' and 'Unload' racks.
- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Route –** The rack's 'Work Route' configured in Core.
- **Run Date –** Date the release is expected to be tempered.

In the grid

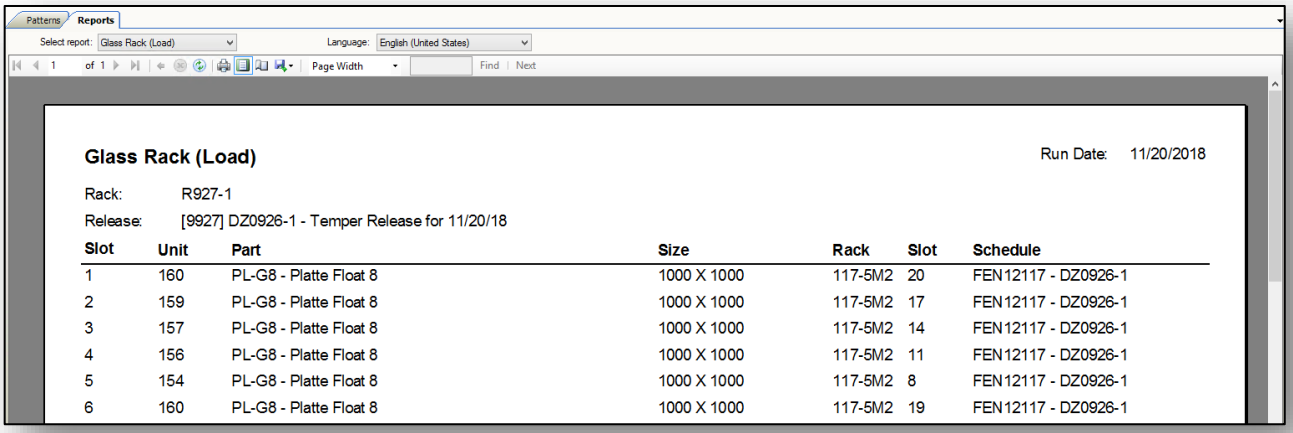
- **Slot –** Slot in the rack generated in Core where the unit can be found.
- **Unit –** Numeric identifier of the unit. One unit can have more than one lite.
- **Part –** Alphanumeric identifier of the part.
- **Size –** Dimensions of the lite.
- **Rack –** Original rack generated through Core.
- **Slot –** Slot in the rack generated in Core where the unit can be found.

Note: On the detail report this 'Slot' column will always match the first 'Slot' column as they are both referring to the same rack.

- **Schedule –** Numeric identifier and description of the schedule generated from Core.

Glass Rack (Load)

The 'Glass Rack (Load)' report displays details about the batch of glass at the 'Load' station. In both 'Batch' mode and 'Batch (w/ Exit Racks)' this report refers to the 'Cutting rack' that is generated in Opti-Glass. The image below represents a 'Glass Rack (Load)' report.



The following information can be found in the 'Glass Rack (Load)' report:

In the header

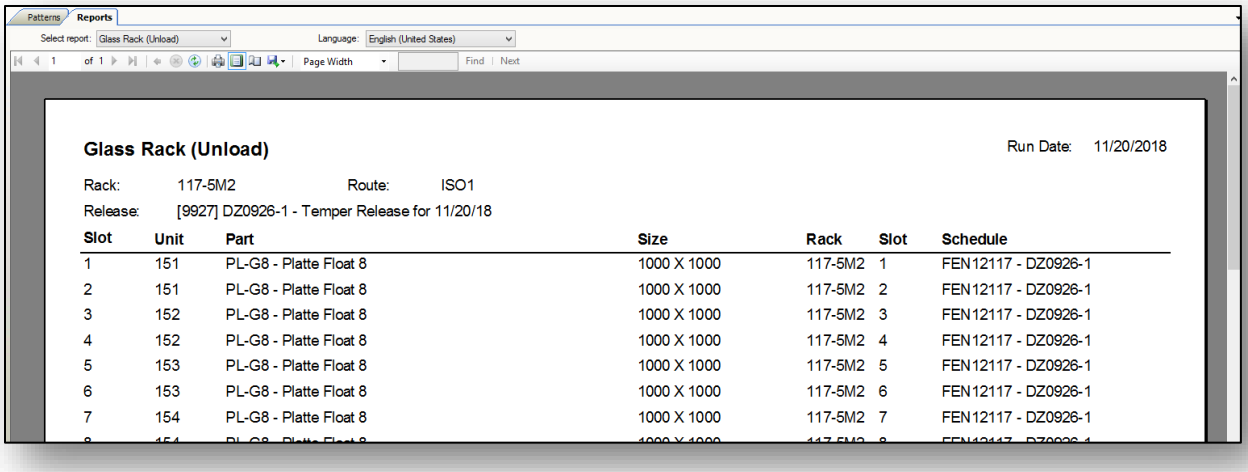
- **Rack –** 'Load' or 'Cutting' rack on which the release can be found. This rack will arrive at the tempering containing the lites. This rack is generated in Opti-Glass when the tempering release is optimized. Rack number will start with the 'Cutting Rack' prefix configured in the 'General' tab of 'Machines' setup.
- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Run Date –** Date the release is expected to be tempered.

In the grid

- **Slot –** 'Cutting Rack' slot where the lite can be found when loading the machine. This comes from the 'Cutting Rack' generated in Opti-Glass.
- **Unit –** Numeric identifier of the unit. One unit can have more than one lite.
- **Part –** Alphanumeric identifier of the part.
- **Size –** Dimensions of the lite.
- **Rack –** Original rack generated through Core.
- **Slot –** Slot in the rack generated in Core where the unit can be found.
- **Schedule –** Numeric identifier and description of the schedule generated from Core.

Glass Rack (Unload)

The 'Glass Rack (Unload)' report details information about the glass at the 'Unload' station. When in 'Batch' mode, this will match the 'Glass Rack Detail' report as the lites are loaded onto the original rack that was generated through Core in 'Batch' mode. When using 'Batch (w/ Exit Racks)' mode, this report will display information about the exit racks generated through Opti-Glass when the tempering release is optimized. In 'Batch (w/ Exit Racks)' mode, this report can be helpful for merging lites from the exit rack to the original rack generated through Core, if desired. The image below represents a 'Glass Rack (Unload)' report.



The following fields / columns can be found in the 'Glass Rack (Unload)' report:

In the header

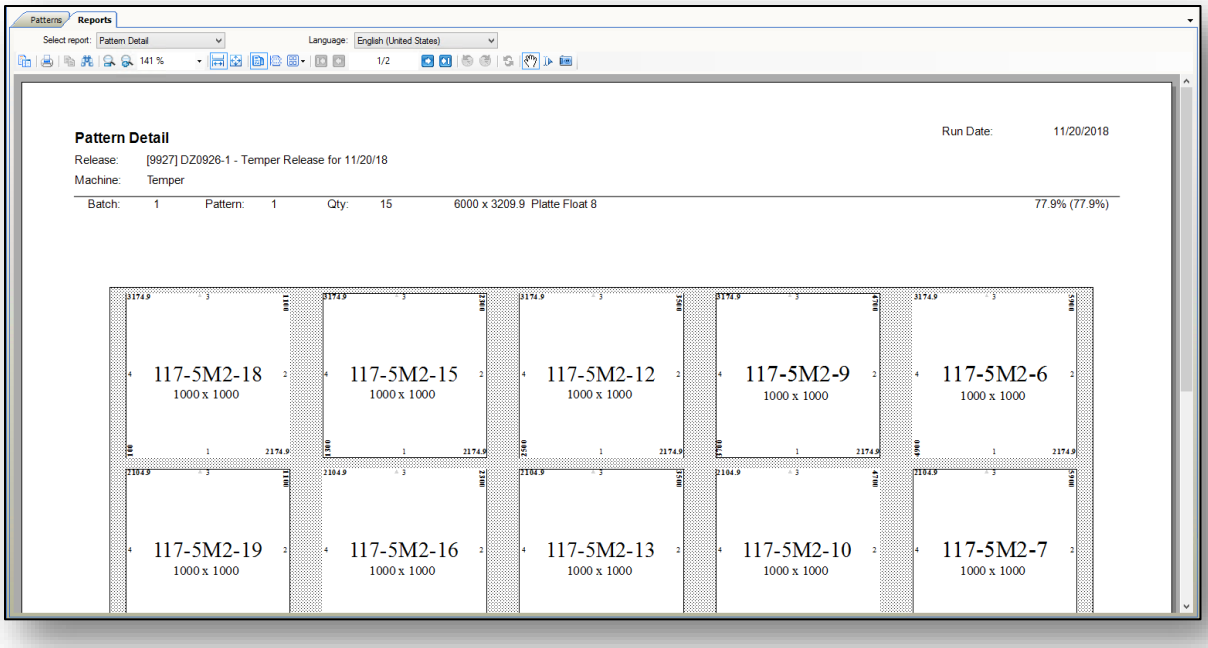
- **Rack –** 'Unload' or 'Exit Rack' on which the lites will be placed upon exiting the tempering oven. In 'Batch' mode this will be the rack generated from Core. In 'Batch (w/ Exit Racks)' this will be the 'Exit Rack' generated in Opti-Glass when the tempering release is optimized. In this case, the rack number will contain the prefix configured in the 'General' tab of 'Machines' setup for the 'Exit Rack'. The rack tag on each lite is generated from the last two digits of the 'Schedule ID / Container Prefix' from Core.
- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Route –** The rack's 'Work Route', configured through Core.
- **Run Date –** Date the release is expected to be tempered.

In the grid

- **Slot –** Slot the lite will be placed in upon exiting the tempering oven. This will be a slot on the rack generated from Core in 'Batch' mode or a slot on the exit rack in 'Batch (w/ Exit Racks)'.
- **Unit –** Numeric identifier of the unit. One unit can have more than one lite.
- **Part –** Alphanumeric identifier of the part.
- **Size –** Dimensions of the lite.
- **Rack –** Original rack generated through Core
- **Slot –** Slot in the rack generated in Core where the unit can be found.
- **Schedule –** Numeric identifier and description of the schedule generated from Core.

Pattern Detail

The 'Pattern Detail' report allows the user to view each pattern of a tempering release. This will aid the user in arranging the lites on the tempering bed. The rack tags shown here will match the rack displayed on the 'Glass Rack Detail' report, which is the production rack, generated from Core. The image below displays an example of a 'Pattern Detail' report:

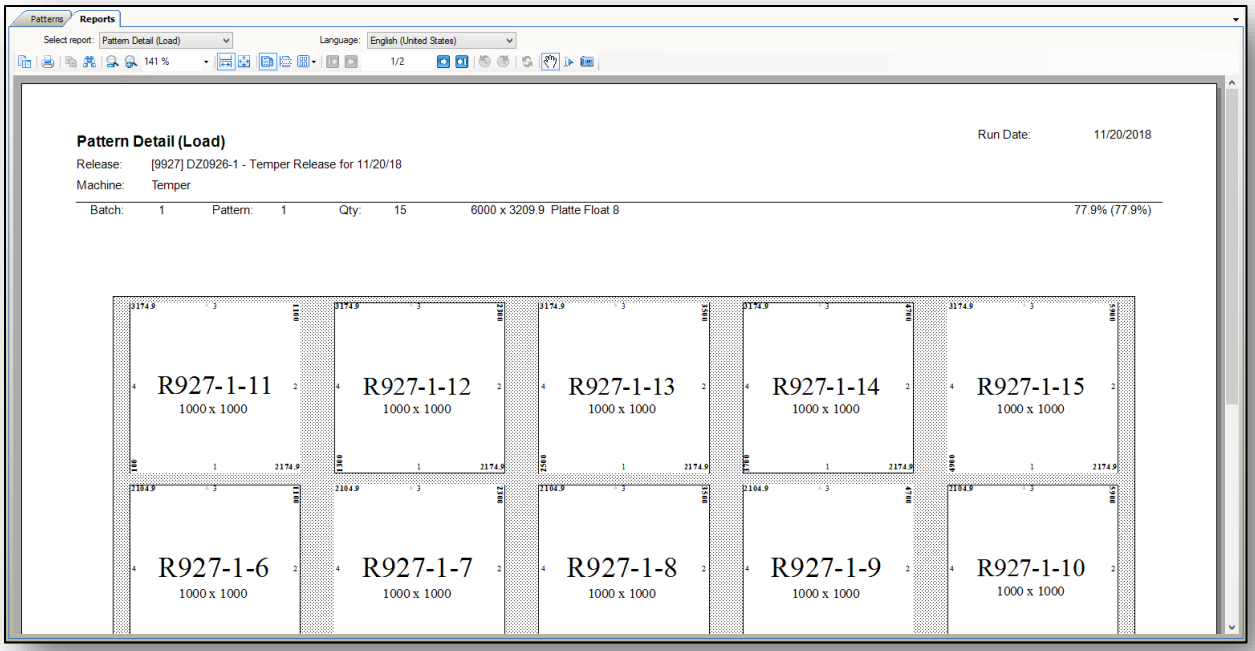


The 'Pattern Detail' report contains the following information:

- **Release –** Tempering Release created in in Opti-Glass.
- **Run Date –** Date the tempering release is planned to be run. This is set at the time the tempering release is created.
- **Machine –** Tempering Machine name.
- **Batch –** The batch to which the pattern belongs.
- **Pattern –** The pattern number.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

Pattern Detail (Load)

The 'Pattern Detail (Load)' report allows the user to view each pattern of a tempering release as they will appear at the entrance of the tempering oven. This will aid the user in arranging the lites on the tempering bed. The rack tags that are shown will here match the rack displayed on the 'Glass Rack (Load)' report. Lites are taken off this rack when *loading* the oven. The image below displays an example of a 'Pattern Detail (Load)' report.



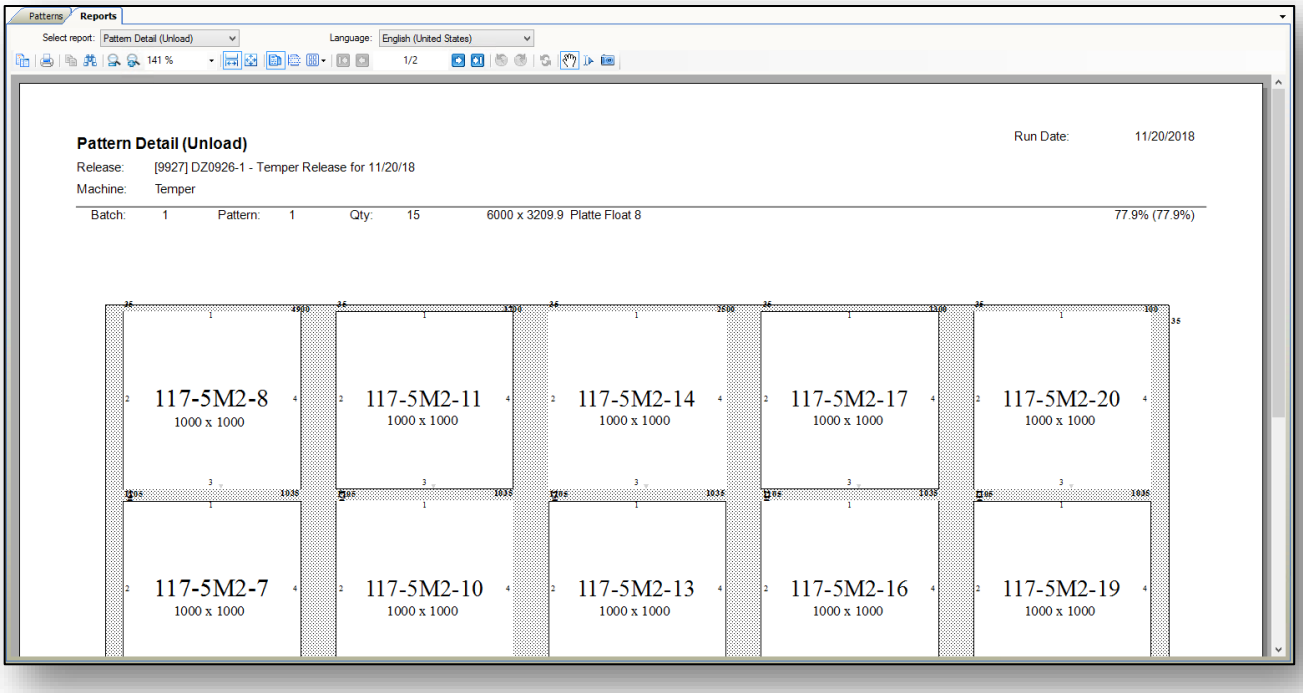
The 'Pattern Detail (Load)' report contains the following information.

- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Run Date –** Date the release will be run in Opti-Temp.
- **Machine –** Tempering machine name.
- **Batch –** The batch to which the pattern belongs.
- **Pattern –** The pattern number.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

Additionally, the orientation of the patterns is determined by the 'Pattern Zero Location' (Load) and the 'Exit Pattern Zero Location' (Unload) from machine setup.

Pattern Detail (Unload)

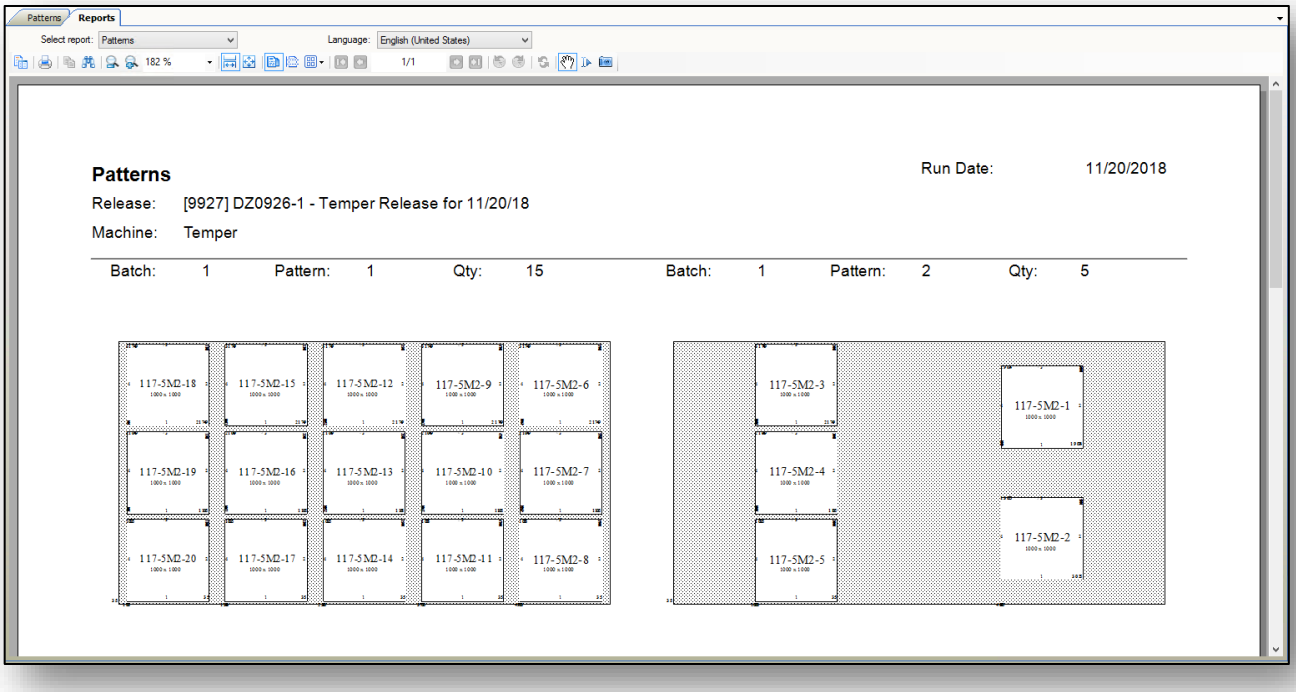
The 'Pattern Detail (Unload)' report allows the user to view each pattern of a tempering release as it will appear at the *exit* of the tempering oven. This will aid the user in determining how to rack each lite and what labels match which lite. The rack tags that are shown here will match the rack displayed on the 'Glass Rack (Unload)' report. Lites are placed on this rack when *unloading* the oven. The image below displays an example of the 'Pattern Detail (Unload)' report:



Additionally, the orientation of the patterns is determined by the 'Pattern Zero Location' (Load) and the 'Exit Pattern Zero Location' (Unload) from machine setup.

Patterns

The 'Patterns' report allows the user to view each pattern of a tempering release. This report displays all the same information as the 'Pattern Detail' report, but it is condensed, displaying six patterns on each page rather than one pattern per page. This display will aid the user in arranging the lites on the tempering bed. The rack tags shown here will match the rack displayed on the 'Glass Rack Detail' report, which is the production rack generated from Core. The image below displays an example of the 'Patterns' report:

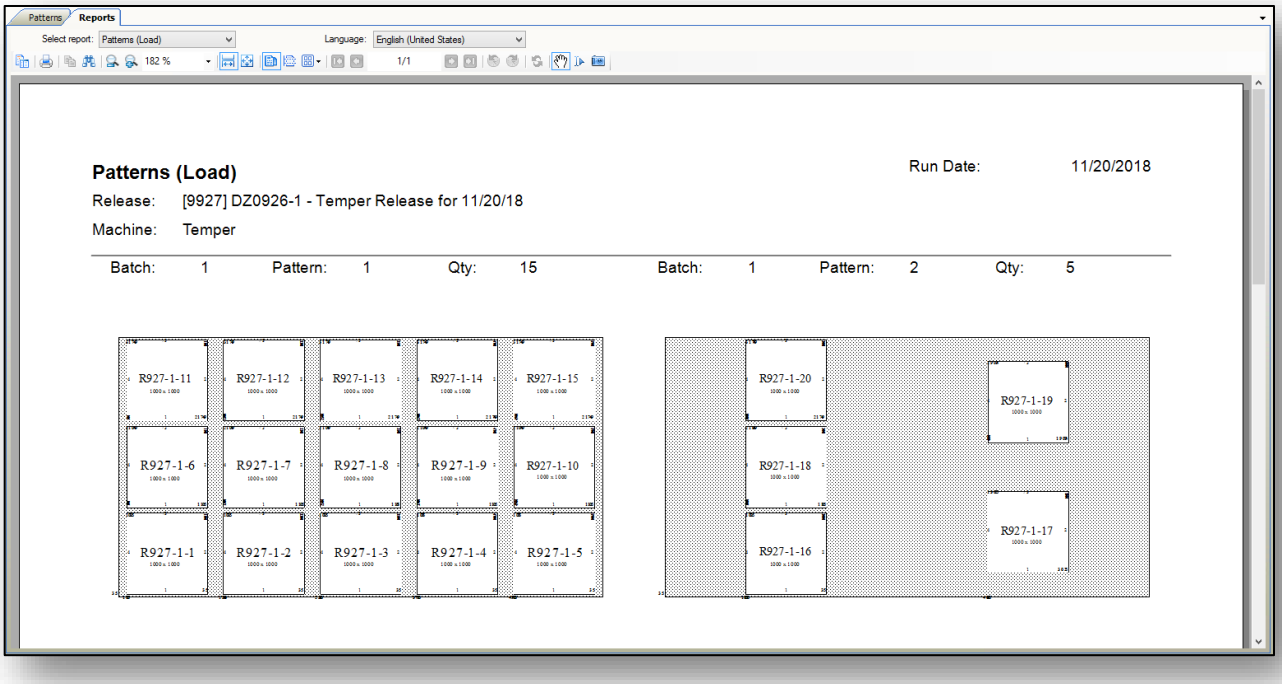


The following details exist in the 'Patterns' report:

- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Run Date –** Date the release is expected to be tempered.
- **Machine –** Tempering machine name.
- **Batch –** The batch to which the pattern belongs.
- **Pattern –** The pattern number.
- **Part –** Part identifier with dimensions.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

Patterns (Load)

The 'Patterns (Load)' report allows the user to view each pattern of a tempering release as they appear at the entrance of the tempering oven. This report displays all the same information as the 'Pattern Detail (Load)' report, but it is condensed, showing six patterns on each page rather than one pattern per page. This display will aid the user in arranging the lites on the tempering bed. The rack tags that are shown here will match the rack displayed on the 'Glass Rack (Load)' report. This rack will be the one from which the lites are taken when loading the oven. The image below represents the 'Patterns (Load) report:



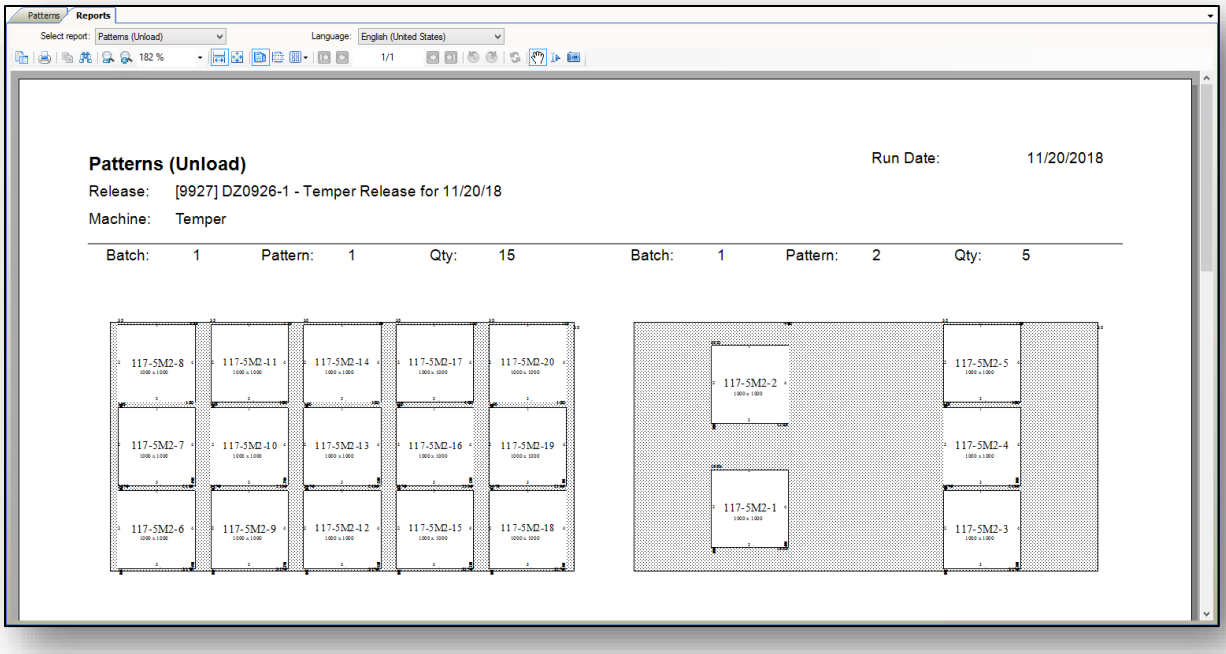
The following information is available in the 'Patterns (Load)' report:

- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Run Date –** Date the release is expected to be tempered.
- **Machine –** Tempering machine name.
- **Batch –** The batch to which the pattern belongs.
- **Pattern –** The pattern number.
- **Part –** Part identifier with dimensions.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

Additionally, the orientation of the patterns is determined by the 'Pattern Zero Location' (Load) and the 'Exit Pattern Zero Location' (Unload) from machine setup.

Patterns (Unload)

The 'Patterns (Unload)' report allows the user to view each pattern of a tempering release as it will appear at the exit of the tempering oven. This displays all the same information as the 'Pattern Detail (Unload)' report but it is condensed, displaying six patterns on each page rather than one pattern per page. This report will aid the user in determining how to rack each lite and what labels match which lite. The rack tags that are shown here will match the rack displayed on the 'Glass Rack (Unload)' report. This rack will be the one on which the lites are placed when unloading the oven. The image below represents an example of the 'Patterns (Unload)' report:



The following information is available in the 'Patterns (Unload)' report:

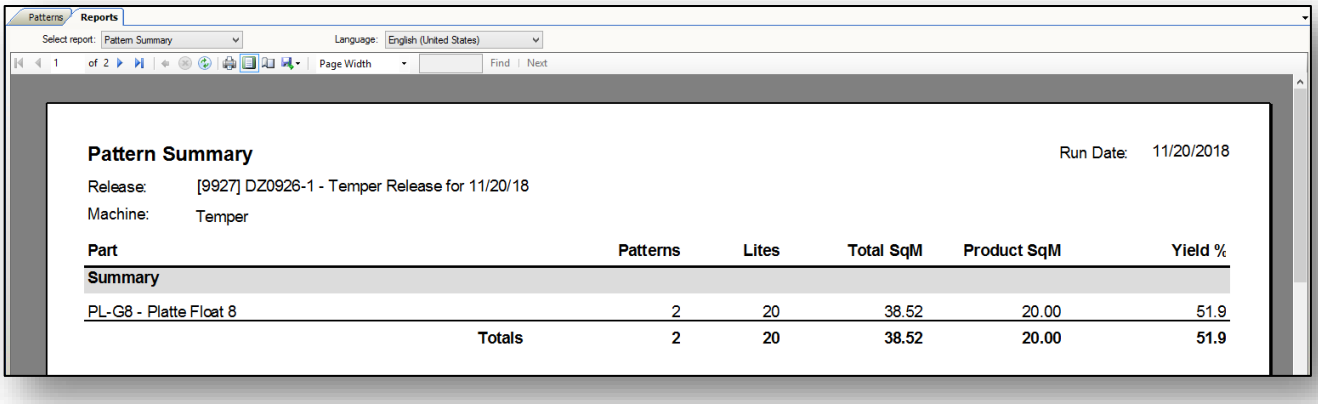
- **Release –** Tempering release created in 'Tempering' in Opti-Glass.
- **Run Date –** Date the release is expected to be tempered.
- **Machine –** Tempering machine name.
- **Batch –** The batch to which the pattern belongs.
- **Pattern –** The pattern number.
- **Part –** Part identifier with dimensions.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

Additionally, the orientation of the patterns is determined by the 'Pattern Zero Location' (Load) and the 'Exit Pattern Zero Location' (Unload) from machine setup.

Pattern Summary

The 'Pattern Summary' report summarizes the release by displaying the glass types, the number of patterns per glass type, the lites on the patterns, yield of the tempering bed, and the numbers that go into calculating the yield (total area of tempering bed and total area of lites tempered).

The report first displays a summary of all batches. The following page(s) displays each individual batch. The image below displays an example of the first page of the 'Pattern Summary' report:



Note: If two instances of the same part are shown, Opti-Glass will not group these together because the two instances are contained in different batches.

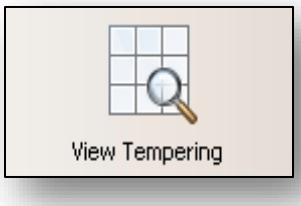
The following information is detailed in the 'Pattern Summary' report:

- **Part –** Glass type that is being tempered.
- **Patterns –** The number of patterns generated for this glass type.
- **Lites –** Number of lites that are optimized on these patterns.
- **Total SqFt –** Total square feet (or meters) of the tempering bed multiplied by the number of patterns.
- **Product SqFt –** The total amount of space (square feet or square meters) taken up by the lites.
- **Yield –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).

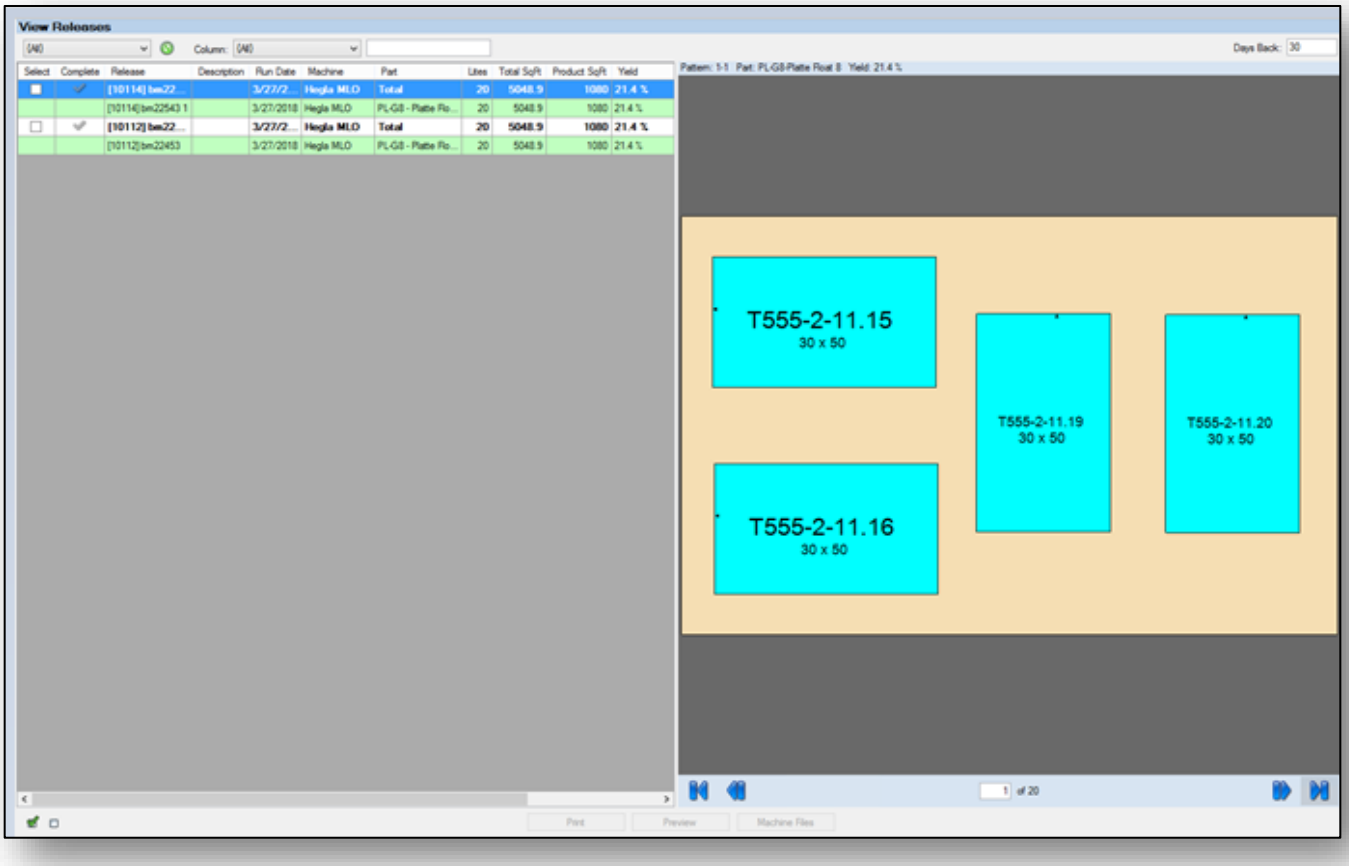
View Tempering ('Batch' and 'Batch w/ Exit Racks' modes only)

The 'View Tempering' screen allows the user to

1. View tempering releases.
2. Set tempering releases complete or not complete.
3. Reset a tempering release's status so that they can be run through Opti-Temp again, if necessary.
4. Reset a pattern's status to return all items to their "un-tempered" status.



To access the 'View Tempering' screen, select 'Releases' >> 'View Tempering'. The following screen will appear:



The left side of the screen displays a list of releases with optimized releases in bold, and glass types that were used in the optimization. If the user selects an individual glass type from this grid, the pattern viewer on the right updates to only show the patterns for that glass type. The grid contains the following columns:

- **Select –** Contains a checkbox for optimized releases.
- **Complete –** Completed patterns and releases will display a green check. A gray checkbox indicates that part of the release is complete but not all of it.
- **Release –** The release number and the release name.
- **Description –** The description of the release.
- **Run Date –** Date the release is expected to be tempered.
- **Machine –** Tempering machine name.
- **Lites –** Number of lites for the glass type.
- **Part –** Part identifier for the glass type. This will be the 'Parent Part'.
- **Release ID –** The release number.
- **Total SqFt (SqM) –** Total square feet or square meters of glass used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the lites.
- **Yield % –** Percentage of the tempering bed that was used for production (Yield % = 100 x TemperingBedArea / ProductArea).
- **Patterns –** Number of patterns for the glass type or for the entire release.
- **Locked By –** Displays the Station ID currently viewing the release.

Note: Clicking and holding the mouse over a lite will magnify the lite tag and dimensions of the lite.

Filters

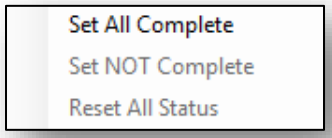
In the top left of the screen, a drop-down exists that allows the list of releases to be filtered based on release status. Selecting 'All' will display releases that are complete, being processed, and not yet started. Selecting 'Not Started' from the drop-down will filter the list to display only releases and glass types that have not yet had any lites accepted or rejected. Additionally, the list of releases can be filtered further by selecting a column and entering criteria in the text box associated with the column drop-down.

Days Back

Filters the list of tempering releases to include only optimized releases whose run date falls within the number of days back specified.

Right Click Options

To access the following screen, the user can either right click on a pattern or right click on list of releases on the left side of the 'View Tempering' screen.

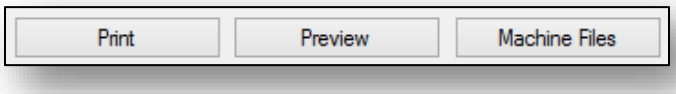


The following options are available in the 'Right Click Options' screen:

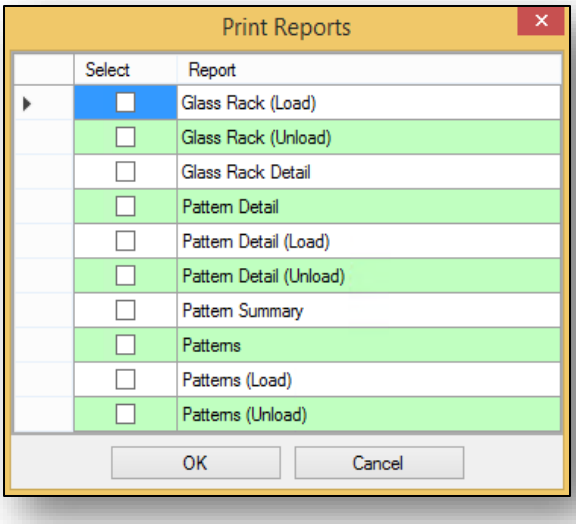
- **Show Print View (only available when right-clicking on a pattern on the right side of the screen) –** Changes the pattern so that it appears in black and white with distance from the origin marked on each side of the lite, as it will appear on the 'Pattern Detail' report.
- **Set All Complete –** Completes all patterns on the selected release.
- **Set Not Complete –** Changes completed releases to not be complete. This does not affect the status of the lites on the release.
- **Reset All Status –** Resets the status of all lites on the currently selected release. This will make all patterns available to run in Opti-Temp again.

Reports and Machine Files

At the bottom of the View Releases menu reports can be printed and previewed. Machine Files can be generated as well.



Selecting the Print button will display a list of the reports also available from the Optimization tab in Tempering. One or more reports can be selected to print.



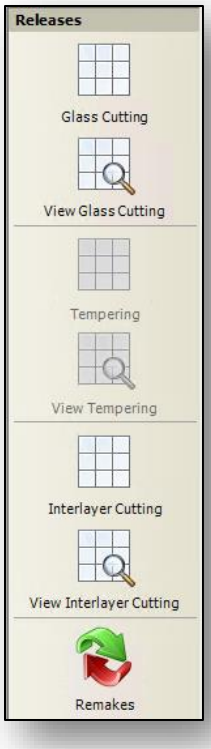
Selecting 'Preview' will display a list of the reports also available from the 'Optimization' tab in Tempering to be previewed.

Note: 'Preview' is disabled if more than one release is selected.

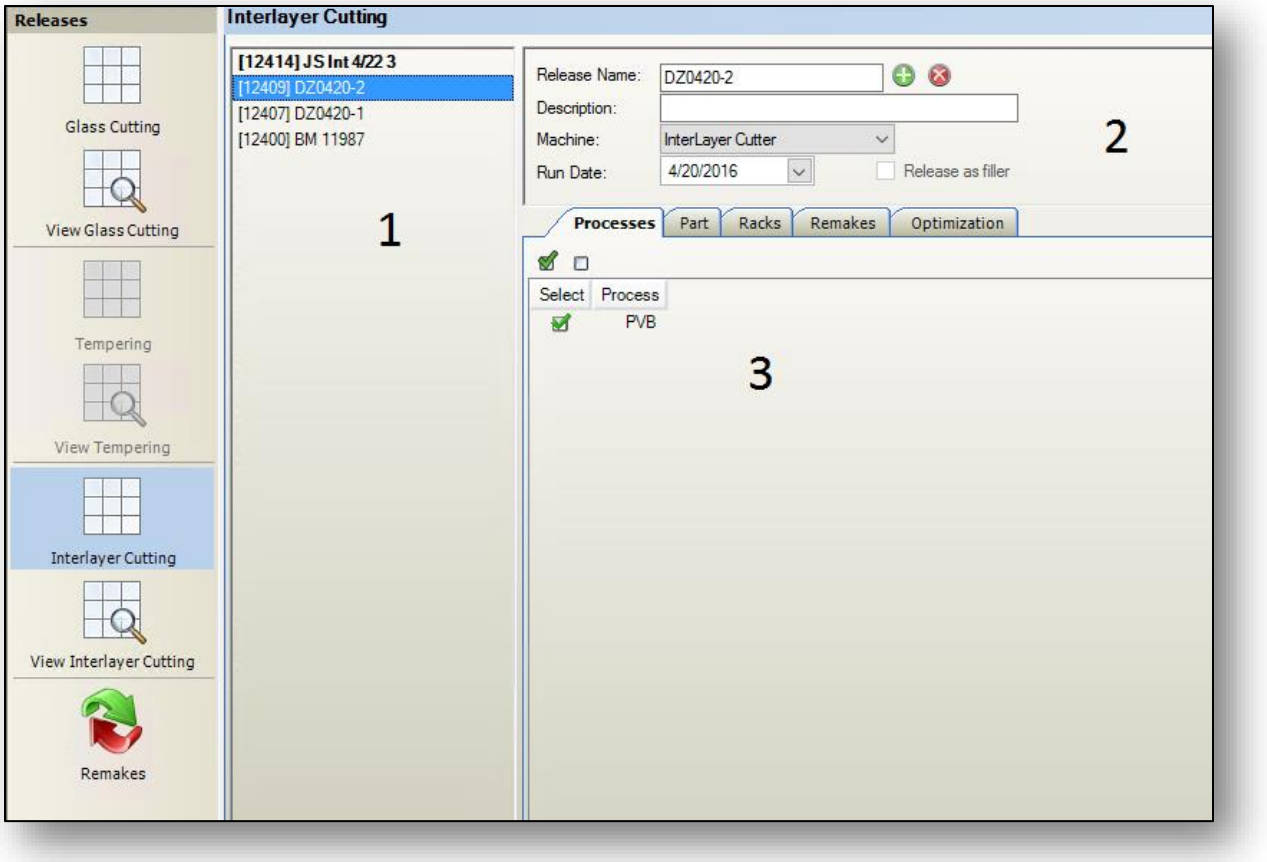
Selecting 'Machine Files' will generate machine files for the selected release.

Interlayer Cutting

Selecting 'Releases' in the main menu on the bottom left of the screen opens the 'Releases' menu that allows the creation of optimization releases and the viewing of optimization results for both cutting and tempering machines.



Selecting ‘Interlayer Cutting’ in the ‘Releases’ menu reveals the ‘Interlayer Cutting’ screen where releases can be created and optimized.



The image above shows the 'Interlayer Cutting' screen divided into three major sections.

Cutting Releases List

The **first section** from the image above shows all releases that are not optimized or have not reached production. The releases appear as '[ReleaseID] Release Name'. Once a release is optimized, users will see it in **bold.** Once any of the release's patterns have received a production status, the release will disappear from this screen. Production statuses occur when the release is run in Opti-Break or when the user manually marks patterns complete in 'View Interlayer Cutting'.

Note: Releases will also disappear from this screen if a store piece is consumed on another release. This prevents used store pieces from being deleted by clearing a release.

Release Header

The **second section** in the 'Interlayer Cutting' screen is the 'Release Header' displaying the information about a release.

- **Release Name –** Name of release provided by the user.
- **Description (optional) –** Description of the release provided by the user.
- **Machine –** Cutting table that will process the release. Drop-down is populated from Machine Setup.
- **Run Date –** Date the release is expected to be run through production.
-  – Add or delete releases.

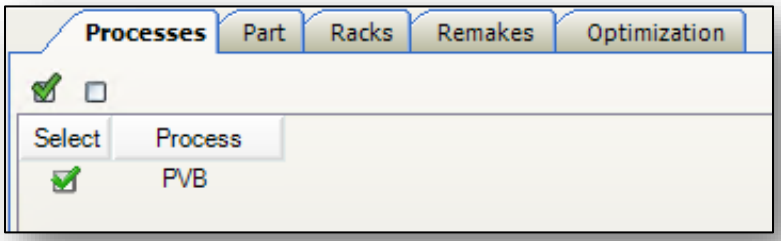
Release Details

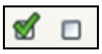
The **third section** of the above image shows the release details. This section outlines what the user sets up to be included on a release and optimizes the release. For a description of how to create and optimize a release see the 'Create New Release' section.

The release details section is divided among five tabs described below.

Processes Tab

In the 'Processes' tab, the user selects what processes will be included on the release.



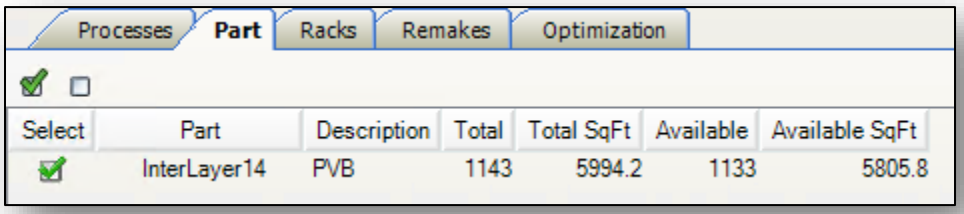
- **Select –** Check box to include or exclude process from release. The  allows the user to select or de-select all processes.

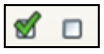
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Process –** Available processes. These are typically configured by FeneTech during implementation of the FeneVision system. Contact FeneTech for assistance in adding or removing processes.

Part Tab

In the 'Part' tab, the user selects what interlayer types to include on the release. This tab will be filtered to show only interlayer types that fall under the processes that have been selected in the 'Process Selection' tab.



- **Select –** Checkbox to include or exclude interlayer type from the release. The  allows the user to select or de-select all glass types.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

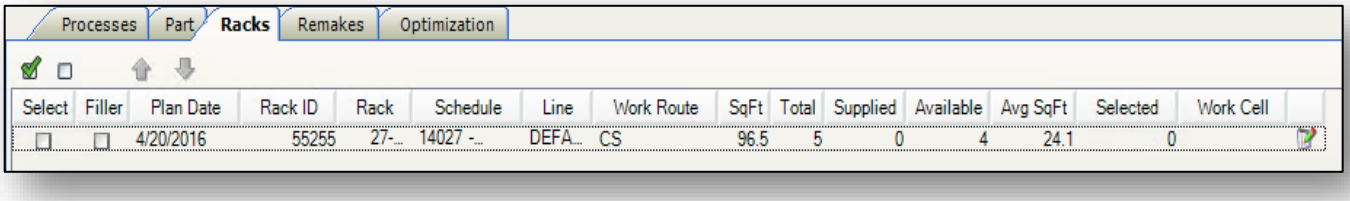
- **Part –** Part number from Parts setup in Core.

- **Description –** Part description from Parts setup in Core.
- **Total –** Total number of pieces for this. Sum of 'Available' pieces and pieces currently selected on this release.
- **Total SqM (SqFt) -** Total area of material for the selected part. Sum of 'Available' lites and lites currently selected on this release.
- **Available –** Number of pieces not selected on any releases.
- **Available SqM (SqFt) -** Area of material not selected on any releases.
- **Selected –** Number of pieces selected on the current release.

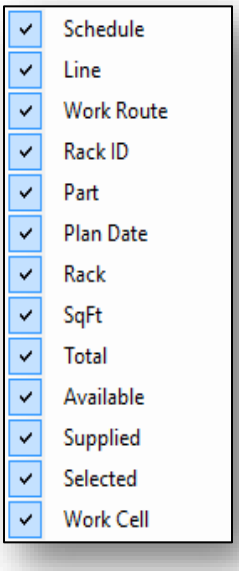
  Note: Disabled glass types will appear gray and are unable to be selected. Interlayer types can be enabled/disabled via the 'Inventory' screen on the 'Default Data' tab or per machine in 'Machines' screen on the 'Inventory' tab. See 'Default Data Tab' or the 'Inventory Tab' for a more detailed description.

Racks Tab

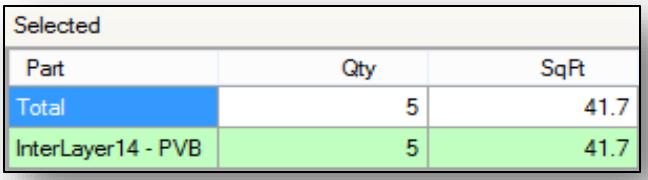
On the 'Racks' tab, the user selects which racks to include on the release. Only racks containing the glass types that are selected on the 'Part' tab will appear here. Interlayer racking is done in Opti and corresponds to mate glass parts racking.



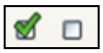
The following columns are available in the 'Rack Selection' screen.



On the right side of the screen, Opti-Glass provides the user with the total number of pieces currently selected on the release as well as the parts selected, and the total square feet (meters) to help with balancing work between lines. This grid is visible in all the tabs except the Optimization tab but won't display any information unless a part is selected in the Racks or Remakes tabs.



Right click anywhere within the grid to see a complete list of available columns. Note that 'Select', 'Filler', and the end-column cannot be hidden.

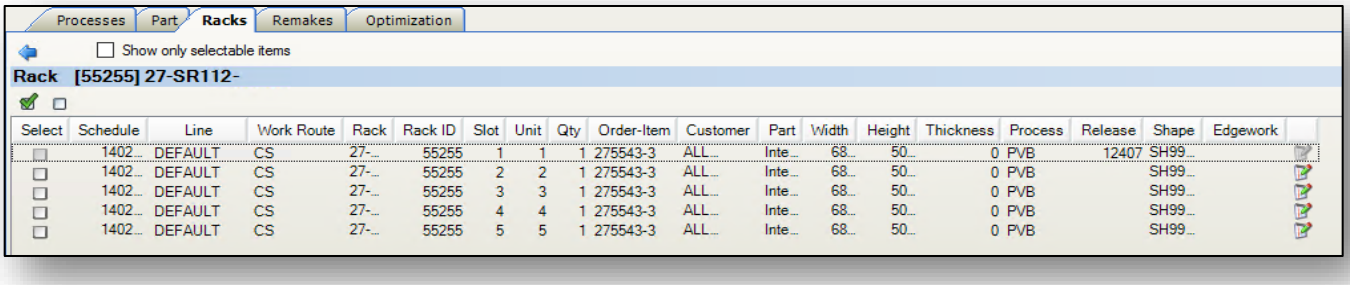
-  – Select or deselect all.
-  – Move racks up and down to re-sequence according to priority. In 'Dynamic' mode, this sequence controls the order in which the racks will be optimized.
- **Select –** Checkbox to include or exclude rack from the release. A green check indicates the full rack will be included on the release. A gray check indicates that some pieces from the rack will be included and some will not.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Filler –** If checked the rack will be used in the release as filler.
- **Plan Date –** Planned date to cut the rack. This date is generated one of two ways:
  1. During 'Work Route Release' from Core, if 'Rack by Plan Date' is checked, the rack's plan date will match the capacity plan.
  2. If 'Rack by Plan Date' is not checked the rack's plan date will be the date to which the schedule is released.

- **Rack ID (hidden by default) –** Opti-Glass internal rack ID. This does not match the rack ID generated through Opti.
- **Rack –** Rack tag comprised of the mate glass rack ID and suffix from the 'Interlayer Tag' setting in Opti.
- **Schedule –** 'ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line similar to the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.
- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- Area (SqFt or SqM) – Total area of glass on the rack. Calculated based on the dimensions of the interlayer pieces on the rack.
- **Total –** Total number of pieces on this rack of the selected interlayer types.
- **Supplied –** Number of pieces on the rack for the selected interlayer types that are supplied and do not need to be cut.
- **Available –** Number of pieces on the rack for the selected interlayer types that are not on a release.
- **Avg SqFt (or SqM) –** The total area divided by the number of pieces on the rack that are available.
- **Selected –** The number of pieces on the rack for the selected interlayer types that are on this release.
- **Part –** Identifies the part(s) assigned to the rack. When multiple glass parts on the same rack, a comma delimited list will show all parts.
- **Work Cell (hidden by default) –** The first production work cell the rack will go through.
-  – Allows the user to manually select pieces from the rack to include on the release. Selecting this icon will take the user to the 'Rack Details' screen.

Rack Details



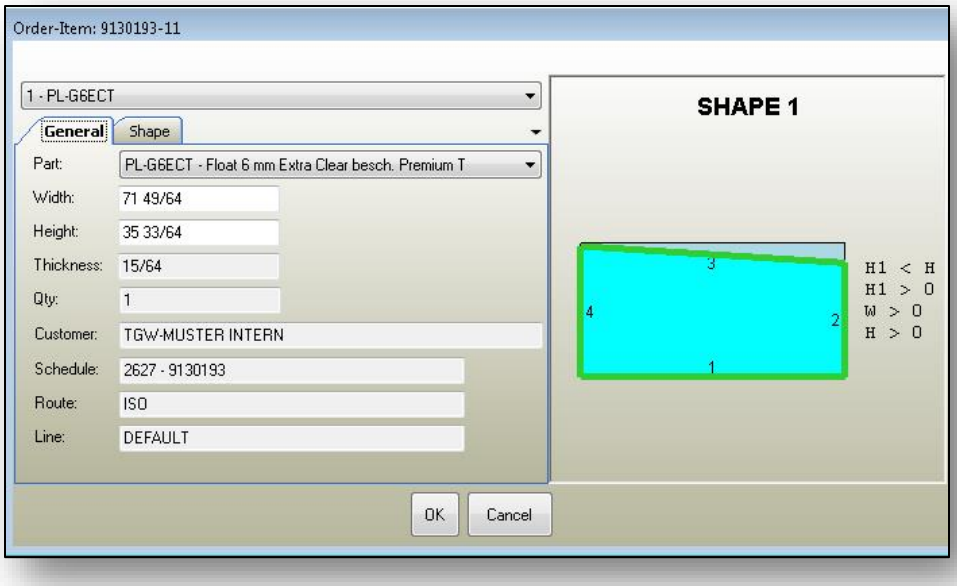
Note: Supplied pieces on a rack will appear in this menu grayed out because they occupy a slot on the rack, but do not need to be cut.

The following columns exist in the 'Rack Details' screen. Use the 'Back' icon to return to 'Rack Selection'. Select the 'Show only selectable items' checkbox to show only units that can be selected. If part of the rack is on another release, those units cannot be selected here. These units will appear grayed out if this is unchecked and disappear if this is checked. Use the  buttons to select all or unselect all.

- **Select, Schedule, Line, Work Route, Rack, and Rack ID –** See the descriptions in the 'Racks' section.
- **Slot –** The position the piece will be placed on the rack once it is cut. For stacked racks, it will read 'SideStack.Postion' meaning that if it reads '12.3' it means 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Unit –** Unit ID for the piece generated during schedule release in Core.
- **Qty –** Quantity for this unit. The value in this column will always read as '1'.
- **Order-Item –** 'Order number - line item number' from Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Part –** Part Number from Core.
- **Width –** Width of the piece from Core.
- **Height –** Height of the piece from Core.
- **Thickness –** Thickness of the piece from Core.
- **Process –** Process under which this particular piece falls.
- **Release –** Release on which the piece has been optimized. If the piece is on a different release, the user cannot select it here.
- **Shape –** Shape Number and shape dimensions of the piece. This is derived from the option structure configured on the product in Core. For example, if the piece is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.
- **Edgework –** Displays all edgework codes applied to this piece. This value originates from option structure in 'Order Entry' in Core.
-  – If an order was entered incorrectly and the schedule cannot be pulled back, selecting  will allow the user to edit the glass type, dimensions, shape, and edgework. These changes will not affect the order in Core nor adjust the capacity plan, so any orders edited in this manner should be manually tracked through production.

  Note: These changes should be made carefully by someone very familiar with the BOM (bill of material).

Selecting  will reveal the 'Order-Item' screen.



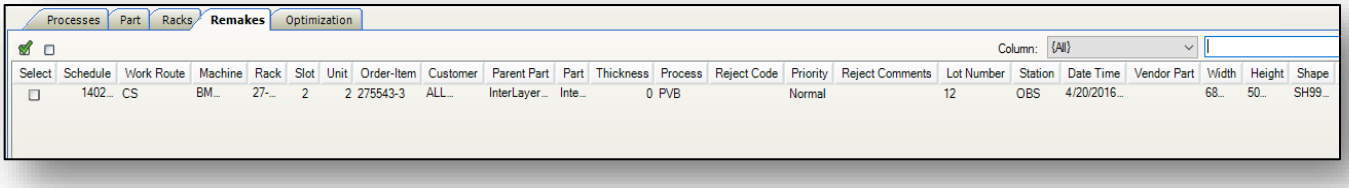
Two tabs exist in the 'Order Item' screen.

- **General Tab –** The 'General' tab allows the user to edit general information regarding the part shown in the 'Order Item' header.
- **Shapes Tab –** The 'Shapes' tab allows the user to edit dimensions, trims, and edgework for the shape shown on the right side of the screen.

  Note: Visible columns can be edited in 'Racks' and 'Rack Details' by right clicking on a column header. It will bring up a menu that shows all the column names with check marks next to what is displayed. Unchecking or checking these modifies what is being displayed.

Remakes Tab

In the 'Remakes' screen, the user selects what remakes to include on the release. Only the remakes for the interlayer types that are selected on the 'Part' tab will appear.



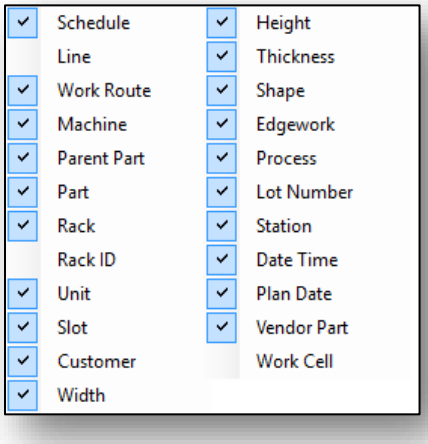
The following columns exist in the 'Remakes' tab. Select  to select / de-select all remakes shown in the grid.

- **Select –** Checkbox to include or exclude rack from the release.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Order-Item –** 'Order number - line item number' from Core.
- **Reject Code –** 'Reject Code' assigned when the piece was rejected (not required). To get a reject code from FeneVision Opti-Break, the station must have assigned 'Reject Codes'.
- **Priority –** 'Reject Priority' selected when the piece was rejected (not required). To get a priority from Opti-Break the station must be assigned 'Reject Codes' (not required).
- **Reject Comment –** Comment entered when the lite was rejected. To get a reject comment from Opti-Break the station must be assigned 'Reject Codes'.
-  – Delete the remake. Deleting a remake does not change the status of the piece on the original release.

To see a list of other available column headings, right click anywhere in the 'Columns' header.



- **Schedule – '**ScheduleID / Schedule Description' identifier from Core.
- **Line (hidden by default) –** Opti-Glass production line similar to the 'Work Route' from Core. Intended for use only when Opti-Glass is being used as a standalone product.
- **Work Route –** 'Work Route' description. Pulled from 'Work Route' setup in Core.
- **Machine –** Cutting machine at which the piece was originally cut. The machine is assigned to the piece when it is accepted or rejected at Opti-Break. If the piece was cut using a different machine than the one it was optimized with, it will still be assigned the machine that cut it.
- **Parent Part –** This indicates the parent part for the interlayer type of the remake. The parent part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part –** Part Number from Core.
- **Rack –** Rack tag comprised of the last two digits of the 'Schedule ID / Container' prefix from Core.
- **Rack ID –** Opti-Glass internal rack ID. This does not match the rack ID generated through Core.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Slot –** The position the lite will be placed on the rack once it is cut. For stacked racks, it will read 'SideStack.Postion'. For example, '12.3' indicates 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.
- **Customer –** Customer name from 'Customers' setup in Core.
- **Width –** Width of the piece from Core.
- **Height –** Height of the piece from Core.
- **Thickness –** Thickness of the piece from Core.

- **Shape –** Shape Number and shape dimensions of the piece. This is derived from the option structure configured on the product in Core. For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.
- **Edgework –** Displays all edgework codes applied to this piece. This value originates from option structure in 'Order Entry' in Core.
- **Process –** Process under which this piece falls.
- **Lot Number –** Identifier of the lot from which the interlayer originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.
- **Station –** 'Station ID' where the rejection occurred.
- **Date Time –** Time of the rejection.
- **Plan Date –** Plan date associated with the original release. Manual remakes will not receive a 'Plan Date' as it was not processed in Core.
- **Vendor Part –** Alpha-numeric identifier of the 'Vendor' part. This is different from the 'Part' number because parts could potentially have the same ID. The 'Vendor Part ID', however, distinguishes the same parts that are from different vendors.
- **Work Cell (hidden by default) –** The first production work cell the rack will go through.

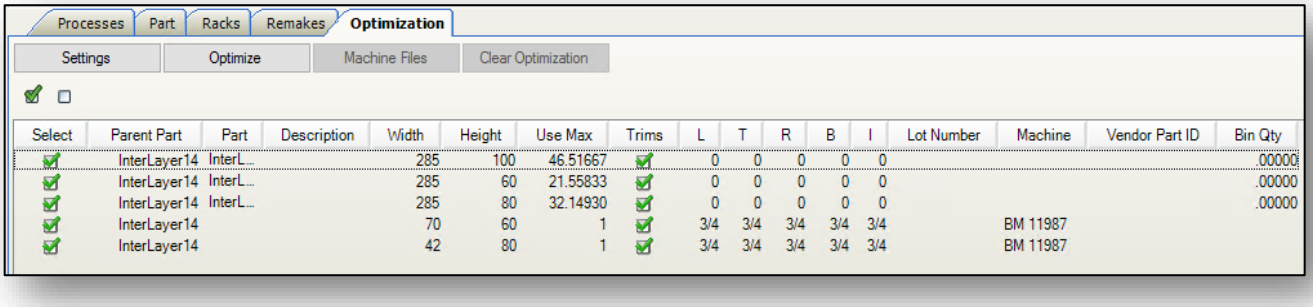
Optimization Tab

In the 'Optimization' tab, the user selects which stock sheets to use and how many sheets to allow the optimizer to use. This is where the optimization of the glass sheets occurs. The following two sections describe the 'Stock Sheets' grid and the 'Settings' dialog.

Stock Sheets Grid

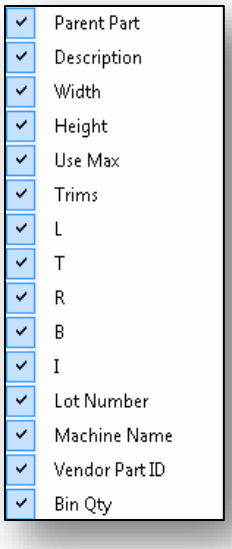
The image below displays the 'Stock Sheets' grid before optimization takes place. Shown are the stock sheets that are available to be used for optimization, which are determined by the glass types on the release and the glass types that are enabled on the machine.

Note: This grid displays 'Stock' sheets. Additionally, in 'Batch' mode, 'Restock' sheets are also displayed.



Select	Parent Part	Part	Description	Width	Height	Use Max	Trims	L	T	R	B	I	Lot Number	Machine	Vendor Part ID	Bin Qty
☑	InterLayer14	InterL...		285	100	46.51667	☑	0	0	0	0	0				.00000
☑	InterLayer14	InterL...		285	60	21.55833	☑	0	0	0	0	0				.00000
☑	InterLayer14	InterL...		285	80	32.14930	☑	0	0	0	0	0				.00000
☑	InterLayer14			70	60	1	☑	3/4	3/4	3/4	3/4	3/4		BM 11987		
☑	InterLayer14			42	80	1	☑	3/4	3/4	3/4	3/4	3/4		BM 11987		

The following columns are available in the 'Stock Sheets Grid'. These can be customized by right clicking on any of the column headers and selecting the desired heading.



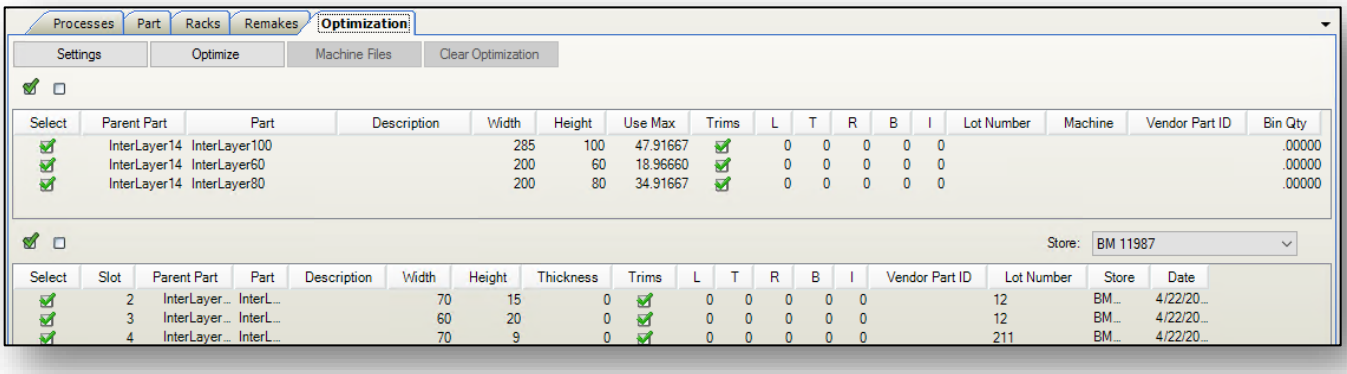
-  – Select or deselect all.
- **Select –** Checkbox to indicate with which stock / restock sheets to make available to the optimizer.

  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

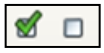
- **Parent Part –** This indicates the 'Parent' part for the 'Stock/Restock' sheet. The 'Parent' part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part (fixed column) –** Identifies the part from the 'Inventory' settings screen. This is the stock sheet that will be used during optimization. The 'Part' column could display as 'Parent' if the user is looking at a parent part, or it could display as 'Child' if the user is looking at a child part. Additionally, the column could be blank if it is a 'Restock / Store' part.
- **Description –** Part description from the 'Inventory' menu under 'Settings' in the 'Part' tab. This is initially configured in Core for the glass part.
- **Width –** Width of the stock sheet from 'Inventory Settings' screen.
- **Height –** Height of the stock sheet from 'Inventory Settings' screen.
- **Use Max –** How many sheets the optimizer can use. Defaults to the 'Quantity On Hand' minus 'Quantity Allocated' for that glass part. Setting this to '-1', will allow the optimizer to use unlimited sheets. Comes from 'Inventory Settings'.
- **Trims –** Checkbox to indicate if specified stock trims will be applied to this stock / restock sheet.
- **L –** Left trim. Amount of trim to use on the left side of the sheet.
- **T –** Top trim. Amount of trim to use on the top of the sheet.
- **R –** Right trim. Amount of trim to use on the right side of the sheet.
- **B –** Bottom trim. Amount of trim to use on the bottom of the sheet.
- **I –** Internal trim. Assures that no two scores are within a certain distance of each other. Would be set to the size of the narrowest piece that can be safely broken out.

  Note: Trims default to what is set in the 'Default Data' tab of 'Inventory Settings' for that glass type. These settings can be overridden here on a per-release basis.

- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user. In the 'Optimization' tab, users will only see a lot number for store and restock pieces. It will be set at the time that piece is broken out.
- **Machine –** Cutting machine that generated the restock piece. This will be blank for stock sheets.
- **Vendor Part ID –** Alpha-numeric identifier of the vendor part. This is different from the part number in that parts could potentially have the same number; the 'Vendor Part ID', however, distinguishes two of the same parts from different vendors.
- **Bin Qty –** Quantity of stock sheets in the 'Inventory' bin that are assigned to the machine. Bins can be assigned for the entire machine and can be overridden for individual stock sheets in the 'Inventory Tab' in 'Machines' settings.
- **Store Sheets –** When running in 'Batch Mode', a second grid appears at the bottom of the table that displays all available store sheets. For this to appear, the following settings must be in place:
  1. Machine must be in 'Batch' mode.
  2. 'Consume Store' must be checked in the release 'Settings'.
  3. Store Sheets' of the glass types selected on the 'Part' tab must exist.



The following columns are available in the 'Store' selection pane:

-  – Select or deselect all.
- **Store –** Drop-down to filter what store pieces are shown based on their store location.
- **Select –** Checkbox to indicate which store sheets to make available the optimizer.

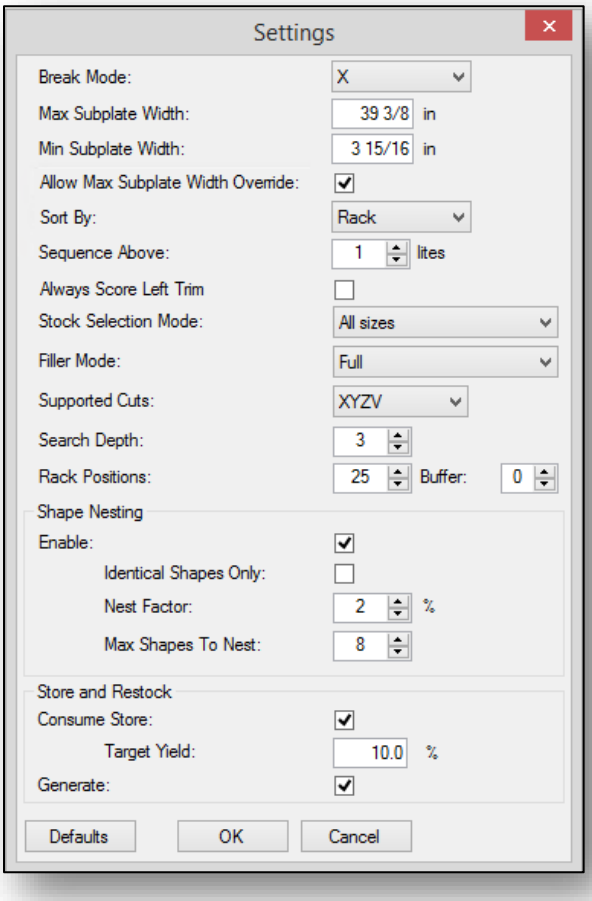
  Note: Clicking and dragging on the checkbox column will allow users to multi-select. Users may also use Ctrl or Shift to select multiple items at once. Hitting the spacebar will check / uncheck all items selected.

- **Slot –** Store slot where the 'Store' sheet is currently assigned. This gets assigned when it is generated on an optimization and can be viewed on the 'Store' tab of 'Machines' setup.
- **Parent Part, Part, Description, Width, Height, Thickness, Trim, L, T, R, B, I, and Vendor Part ID –** See the descriptions under 'Stock Sheets Grid'.
- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user. In the 'Optimization' tab, users will only see a lot number for store and restock pieces.
- **Store –** Identifies the location the remnant piece is located.
- **Date –** Identifies the date the remnant piece was added to the 'Store' location.

Settings

If the user needs to make changes at the release level, the following settings can be reconfigured before optimization.

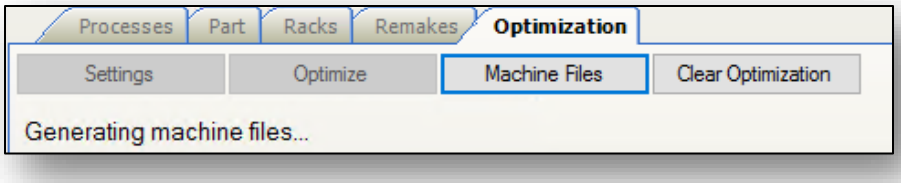
- Settings – Machine settings are saved in the 'Settings' screen for each release. These are saved when the optimization is created; thus, any changes to 'Machines' setup will not change the settings on existing releases. Select the 'Settings' button to access the following dialog:



  - Default – Selecting this button will reset all the fields to the current settings on the machine.
  - OK – Saves changes to the settings and closes the Settings window.
  - Cancel – Closes the Settings window without saving.

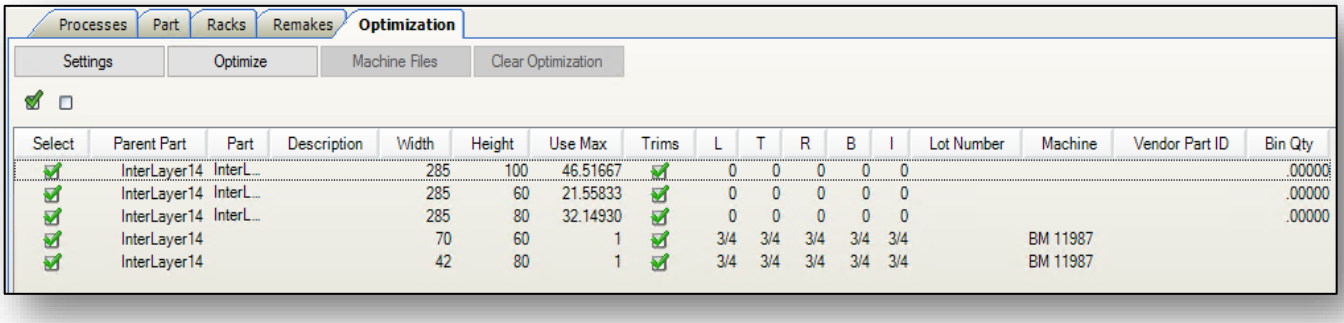
  Note: See machine settings in the setup section for more information regarding the individual settings.

- – Select all or unselect all from the available stock sheets list.
- Optimize – Selecting 'Optimize' will optimize the release (enabled before optimization).
- Machine Files – Selecting 'Machine Files' generates machine files for the release and outputs these into to machine file directory set in 'Machines' setup on the 'Interface Tab'. Once the machine files are generated, a progress bar will display notifying the user that the machine files have been generated successfully. Select the 'Close' button then returns the user to the pattern detail screen (enabled after optimization).



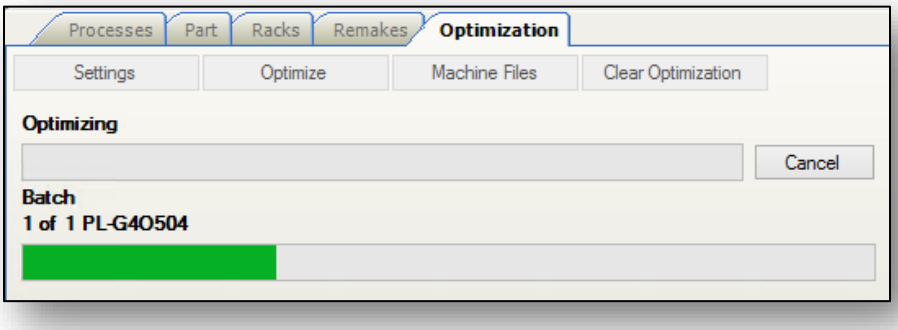
- Clear Optimization – Selecting 'Clear Optimization' undoes the optimization (enabled after optimization). If machine files have been generated clearing, the optimization will delete them.

Once the 'Settings' screen has been configured and saved, the user is ready to optimize.



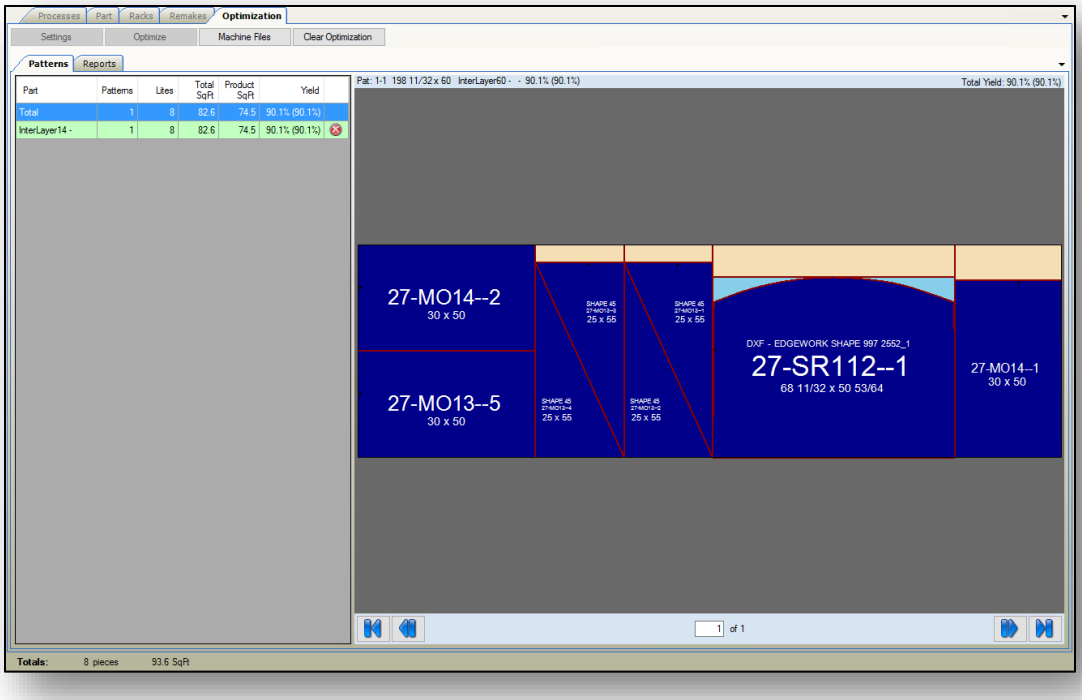
To optimize:

1. – Indicates the stock sheets that have been selected for optimization.
2. Select the 'Optimize' button to begin the optimization. During the optimization, the progress bar will appear, indicating the progress and the total yield of the optimization.



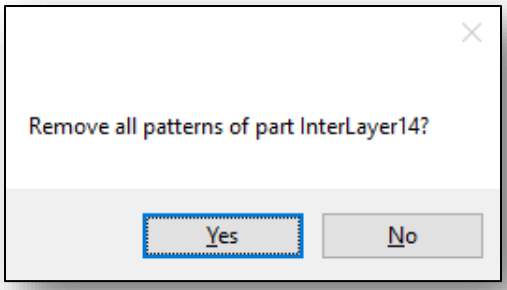
Patterns Tab

Once optimization is completed, the 'Optimization' tab will separate into the 'Patterns' and 'Reports' tabs as shown in the image below.



The grid on the left displays the interlayer types that were used in the optimization. If the user selects an individual interlayer type from this grid, the pattern viewer on the left updates to only show the patterns for that interlayer type. The grid contains the following columns:

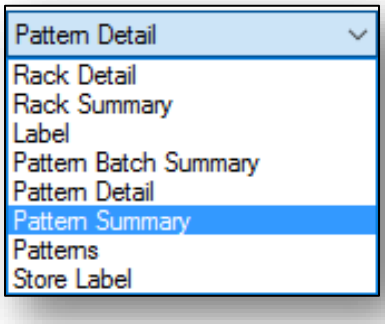
- **Part –** Part identifier for the interlayer type. This will be the 'Parent Part'.
- **Patterns –** Number of patterns for the interlayer type.
- **Pieces –** Number of pieces for the interlayer type.
- **Total SqFt (SqM) –** Total square feet or square meters of interlayer used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the pieces.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).
-  – This deletes all patterns for an interlayer type from the release. Selecting 'Delete' will prompt the user with the following screen:



Reports Tab

Once a 'Cutting' release is optimized the 'Reports' tab will appear. The user can select the desired report from the 'Select Reports' dropdown.

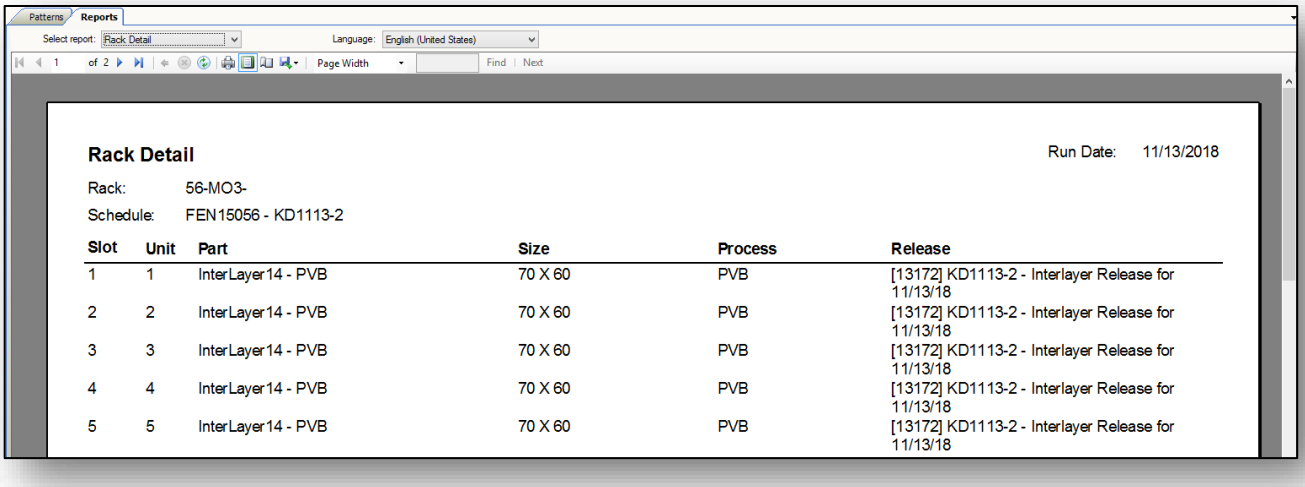
The image below represents the list of reports for 'Cutting' machines.



Note: Custom SQL reports can be added to this drop-down menu utilizing "system report" functionality. Contact FeneTech for assistance in adding or removing reports from this dropdown.

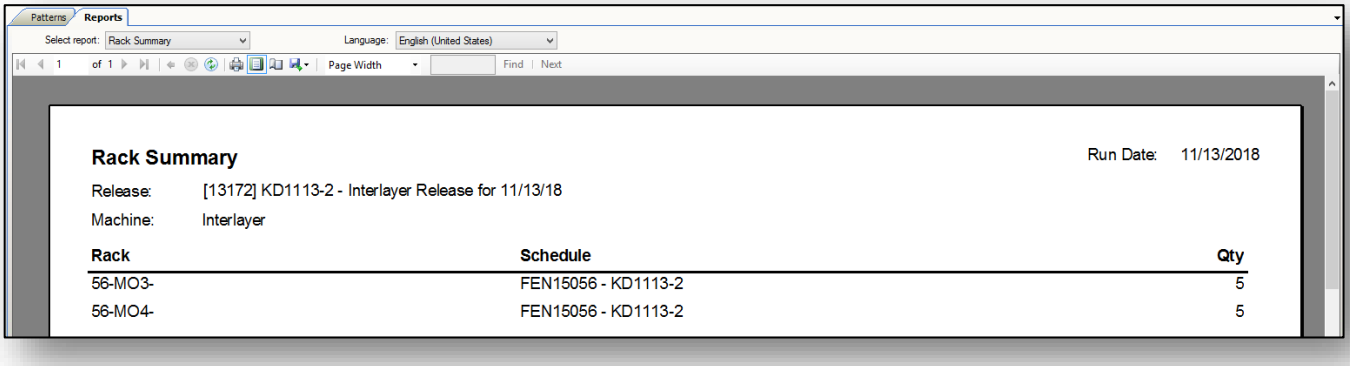
Rack Detail

The 'Rack Detail' report provides details for each unit on the rack. It will generate the details for every rack on the selected release. To view this report, go to the 'Optimization' tab then to the 'Reports' sub tab. Select 'Rack Detail' from the dropdown list.



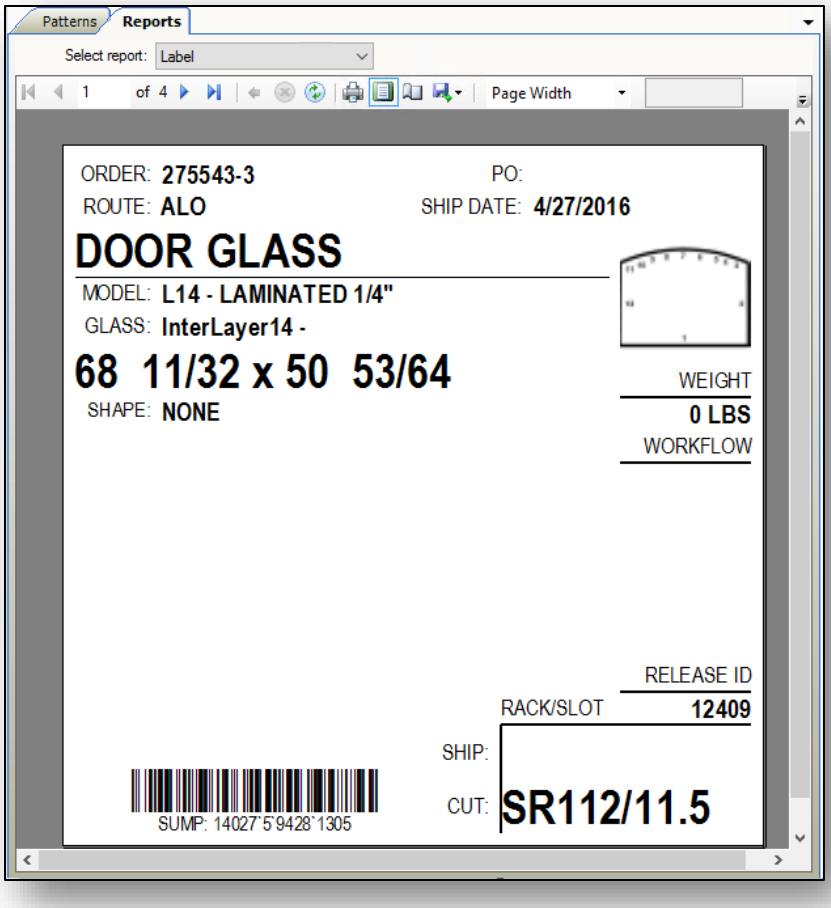
Rack Summary

The 'Rack Summary Report' shows the different racks on a release, the number of pieces on each rack, and the production schedule associated with the rack. To view this report, go to the 'Optimization' tab then to the 'Reports' sub tab. Select 'Rack Summary' from the dropdown list.



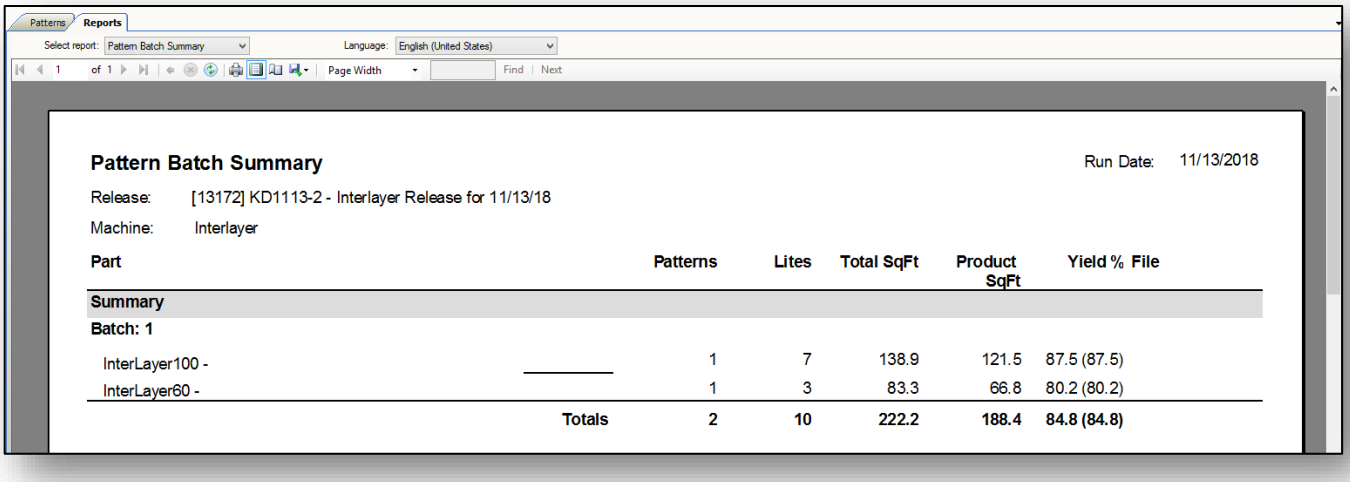
Label

The 'Label' is placed on the piece at the breakout station showing the workflow for the piece. If the piece is a remake the word 'REMAKE' will appear in the middle of the label. In order to achieve this, a label report needs to be set up in 'Reports' setup in Core. The image below represents an example of a label.



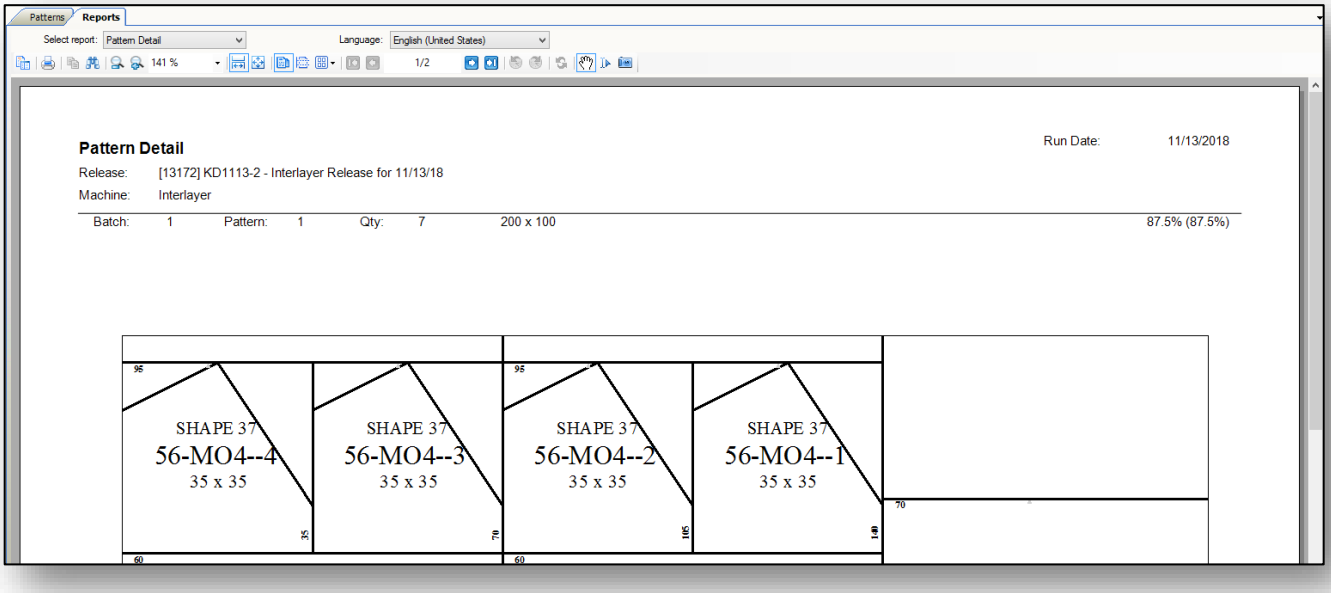
Pattern Batch Summary

The 'Pattern Batch Summary' shows the same information as the 'Pattern Summary' except that *batches* are clearly grouped. An example of the 'Pattern Batch Summary' report follows.



Pattern Detail

The 'Pattern Detail' report allows the user to view each pattern and provides the user with some basic information for each pattern, such what stock sheet will be used and the pattern yield. The 'Pattern Detail' report shows the same information as the 'Patterns' report; however, only one pattern is shown per page.



The followng information is visible in the 'Pattern Detail' report:

In the header

- **Run Date –** Date the release is expected to be run through production. Set in 'Releases'.
- **Release –** Release name.
- **Machine –** Cutting table that will process the release. This is selected in 'Releases' when the release is first created.

In the body

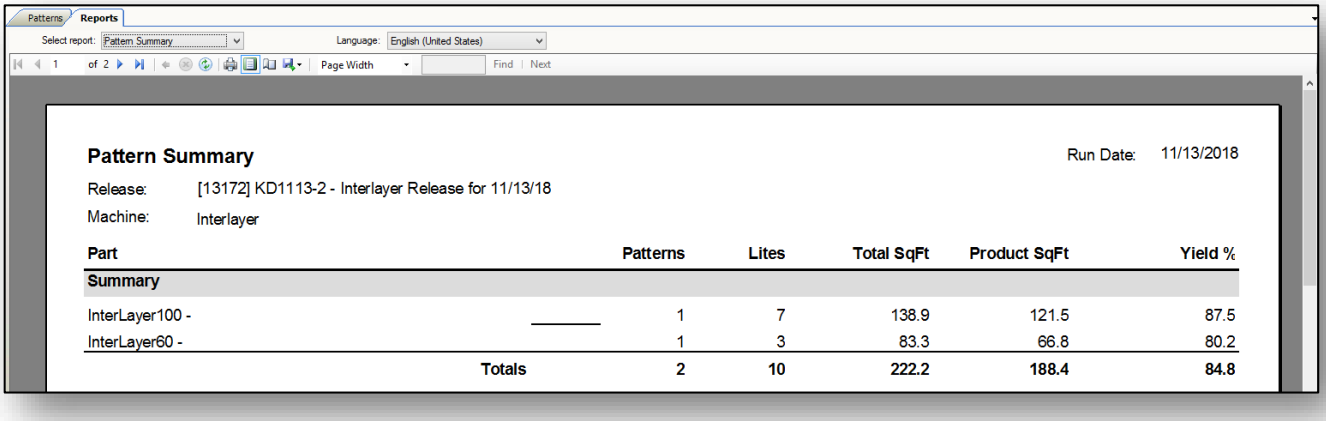
- **Batch –** Batch number of the pattern shown.

- **Pattern –** Identifying information about the pattern including part and dimensions.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).
- **Date / Time –** Date and time the report was accessed.

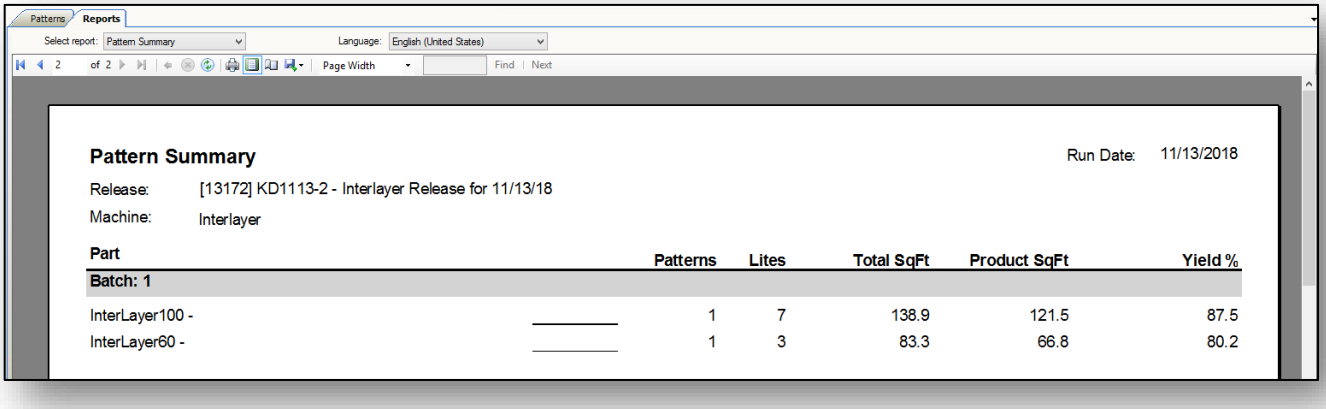
Pattern Summary

The 'Pattern Summary' report summarizes the release by displaying the glass types, the number of patterns per glass type, the pieces on the patterns, material used on the patterns, material that goes toward the pieces, and the yield.

The report first displays a summary of all batches.



The following pages display each individual batch.



Note: If two instances of the same part are shown, Opti-Glass will not group these together because they are contained in different batches.

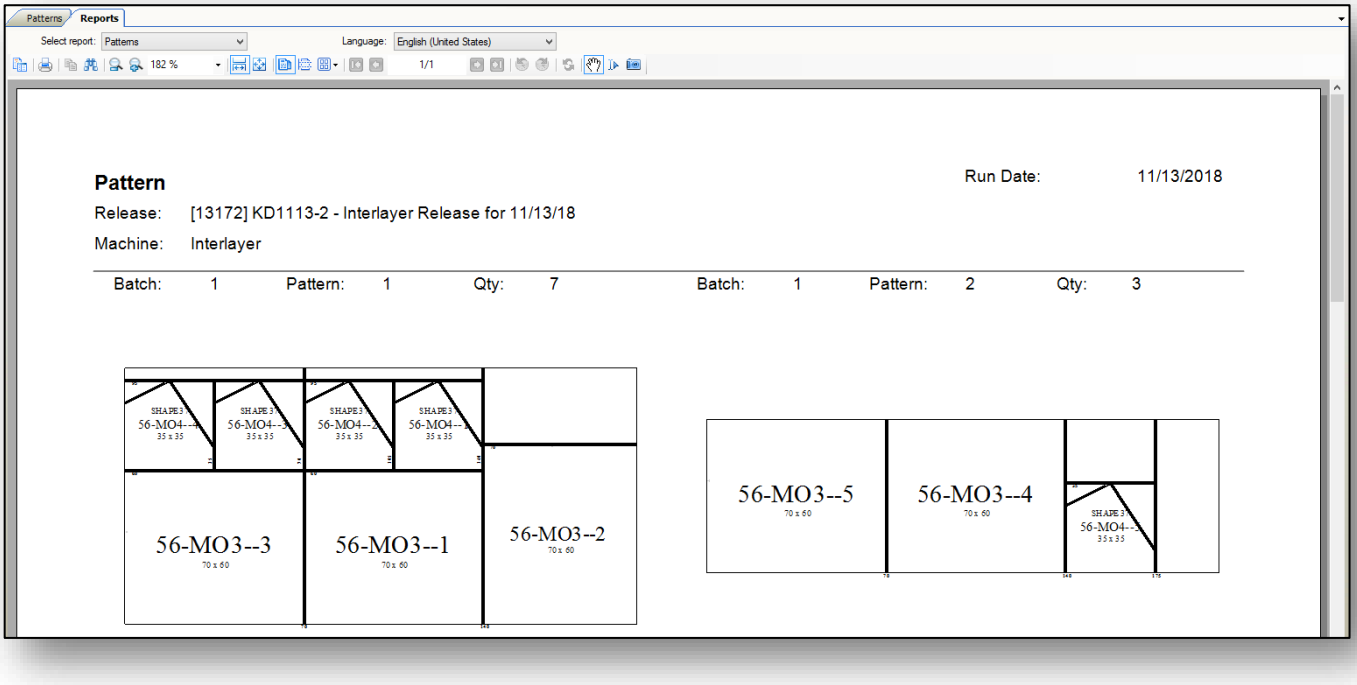
The following information is detailed in the 'Pattern Summary' report:

- **Part –** The part number of the glass being used on the optimization originating from Core.
- **Patterns –** The number of patterns generated for this part.
- **Pieces –** Number of pieces that are optimized on these patterns.

- **Total SqFt –** Total square feet (or meters) of the sheet(s) being used.
- **Product SqFt –** The raw material (square feet or square meters) taken up by the pieces.
- **Yield % –** Percentage of the sheets that are used as production calculated using the formula (Yield % = 100 x MaterialAreaExcludeTrim / ProductArea). The second Yield number in parenthesis includes trim and is calculated using the formula (Yield % = 100 x MaterialArea / ProductArea).

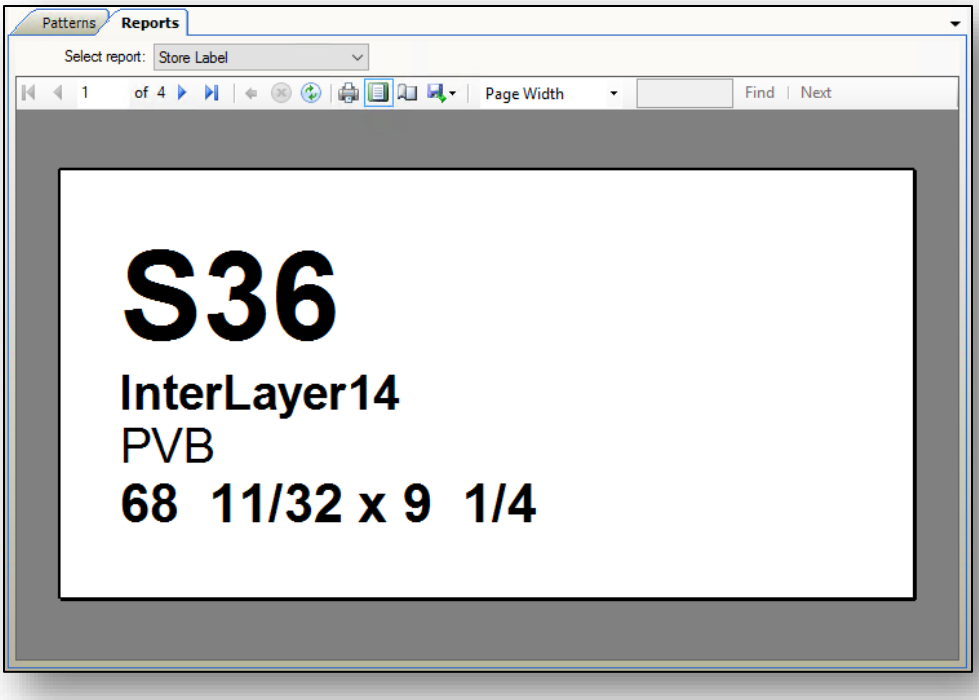
Patterns

The 'Patterns' report shows the same information as the 'Pattern Detail' page; however, six patterns are displayed on the screen at a time.



Store Label

'Store Labels' are placed on store pieces to indicate to which 'Store' rack the piece should be taken.



The values on the store label example represent the following:

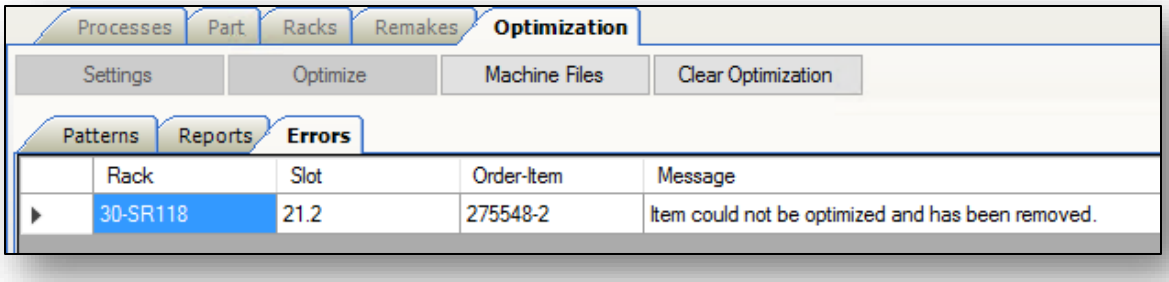
- **S –** Represents that this piece is a 'store' piece.
- **36 –** Store slot where this piece will be placed.
- **InterLayer14 –** Represents the part number.
- **PVB –** Represents the part description.
- **68 11/32 x 9 1/4** – Dimension of the store piece.

Note: Store labels are only generated for Offline Store. They are not necessary for Restock.

Note: While store labels can be generated via Opti-Glass before or after accepting a pattern, store may change if using dynamic mode in Opti-Break. Therefore, store labels can also be generated via Opti-Break

Errors Tab

If an error is encountered during an optimization the 'Errors Tab' will appear to the right of the 'Reports Tab' displaying the errors. Any release containing errors will appear in red in the release list in 'Interlayer Cutting' and 'View Interlayer Cutting'.

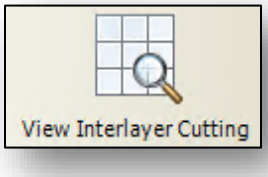


Note: When an optimization begins the optimizer first performs validations (verifies everything can fit on the stock, DXF files can be read, etc.). If an error is encountered during the validations, then the user is immediately prompted, and optimization does not occur. The 'Errors Tab' will only appear if an error occurs after these validations are completed. If an error occurs, contact FeneTech for assistance.

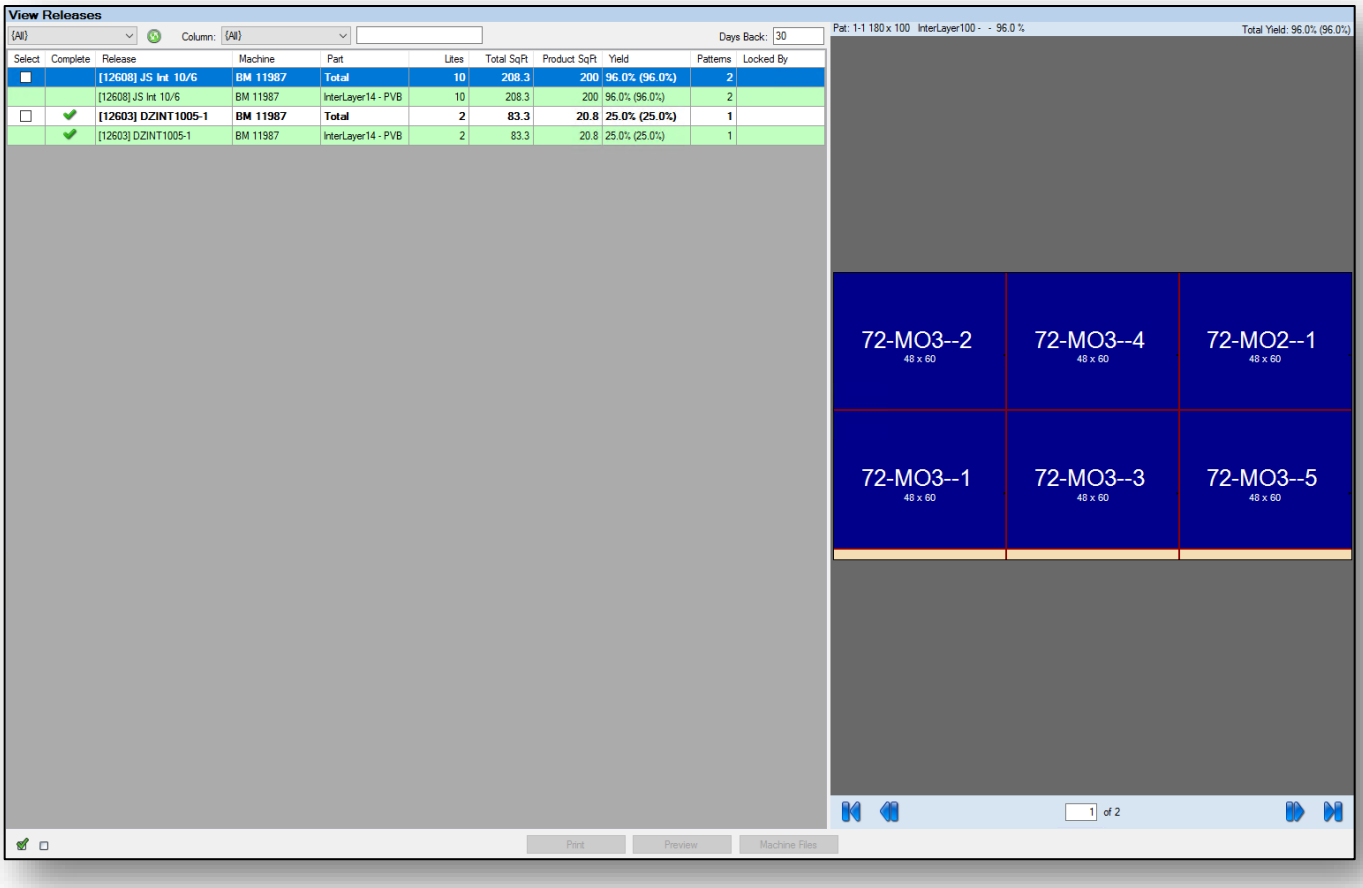
View Interlayer Cutting

The 'View Interlayer Cutting' screen allows the user to:

1. View releases.
2. Set releases complete or not complete.
3. Reset a release's status so that they can be run through FeneVision Opti-Break again, if necessary.
4. Reset a pattern's status to return all items to their "uncut" status.



To access the 'View Interlayer Cutting' screen, select 'Releases' >> 'View Interlayer Cutting'. The following screen will appear:



The left side of the screen displays a list of releases with optimized releases in bold, and glass types that were used in the optimization. If the user selects an individual glass type from this grid, the pattern viewer on the right updates to only show the patterns for that glass type. The grid contains the following columns:

- **Select –** Contains a checkbox for optimized releases.
- **Complete –** Completed patterns and releases will display a green check. A gray checkbox indicates that part of the release is complete but not all of it.
- **Release –** The release number and the release name.
- **Description –** The description of the release.
- **Run Date –** Date the release is expected to be cut.
- **Machine –** Interlayer Cutting machine name.
- **Lites –** Number of lites for the glass type.
- **Part –** Part identifier for the glass type. This will be the 'Parent Part'.
- **Release ID –** The release number.
- **Total SqFt (SqM) –** Total square feet or square meters of glass used for these patterns.
- **Product SqFt (SqM) –** Total square feet or square meters of the lites.
- **Yield % –** Percentage of the tempering bed that was used for production (Yield % = 100 x MaterialAreaExcludingTrims / ProductArea).
- **Patterns –** Number of patterns for the glass type or for the entire release.
- **Locked By –** Displays the Station ID currently viewing the release.

Filters

In the top left of the screen, a drop-down exists that allows the list of releases to be filtered based on release status. Selecting 'All' will display releases that are complete, being processed, and not yet started. Selecting 'Not Started' from the drop-down will filter the list to display only releases and glass types that have not yet had any lites accepted or rejected. Additionally, the list of releases can be filtered further by selecting a column and entering criteria in the text box associated with the column drop-down.

Days Back

Filters the list of releases to include only optimized releases whose run date falls within the number of days back specified.

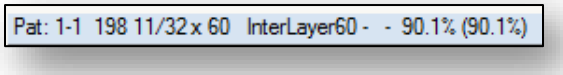
Note: Clicking and holding the mouse over a piece will magnify the piece tag and dimensions of the piece.

Pieces will appear in different colors on the 'Patterns' tab. Piece colors can be customized. The following default colors are available:

- Dark Blue – Used to indicate 'Production' and 'Filler' pieces.
- **Aquamarine** – Used to indicate pieces that are 'Online Store', offline 'Store', and 'Restock'
- **Light Yellow** – Used to indicate 'Remakes'.
- **Red** – Indicates the piece has been rejected.
- **Wheat** – Used to indicate scrap.
- **Light Gray** – Used to indicate pulled back pieces.
- **Goldenrod** – Used to indicate the beginning of the next batch.
- **Sky Blue** – Used to indicate scrap around shapes.
- Dark Green – Indicates the piece has been accepted.
- **Gold** – Priority *(Obsolete)*

  Note: The list above displays the default colors that correspond to the status of the pieces on a pattern. It's possible to customize the colors shown. Contact FeneTech for more information regarding customizing pattern colors.

The bar across the top of the patterns provides the user with information about the current pattern.



- **Pat 1-1 –** Designates that '1' is the batch and '1' is the batch pattern. Indicates the batch / batch pattern currently being displayed.
- **198 11/32 x 60 –** Indicates the dimensions of the stock sheet used for the current pattern.
- **InterLayer60 -** Indicates the Part Number – Part Description from 'Inventory Setup' in Opti-Glass.
- **90.1% (90.1%) –** Indicates the current pattern's yield followed by the current pattern's yield including trim as scrap. This value will be less than the first value if the trim is not '0'. The two values will be the same if the trim is '0'.

Right Click Options

To access the following screen, the user can either right click on a pattern or right click on list of releases on the left side of the 'View Interlayer Cutting' screen.

The following options are available when right-clicking on a release on the left side of the screen:

- **Settings –** Displays a list of settings used during optimization in read-only mode.

- **Set All Complete –** Completes all patterns on the selected release. With 'Real-Time Inventory' disabled, the 'Relieve Inventory' screen will appear when 'Set All Complete' is selected.
- **Set Not Complete –** Changes completed releases to not be complete. This does not affect the status of the interlayer pieces on the release. If 'Real-Time Inventory' is enabled, this will replenish inventory. If 'Real-Time Inventory' is disabled inventory is not replenished.
- **Reset All Status –** Resets the status of all interlayer pieces on the release that is currently selected. This will make all patterns available to run in Opti-Break again. No inventory transaction occurs.
- **Move (only available when right-clicking on a parent part) –** Allows the patterns associated with the selected glass type to be moved to a new release.
- **Delete (only available when right-clicking on a parent part) –** Deletes all patterns from the release for the selected glass type.

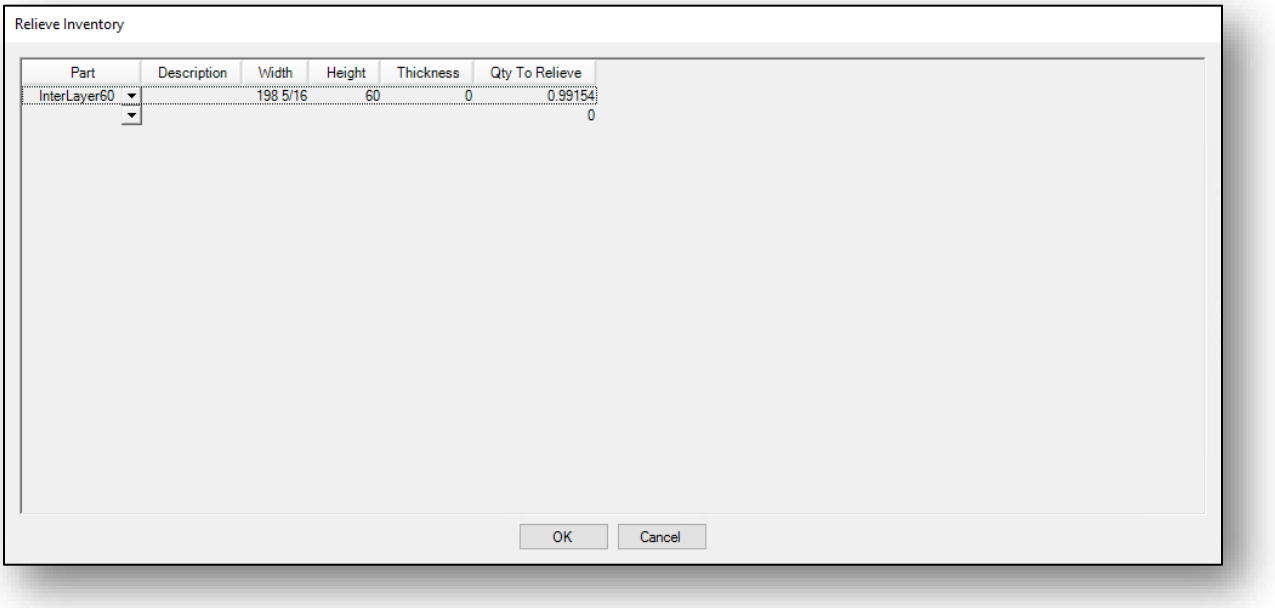
The following options are available when right-clicking on a pattern on the right side of the screen:

- **Show Print View –** Changes the pattern so that it appears in black and white with distance from the origin marked on each cut, as it will appear on the 'Pattern Detail' report.
- **Set Pattern Complete –** Sets all interlayer pieces on the currently displayed pattern complete. No inventory transaction occurs.
- **Reset Pattern Status –** Resets the status of all interlayer pieces on the pattern that is currently displayed. No inventory transaction occurs.
- **Delete Pattern –** Deletes the currently selected pattern from the release. Interlayer pieces from deleted patterns will be available to optimize in new releases. Patterns cannot be deleted from releases that are set as complete.

  Note: Deleting patterns should be done carefully.

Relieve Inventory

The 'Relieve Inventory' screen appears when the user selects 'Set All Complete' on a release with 'Real-Time Inventory' off. This screen does not appear if 'Real-Time Inventory' is on.



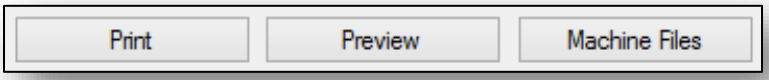
- **Part –** Shows the glass part being relieved. The part shown originates from 'Inventory' under the 'Settings' menu.

Note: The arrow in this column is disabled for the glass parts on the release because the user is not allowed to change the glass type at this point. This arrow is enabled on the blank line to allow the user to manually enter another glass type to relieve. An example of when this would be useful is if the wrong glass sheet is cut and then the user realizes the mistake.

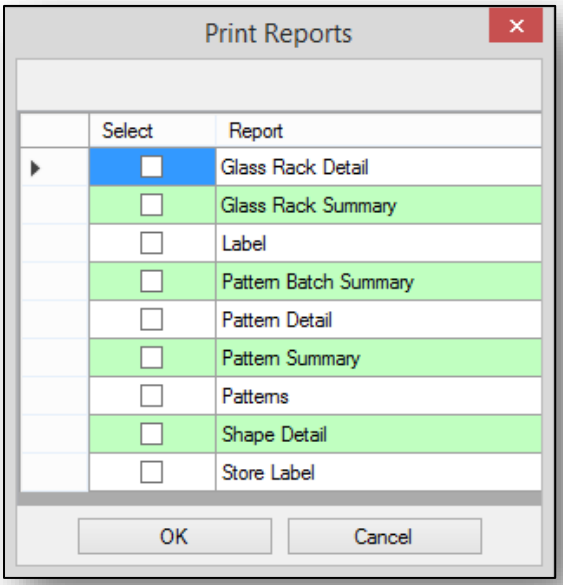
- **Description –** Part description from 'Inventory' under the 'Settings' menu on the 'Glass' tab (read only).
- **Width –** Width of the stock sheet from 'Inventory' under the 'Settings' menu (read only).
- **Height –** Height of the stock sheet from 'Inventory' under the 'Settings' menu (read only).
- **Thickness –** Thickness from 'Inventory' under the 'Settings' menu (read only).
- **Qty to Relieve –** Number of sheets to relieve. This field can be edited. When 'OK' is selected, this indicates the number of sheets that will be relieved from inventory.

Reports and Machine Files

At the bottom of the View Releases menu reports can be printed and previewed. Machine Files can be generated as well.



Selecting 'Print' will display a list of the reports also available from the Optimization tab in Interlayer Cutting. One or more reports can be selected to print.



Selecting 'Preview' will display a list of the reports also available from the Optimization tab in Interlayer Cutting to be previewed.

Note: 'Preview' is disabled if more than one release is selected.

Selecting 'Machine Files' will generate machine files for the selected release.

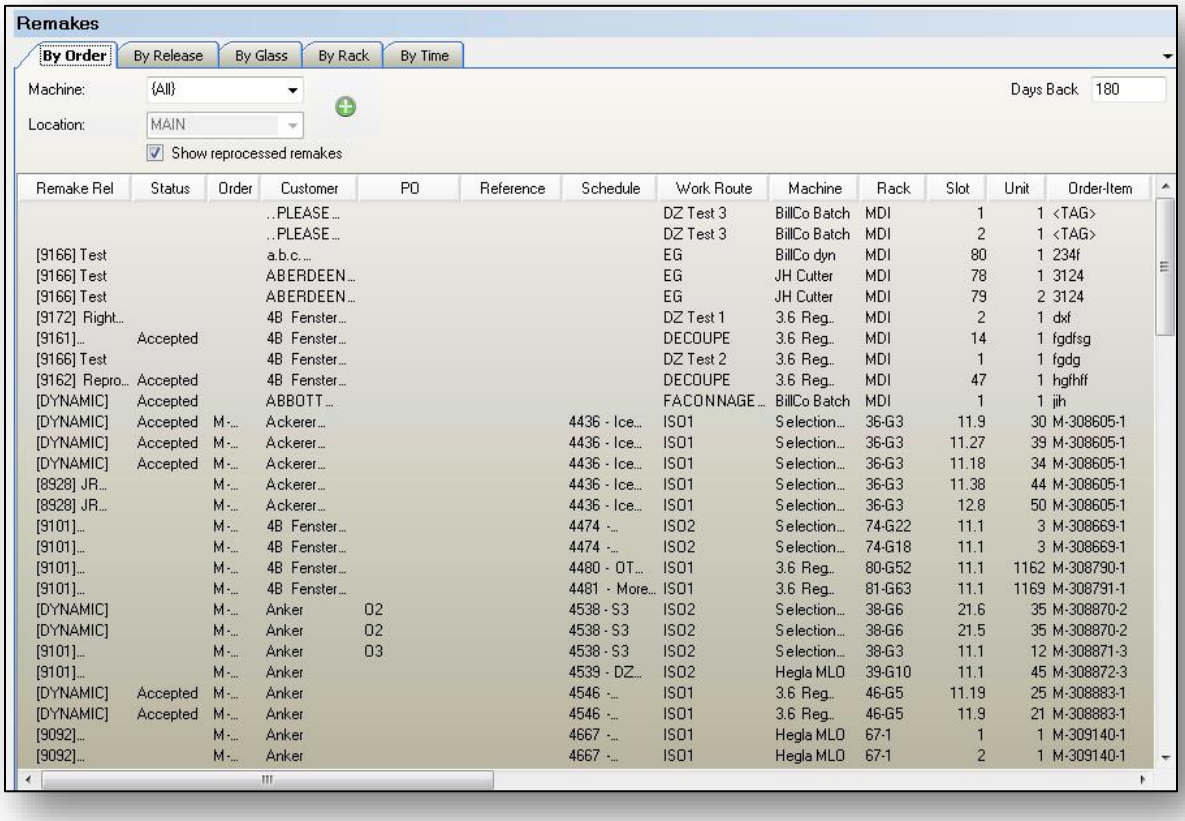
Remakes

The 'Remakes' page allows the user to view all remakes by order, release, glass, rack, or time.

Remakes

The 'Remakes' screen contains the following filters:

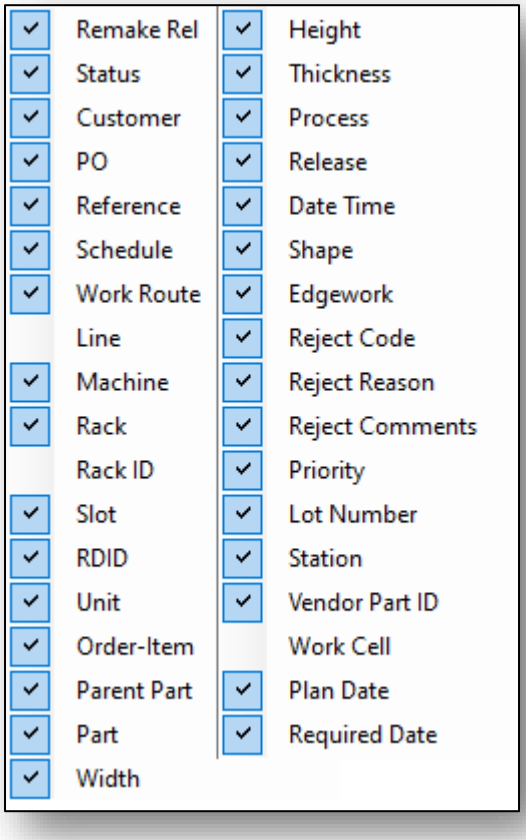
- **Machine –** The machine on which the remakes will be processed.
- **Location –** Filter to indicate from which location the remakes are found. This filter is 'read only' so the user cannot view remakes from other locations.
- **Show reprocessed remakes –** When checked, all remakes will be displayed—even those that have already been cut. When unchecked, only remakes that have not yet been cut will be shown. For a remake to be considered 'Reprocessed', it must actually be cut, so if a remake exists on a release but the release has not been cut, it will still be shown.
- **Days Back –** Number of days back to search for remakes. Based on the 'Date Time' of the remakes.



Remake Rel	Status	Order	Customer	PO	Reference	Schedule	Work Route	Machine	Rack	Slot	Unit	Order-Item
			..PLEASE...				DZ Test 3	BillCo Batch	MDI	1	1	<TAG>
			..PLEASE...				DZ Test 3	BillCo Batch	MDI	2	1	<TAG>
[9166] Test			a.b.c....				EG	BillCo dyn	MDI	80	1	234f
[9166] Test			ABERDEEN...				EG	JH Cutter	MDI	78	1	3124
[9166] Test			ABERDEEN...				EG	JH Cutter	MDI	79	2	3124
[9172] Right...			4B Fenster...				DZ Test 1	3.6 Reg..	MDI	2	1	dxf
[9161]...	Accepted		4B Fenster...				DECOUPE	3.6 Reg..	MDI	14	1	fgdfsg
[9166] Test			4B Fenster...				DZ Test 2	3.6 Reg..	MDI	1	1	fgdg
[9162] Repro...	Accepted		4B Fenster...				DECOUPE	3.6 Reg..	MDI	47	1	hgfhff
[DYNAMIC]	Accepted		ABBOTT...				FACONNAGE...	BillCo Batch	MDI	1	1	jih
[DYNAMIC]	Accepted	M-...	Ackerer...			4436 - Ice...	ISO1	Selection...	36-G3	11.9	30	M-308605-1
[DYNAMIC]	Accepted	M-...	Ackerer...			4436 - Ice...	ISO1	Selection...	36-G3	11.27	39	M-308605-1
[DYNAMIC]	Accepted	M-...	Ackerer...			4436 - Ice...	ISO1	Selection...	36-G3	11.18	34	M-308605-1
[8928] JR...		M-...	Ackerer...			4436 - Ice...	ISO1	Selection...	36-G3	11.38	44	M-308605-1
[8928] JR...		M-...	Ackerer...			4436 - Ice...	ISO1	Selection...	36-G3	12.8	50	M-308605-1
[9101]...		M-...	4B Fenster...			4474 -...	ISO2	Selection...	74-G22	11.1	3	M-308669-1
[9101]...		M-...	4B Fenster...			4474 -...	ISO2	Selection...	74-G18	11.1	3	M-308669-1
[9101]...		M-...	4B Fenster...			4480 - OT...	ISO1	3.6 Reg..	80-G52	11.1	1162	M-308790-1
[9101]...		M-...	4B Fenster...			4481 - More...	ISO1	3.6 Reg..	81-G63	11.1	1169	M-308791-1
[DYNAMIC]		M-...	Anker	02		4538 - S3	ISO2	Selection...	38-G6	21.6	35	M-308870-2
[DYNAMIC]		M-...	Anker	02		4538 - S3	ISO2	Selection...	38-G6	21.5	35	M-308870-2
[9101]...		M-...	Anker	03		4538 - S3	ISO2	Selection...	38-G3	11.1	12	M-308871-3
[9101]...		M-...	Anker			4539 - DZ...	ISO2	Hegla MLO	39-G10	11.1	45	M-308872-3
[DYNAMIC]	Accepted	M-...	Anker			4546 -...	ISO1	3.6 Reg..	46-G5	11.19	25	M-308883-1
[DYNAMIC]	Accepted	M-...	Anker			4546 -...	ISO1	3.6 Reg..	46-G5	11.9	21	M-308883-1
[9092]...		M-...	Anker			4667 -...	ISO1	Hegla MLO	67-1	1	1	M-309140-1
[9092]...		M-...	Anker			4667 -...	ISO1	Hegla MLO	67-1	2	1	M-309140-1

The tabs on the 'Remakes' grid display all the remakes, but the tabs exist, and the columns are arranged so the user can easily find the correct item. Remakes are shown 'By Order', 'By Release', 'By Glass', 'By Rack', and 'By Time'.

The following columns exist in each of the tabs in the 'Remakes' grid. To see a list of all available column headings, right click on any column heading. The user can choose which columns to display by clicking beside the desired column headings from the following:



The following columns are available in the 'Remakes' screen:

- **Remake Rel *(fixed column)*** – Release containing the remake.

  Note: The 'Remake Release' is not the original release that spawned the remake

- **Status *(fixed column)*** – Status of the remake. Locked as the second column on all tabs.
  - **Accepted –** Remake has been reprocessed and accepted
  - **Rejected –** Remake has been reprocessed and rejected. When a remake gets rejected a new remake for this unit is generated and the previous record remains 'Rejected' as this status is considered 'Reprocessed'.
  - **Blank –** Remakes that have not been reprocessed.

- **Customer –** Customer who ordered the unit that is being remade.
- **PO –** Purchase order identifier from the unit being remade.
- **Reference –** Customer reference configured in FeneVision Core.
- **Schedule –** Schedule from Core containing the lite that needs remade.
- **Work Route –** Identifies the work route to which the rack is assigned.

- **Line *(hidden by default)* –** Opti production line, like the 'Work Route' from Core. Intended for use when Opti-Glass is being used as a standalone product.
- **Machine –** Cutting machine lite was originally cut at. The machine gets assigned to the lite when it is accepted or rejected at Opti-Break. If the lite was rejected in FeneVision Opti-Temp, it will still show the Cutting Machine. If the lite was cut using a different machine that it was optimized for it will still be assigned the machine that cut it.
- **Rack -** Rack prefix configured in Core in 'Containers' setup and part of the Schedule ID.
- **Rack ID *(hidden by default)* –** Opti rack ID. This field can be used when writing SSRS reports.

  Note: The 'Rack ID' does not match the rack ID generated through Core.

- **Slot -** The position the remake will be placed on the rack once it is cut.

  For example, with stacked racks, the 'Slot' will read 'SideStack.Postion' meaning that if it reads '12.3' it means 'Side 1, Stack 2, Position 3'. This data originates from the rack that is generated during schedule release in Core.

- **RDID –** Rack Detail ID number. This number is used as a unique identifier in the RackDetail table.
- **Unit –** Unit ID for the lite generated during schedule release in Core.
- **Order-Item –** 'Order number-line item number' from 'Order Entry' in Core.
- **Parent Part –** This indicates the 'Parent' part for the glass type of the remake. The 'Parent' part is assigned on the 'Assignment Tab' that is set in 'Inventory' setup.
- **Part –** The part number from 'Parts' setup in Core. This is the stock size used when the lite was originally rejected.
- **Width –** Width of the lite from 'Order Entry' in Core.
- **Height –** Height of the lite from 'Order Entry' in Core.
- **Thickness –** Thickness of the lite from 'Order Entry' in Core.
- **Process –** Process under which this lite falls. Configured in the database. *Contact FeneTech for more information.*
- **Release –** Release on which the lite was originally optimized. Will display 'MDI' if the remake was entered manually.
- **Date Time –** Identifier noting the date and time of the lite was rejected.
- **Shape –** Shape Number and shape dimensions of the lite. This is derived from the option structure in 'Order Entry' in Core.

  For example, if the lite is shape 1 which requires an H1 value and H1 is set to 10 inches, this column will display 'SH001, H1=10'.

  - **Edgework –** Displays all edgework codes applied to this lite. This value originates from option structure in 'Order Entry' in Core.
- **Reject Code –** The code selected when this lite was rejected.
- **Reject Reason –** Reason the lite was rejected.
- **Reject Comments –** Comment entered when the lite was rejected. To get a reject comment from FeneVision Opti-Temp or Opti-Break the station must be assigned reject codes.
- **Priority –** Priority assigned when the lite was rejected at Opti-Break. These are assigned to reject codes in Reject Settings. Priorities include 'Un-Assigned', 'Manual', 'Normal', 'Re-release', and 'Dynamic'.
- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the FeneVision Opti-Break user.
- **Station –** Station at which the rejection occurred.
- **Vendor Part ID -** Alpha-numeric identifier of the vendor part. This is different from the Part number in that parts could potentially have the same number; the 'Vendor Part ID', however, distinguishes two of the same parts from different vendors.

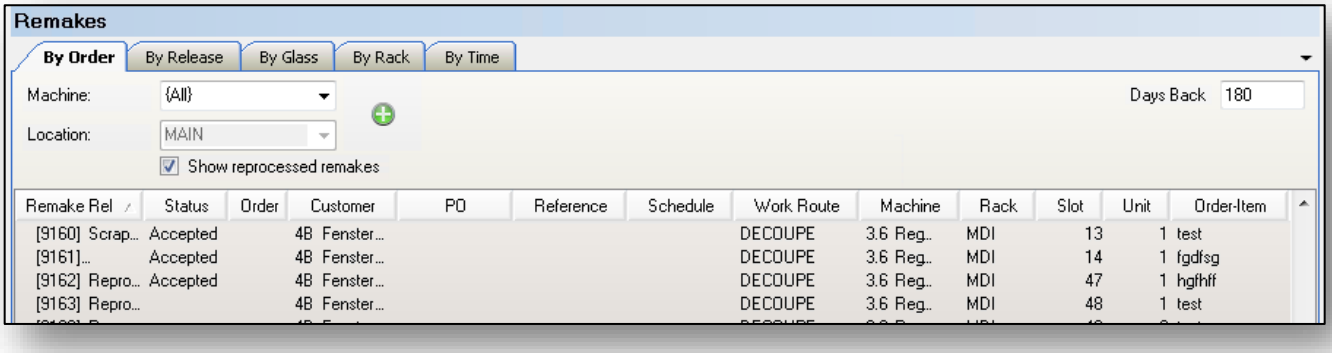
- **Work Cell *(hidden by default)* –** The first production work cell assigned to the rack.
- **Plan Date –** Plan date associated with the original release. Manual remakes will not receive a 'Plan Date' as it was not processed in Core.
- **Required Date –** Date that item must be processed by in order to make sure the order can be completed by the date specified in Order Entry.
-  – Located near the far-right side of the 'Remakes' screen, this deletes the remake from the Opti-Glass database. This icon will only appear for remakes that have not been reprocessed because reprocessed remakes cannot be deleted.

  Note: If a rejected lite is reprocessed through Core it will not appear in the 'Remake's screen in Opti-Glass.

By Order

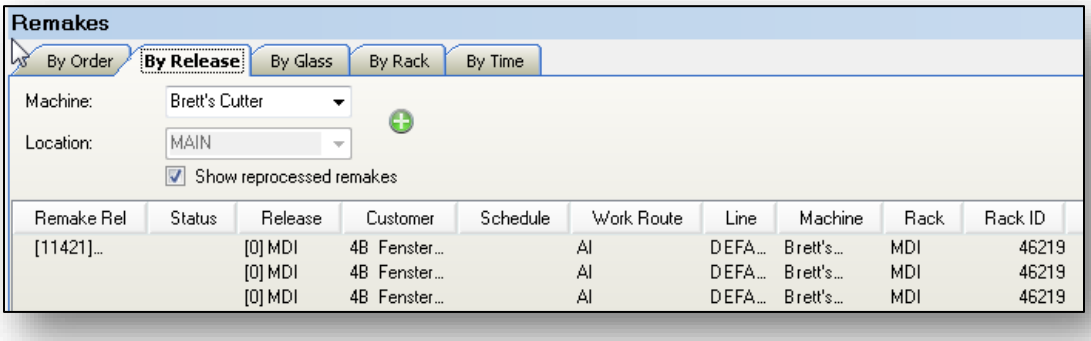
In the 'By Order' tab, the 'Order' column cannot be hidden. This tab shows the order number as the third column to make it easier to sort by order.

Note: The user can return to the 'Remakes Grid' for descriptions of each of the columns in the 'By Order', 'By Release', 'By Glass', 'By Rack', and 'By Time' tabs.



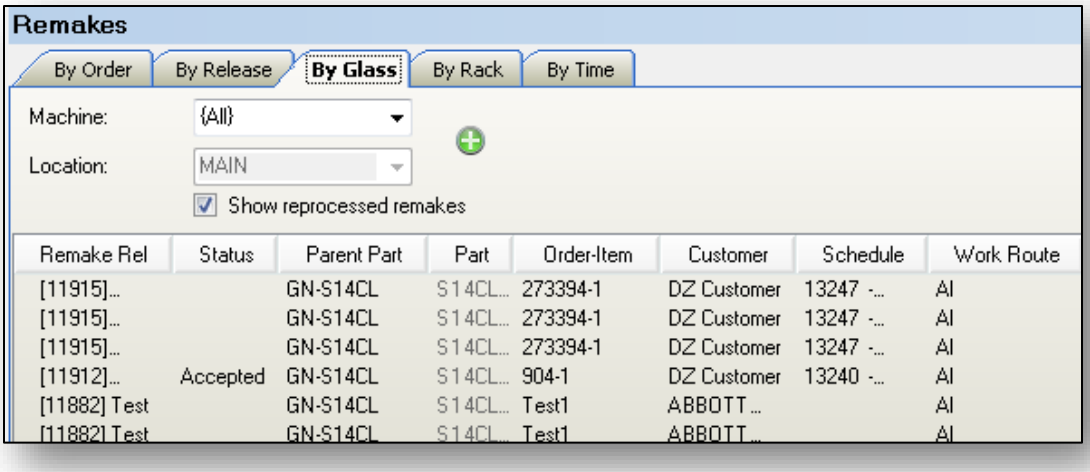
By Release

In the 'By Release' tab, the 'Release' column cannot be hidden. This tab shows the release number as the third column to make it easier to sort by release.



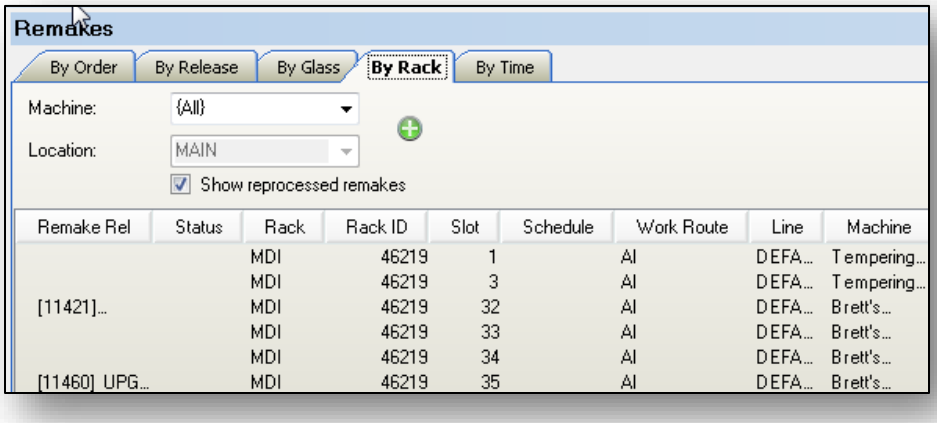
By Glass

This tab shows the 'Parent Part' as the third column and the 'Part' as the fourth to make it easier to sort by glass.



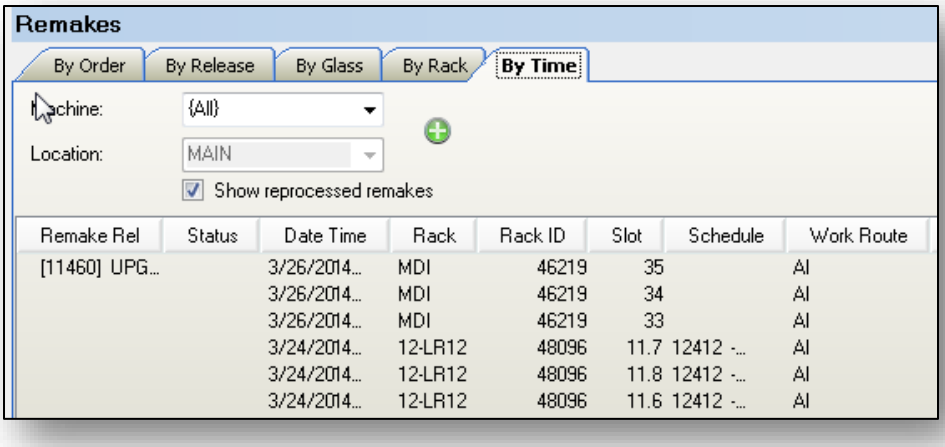
By Rack

In the 'By Rack' tab, the 'Rack' column cannot be hidden. This tab shows the rack as the third column to make it easier to sort by rack.



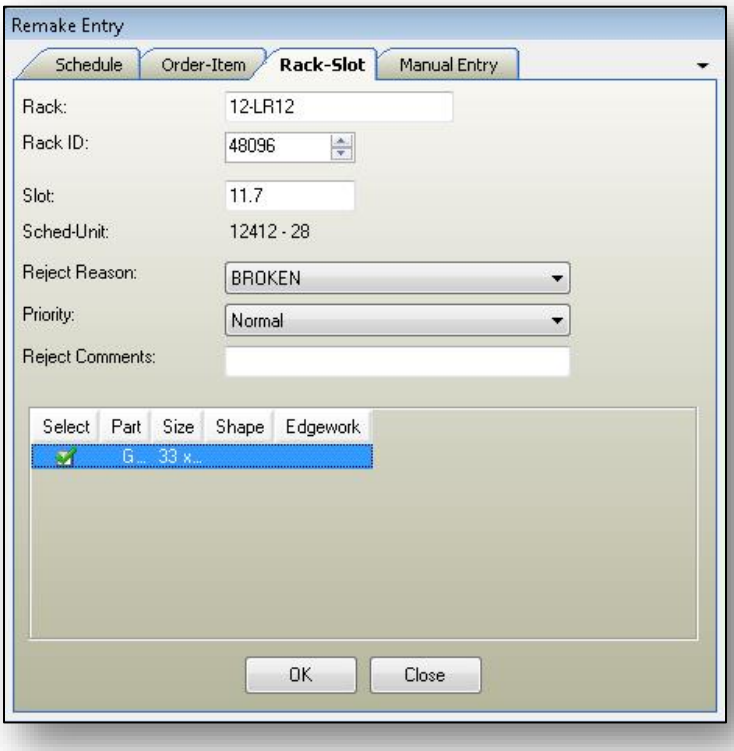
By Time

In the 'By Time' tab, the 'Date Time' column cannot be hidden. This tab shows the 'Date Time' as the third column to make it easier to sort by time the reject was created.



Remake Entry

Generally, 'Remakes' are created by a rejection occurring on the production floor. However, the user can create a remake in Opti-Glass through 'Remake Entry'. Select 'Add' to access the 'Remake Entry' screen.



To create a remake, complete the following steps:

1. Enter all necessary information (this varies for different tabs; see the 'Schedule' tab for more information).
2. Select a 'Reject Reason'.

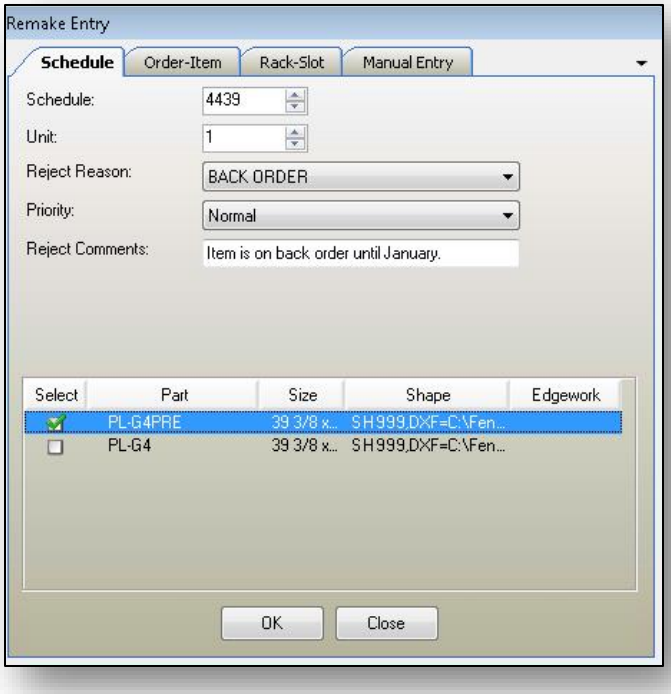
   Note: 'Reject Reasons' are set up and assigned in Core.

3. Select a 'Priority'. Reject priorities are described in 'Rejects'.
4. Enter a 'Reject Comment' *(optional)*.
5. Check the lite to remake from the bottom list and select 'OK'

Note: To be able to remake a lite, the lite must have been processed.

Schedule

The 'Schedule' tab allows the user to enter remakes by schedule.



- **Schedule –** Schedule number containing the intended remake.
- **Unit –** Unit number of the intended remake.

  Note: As soon as a valid schedule and unit is entered, the bottom list will be populated with the corresponding lites.

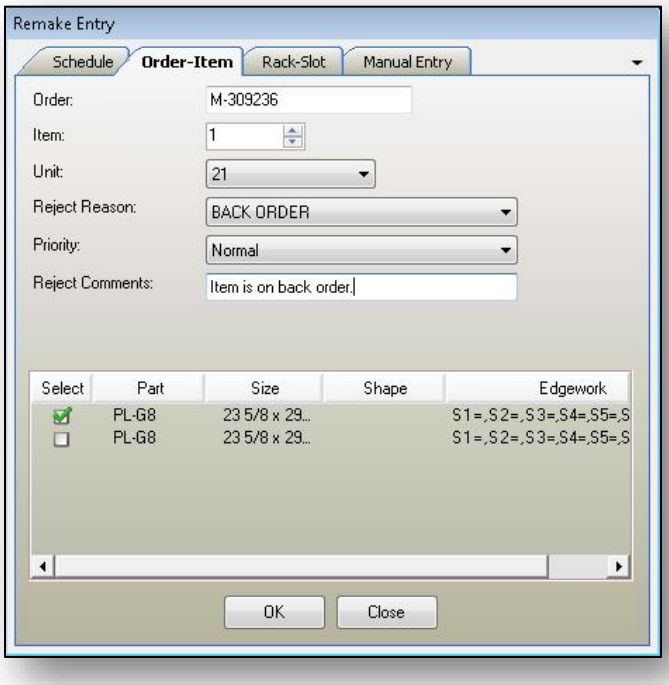
- **Reject Reason –** Drop-down to indicate the reject reason (configured in Core and synced to Opti-Glass).
- **Priority –** Drop-down to indicate remake 'Priority'.
  - **Unassigned –** Not reprocessed until priority is set to one of the other levels.
  - **Manual –** Remake will be processed manually.
  - **Normal –** The remake is reprocessed as if a 'Reject Code' is not being used. The remake could be reprocessed automatically via 'Dynamic Mode' or included in another release.
  - **Re-Release –** Reprocessing will require that the remake be included in another release.
  - **Dynamic** – Reprocessed in 'Dynamic Mode' and not available to be included in another release.

- **Reject Comments –** Field to enter any comments associated with the reject.

To add the remake, select 'OK'. Selecting 'Close' will cancel the selection.

Order-Item

The 'Order-Item' tab allows the user to enter remakes by the order number and line item.



- **Order –** Order number of intended remake.
- **Item –** Line item of intended remake.
- **Unit –** Unit number of intended remake. This drop down is populated as soon as a valid Order and Item are entered.
- **Reject Reason –** Dropdown configured in Core that allows the user to provide a reject reason for the item.

  Note: As soon as a valid order, item, and unit is entered, the bottom list will be populated with the corresponding lites.

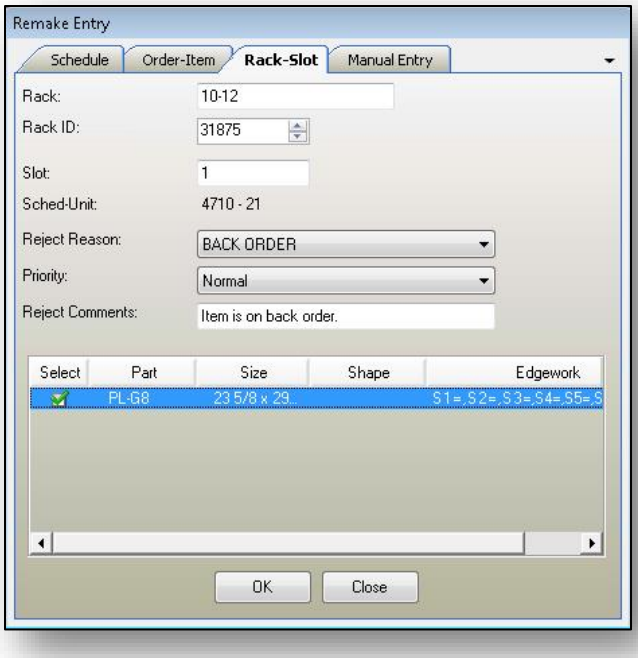
- **Reject Reason –** Drop-down to indicate the reject reason (configured in Core and synced to Opti-Glass).
- **Priority –** Drop-down to indicate remake 'Priority'.
  - **Unassigned –** Not reprocessed until priority is set to one of the other levels.
  - **Manual –** Remake will be processed manually.
  - **Normal –** The remake is reprocessed as if a 'Reject Code' is not being used. The remake could be reprocessed automatically via 'Dynamic Mode' or included in another release.
  - **Re-Release –** Reprocessing will require that the remake be included in another release.
  - **Dynamic –** Reprocessed in 'Dynamic Mode' and not available to be included in another release.

- **Reject Comments –** Field to enter any comments associated with the reject.

To add the remake, select 'OK'. Selecting 'Close' will cancel the selection.

Rack-Slot

The 'Rack-Slot' tab allows the user to enter remakes by the rack ID and slot number.



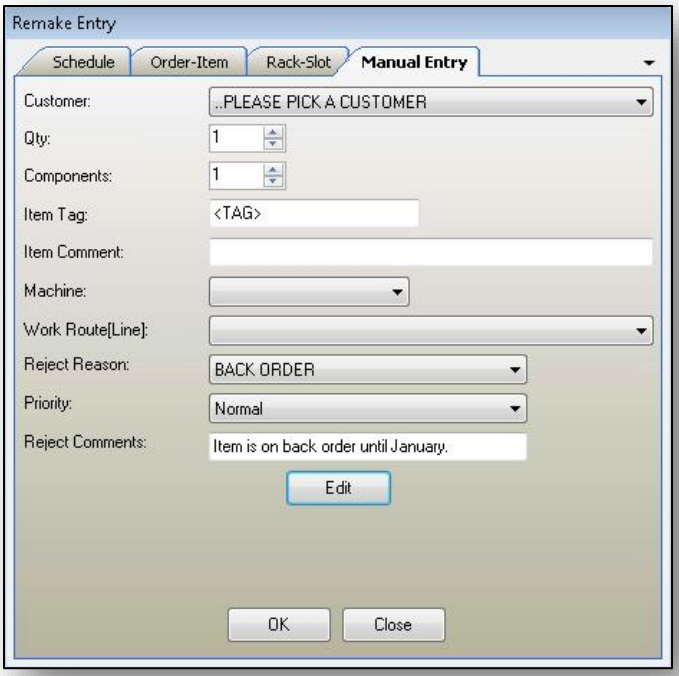
- **Rack–** Rack tag of intended remake. 'Rack' be found in the 'Rack' column of the 'Racks' tab on 'Cutting' screen. See 'Racks'.
- **Rack ID –** Rack ID of the intended remake. The rack ID can be found in the 'Rack ID' column of the 'Racks' tab of the 'Cutting' screen. See 'Racks'.
- **Slot –** Slot number of intended remake. The slot number can be found in the 'Slot' column of the 'Rack Details' screen. See 'Rack Details'.
- **Sched-Unit –** The schedule that contains the selected item. This is automatically populated once the user enters the 'Rack', 'Rack ID', and 'Slot'.
- **Reject Reason –** Drop-down to indicate the reject reason (configured in Core and synced to Opti-Glass).
- **Priority –** Drop-down to indicate remake 'Priority'.
  - **Unassigned –** Not reprocessed until priority is set to one of the other levels.
  - **Manual –** Remake will be processed manually.
  - **Normal –** The remake is reprocessed as if a 'Reject Code' is not being used. The remake could be reprocessed automatically via 'Dynamic Mode' or included in another release.
  - **Re-Release –** Reprocessing will require that the remake be included in another release.
  - **Dynamic –** Reprocessed in 'Dynamic Mode' and not available to be included in another release.

- **Reject Comments –** Field to enter any comments associated with the reject.

To add the remake, select 'OK'. Selecting 'Close' will cancel the selection.

Manual Entry

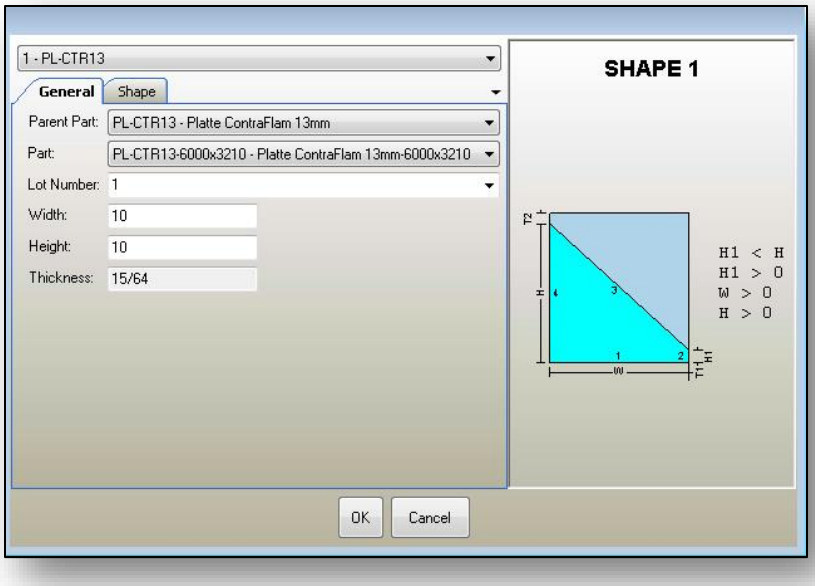
The 'Manual Entry' tab allows the user to create a remake from scratch. Remakes created here will not be tied to a schedule from Core. This allows an Opti-Glass user to optimize a lite that needs cut without having to go back to Core.



- **Customer –** Drop-down to select the customer (required).
- **Qty –** Number of remakes to create.
- **Components –** Number of lites in the remake. For example, a remake for a two lite IG would have two components if both are to be remade.
- **Item Tag –** This will appear in the 'Order-Item' field when the remake is created (required).
- **Item Comment –** These comments can be placed on labels or other reports. This is the equivalent to an 'Item Comment' from Core, but since no actual order is tied to the remake, these do not appear anywhere else outside of Opti *(optional)*.
- **Machine –** Drop-down to indicate which cutting machine the remake will go through.
- **Work Route [Line] –** 'Work route' the remake will be assigned to with the desired 'Line' in [ ]. Descriptions of these can be found on the 'Racks' tab of 'Cutting' (required).
- **Reject Reason –** Drop-down to indicate the reject reason (configured in Core and synced to Opti-Glass).
- **Priority –** Drop-down to indicate remake 'Priority'.
  - **Unassigned –** Not reprocessed until priority is set to one of the other levels.
  - **Manual –** Remake will be processed manually.
  - **Normal –** The remake is reprocessed as if a 'Reject Code' is not being used. The remake could be reprocessed automatically via 'Dynamic Mode' or included in another release.
  - **Re-Release –** Reprocessing will require that the remake be included in another release.
  - **Dynamic –** Reprocessed in 'Dynamic Mode' and not available to be included in another release.

- **Reject Comments –** Field to enter any comments associated with the reject.
- 

– Selecting 'Edit' will allow the user to make any necessary changes to the item. The following screen will appear:



General Tab

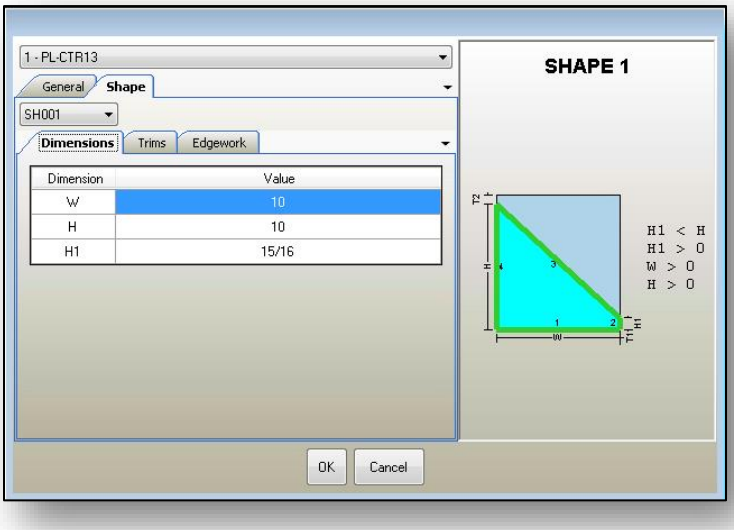
The user can select what glass part to use, and width and height of the lite. The thickness originates from 'Inventory' under the 'Settings' menu for the selected glass part. *This is read only.*

Shape Tab

The user can select a shape to use and specify the dimensions, trims, and edgework for the shape. Each of these tabs are shown below. The dropdown at the top of this screen allows the user to select an individual component to edit or all at once. This is useful in the case of an IG unit that has more than one component (lite).

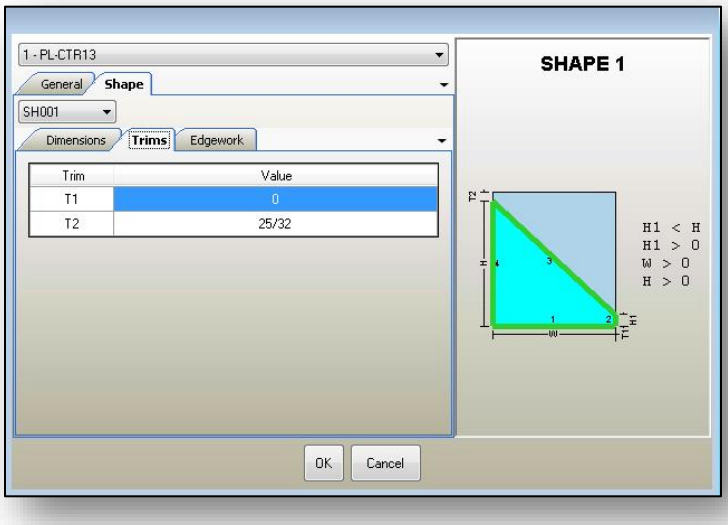
Dimensions

The 'Dimensions' tab in the 'Shape Editing' screen allows the user to change the dimensions of the shape.



Trims

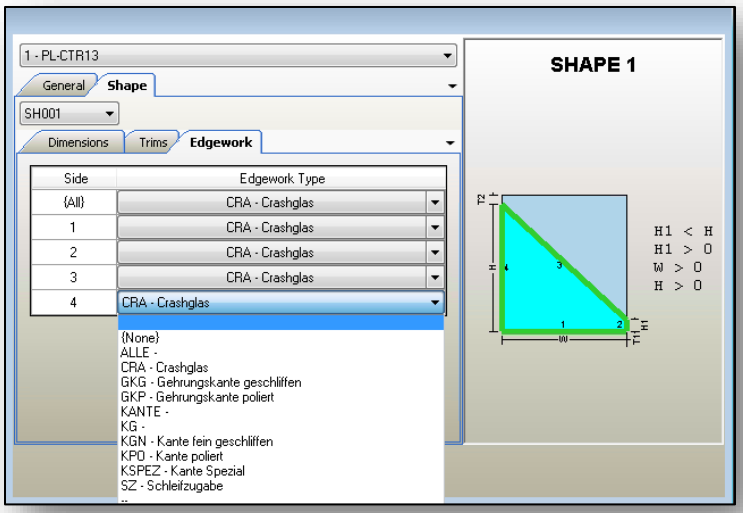
The ‘Trims’ tab allows the user to change the value of each of the shape trims.



Note: These are ‘Shape Trims’. The ‘Trims’ tab does not display if shape ‘SH000’ is selected.

Edgework

The ‘Edgework’ tab allows the user to add or edit the edgework on each side of the shape. The drop-down under the ‘Edgework Type’ column displays the selection of edgework types. The green outline in the image above represents the edgework on the lite.

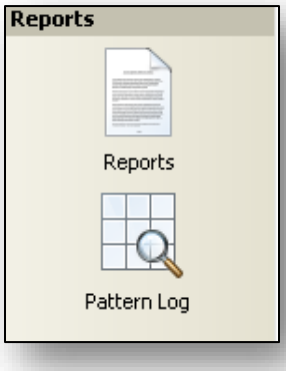


When finished entering the information on the ‘General’ and ‘Shape’ tab select ‘OK’ to save and return to ‘Remake Entry’; selecting ‘Cancel’ will return the user to the ‘Remake Entry’ screen.

Select ‘OK’ to add the remake. Selecting ‘Close’ will cancel the remake.

Reports

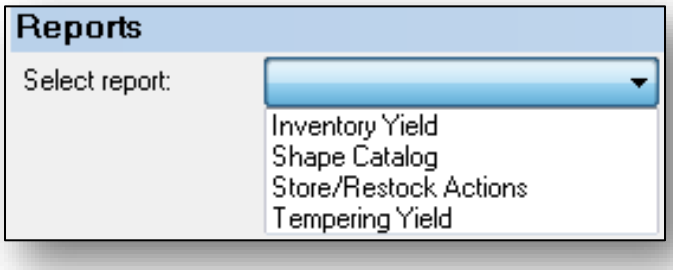
The ‘Reports’ screen allows the user to view and print system reports not tied to a specific release. Custom reports can also be added through this screen. Users can also access the machine files of dynamically optimized patterns through the ‘Pattern Log’.



Reports

The ‘Reports’ menu allows the user to see summary information regarding inventory and tempering yields and store and restock actions. Additionally, the FeneVision Shape Catalog can be viewed here.

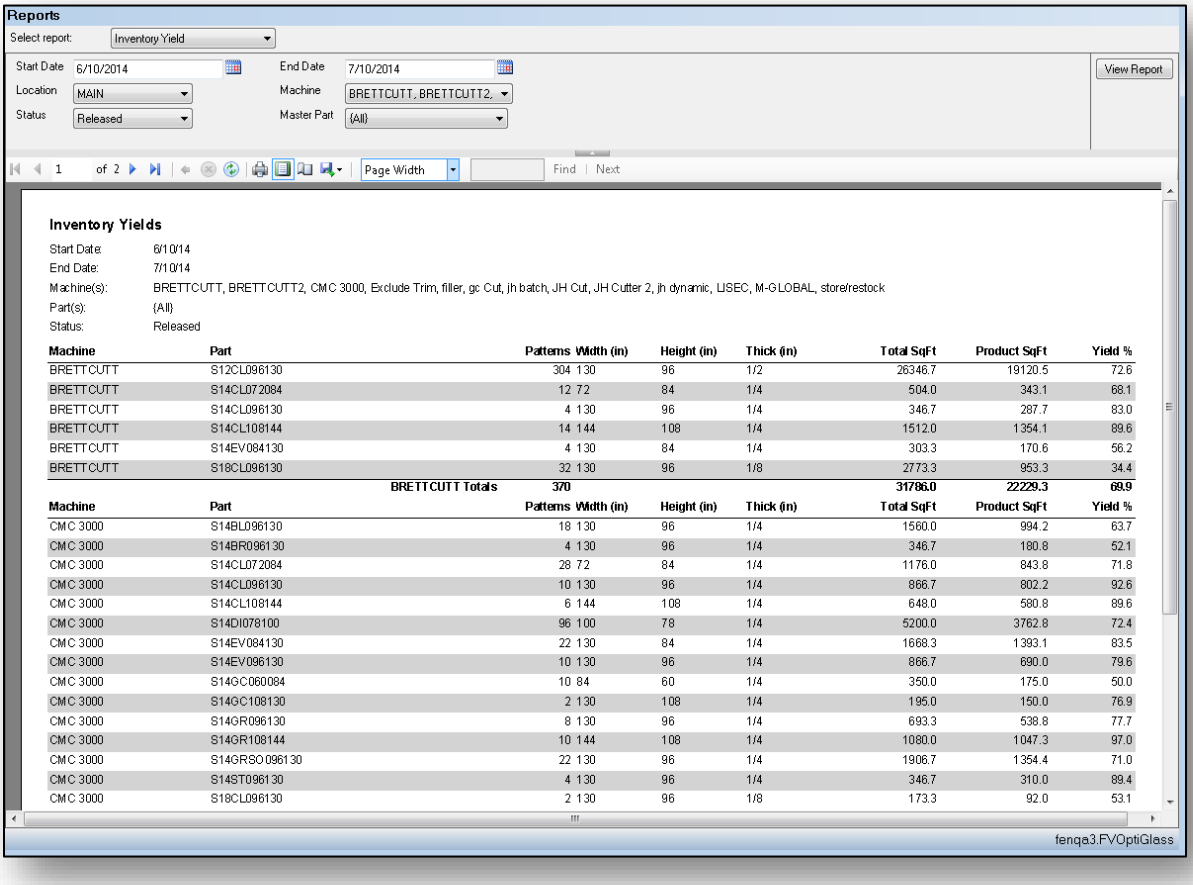
The ‘Select Report’ drop-down allows the user to choose from the following:



Inventory Yields

The ‘Inventory Yields’ report provides information regarding each ‘Cutting’ machine’s yields. The report’s filter allows the user to indicate a date range, location, release status, machine, and master part.

An example of the 'Inventory Yields' report is shown below.

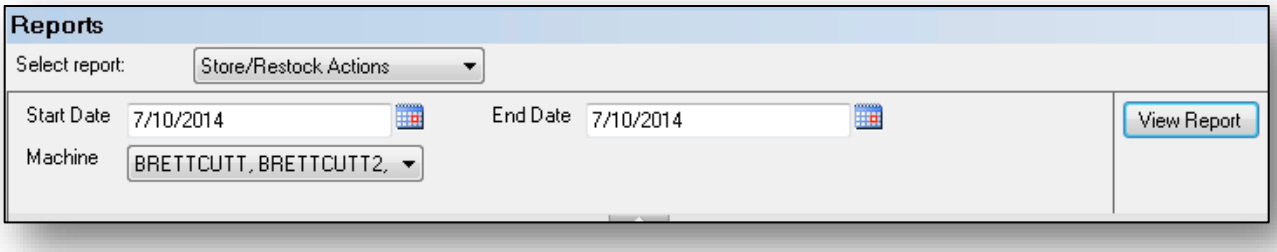


Shapes Catalog

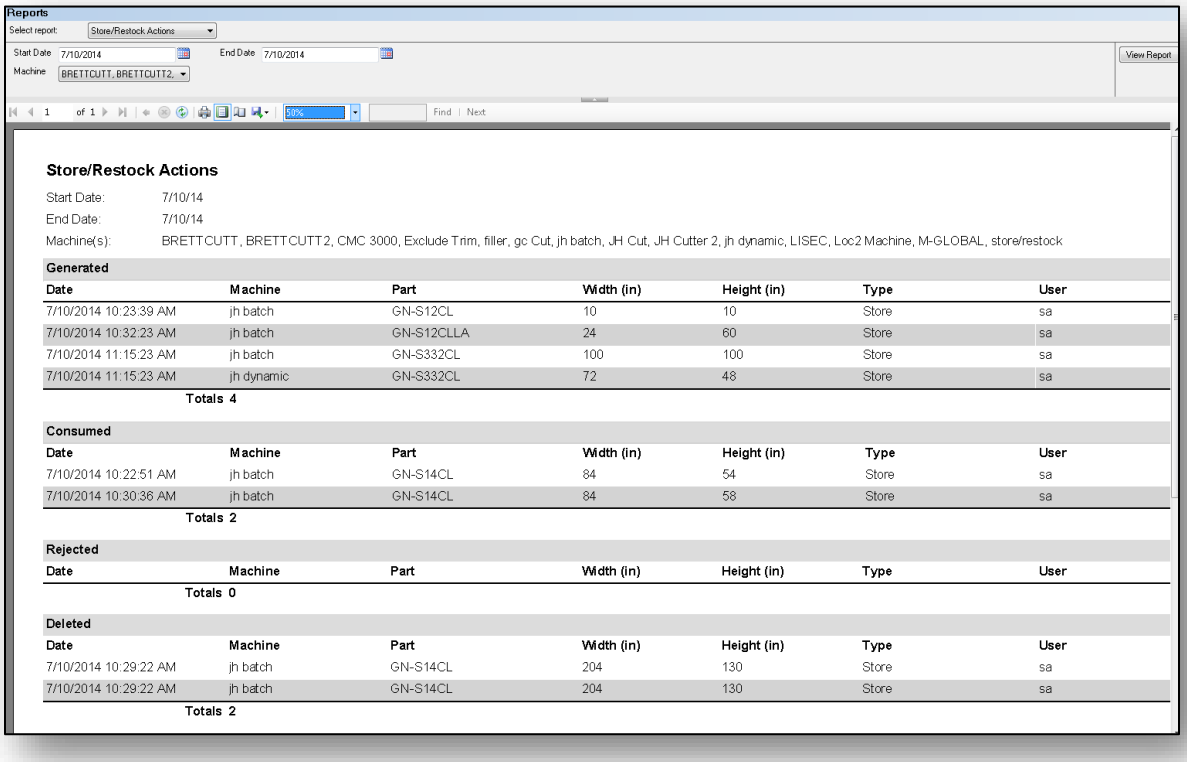
The 'Shapes Catalog' provides the user with an indexed list of shapes.

Store / Restock Actions

The 'Store / Restock Actions' report details each machine's store and restock capabilities. The report can be filtered using the following fields:



The image below represents an example of a 'Store / Restock Actions' report.



Reports

Select report: Store/Restock Actions

Start Date 7/10/2014 End Date 7/10/2014 View Report

Machine BRETTCUTT, BRETTCUTT2,

1 of 1 80% Find | Next

Store/Restock Actions

Start Date: 7/10/14

End Date: 7/10/14

Machine(s): BRETTCUTT, BRETTCUTT2, CMC 3000, Exclude Trim, filler, gc Cut, jh batch, JH Cut, JH Cutter 2, jh dynamic, LISEC, Loc2 Machine, M-GLOBAL, store/restock

Generated

Date	Machine	Part	Width (in)	Height (in)	Type	User
7/10/2014 10:23:39 AM	jh batch	GN-S12CL	10	10	Store	sa
7/10/2014 10:32:23 AM	jh batch	GN-S12CLLA	24	60	Store	sa
7/10/2014 11:15:23 AM	jh batch	GN-S332CL	100	100	Store	sa
7/10/2014 11:15:23 AM	jh dynamic	GN-S332CL	72	48	Store	sa
Totals 4						

Consumed

Date	Machine	Part	Width (in)	Height (in)	Type	User
7/10/2014 10:22:51 AM	jh batch	GN-S14CL	84	54	Store	sa
7/10/2014 10:30:36 AM	jh batch	GN-S14CL	84	58	Store	sa
Totals 2						

Rejected

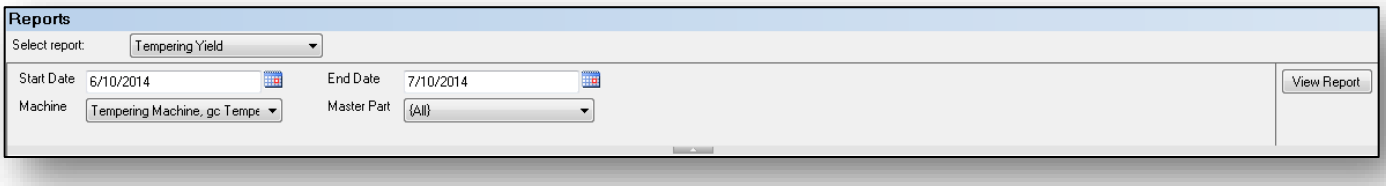
Date	Machine	Part	Width (in)	Height (in)	Type	User
Totals 0						

Deleted

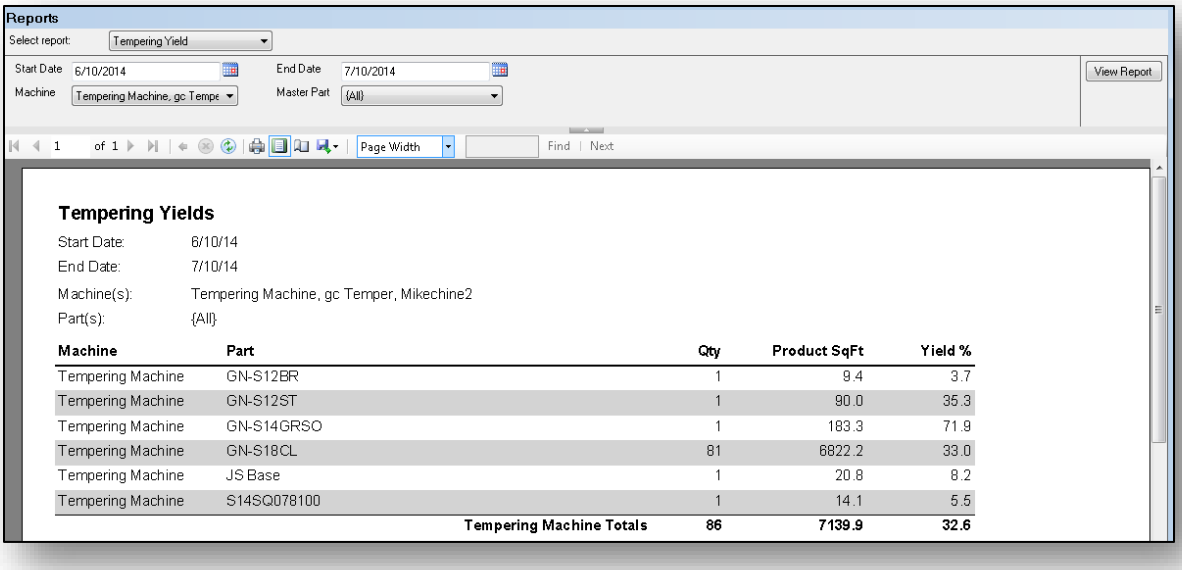
Date	Machine	Part	Width (in)	Height (in)	Type	User
7/10/2014 10:29:22 AM	jh batch	GN-S14CL	204	130	Store	sa
7/10/2014 10:29:22 AM	jh batch	GN-S14CL	204	130	Store	sa
Totals 2						

Tempering Yield

The 'Tempering Yield' report summarizes each tempering machine's yield for a given date range. The image below represents the filters available for the 'Tempering Yield' report:



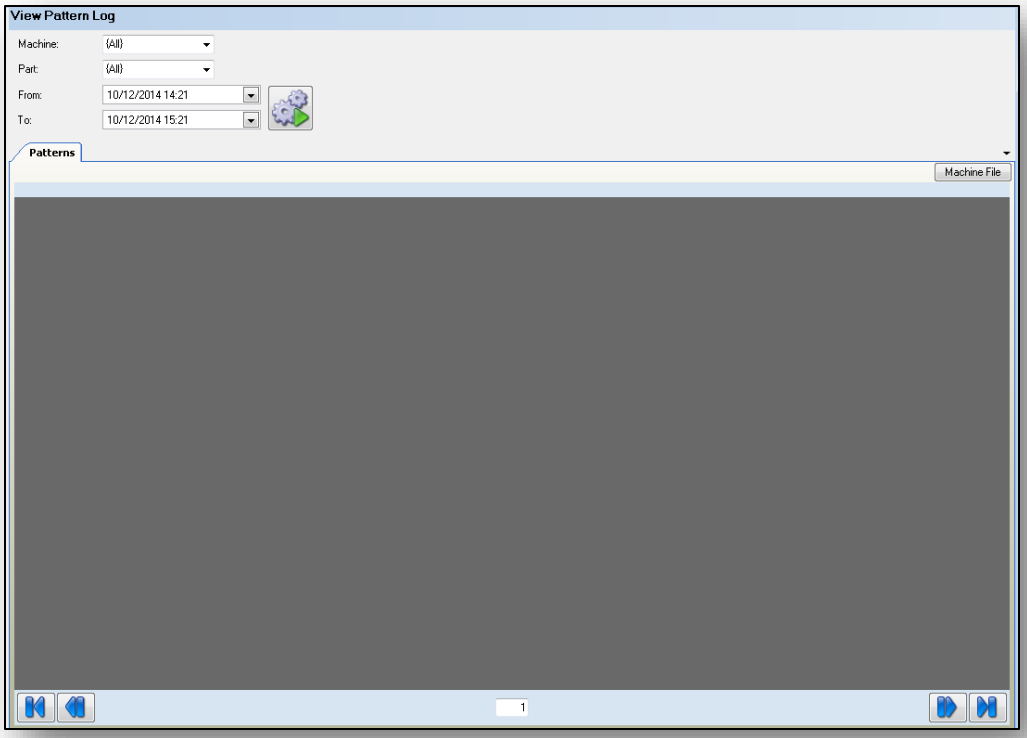
The image below represents a 'Tempering Yield' report.



Custom reports can be configured to appear in the 'Reports' drop-down. Contact FeneTech for assistance in configuring custom reports.

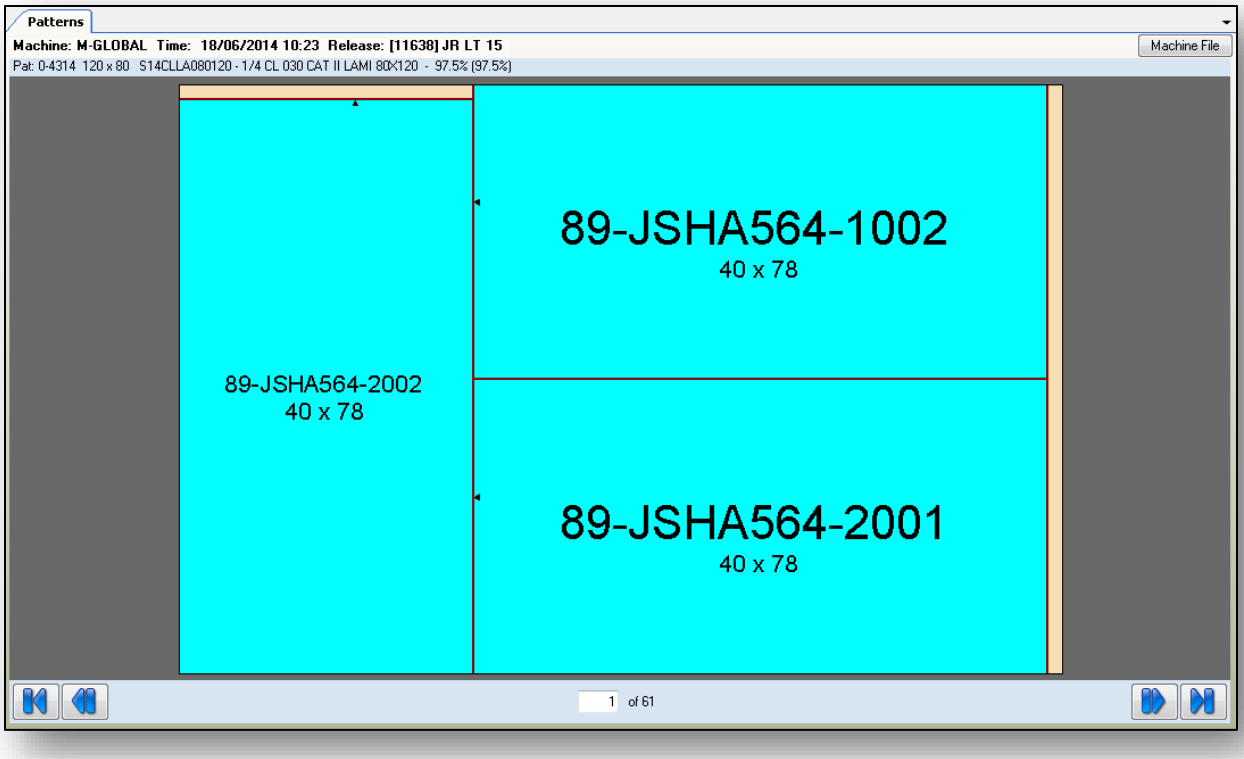
Pattern Log

Users can access 'Pattern Log' screen that displays dynamically generated patterns.

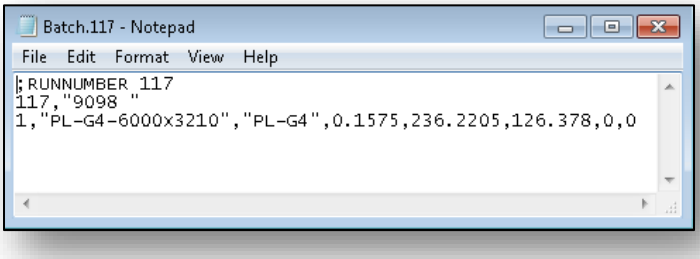


The following fields exist in the 'Pattern Log' screen:

- **Machine –** Drop-down to select which 'Cutting' machine's patterns to display. Select {All} to see patterns for all Cutting machines.
- **Part –** Drop-down to indicate which part to view in the 'Pattern Log'. Select {All} to see patterns for all parts.
- **From / To –** Date Range. Select the arrow to view a calendar from which to indicate the date range.
- **Patterns –** Screen that displays each pattern indicated in the date range from the machine indicated. Part information includes part identifier, dimensions, and yield.
-  – Once the 'Machine', 'Part' and date range are indicated, select this button to pull the patterns. If a large number of patterns are being selected then a loading bar will appear to inform the user of the progress of loading all the patterns. The patterns that meet the requirements will be displayed in the screen below.



- Machine File – Allows user to view the machine files for this particular pattern. Unlike generating machine files for releases, this does not save a file anywhere. Instead selecting the 'Machine Files' button generates a machine file for the specific pattern being viewed. This file opens in a text editor so that the user can see what is in it. The user can save the file through the text editor if necessary, otherwise the file disappears when the text editor is closed. This feature exists for troubleshooting purposes.



Creating a Quote Optimization

To test the yield on certain orders, the user can create a quote or "test" optimization. See 'Creating a Test Optimization' to see the steps to create a quote optimization.

Additional Functionality

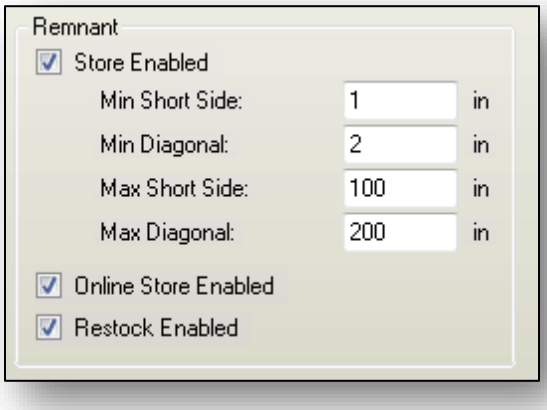
Store and Restock Functionality

The 'Store and Restock' functionality is designed to store excess glass from sheets that would otherwise be scrap. In both the 'Inventory Setup' section and the 'Machine Setup' section the user can specify the minimum and maximum size that can be stored.

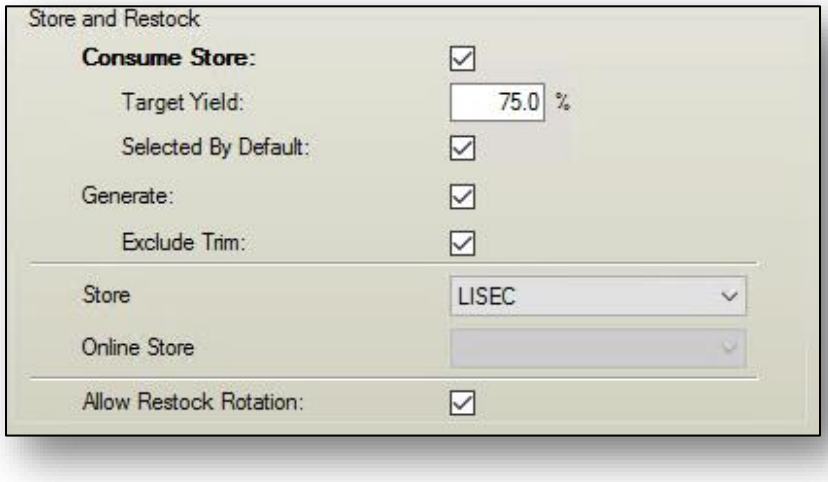
Follow the steps outlined below to enable the 'Glass Store' function:

1. Select the 'Settings' menu at the bottom left of the screen. Then select 'Inventory'. Navigate to the 'Stock Sizes' tab and select the 

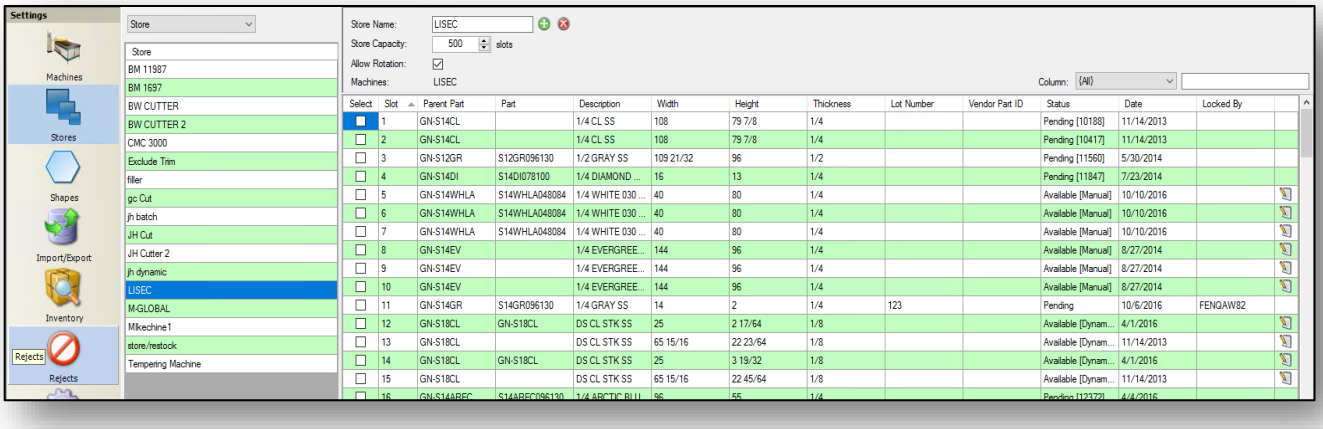
tab.
2. In the 'Remnant' section of the 'Default Data' tab, check 'Store Enabled' to enable the 'Consume Store' functionality.
3. Enter the minimum and maximum short side dimensions and the minimum and maximum diagonal dimensions to indicate the size of remnants that can be stored in the system.



4. Select 'Settings' >> 'Machines'. In the 'Machines Setup' screen under the 'Optimization' tab, there exists a section called 'Store and Restock'.



5. Once either 'Consume Store' or 'Generate' has been checked in the 'Optimization' tab and the 'Store' drop-down is specified, the 'Store' setup will become active for that location. This screen shows a list of the stored pieces currently in the remnants rack. The user can manually remove remnants if they are broken or are no longer in the rack.



6. If the status of the 'Store' part is 'Available, the user can remove or manually edit any part listed in the 'Store' setup screen. In the example represented by the image below, the user can see how the 'Parent Part' number, in addition to the 'Part' number and 'Lot Number' can be changed with the use of a drop-down menu. The other fields can be manually edited.

7. As shown in the image above, the remnant is labeled S-8, indicating that the stored remnant will be placed in slot 8. The remnant is now listed in the 'Store' inventory.

Status

Once 'Store' is generated, the piece will be assigned a 'Status'. The 'Status' can be seen on the 'Store' tab of 'Machines' Setup.

- **Pending –** When a 'store' piece is first generated on a release it receives a status of 'Pending'. It will remain 'Pending' until the pattern is broken out at FeneVision Opti-Break. 'Pending' pieces cannot be edited or consumed.

  Note: In 'Dynamic' mode 'store' is generated in Opti-Break so they will never receive a status of 'Pending' they will immediately become 'Available'.

- **Available –** Once a 'Store' piece is broken out at Opti-Break, it becomes 'Available'. This means it can be consumed by another release. Additionally, a 'Store' piece can be edited in the 'Store' tab of 'Machines' setup.
- **Optimized –** When a 'Store' piece is consumed on a release, but the release has not yet been cut, its status will be 'Optimized'. 'Store' pieces with a status of 'Optimized' cannot be edited but remain in the store slot until the pattern is cut. When the pattern is cut the 'Optimized' piece becomes 'Used' and will no longer be visible in any Opti screens *(in 'Dynamic' mode 'Store' is consumed in Opti-Break)*.

  Note: In the 'Store' tab of the 'Machines' setup screen, the user can print store labels for each store piece and also transfer store between machines.

Filler Functionality

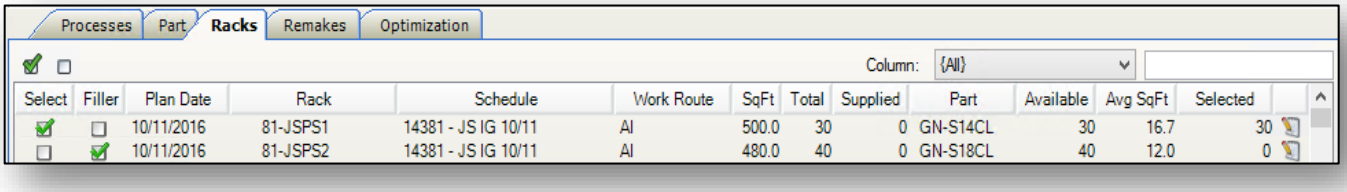
The 'Filler' functionality allows scrap space on patterns to be used to cut future production. This functionality can improve yields. If a lite is included in a release as 'Filler', it is considered 'Optional', meaning that if the algorithm is unable to place it without increasing the number of patterns, then it will be removed from the release. 'Filler' lites take priority over generating 'Store' or 'Restock'.

Note: Configuring 'Filler' is different in 'Batch' mode and 'Dynamic' mode.

Batch Mode

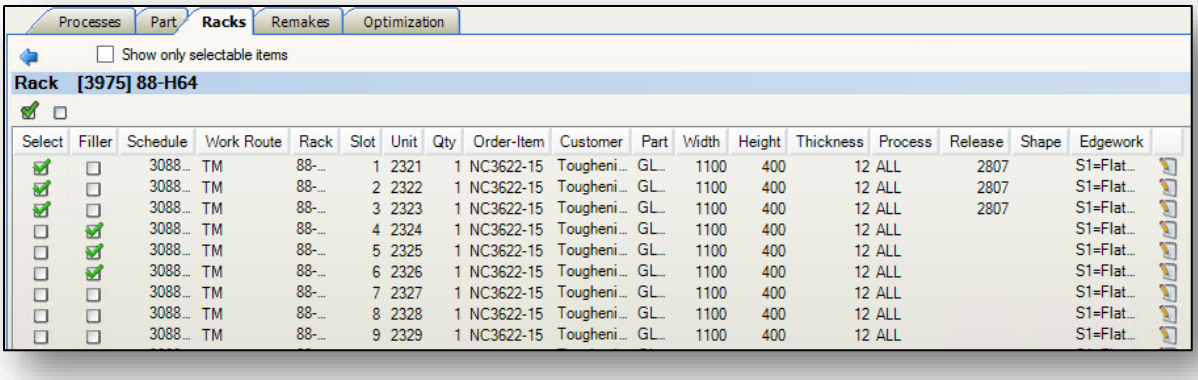
When the machine is in 'Batch' mode 'Filler' lites are optimized with the production lites in FeneVision Opti-Glass. In this mode there will be a 'Filler' checkbox next to the 'Select' checkbox on the 'Racks' tab in the 'Cutting' screen. To use the 'Filler' functionality in 'Batch' mode, navigate to 'Releases' >>'Cutting' and create a release.

1. On the 'Racks' tab check 'Filler' for the racks that are to be included in the scrap.



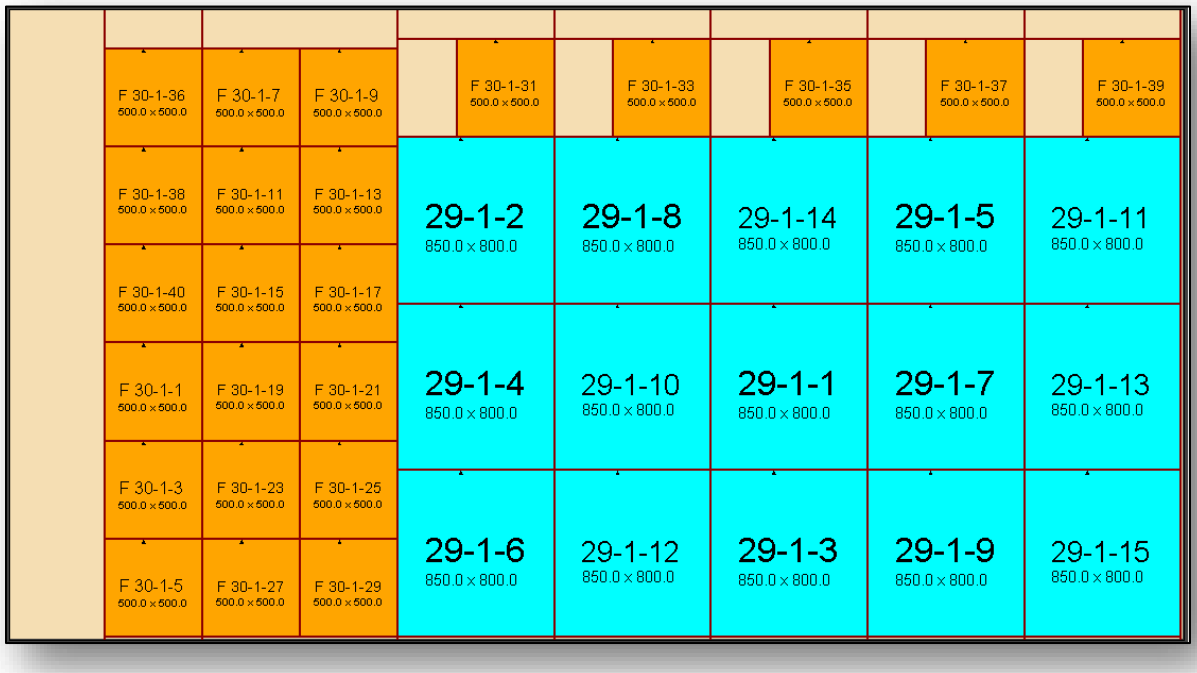
Select	Filler	Plan Date	Rack	Schedule	Work Route	SqFt	Total	Supplied	Part	Available	Avg SqFt	Selected
☑	☐	10/11/2016	81-JSPS1	14381 - JS IG 10/11	AI	500.0	30	0	GN-S14CL	30	16.7	30
☐	☑	10/11/2016	81-JSPS2	14381 - JS IG 10/11	AI	480.0	40	0	GN-S18CL	40	12.0	0

Alternatively, if the user would like to use part of a selected rack for fillers, selecting the  icon will allow the user to edit each individual unit on the rack. Here, the user may select which units are to be used as production ('Select') and which units are to be used as 'Filler', as well as unchecking the units not to be considered for the current release.



Select	Filler	Schedule	Work Route	Rack	Slot	Unit	Qty	Order-Item	Customer	Part	Width	Height	Thickness	Process	Release	Shape	Edgework
☑	☐	3088...	TM	88-...	1	2321	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL	2807		S1=Flat...
☑	☐	3088...	TM	88-...	2	2322	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL	2807		S1=Flat...
☑	☐	3088...	TM	88-...	3	2323	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL	2807		S1=Flat...
☐	☑	3088...	TM	88-...	4	2324	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...
☐	☑	3088...	TM	88-...	5	2325	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...
☐	☑	3088...	TM	88-...	6	2326	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...
☐	☐	3088...	TM	88-...	7	2327	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...
☐	☐	3088...	TM	88-...	8	2328	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...
☐	☐	3088...	TM	88-...	9	2329	1	NC3622-15	Toughen...	GL...	1100	400	12	ALL			S1=Flat...

2. Optimize the release.



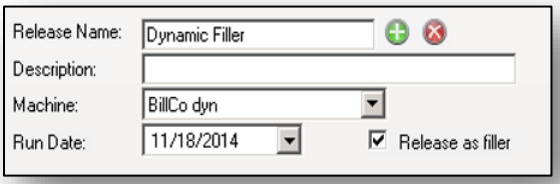
The image above shows that 23 lites were included as filler, but the rack selected as 'Filler' contains 40 lites. The remaining 17 lites will be available to add onto another release.

Note: In the image above, the 'Filler' lites were configured to appear in orange while production lites are shown in aqua. This was configured only for the purpose of this example. By default, both types of lites will appear in aqua. See 'View Cutting' in the 'Setup' section for the default colors.

Dynamic Mode

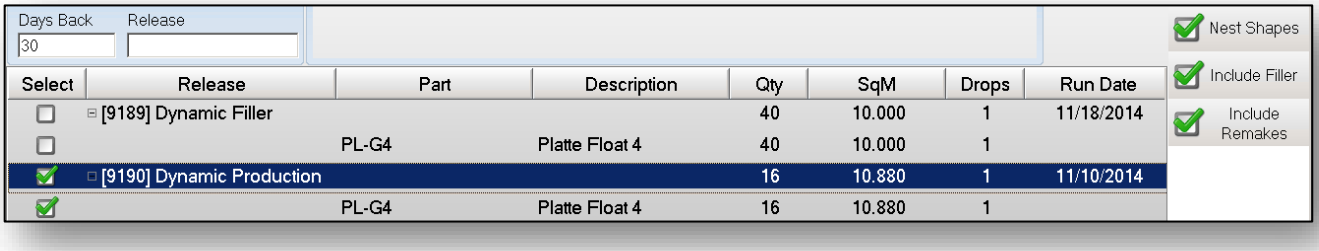
When the machine is in 'Dynamic' mode, 'Filler' lites are pulled onto patterns in FeneVision Opti-Break. To indicate what lites constitute a 'Filler', the user must create a 'Filler Release' in Opti-Glass. To use the 'Filler' functionality in 'Dynamic' mode, go to 'Releases' >> 'Cutting' and create a release.

1. Check ‘Release as filler’ on the header.



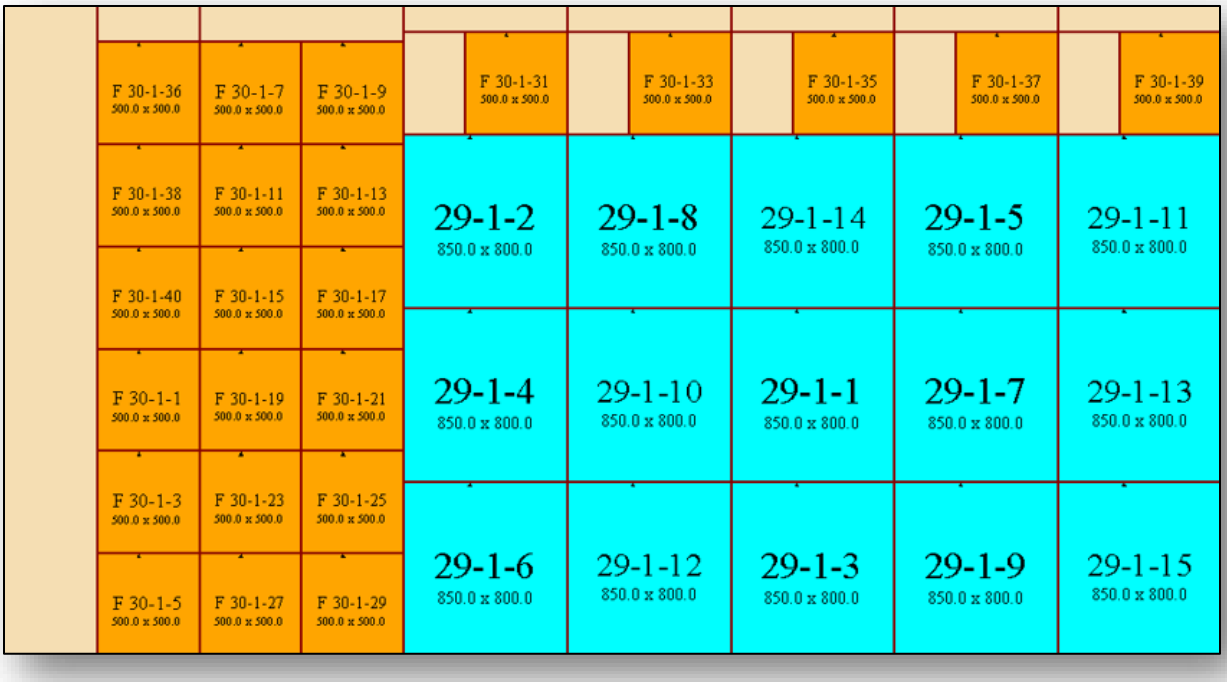
Note: Normally the ‘Run Date’ for a ‘Filler Release’ should be set to a date in the future.

2. Optimize the release. At this point the lites on this release are in the system as ‘Filler’ and can be pulled onto a pattern in Opti-Break.
3. In Opti-Break select another release that contains the same glass type as the ‘Filler’ lites.
4. Confirm that ‘Include Filler’ is selected along the right side,
5. Select ‘Run’.



Note: Notice the ‘Filler Release’ is available to run if the user desires to run it as normal production. This is controlled by the ‘ForceFillerCompletionDate’ setup parameter. See below for more information on this.

Once the pattern is generated, lites from the ‘Filler Release’ will be placed in the scrap areas around the lites from the production release.



Note: In the image above, the 'Filler' lites appear in orange while production lites are Agua. For the purposes of this example filler was changed to be orange. By default, these will both be aqua. See 'View Cutting' for the default colors.

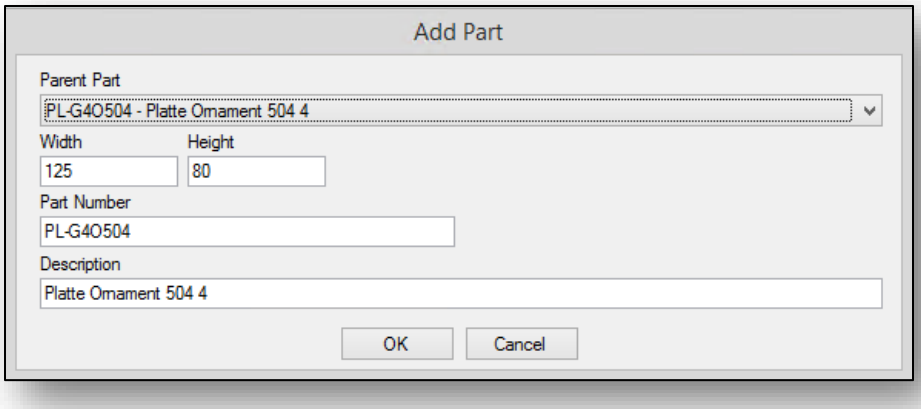
Force Filler Completion Date (Setup parameter)

'ForceFillerCompletionDate' is a Setup Parameter that specifically applies to 'Filler' in 'Dynamic Mode'. The user configures the GSP according to the following guidelines:

- **No Cut Deadline –** Set to '0' if 'Filler Releases' do not need to be cut by a specific date. In this case, 'Filler Releases' are treated as 'Filler' indefinitely meaning they will only be pulled onto other releases if stock is not added. The Opti-Break user will never be able to select a 'Filler Release' and run it as production.
- **Cut Deadline –** Set to '1' if there is a deadline to cut 'Filler Releases'. Once the run date of a 'Filler Release' is reached, all lites that have not been cut will be optimized the next time that glass type is run, even if more stock is required. Before the run date is reached, lites from 'Filler Releases' are only cut if more stock is not needed. In this case, 'Filler Releases' will always be available to run in Opti-Break. This gives the user the ability to complete the release ahead of the 'Run Date' if needed.

Adding New Glass Parts During Optimization

A new stock sheet size can be added during optimization by selecting  from the 'Optimization' tab for a cutting release. Selecting the button opens the 'Add Part' menu.



After selecting a parent part, a new part can be created and used to optimize the release. No inventory transaction can take place until the part is added in FeneVision Core and synced with FeneVision Opti-Glass.

Exiting

To exit the FeneVision Opti-Glass application, select the 'Close' icon in the upper right-hand corner of the main screen.

Setup

The user must complete an initial setup of the FeneVision Opti-Glass application.

System Requirements

The Opti-Glass application has specific hardware and software requirements. Please reference the FeneVision Hardware and Software Requirements document.

Installation

The Opti-Glass application is installed by executing an installation file and following the associated installation wizard. Although the software and hardware installations are not difficult, it should be done by someone with Microsoft® Windows and computer setup experience.

This section will identify the steps required to install the Opti-Glass application.

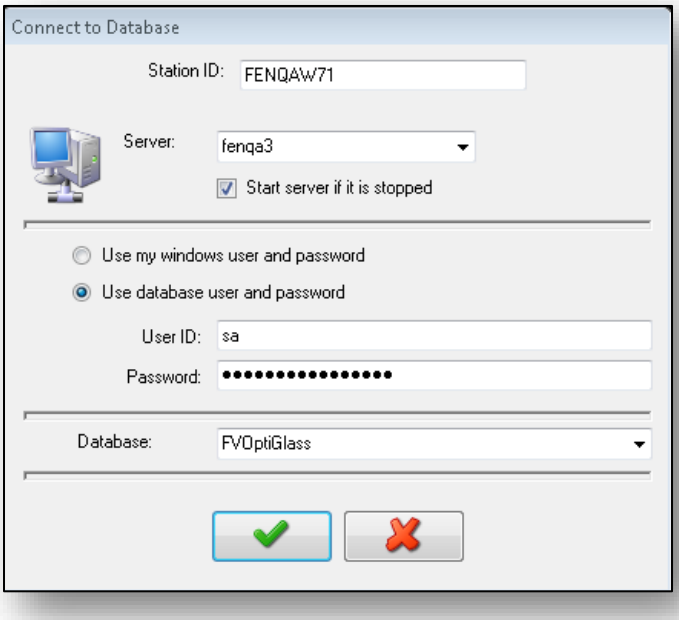
Program

To install the Opti-Glass application, complete the following steps:

1. Locate the Opti-Glass installation program.
2. Double click the installation file to begin installation.
3. An installation wizard will launch the install of the Opti-Glass application.
4. A dialog box will appear that contains the license terms. These must be accepted in order to proceed with the installation.
5. Choose the typical install.
6. An application icon is automatically placed on the user desktop. This icon can be used to start the application.
7. It may be necessary to activate the Opti-Glass database server to enable the use of this application. Contact FeneTech to receive the activation codes.
8. Certain functionality, such as 'Dynamic' optimization, must be enabled via activation codes. Contact FeneTech to receive the activation codes.

Initial Setup

Double clicking on the Opti-Glass icon on the users' desktop launches the application. The first time the program is opened the 'Connect to Database' screen will appear asking the user to specify the server and database.



The 'Station ID' must be a unique identifier for each instance of Opti-Glass that is being run. The same 'Station ID' should not be used for two different computers. If the 'Station ID' is not unique, parameters set on one machine will affect the parameters of another machine.

If it is necessary to change the server or database information in the future, start the application while holding down the SHIFT key. This will cause the above screen to display as if it is being started for the first time.

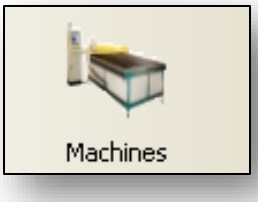
Settings

Select 'Settings'.

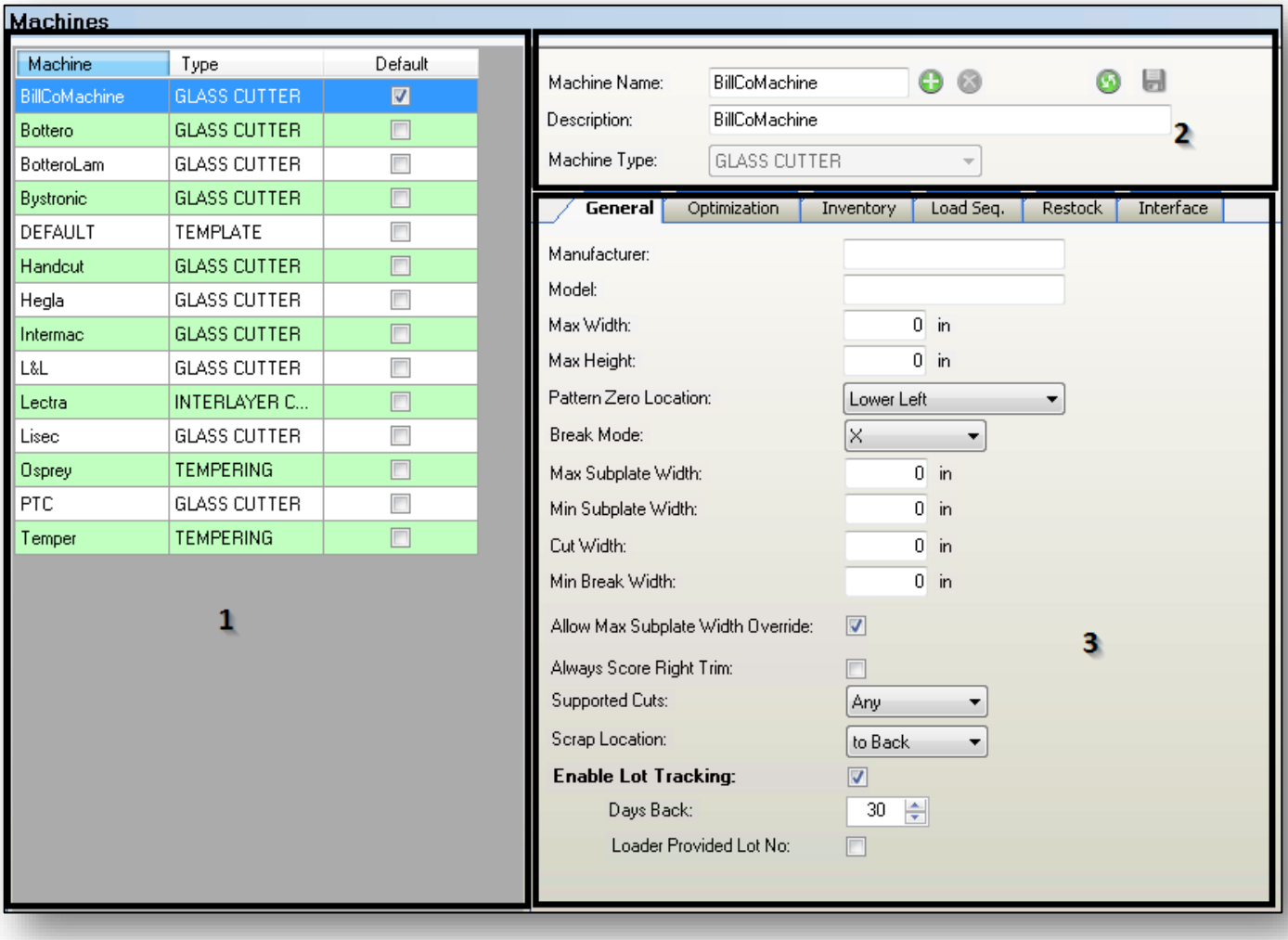
Access the 'Machines' setup by accessing 'Settings' >> 'Machines'.

Machines

The 'Machines Setup' page allows users to configure 'Glass Cutters', 'Tempering Machines', and 'Interlayer Cutters'.



Note: When creating a new 'Glass Cutter' its settings will be inherited from the 'Template' machine. The 'Template' machine is the first machine that is created in a database and should NOT be used to optimize and cut releases. This must always be a 'Glass Cutter' machine and cannot be another kind of machine (such as a 'Tempering Machine'). If a machine setting has not been modified, it will automatically change if the template machine setting is changed. Values modified for a machine are indicated in ***bold*** *and will not change if a change is made to the template machine.*

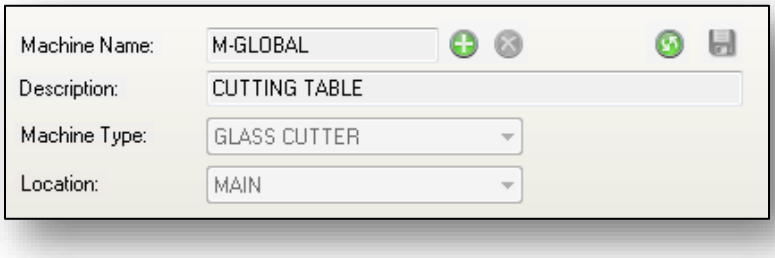


The **first section** of the 'Machines' screen lists all glass cutters, interlayer cutters, and tempering machines existing at the user's current location.

Indicate the 'Default' machine by checking the box beside the machine name, as represented in the image below.

The default machine is the machine that will be selected by default when a new release is created. Only one machine of each type— 'Glass Cutter', 'Interlayer Cutter', and 'Tempering'—can be indicated as the 'Default Machine'.

The **second section** of the 'Machines' screen allows the user to add and delete machines. The following information is contained in the **second section**:

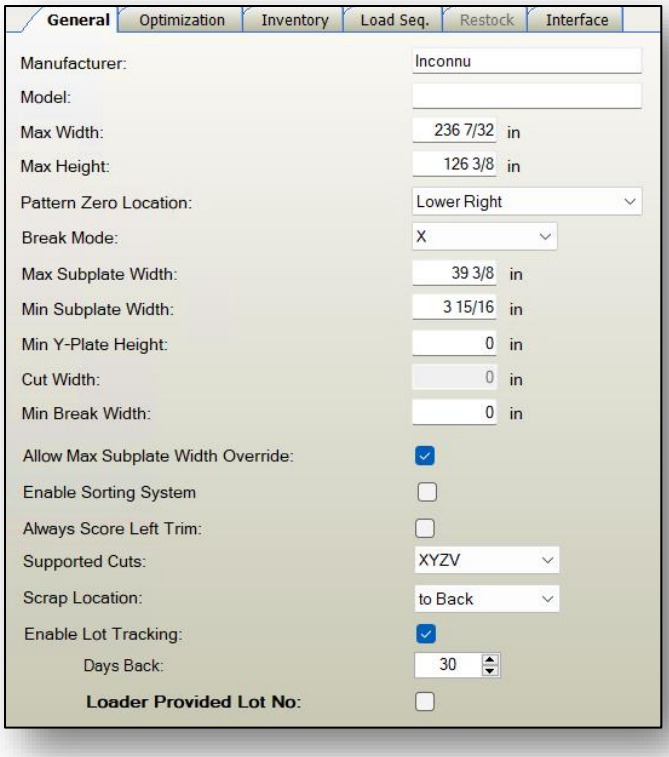


- **Machine Name –** The name of selected machine. Entered here when creating the machine.
- **Description –** In this field, the user has the option of adding a description for the machine.
- **Machine Type –** Indicates what the machine does — 'Glass Cutter', 'Interlayer Cutter', 'Loader', or 'Tempering'.
  - **Glass Cutting –** The cutting table used to optimize releases in Opti-Glass and break out patterns in Opti-Break.
  - **Interlayer Cutter –** Cutting table used to cut the interlayer of laminated glass. Used to optimize interlayer parts in Opti-Glass and break out these patterns in Opti-Break.
  - **Tempering –** Tempering bed *(used to optimize tempering releases in Opti-Glass and to run in Opti-Temp)*.
-  – Add or delete a machine. Machines that are associated with a release are unable to be deleted.
-  – Refresh the 'Machines' screen.
-  – Save changes.

The **third section** of the 'Machines' screen allows the user to configure the various settings on each machine. This section will differ slightly depending upon the type of machine that is selected.

Glass Cutting Machines

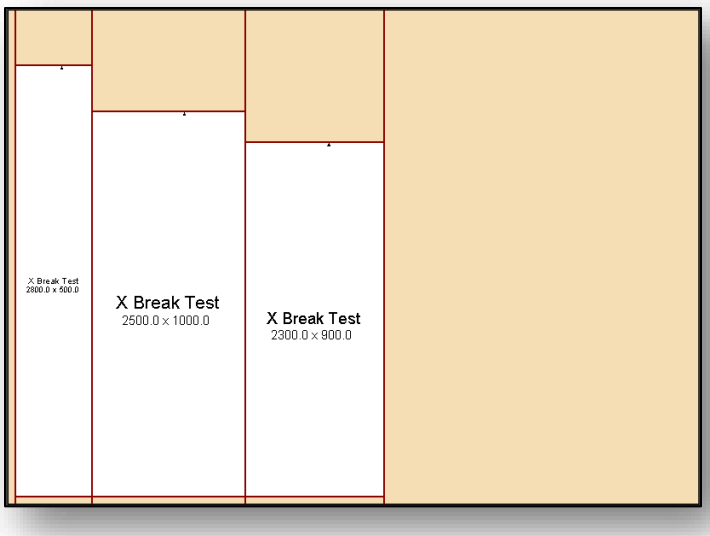
General Tab



- **Manufacturer –** Manufacturer of the cutting table (for informational purposes only).
- **Model –** Model of the cutting table (for informational purposes only).
- **Max. Width –** Maximum stock sheet width that the cutting table can handle (maximum travel along the X-axis). Setting to '0' disables the width check.
- **Max. Height –** Maximum height of a stock sheet that the cutting table can handle (maximum travel along the Y-axis). Setting to '0' disables the height check.

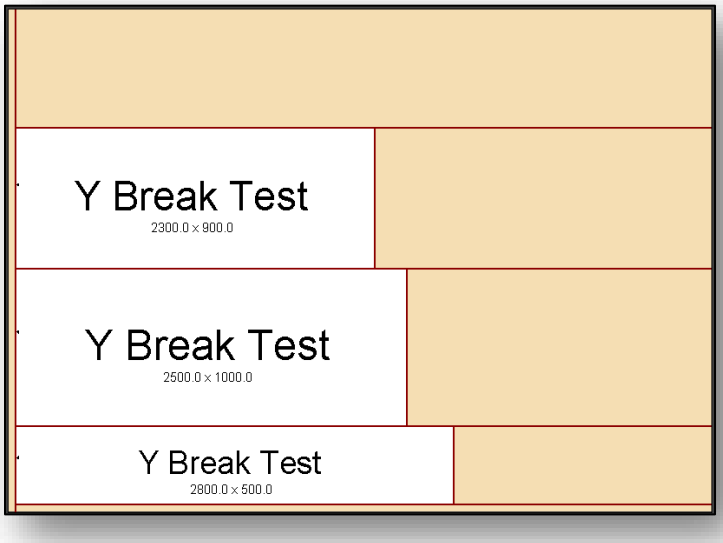
  Note: Setting both Max. Width and Max. Height to 0 disables both checks

- **Pattern Zero Location –** Indicates the corner of the pattern representing position 0.0.
- **Break Mode –** Method with which the algorithm will attempt to optimize patterns.
  - **X –** X-cuts create the subplates.



- **Y –** Y cuts create the subplates.

  Note: This is ideal for optimizations with several long narrow lites.



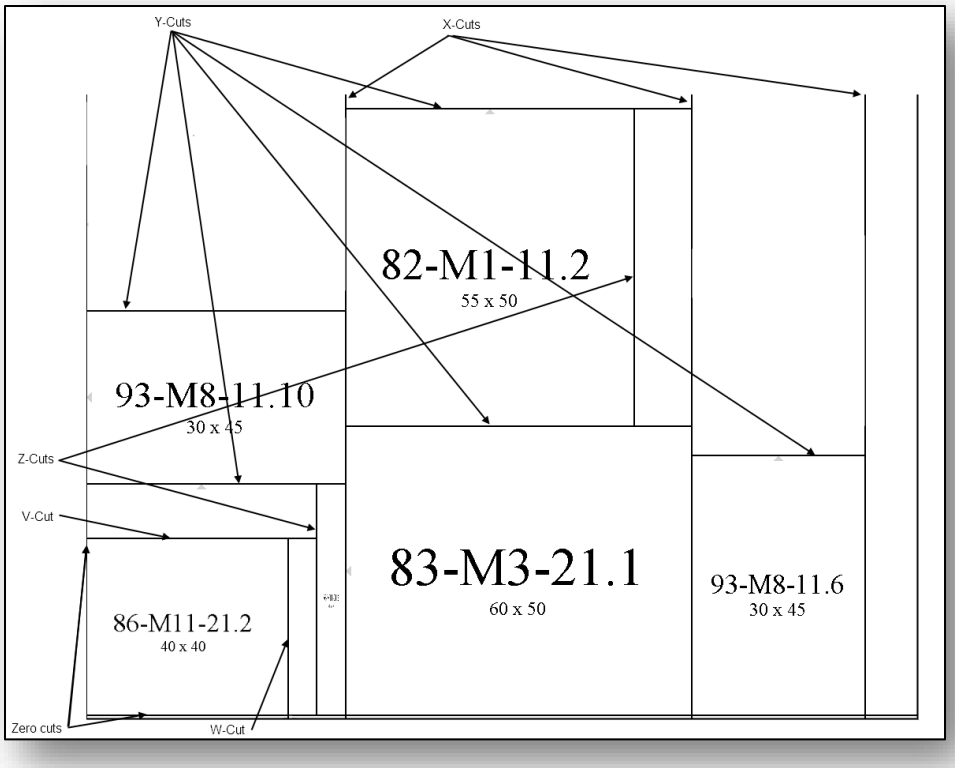
- **XY –** Both X break and Y break optimizations occur behind the scenes. The algorithm selects the better of the two optimizations to use.

  Note: 'XY Break Mode' will take longer to optimize than the other modes.

- **Lami –** Optimizes with only X, Y, and Z cuts, but attempts to minimize the number of Z cuts that occur. This can potentially hurt yields.

Note: X cuts in 'Y Break Mode' can still create subplates if the stock sheet's width is greater than the 'Max. Subplate Width'.

- **Max. Subplate Width –** Maximum width between any two X-cuts. The algorithm will never try to put two X-cuts (vertical cuts from bottom to top) farther than the maximum subplate width. If a lite is larger than this value or one side is larger, and it cannot be rotated, it is excluded from the optimization unless the 'Allow Max. Subplate Width Override' is enabled.
- **Min. Subplate Width –** Minimum distance between any two X-CUTS. The algorithm will never try to put two 'X' cuts (vertical cuts from bottom to top) closer than the minimum subplate width. If a lite is smaller than this value or one side is smaller, and it cannot be rotated, it will be excluded from the optimization. There is no option to allow overrides for minimum subplate width.
- **Min. Y-Plate Height –** Minimum height of a Y-plate, if the minimum threshold is not met for a Y-Plate the plate will be attempted to be rotated. This setting will be ignored if it cannot be satisfied. Setting this to 0 will effectively disable this setting.
- **Cut Width -** Setting that defines the 'Saw Thickness'. When the 'Cut Width' is greater than 0, optimization considers material loss during the cut, e.g., using a saw for cutting instead of a cutting wheel. All cutting algorithms support this setting, which considers the width of the cutter.
- **Min. Break Width -** If set to a non-zero value then a check is made for each score in the sequence in which they would be broken out. One side of the score must be equal to or larger than the setting. Default is '0'. All glass-cutting algorithms support this setting.
- **Allow Max. Subplate Width Override –** Allows production pieces that cannot be optimized without violating the 'Max. Subplate Width' parameter to be optimized. The 'Max. Subplate Width' is ignored for only those pieces that would not fit if the constraint existed.
- **Enable Sorting System –** Allows the Cutting machine to be linked to a sorting interface. Contact FeneTech for more information about using sorting interfaces.
- **Always score left / right trim –** When the last X cut is close to the end of the pattern, the algorithm can choose to remove it and extend all of the Y scores to the edge of the stock sheet. Checking 'Always Score Right/Left Trim' assures that the algorithm will add the trim near the edge of the pattern and end the 'Y' scores at that trim, rather than extending the 'Y' scores to the edge.
- **Supported cuts –** Setting to indicate which cuts are supported for this table ('XYZ', 'XYZV', 'XYZVW', and 'Any').
  - **XYZ, XYZV, XYZVW, or Any –** Indicates types of cuts the machine will support. Below represents an image of an 'XYZVW' cut structure.



- **X-CUT –** Vertical score made along a point on the X-cuts travel between the top and bottom of the sheet.
- **Y-CUT –** Horizontal score made along a point on the 'Y-axis'. 'Y-CUTs' travel between two X-cuts or the sides of the pattern.
- **Z-CUT –** Vertical score with at least one endpoint on a 'Y-cut and no endpoint on a 'V-cut.
- **V-CUT –** Horizontal score with at least one endpoint on a Z-cut.
- **W-CUT** – Vertical score with at least one endpoint on a V-cut.
- **Any –** Includes any cuts supported by FeneVision. Currently, 'Any' and 'XYZVW' are the same.

- **Scrap Location –** This indicates where scrap will be placed. If part of a sub-plate is production but another part is scrap, this setting determines if the scrap should be placed at the 'Front' of the sub-plate or at the 'Back'.

  Note: 'Front' and 'Back' are relative to the 'Pattern Zero Location'. The end of the sub-plate that is closest to the 'Pattern Zero Location' is the 'Front' and farthest is the 'Back'.

- **Enable Lot Tracking –** Checkbox to indicate if 'Lot Tracking' is enabled for this cutting machine.

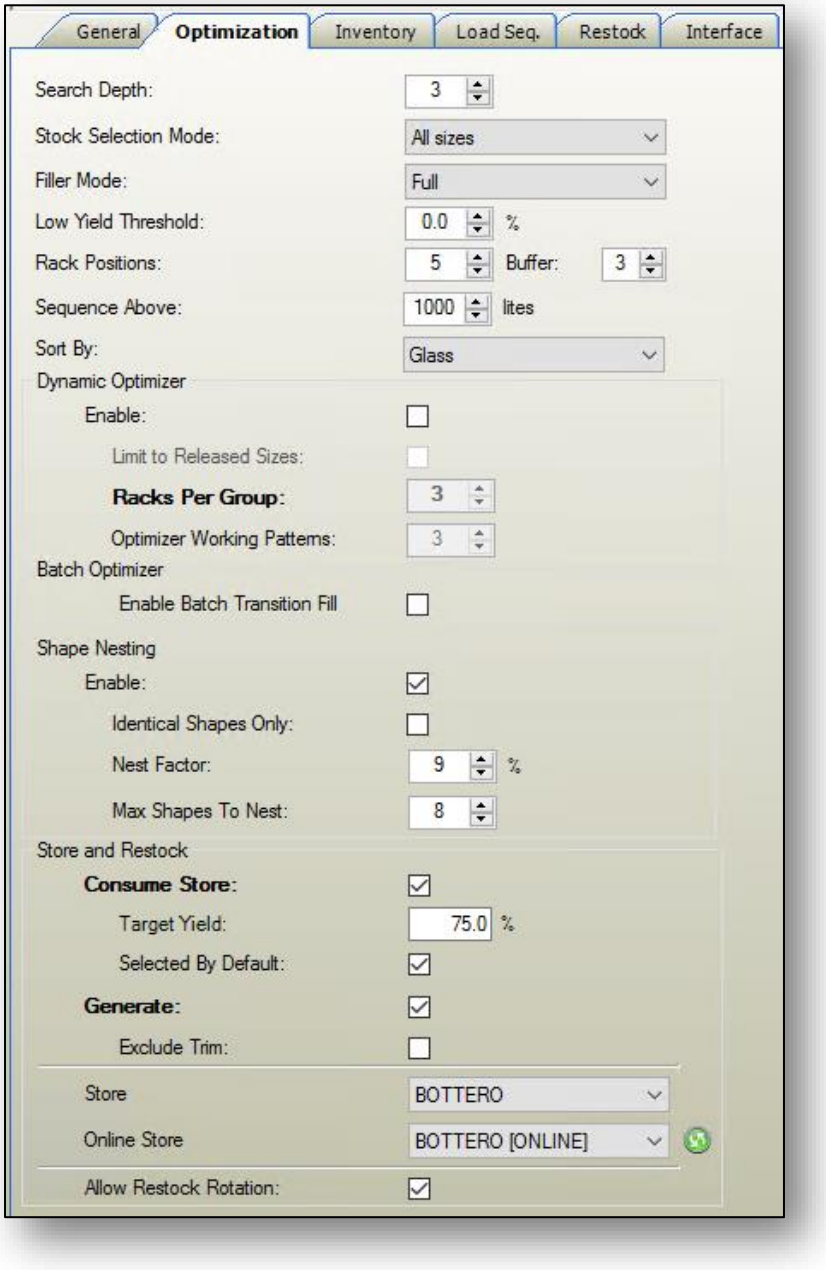
  Note: If the parameter 'Send Loading Rack in Cut File' is exists for the interface, this must be checked for the lot numbers to be properly assigned.

- **Days Back –** Drop-down to indicate how many days back for the machine to look for lots. This goes off the receipt date associated with the lot. Disabled if 'Lot Tracking' is not enabled.

- **Loader Provided Lot No –** Checkbox to indicate if the lot number will be selected by the loading machine. Only available for machines using a loading interface (uses Opti-Load). When enabled user will not be able to manually select a lot number at the beginning of a run in Opti-Break.

Optimization Tab

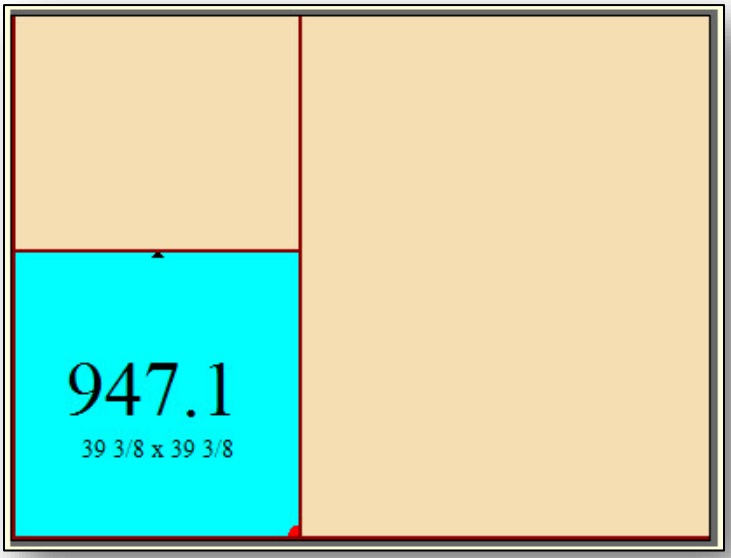
The 'Optimization' tab allows the user to configure the machine's settings regarding the actual optimization of the release. This is also where the user can indicate whether the release is to be run in 'Dynamic' mode.



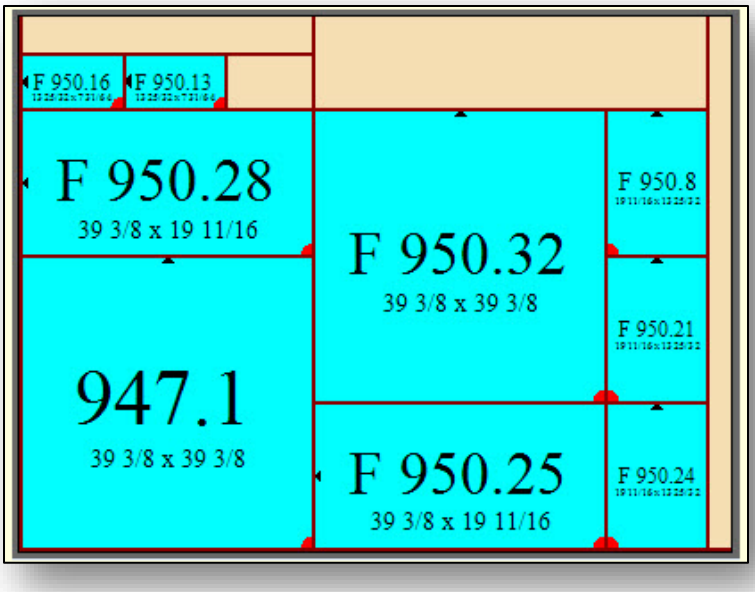
The following settings are on the 'Optimization' tab:

- **Search depth –** This setting controls the amount of effort the algorithm exerts to improve yields. This will be a numeric value between 1 and 10. The higher the number, the harder the algorithm will work, which can result in better yields. However, it will also increase the amount of time it takes to optimize. Users are encouraged to experiment with search depths to find what works best. Additionally, this can be changed per release when optimizing.
- **Stock Selection Mode –** This will tell the algorithm if it is more important to get the best possible yield or to minimize the number of times the operator has to switch stock sizes.
    - **Best yield –** Optimizes all stock sizes together and each stock size separately and chooses the best result.
    - **All sizes –** Optimizes only all sizes together.
    - **One size –** Optimizes on each stock size completely and chooses the best result.
    - **One size except last pattern –** Optimizes on each stock size completely but allows use of a different stock size for the last pattern.

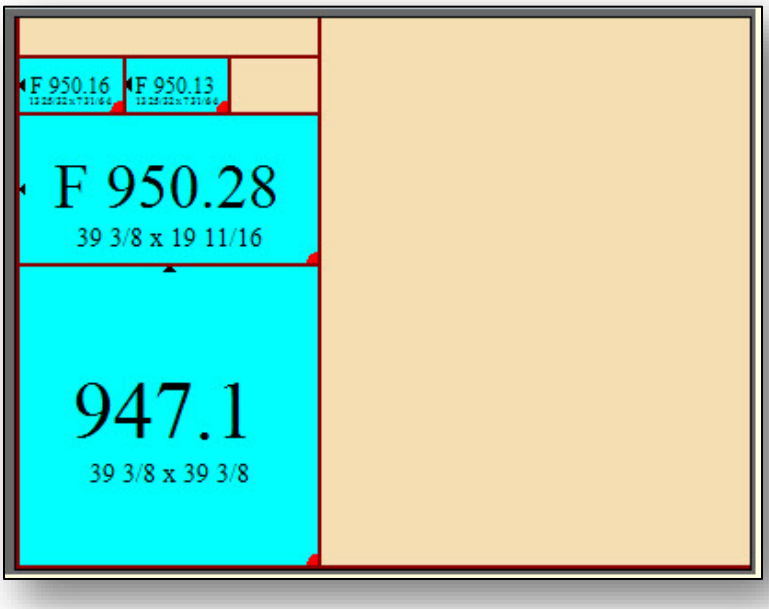
- **Filler Mode –** This mode will be used when filling out empty space on patterns with filler lites.
    - **Disabled –** No filler lites will be placed on the patterns. See below for an example of a pattern with filler mode disabled.



    - **Full –** Filler lites will be used where they fit anywhere there is scrap on a pattern. See below for an example of a pattern with filler mode set to 'Full'. The lites marked with an 'F' are filler lites.



- **Subplate –** Filler lites will only be used to fill the scrap within the subplates on a pattern. They will not be used to fill-in any scrap outside the final 'X' cut on a pattern. See below for an example of a pattern with filler mode set to 'Subplate'. The lites marked with an 'F' are filler lites.



Note: 'Filler' lites are lites that do not need to be cut yet; however, if there is room on the glass that will go to waste then these are pulled into the patterns. 'Filler' lites will take priority over generating 'Store' or 'Restock'. For more information on how to mark a lite as a 'Filler', see the 'Filler Functionality'.

- **Low Yield Threshold –** User chooses a value to represent the lowest yield percentage. If a pattern falls below this yield, the 'Yield' column will flicker in the pattern list during a run in FeneVision Opti-Break. Defaults to '0'.
- **Rack positions –** This determines how many racks can be included at any time around a cutting table. In 'Batch' mode, this determines the maximum number of racks in a batch.
- **Buffer –** This setting determines how many 'Buffer Racks' there will be. A 'Buffer Rack' is a rack that is used to fill the empty space on the last pattern of a batch. If 'Buffer' is set to '0', and the last pattern of a batch has a poor yield, the next batch will begin on the next pattern instead of using the scrap for the end of the previous batch.

  Note: When a buffer rack is used, the lites for the next pattern will be a different color. See 'Patterns Tab' for detailed information on the distinct colors used.

- **Sequence Above –** This setting only applies to lites from 'Stacked Racks' (A-Frame Racks or L Racks) and does not apply to lites from 'Harp Racks'. If the number of lites included in the release from a particular 'Stacked Rack' exceeds this value, then the optimization algorithm will force the breakout sequence to conform to the desired rack-position-slot-sequence determined by the work route sequencing. If the number of lites in the optimization is less than or equal to this value, sequencing is ignored. Entering a value of 0 into this setting will keep the lites from being sequenced regardless of the number of lites.

  Note: Sequencing the optimization will often have a negative impact on material yield. This occurs because there exists a specific order in which lites must be broken out; thus, the algorithm is restricted in what it can do. However, this value can be modified to adjust the balance between production flow and material yield.

- **Sort By –** Setting to determine the order in which things will be optimized.
  - **Rack –** The rack sequence honored during optimization.
  - **Glass –** Optimization will sort by glass as determined by 'Load Sequence'. This setting will still sort by racks; however, that sort will be secondary to sorting by glass.

- **Dynamic Optimizer –** When 'Enabled' is checked, the 'Cutting' machine will operate in 'Dynamic' mode. When unchecked, the 'Cutting' machine will operate in 'Batch' mode (the settings in this section only apply to 'Dynamic' mode). In **'Batch'** mode, the *patterns* that are generated when the 'Cutting' release is optimized in Opti-Glass will be the same patterns that are cut at Opti-Break. In **'Dynamic'** mode, the patterns generated when the 'Cutting' release is optimized in Opti-Glass will not necessarily be the same patterns that get cut at Opti-Break. In 'Dynamic' mode, each pattern is re-optimized before being cut. This can improve yields if something changes during production (e.g., lite needs remade).
  - **Enable –** When checked, the machine is in 'Dynamic' mode. When unchecked, the application will run in 'Batch' mode.
  - **Limit to Released Sizes –** When checked, the Opti-Break user will only be able to select from the stock sized that were used on the release in Opti-Glass.
  - **Racks Per Group –** Set value to '0' to maintain 'Dynamic' optimization. Any value other than '0' will be used to create default groups of racks when beginning a 'Dynamic' run.

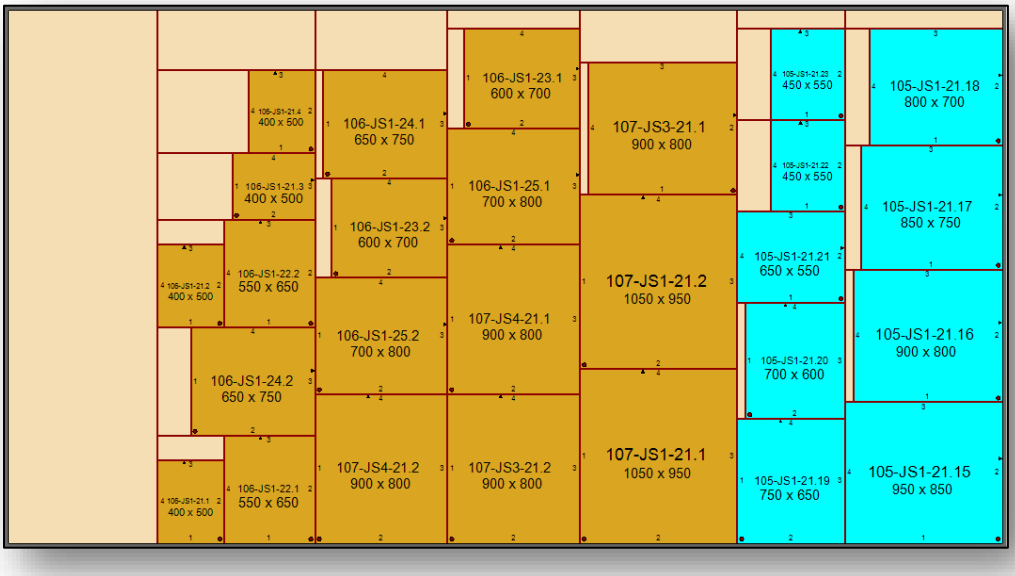
    For example, if a run selection has 10 racks and 'Racks Per Group' is set at '4', the 'Dynamic' optimizer will create three groups with 4, 4, and 2 racks. The racks from the first group will be given priority and optimized before the racks from the next group. The default groups can be overridden in Opti-Break when starting a run.

- **Optimizer Working Patterns –** Indicates the number of patterns that will be generated in 'Dynamic' mode when running a release in Opti-Break ('Dynamic' mode only).

- **Batch Optimizer** (Disabled when Dynamic Optimize is enabled)
  - **Enable Batch Transition Fill –** When enabled, the optimizer will attempt to fill the last pattern of each glass type within the batch with production from the next batch. In each pattern that contains more than one batch, the next batch will be indicated by a goldenrod color.

    For example, if a release contains two batches, each with three glass types, the last pattern of each of the three glass types in batch 1 can contain items from batch 2 (of the same glass type).

    The image below shows the last pattern of the first batch on the right (aqua). Because of the large amount of space still available on the pattern, batch 2 has been added (goldenrod).



Note: Goldenrod is also used to indicate buffer. If buffer and transitions are enabled, users will see the color used for both instances.

- **Shape Nesting –** The following settings apply to how the optimizer will attempt to 'Nest' shapes. Nesting shapes is when the diagonal edges of shapes are placed together to limit the amount of scrap generated by a shape.
  - **Enable –** When checked, the machine will attempt to nest any shape that is configured to 'Allow shape nesting'.
  - **Identical Shapes Only –** When checked the machine will only attempt to nest shapes that are identical.
  - **Nest Factor –** Percentage to specify how much of an improvement within a 'nested pair' is needed for nesting to occur. The 'improvement' is determined by the amount of area used. If the area improvement is greater than or equal to the 'Nest Factor' than it will attempt to nest those two shapes together. Otherwise, it will not. 10% is a typical nest factor setting.

For example, 3 nest-able shapes are on a release. Optimized by themselves, lite 1 consumes 4 SqFt, lite 2 consumes 5 SqFt, and lite 3 consumes 6 SqFt. The 'Nest Factor' is set to 21%. When optimized together, lite 1 and lite 2 take up 7 SqFt. Thus, the area improvement from this nesting would be 22%. This is determined by the formula (Un-nested Area [9] – Nested Area [7]) / (Un-nested Area [9]). Using this scenario, these shapes could be nested together. However, if lite 1 and lite 3 take up 8 SqFt when nested together, then the area improvement would be 20%. Therefore, with a nest factor of 21%, lite 1 and lite 3 would not be allowed to nest together.

- **Max Shapes To Nest –** Setting to indicate how many shapes can be nested within one block. Can be anywhere from 2 to 10.

- **Store and Restock –** The settings in this section control if a machine saving remnant glass for later use and how the machine will handle consuming remnant glass.
  - **Consume Store –** When checked, the user will be able to select 'Available' store sheets to use during optimization. This only applies to 'Store'. Existing 'Restock' pieces are always available to select during optimization.

    Note: If the machine is in 'Dynamic' mode, the 'Store' and 'Restock' sheets will only be able to be selected to consume when running in Opti-Break. This is to prevent store pieces being created on one release, used on another, then the original release being cleared.

    - **Target Yield –** Yield threshold for consumption of 'Store' pieces. The yield of any pattern optimized on 'Store' must be greater than or equal to the 'Target Yield' otherwise the 'Store' will not be consumed.

      Note: This setting only applies to 'Store', not 'Restock'.

    - **Selected By Default** – When checked, the store pieces will be selected by default in the selection screens ('Optimize' tab in Opti-Glass and the 'Stock Selection' in Opti-Break) so the algorithm will attempt to consume them, by default.

      Note: This setting only applies to 'Store', not 'Restock'.

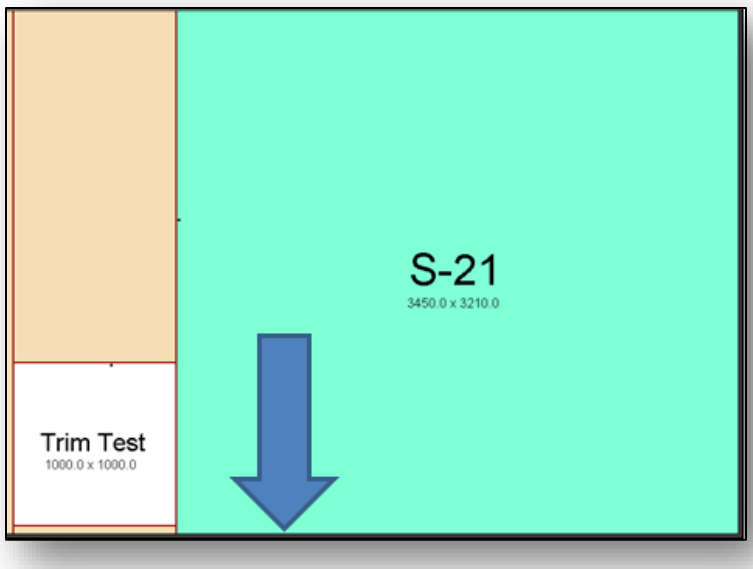
  - **Generate –** When checked, the machine will 'Store' scrap glass if it meets the requirements on the 'Inventory' tab and if the machine has an empty 'Store' slot.

    Note: This setting applies to both 'Store' and 'Restock'

    - **Exclude Trim –** When checked, if there is bottom trim on a pattern and remnant is generated the bottom trim will not be extended through the remnant piece. When unchecked the bottom trim will extend through the remnant piece.

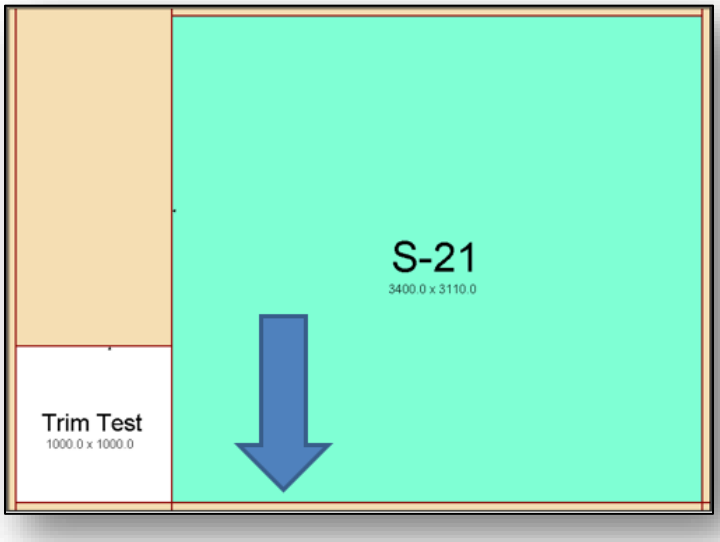
      Note: This applies to both 'Store' and 'Restock'.

      The image below represents an example of a pattern in which 'Exclude Trim' is enabled. Note that the store piece extends to the bottom of the pattern:



The image below represents an example of a pattern in which 'Exclude Trim' is disabled.

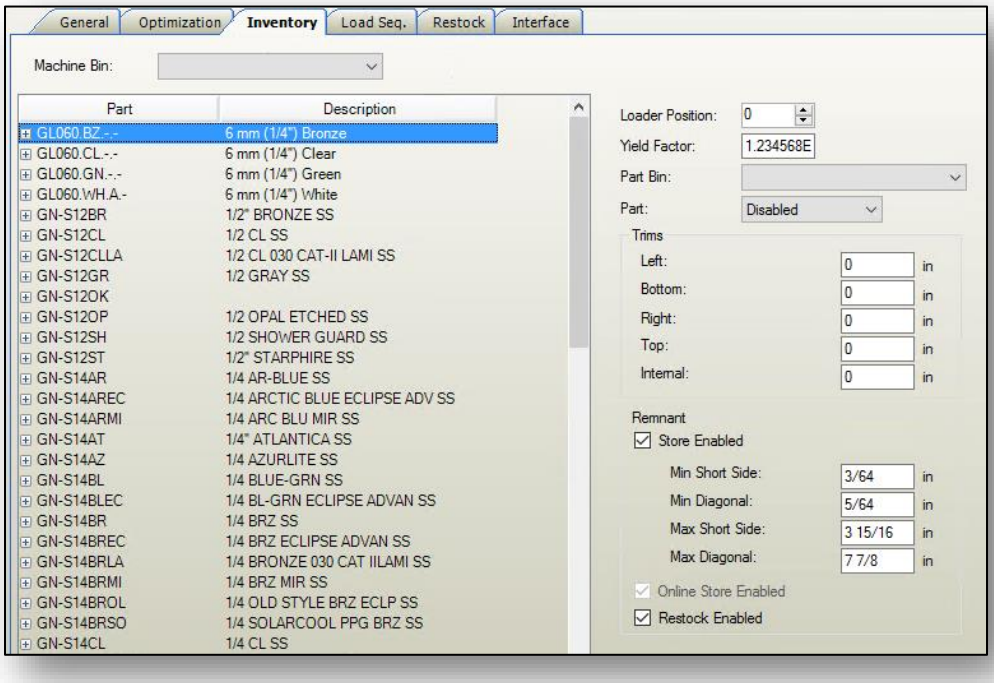
Note: The store piece does not extend to the bottom of the pattern.



- **Store –** Specifies the 'Store' location where generated remnant pieces will be placed.
- **Online Store –** Specifies the 'Store' location where generated remnant pieces will be placed.
- **Refresh** (Hidden unless online store sync is enabled) – Allows the user to manually sync the online store with the machine's store / remnant system.
- **Allow Restock Rotation –** When checked, generated 'Restock' sheets can be rotated so that the longest side is saved as the width.

Inventory Tab

The ‘Inventory’ tab in the ‘Machines’ setting allows the user to override the default settings for inventory parts.



Note: The ‘Inventory’ tab is read only on the template machine since all the settings are pulled from ‘Inventory’ setup.

The user can override the default settings on non-template machines. These settings are outlined on the ‘Default Data’ tab in ‘Inventory’ setup.

Note: FeneTech recommends making changes to these settings on the ‘Default Data’ tab of ‘Inventory’ setup rather than here. Once a change is made here, any global change made to ‘Inventory’ Setup will not override any change that has been made here.

- **Machine Bin –** Drop-down to indicate which bin, if any, the ‘Cutting’ table will use to pull inventory. If a bin is indicated, this will affect inventory transactions from Core.
- **Part / Description Grid –** Highlighting each part allows for configuration of the right side of the screen. Selecting ⊞ will expand the parts to show the ‘Child’ parts under each ‘Parent’ part.
- **Part –** Select one of the three options from the dropdown list:
  - **Disabled –** If a part is marked ‘Disabled’, it is not available for optimization. If all stock sizes for a glass type are ‘Disabled’ for a machine, the glass type will be grayed out on the ‘Glass’ tab of the ‘Cutting’ screen. This way, the machine will not attempt to cut it.
  - **Enabled –** If a part is marked ‘Enabled’, it is available for optimization with this machine. If any stock size for a glass type is ‘Enabled’ (or ‘Optional’) that glass type will be selectable on the ‘Glass’ tab of ‘Cutting’. If a stock sheet is marked ‘Enabled’ it will be selected by default on the ‘Optimization’ tab of ‘Cutting’ when the user is preparing to optimize a release.
  - **Optional –** Marking a part as ‘Optional’ is the same as making it ‘Enabled’ except that it will not be selected by default during optimization.

- **Yield Factor -** This setting is used to perform yield comparisons between different sizes of the same stock, thus allowing the optimizer to give preference to one size over another. The Yield Factor can be any value greater than 0

and less than or equal to 100. The scrap of each size is multiplied by its corresponding yield factor, and the result is then compared to select the best pattern; the lowest result will have highest preference. The yield factors for two or more sizes can be the same if no preference is desired. The following internal calculation is used:

- weightedWaste = patternWaste * (1 + ((100 - YieldFactor) / 100)

  For example, assume that there are 4 stock sizes that all generated a pattern with the same amount of scrap, 4.2 SqFt.
  - Stock A has a Yield Factor of 100.
  - Stock B has a Yield Factor of 90.
  - Stock C has a Yield Factor of 50.
  - Stock D has a Yield Factor of 5.

  When deciding which pattern to keep, the algorithm compares the weighted waste as depicted below:
  - Stock A's pattern will have a weightedWaste of 4.2 sqft. (Waste * 1.0)
  - Stock B's pattern will have a weightedWaste of 4.62 sqft. (Waste * 1.1)
  - Stock C's pattern will have a weightedWaste of 6.3 sqft. (Waste * 1.5)
  - Stock D's pattern will have a weightedWaste of 8.19 sqft. (Waste * 1.95)

  StockA will have generated the preferable pattern as the weightedWaste is the lowest.

Note: This value is set based on the default value from Inventory Setup; however, during the optimization, this field can be overridden.

Note: When syncing parent / child relationships from FeneVision Core, the default 'Yield Factor' will be set to 100.

- **Loader Position –** If the cutting machine controls an automatic loader, this setting tells the cutting machine from what position the glass is to be retrieved.

  Note: 'Loader Position' is not supported by all interfaces.

- **Part Bin –** Drop-down to indicate which bin, if any, the cutting table will pull inventory from for this given part.

  For example, if the user chooses **'Machine Bin ABC'** for the machine bin (see above), and for part **'S12BR96130'** the user selects **'Part Bin XYZ'**, when this machine is chosen, inventory will be pulled from **'Machine Bin ABC'** *unless* the part is **'S12BR96130'** in which case it will pull inventory from **'Part Bin XYZ'**.

- **Trims –** Sets the trims (scrap) along the left, right, top, and bottom of the sheet to allow square cuts. Typically, all edge trims are triple the glass thickness with the internal trim as the smallest section that can be broken out.
  - **Left –** Amount taken off the left side of the sheet.
  - **Bottom –** Amount taken off the bottom of the sheet.

- **Right –** Amount taken off the right side of the sheet.
- **Top** – Amount taken off the top of the sheet.
- **Internal –** The internal trim. Assures that no two scores are within a certain distance of each other. Would be set to the smallest piece that can be safely broken out.

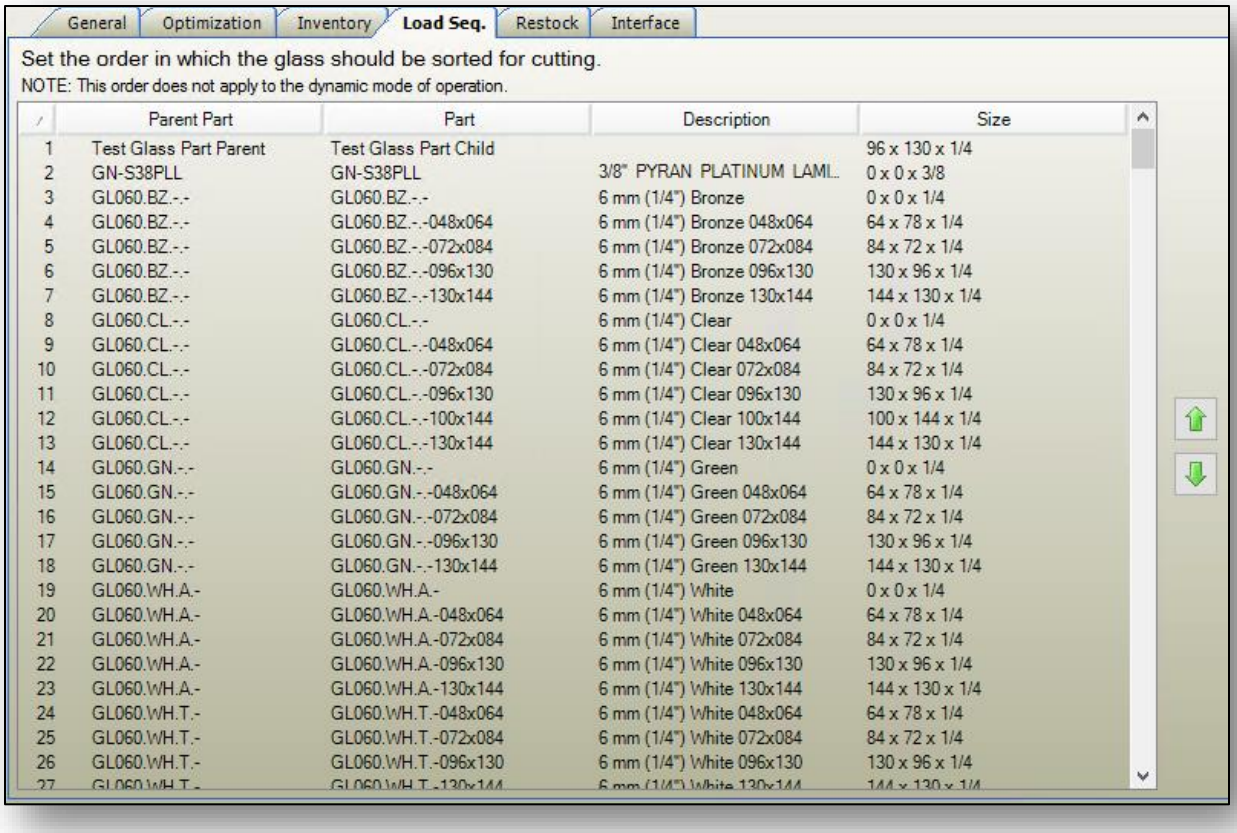
  Note: All trims are relative to 'Zero Pattern Location' that resides in the lower left corner; therefore, if a left trim is set and then the 'Zero Pattern Location' is set to be on the right, the left trim will always appear on the right.

- **Remnant –** Scrap that can be stored for future use.
  - **Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Store'.
  - **Min Short Side –** Minimum length of the short side measurement that can be saved. Anything with a smaller short side than this is considered too small to save.
  - **Min Diagonal –** Minimum length of the diagonal measurement that can be saved. Scrap with a diagonal less than this is considered too small to save.
  - **Max Short Side –** Maximum length of the short side measurement that can be saved. Anything with a short side larger than this is considered too large for the store slots and will not be saved.
  - **Max Diagonal –** Maximum length of the diagonal measurement that can be saved. Anything with a diagonal larger than this is considered too large for the store slots and will not be saved.

- **Online Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Online Store'. Only unused 'X' plates at the ends of patterns are eligible to be saved as 'Online Store'.
- **Restock Enabled –** When checked, this enables the machine to save the unused portion of the last pattern in a batch without utilizing a 'Store' slot. The piece will be saved and placed back on the top of the stockpile and the algorithm will know to use it on the next pattern of that glass type.

Load Sequence Tab

The 'Load Sequence' tab allows the user to set the order in which the glass should be sorted for cutting.



	Parent Part	Part	Description	Size
1	Test Glass Part Parent	Test Glass Part Child		96 x 130 x 1/4
2	GN-S38PLL	GN-S38PLL	3/8" PYRAN PLATINUM LAMI..	0 x 0 x 3/8
3	GL060.BZ.-.-	GL060.BZ.-.-	6 mm (1/4") Bronze	0 x 0 x 1/4
4	GL060.BZ.-.-	GL060.BZ.-.-048x064	6 mm (1/4") Bronze 048x064	64 x 78 x 1/4
5	GL060.BZ.-.-	GL060.BZ.-.-072x084	6 mm (1/4") Bronze 072x084	84 x 72 x 1/4
6	GL060.BZ.-.-	GL060.BZ.-.-096x130	6 mm (1/4") Bronze 096x130	130 x 96 x 1/4
7	GL060.BZ.-.-	GL060.BZ.-.-130x144	6 mm (1/4") Bronze 130x144	144 x 130 x 1/4
8	GL060.CL.-.-	GL060.CL.-.-	6 mm (1/4") Clear	0 x 0 x 1/4
9	GL060.CL.-.-	GL060.CL.-.-048x064	6 mm (1/4") Clear 048x064	64 x 78 x 1/4
10	GL060.CL.-.-	GL060.CL.-.-072x084	6 mm (1/4") Clear 072x084	84 x 72 x 1/4
11	GL060.CL.-.-	GL060.CL.-.-096x130	6 mm (1/4") Clear 096x130	130 x 96 x 1/4
12	GL060.CL.-.-	GL060.CL.-.-100x144	6 mm (1/4") Clear 100x144	100 x 144 x 1/4
13	GL060.CL.-.-	GL060.CL.-.-130x144	6 mm (1/4") Clear 130x144	144 x 130 x 1/4
14	GL060.GN.-.-	GL060.GN.-.-	6 mm (1/4") Green	0 x 0 x 1/4
15	GL060.GN.-.-	GL060.GN.-.-048x064	6 mm (1/4") Green 048x064	64 x 78 x 1/4
16	GL060.GN.-.-	GL060.GN.-.-072x084	6 mm (1/4") Green 072x084	84 x 72 x 1/4
17	GL060.GN.-.-	GL060.GN.-.-096x130	6 mm (1/4") Green 096x130	130 x 96 x 1/4
18	GL060.GN.-.-	GL060.GN.-.-130x144	6 mm (1/4") Green 130x144	144 x 130 x 1/4
19	GL060.WH.A.-	GL060.WH.A.-	6 mm (1/4") White	0 x 0 x 1/4
20	GL060.WH.A.-	GL060.WH.A.-048x064	6 mm (1/4") White 048x064	64 x 78 x 1/4
21	GL060.WH.A.-	GL060.WH.A.-072x084	6 mm (1/4") White 072x084	84 x 72 x 1/4
22	GL060.WH.A.-	GL060.WH.A.-096x130	6 mm (1/4") White 096x130	130 x 96 x 1/4
23	GL060.WH.A.-	GL060.WH.A.-130x144	6 mm (1/4") White 130x144	144 x 130 x 1/4
24	GL060.WH.T.-	GL060.WH.T.-048x064	6 mm (1/4") White 048x064	64 x 78 x 1/4
25	GL060.WH.T.-	GL060.WH.T.-072x084	6 mm (1/4") White 072x084	84 x 72 x 1/4
26	GL060.WH.T.-	GL060.WH.T.-096x130	6 mm (1/4") White 096x130	130 x 96 x 1/4
27	GL060.WH.T.-	GL060.WH.T.-130x144	6 mm (1/4") White 130x144	144 x 130 x 1/4

If two distinct glass types are used on a release, this determines which glass type will be cut first.

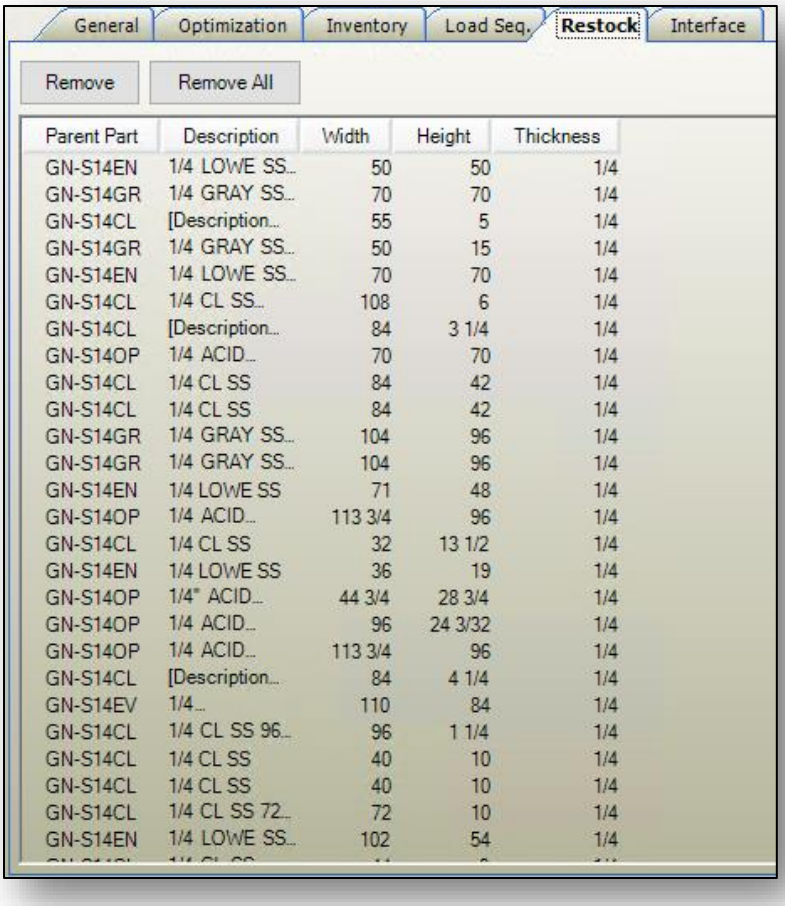
Note: The order in which the glass is used on a release does not apply when optimizing in 'Dynamic' mode.

- **Parent Part –** The parent glass part. This would typically be the 'Glass Type'. Parent assignments can be set up in 'Inventory' setup on the 'Assignment' tab.
- **Part** – The child part. This would normally be the actual stock sizes associated with a glass type child parts are set up in FeneVision Core.
- **Description –** The part's description from 'Parts' setup in Core.
- **Size –** The glass part's dimensions from the 'Glass' tab in 'Inventory' setup. Appears as width x height x thickness.
-  – Used to arrange the sequence in which the glass should be sorted for cutting.

Restock Tab

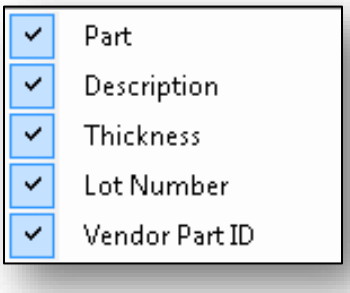
The 'Restock' functionality allows Opti-Glass to save the last largest piece of glass from an optimized pattern (X-plate) and place it into 'Store'.

The user can remove or remove all parts from re-stocking. Highlight the part(s) to be removed and select either 'Remove' or 'Remove All'.



Parent Part	Description	Width	Height	Thickness
GN-S14EN	1/4 LOWE SS...	50	50	1/4
GN-S14GR	1/4 GRAY SS...	70	70	1/4
GN-S14CL	[Description...	55	5	1/4
GN-S14GR	1/4 GRAY SS...	50	15	1/4
GN-S14EN	1/4 LOWE SS...	70	70	1/4
GN-S14CL	1/4 CL SS...	108	6	1/4
GN-S14CL	[Description...	84	3 1/4	1/4
GN-S14OP	1/4 ACID...	70	70	1/4
GN-S14CL	1/4 CL SS	84	42	1/4
GN-S14CL	1/4 CL SS	84	42	1/4
GN-S14GR	1/4 GRAY SS...	104	96	1/4
GN-S14GR	1/4 GRAY SS...	104	96	1/4
GN-S14EN	1/4 LOWE SS	71	48	1/4
GN-S14OP	1/4 ACID...	113 3/4	96	1/4
GN-S14CL	1/4 CL SS	32	13 1/2	1/4
GN-S14EN	1/4 LOWE SS	36	19	1/4
GN-S14OP	1/4" ACID...	44 3/4	28 3/4	1/4
GN-S14OP	1/4 ACID...	96	24 3/32	1/4
GN-S14OP	1/4 ACID...	113 3/4	96	1/4
GN-S14CL	[Description...	84	4 1/4	1/4
GN-S14EV	1/4...	110	84	1/4
GN-S14CL	1/4 CL SS 96...	96	1 1/4	1/4
GN-S14CL	1/4 CL SS	40	10	1/4
GN-S14CL	1/4 CL SS	40	10	1/4
GN-S14CL	1/4 CL SS 72...	72	10	1/4
GN-S14EN	1/4 LOWE SS...	102	54	1/4

The image below represents the columns in the 'Restock' tab.

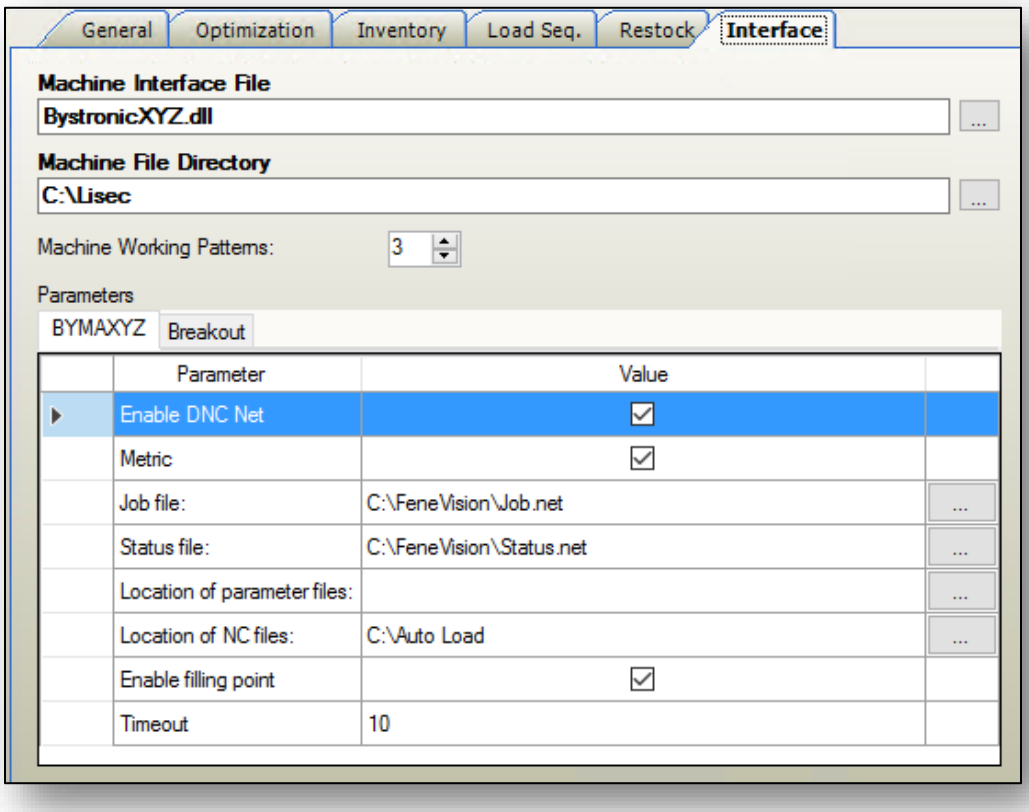


- **Parent Part (fixed column) –** The parent glass part of the 'Restock' piece. Typically, this would be the 'Glass Type' (required).
- **Part –** Stock sheet from which the 'Restock' piece originated (optional).
- **Description –** Description of the part. If this is blank, this will be populated with a description of the 'Parent Part' (automatically filled based on 'Parent Part' and 'Part').
- **Width –** Width of the 'Restock' piece.
- **Height –** Height of the 'Restock' piece.

- **Thickness –** Thickness of the 'Restock' piece. Automatically filled from the 'Glass Tab' in 'Inventory' Setup based on the 'Parent Part' and 'Part'.
- **Vendor Part ID –** Alphanumeric identifier of the Vendor part from which the 'Restock' piece was generated. This is different from the Part number in that parts could potentially have the same number; the Vendor Part ID, however, distinguishes two of the same parts from different vendors.
- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.

Interface Tab

The 'Interface' tab allows the user to configure the settings that are specific to the type of cutting table being used.



The following fields exist in the 'Interface' tab:

- **Machine Interface File –** This field allows the user to specify what type of machine interface is in use. Selecting the ... button allows the user to select the DLL to be used.

  Note: For additional assistance with the DLLs, contact FeneTech.

- **Machine File Directory** – Output path for the machine files when generated through Opti-Glass.
- **Machine Working Patterns –** Number of patterns that Opti-Break will generate machine files for when operating in 'Online Mode'. Unlike 'Optimizer Working Patterns' from the 'Optimization' tab, 'Machine Working Patterns' is applicable to both 'Batch' and 'Dynamic' mode when in 'Online Mode'. This number can be set from 2 to 10.

  Note: For Dynamic mode, the Machine Working Patterns may not exceed the Optimizer Working Patterns number.

- **Online Mode –** Check to enable 'Online Mode'. 'Online Mode' means that the files can be generated "on the fly" at Opti-Break.

- **Parameters –** Allows the user to set parameters for the machine.
  - **Interface Tab –** Contains the machine-specific parameters. The tab name will be the type of machine selected for 'Machine Interface File', e.g., Hegla.
    - **Parameter –** Available parameters for the given machine. The list of parameters will be different depending upon the type of machine being used. For assistance on how to set the parameters, see Appendix A.
    - **Value –** Parameter's value. This could be a user specified value or a check box to enable or disable the setting.

  - **Edge Delete –** Trims the coating off the edges of the lite. This tab allows the user to enable edge deletion and to indicate a minimum grind width *(not available for all interfaces)*.
  - **Online Store –** Tab allowing the user to set the parameters and values enabling the 'Online Store' functionality *(not available for all interfaces)*.
    - **Store Capacity –** must be set to at least a value of '1'.
    - **Min Width, Height –** Minimum dimensions of remnant that can be saved as 'Online Store'.
    - **Max Width, Height –** Maximum dimensions of remnant that can be saved as 'Online Store'.
    - **Max H / W ratio –** Maximum ratio of height / width that is acceptable for a remnant piece to be saved as 'Online Store'.

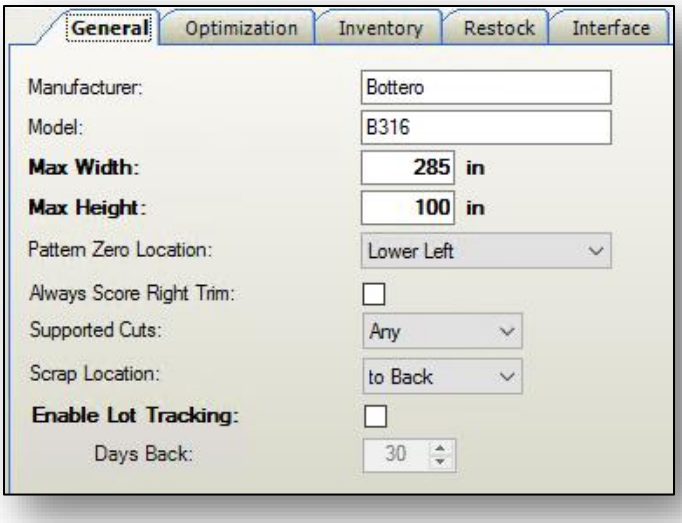
Note: Interfaced parameters can also be accessed in the setup screens of Opti-Break.

Interlayer Cutter

'Interlayer Cutters' are machines used to optimize and cut the interlayer of laminated glass units, allowing for a non-continuous interlayer optimizer. The setup is like other glass cutting machines. FeneVision will calculate the fractional amount of a roll used by the release by utilizing a specified calculation.

For example, if a roll of interlayer is 100" high x 25,000" long, and a sheet of glass is 100" high x 100" long, one sheet =0.004 of a roll.
(100 * 100) / (100 * 25000) = 0.004
Similarly, if the user were to override the width of a sheet to be 250" wide, then one sheet = 0.01 of a roll.
(100 * 250) / (100 * 25000) = 0.0

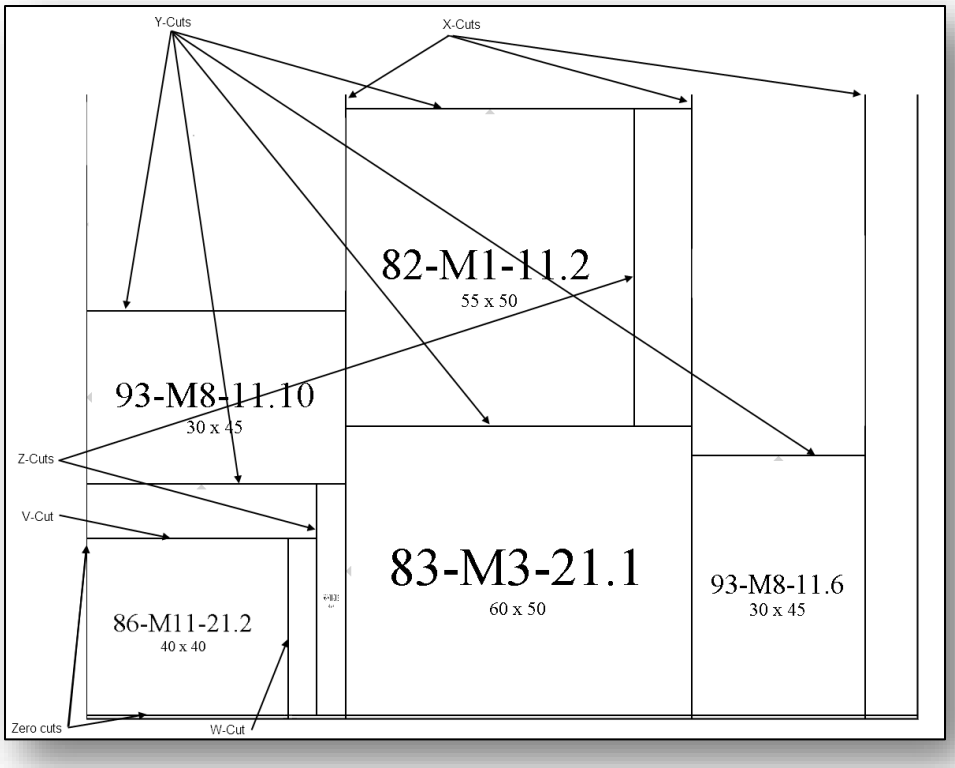
General Tab



- **Manufacturer –** Manufacturer of the cutting table (for informational purposes only).
- **Model –** Model of the cutting table (for informational purposes only).
- **Max. Width –** Maximum stock sheet width that the cutting table can handle (maximum travel along the X-axis).
- **Max. Height –** Maximum height of a stock sheet that the cutting table can handle (maximum travel along the Y-axis).

  Note: When an interlayer part is configured to optimize as a 'Roll', the width of available stock parts to optimize on will use the Max Width of the selected machine.

- **Pattern Zero Location –** Indicates the corner of the pattern representing position 0.0.
- **Always Score Left / Right Trim –** When the last X cut is close to the end of the pattern, the algorithm can choose to remove it and extend all the Y scores to the edge of the stock sheet. Checking 'Always Score Right/Left Trim' assures that the algorithm will add the trim near the edge of the pattern and end the 'Y' scores at that trim, rather than extending the 'Y' scores to the edge.
- **Supported cuts –** Setting to indicate which cuts are supported for this table ('XYZ', 'XYZV', 'XYZVW', and 'Any').
  - **XYZ, XYZV, XYZVW, or Any –** Indicates types of cuts the machine will support. Below represents an image of an 'XYZVW' cut structure.



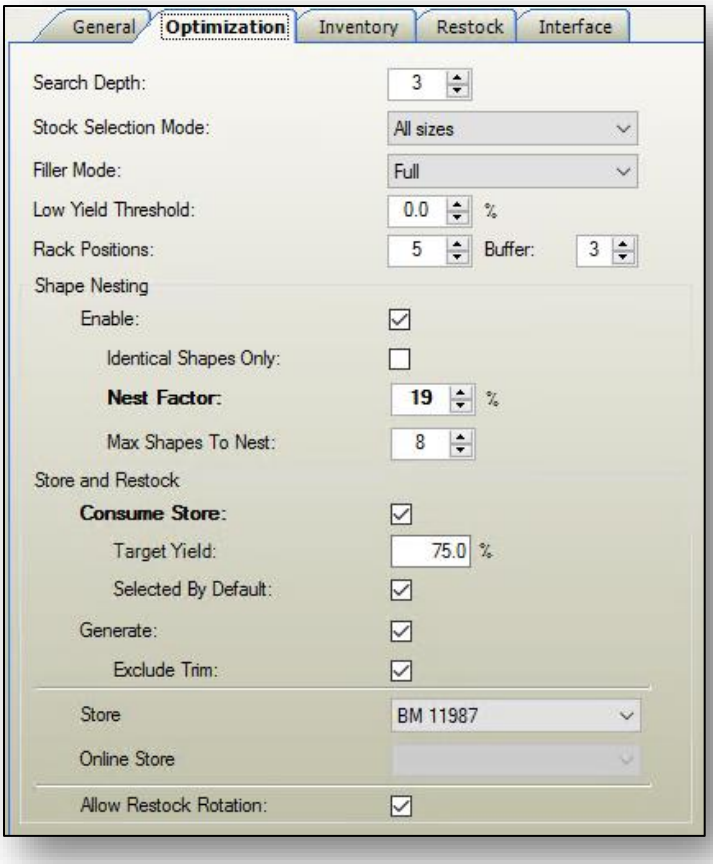
- **X-CUT –** Vertical score made along a point on the X-cuts travel between the top and bottom of the sheet.
- **Y-CUT –** Horizontal score made along a point on the 'Y-axis'. 'Y-CUTs' travel between two X-cuts or the sides of the pattern.
- **Z-CUT –** Vertical score with at least one endpoint on a 'Y-cut and no endpoint on a 'V-cut.
- **V-CUT –** Horizontal score with at least one endpoint on a Z-cut.
- **W-CUT –** Vertical score with at least one endpoint on a V-cut.
- **Any –** Includes any cuts supported by FeneVision. Currently, 'Any' and 'XYZVW' are the same.

- **Scrap Location –** This indicates where scrap will be placed. If part of a sub-plate is production but another part is scrap, this setting determines if the scrap should be placed at the 'Front' of the sub-plate or at the 'Back'.

  Note: 'Front' and 'Back' are relative to the 'Pattern Zero Location'. The end of the sub-plate that is closest to the 'Pattern Zero Location' is the 'Front' and farthest is the 'Back'.

- **Enable Lot Tracking –** Checkbox to indicate if 'Lot Tracking' is enabled for this cutting machine.
- **Days Back –** Drop-down to indicate how many days back for the machine to look for lots. This goes off the receipt date associated with the lot. Disabled if 'Lot Tracking' is not enabled.

Optimization Tab



The following fields exist on the 'Optimization' tab:

- **Search Depth –** Controls the amount of effort the algorithm exerts to improve yields. This will be a numeric value between 1 and 10. The higher the number, the harder the algorithm will work, but it will also increase the amount of time it takes to optimize. Users are encouraged to experiment with search depths to find what works best. Additionally, this can be changed per release when optimizing.
- **Stock Selection Mode –** This setting will tell the algorithm if it is more important to get the best possible yield or to minimize the number of times the operator has to switch stock sizes
  - **Best yield –** Optimizes all stock sizes together and each stock size separately and chooses the best result of the two.
  - **All sizes –** Optimizes only all sizes together.
  - **One size –** Optimizes on each stock size completely and chooses the best result.
  - **One size except last pattern –** Optimizes on each stock size completely but allows use of a smaller stock size for the last pattern.

- **Filler Mode –** This mode will be used when filling out empty space on patterns with filler lites.
  - **Disabled –** No filler lites will be placed on the patterns. See below for an example of a pattern with filler mode disabled.
  - **Full –** Filler lites will be used where they fit anywhere there is scrap on a pattern. See below for an example of a pattern with filler mode set to 'Full'. The lites marked with an 'F' are filler lites.

- **Subplate –** Filler lites will only be used to fill the scrap within the subplates on a pattern. They will not be used to fill-in any scrap outside the final 'X' cut on a pattern. See below for an example of a pattern with filler mode set to 'Subplate'. The lites marked with an 'F' are filler lites.

  Note: 'Filler' lites are lites that do not need to be cut yet; however, if there is room on the glass that will go to waste then these are pulled into the patterns. 'Filler' lites will take priority over 'Stored' or 'Restocked'. For more information on how to mark a lite as a 'Filler' lite, see the 'Filler Functionality' section.

- **Low Yield Threshold –** User chooses a value to represent the lowest yield percentage. If a pattern falls below this yield, the 'Yield' column will flicker. Defaults to '0'.
- **Rack Positions –** This determines how many racks can be included at any time around a cutting table. In batch mode, this determines the size of the batch.
- **Shape Nesting –** The following settings apply to how the optimizer will attempt to 'nest' shapes. Nesting shapes is when the diagonal edges of shapes are placed together to limit the amount of scrap generated by a shape.
  - **Enable –** When checked, the machine will attempt to nest any shape that is configured to 'Allow shape nesting'.
  - **Identical Shapes Only –** When checked the machine will only attempt to nest shapes that are identical.
  - **Nest Factor –** Percentage to specify how much of an improvement within a 'nested pair' is needed for nesting to occur. The 'improvement' is determined by the amount of area used. If the area improvement is greater than or equal to the 'Nest Factor' than it will attempt to nest those two shapes together. Otherwise, it will not. 10% is a typical nest factor setting.

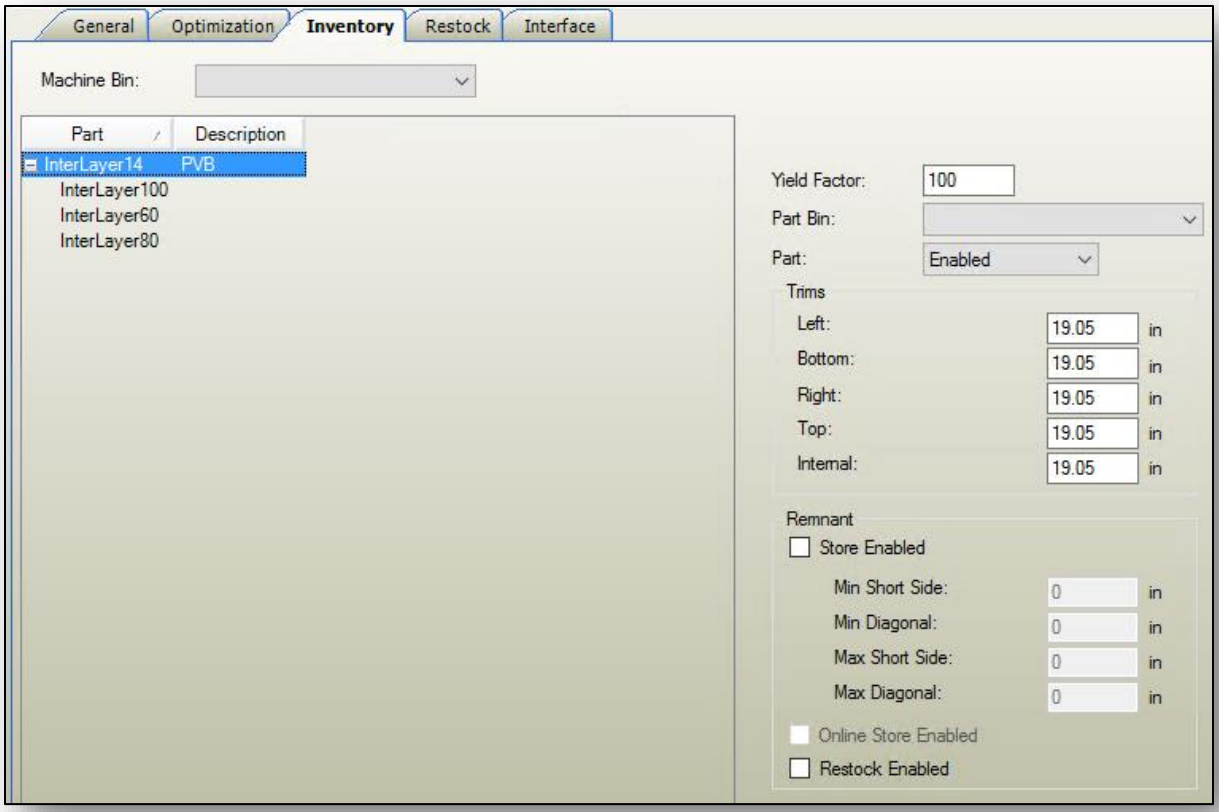
    For example, there are 3 nest-able shapes on a release. Optimized alone, lite 1 consumes 4 SqFt, lite 2 consumes 5 SqFt, and lite 3 consumes 6 SqFt. In this example, 'Nest Factor' is set to 21%. When optimized together, lite 1 and lite 2 take up 7 SqFt. Thus, the area improvement from this nesting would be 22%. This is determined by the formula (Un-nested Area [9] – Nested Area [7]) / (Un-nested Area [9]). In this scenario, these shapes could be nested together. However, lite 1 and lite 3 take up 8 SqFt when nested together. Now the area improvement would be 20%. Therefore, with a nest factor of 21%, lite 1 and lite 3 would not be allowed to nest together.

  - **Max Shapes To Nest –** Setting to indicate how many shapes can be nested within one block. Can be anywhere from 2 to 10.

- **Store and Restock –** The settings in the 'Optimization' tab for 'Store and Restock' for the 'Interlayer Cutter' are the same as the settings for the 'Glass Cutting' machines.

Inventory Tab

The 'Inventory' tab in the 'Machines' setup for 'Interlayer Machines' allows the user to override the default settings for inventory parts. Only 'Interlayer' parts will be visible in this tab.



The following fields exist in the 'Inventory' tab in the 'Interlayer Cutter' machine setup:

- **Machine Bin –** Drop-down to indicate which bin, if any, is assigned for that 'Interlayer Cutting' table from which inventory is pulled. If a bin is indicated, this will affect inventory transactions from FeneVision Core.
- **Part / Description Grid –** Highlighting each part allows for configuration of the right side of the screen.
- **Part –** Select one of the three options from the dropdown list:
  - **Disabled –** The sheet size will be ignored by the optimizer even though it might be in a production schedule.
  - **Enabled –** The sheet size will be enabled for optimization and will be checked by default during optimization.
  - **Optional –** The sheet size will appear in the optimizer but will not be checked by default during optimization.

- **Yield Factor -** This setting is used to perform yield comparisons between different sizes of the same stock, thus allowing the optimizer to give preference to one size over another. The Yield Factor can be any value greater than 0 and less than or equal to 100. The scrap of each size is multiplied by its corresponding yield factor, and the result is then compared to select the best pattern; the lowest result will have highest preference. The yield factors for two or more sizes can be the same if no preference is desired. The following internal calculation is used:
  - weightedWaste = patternWaste * (1 + ((100 - YieldFactor) / 100)

For example, assume that there are 4 stock sizes that all generated a pattern with the same amount of scrap, 4.2 SqFt.

- Stock A has a Yield Factor of 100.
- Stock B has a Yield Factor of 90.
- Stock C has a Yield Factor of 50.

- Stock D has a Yield Factor of 5.

When deciding which pattern to keep, the algorithm compares the weighted waste as depicted below:

- Stock A's pattern will have a weightedWaste of 4.2 sqft. (Waste * 1.0)
- Stock B's pattern will have a weightedWaste of 4.62 sqft. (Waste * 1.1)
- Stock C's pattern will have a weightedWaste of 6.3 sqft. (Waste * 1.5)
- Stock D's pattern will have a weightedWaste of 8.19 sqft. (Waste * 1.95)

StockA will have generated the preferable pattern as the weightedWaste is the lowest.

Note: This value is set based on the default value from Inventory Setup; however, during the optimization, this field can be overridden.

Note: When syncing parent / child relationships from Core, the default 'Yield Factor' will be set to 100.

- **Trims –** Sets the trims (scrap) along the left, right, top, and bottom of the sheet to allow square cuts. Typically, all edge trims are triple the material thickness with the internal trim as the smallest section that can be cut out.
  - **Left –** Score placed along the left side of the sheet.
  - **Bottom –** Score placed along the bottom side of the sheet.
  - **Right –** Score placed along the right side of the sheet.
  - **Top –** Score placed along the top side of the sheet.
  - **Internal –** Determines the smallest section that can be cut out. For example, if a gap is left between two lites, that will be scrapped. The algorithm used to determine trim size guarantees the gap is no smaller than the trim setting.

    Note: All trims are relative to 'Zero Pattern Location' that resides in the lower left corner; therefore, if a left trim is set and then the 'Zero Pattern Location' is set to be on the right, the left trim will always appear on the right.

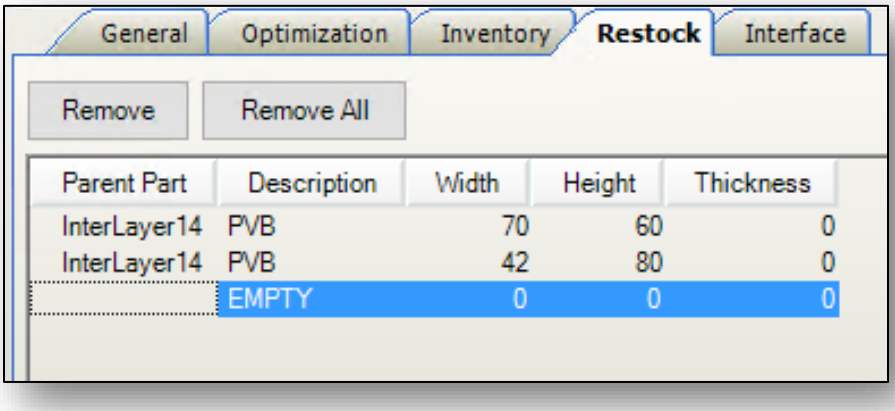
- **Remnant –** Scrap that can be stored for future use.
  - **Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Store'.
  - **Min Short Side –** Minimum length of the short side measurement that can be saved. Anything with a smaller short side than this is considered too small to save.
  - **Min Diagonal –** Minimum length of the diagonal measurement that can be saved. Scrap with a diagonal less than this is considered too small to save.
  - **Max Short Side –** Maximum length of the short side measurement that can be saved. Anything with a short side larger than this is considered too large for the store slots and will not be saved.
  - **Max Diagonal –** Maximum length of the diagonal measurement that can be saved. Anything with a diagonal larger than this is considered too large for the store slots and will not be saved.

- **Online Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Online Store'. Only unused 'X' plates at the ends of patterns are eligible to be saved as 'Online Store'.

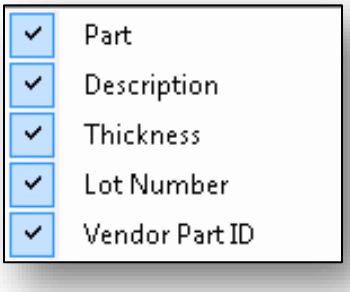
- **Restock Enabled –** When checked, this enables the machine to save the unused portion of the last pattern in a batch without utilizing a 'Store' slot. The piece will be saved and placed back on the top of the stockpile and the algorithm will know to use it on the next pattern of that glass type.

Restock Tab

The 'Restock' functionality allows Opti-Glass to save the last largest piece of glass from an optimized pattern (X-plate) and place it into 'Store'. The user can remove or remove all parts from re-stocking. Highlight the part(s) to be removed and select either 'Remove' or 'Remove All'.

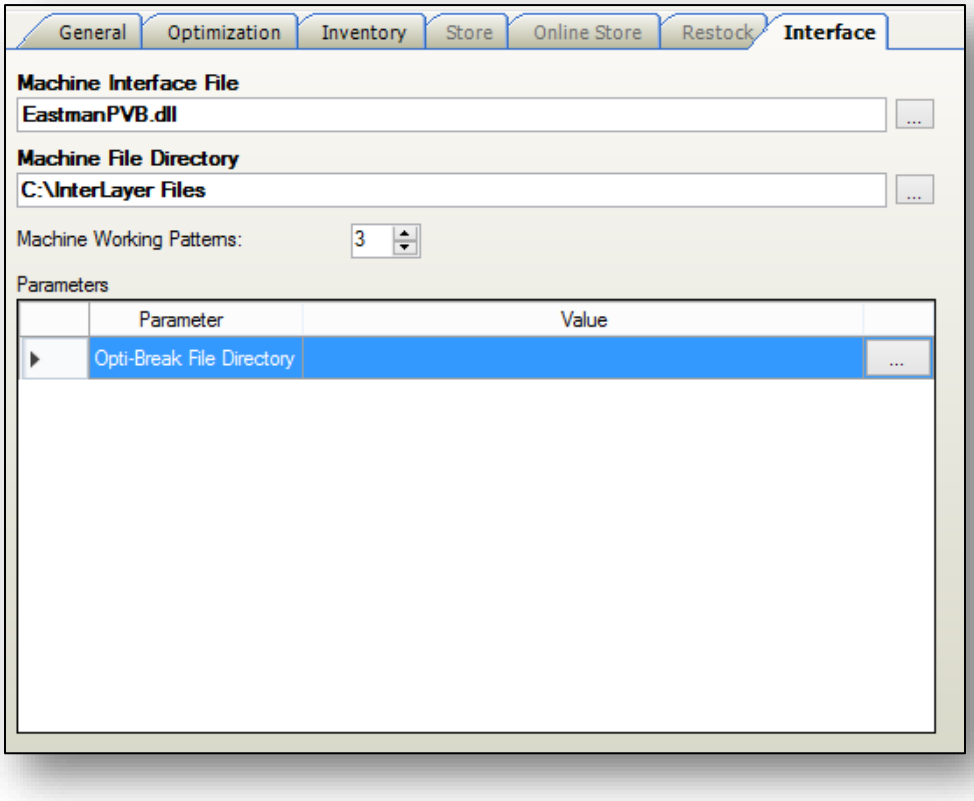


The image below represents the columns in the 'Restock' tab.



- **Parent Part (fixed column) –** The parent interlayer part of the 'Restock' piece. Typically, this would be the 'Interlayer Type' (required).
- **Part –** Stock sheet from which the 'Restock' piece originated (optional).
- **Description –** Description of the part. If this is blank, this will be populated with a description of the 'Parent Part' (automatically filled based on 'Parent Part' and 'Part').
- **Width –** Width of the 'Restock' piece.
- **Height –** Height of the 'Restock' piece.
- **Thickness –** Thickness of the 'Restock' piece. Automatically filled from the 'Interlayer Tab' in 'Inventory' Setup based on the 'Parent Part' and 'Part'.
- **Vendor Part ID –** Alphanumeric identifier of the Vendor part from which the 'Restock' piece was generated. This is different from the Part number in that parts could potentially have the same number; the Vendor Part ID, however, distinguishes two of the same parts from different vendors.
- **Lot Number –** Identifier of the lot from which the glass originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.

Interface Tab



The following fields exist in the 'Interface' tab:

- **Machine Interface File –** This field allows the user to specify what type of machine interface is in use. Selecting the ... button allows the user to select the DLL to be used.

  Note: For additional assistance with the DLLs, contact FeneTech.

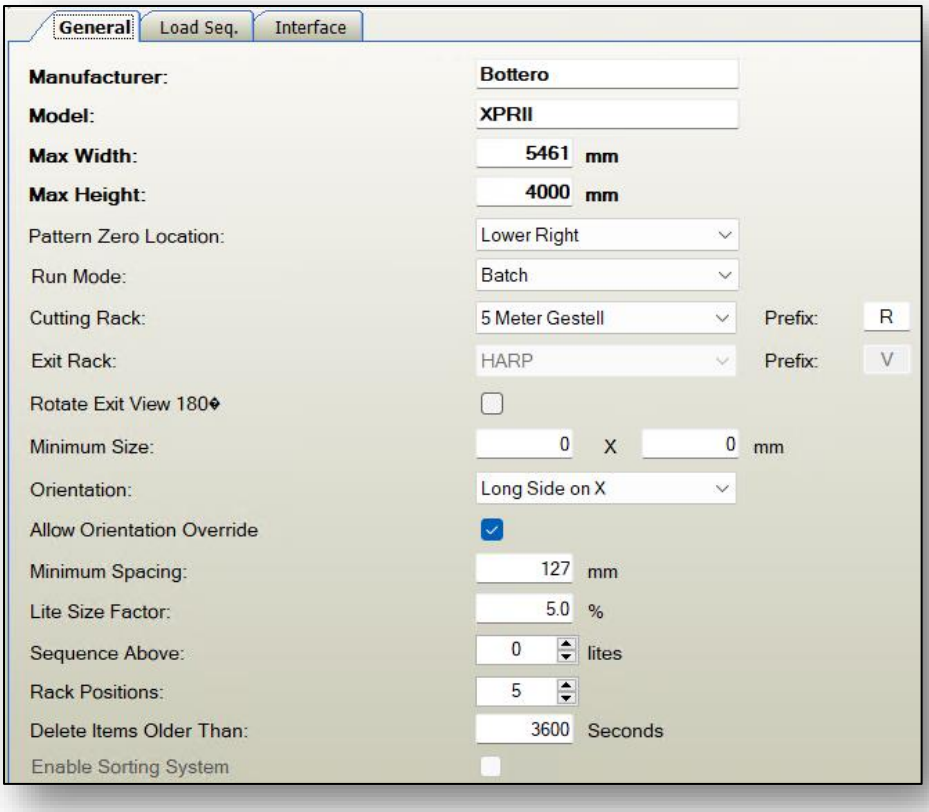
- **Machine File Directory –** Output path for the machine files when generated through Opti-Glass.
- **Parameters –** No parameters currently exist for 'Interlayer' interfaces.

Tempering Machines

The 'Tempering Machines' setup allows users to configure tempering machines for Opti-Temp. Once schedules have been released to OPTI, a tempering release can be prepared for tempering machines in 'Batch' mode or 'Batch (w/ Exit Racks)'. 'Dynamic' tempering machines will not be used for tempering releases.

General Tab

The 'General' tab of 'Machines' setup for 'Tempering' machines differs slightly than those for the 'Cutting' or 'Interlayer' machines.



- **Manufacturer –** Manufacturer of the tempering oven.
- **Model –** Model of the tempering oven.
- **Max Width –** Maximum width of the lites that can be placed in the tempering oven at one time. Typically, this is set to the width of the bed (maximum travel along the X-axis).
- **Max Height –** Maximum height of lites that can be placed in the tempering oven at one time. Typically, this is set to the height of the bed (maximum travel along the Y-axis).
- **Pattern Zero Location –** Indicates the corner of the pattern that represents position 0.0.
- **Run Mode –** Allows the user to configure in which mode the 'Tempering' machine will run the release.
    - **Batch Mode –** In this mode, a 'Tempering' release is created and optimized in FeneVision Opti-Glass prior to placing the lites on a cutting release. The 'Load' racks generated for the tempering release will appear when placing the lites on a cutting release. At Opti-Temp the preconfigured tempering release will be used instead of generating a new release at Opti-Temp.
    - **Batch with Exit Racks Mode –** This mode is like 'Batch' mode, but new racks are generated for unloading the tempering oven. These racks are different from the 'Load' racks.
    - **Dynamic Mode –** No 'Tempering' releases are created from Opti-Glass, and no preconfigured 'Tempering' releases are created ahead of time. In FeneVision Opti-Temp, the tempering release is created at the time the release is run based on the availability of units that are ready to be tempered.

- **Cutting Rack –** Rack from which the units will enter the tempering oven. Disabled in 'Dynamic' mode.
- **Exit Rack –** Rack upon which the tempered units will be placed once tempering is complete. Enabled only when in 'Batch with Exit Mode'.
- **Rotate Exit View 180 ° –** Indicates the pattern will be rotated 180 degrees from Pattern Zero Location upon exiting

- **Minimum Size –** Minimum size of glass that can be used in tempering bed. For a lite to meet the minimum size requirement the longest side of the lite must be greater than or equal to the largest value (Height or Width) of 'Minimum Size' AND the short size of the lite must be greater than or equal to the other value (Height or Width) of 'Minimum Size'.

  For example, if 'Minimum Size' is set to 15 x 25 and a lite is 25 x 16, it can be tempered at this machine. If a lite is 35 x 10, it cannot be tempered at this machine.

- **Orientation –** The positioning of the glass on the machine.
  - **{Any} –** Lites can be rotated in any way on the tempering bed.
  - **Base on X –** Base of the lite will be placed along the bottom of the tempering bed (X-Axis). This setting will make it so that lites are not rotated in tempering.
  - **Base on Y –** Base of the lite will be placed along the left side of the tempering bed (Y-Axis). This setting will make it so lites are rotated 90° in tempering.
  - **Long Side on X –** The long side of the lite will be used as the base of the lite. Base of the lite will be placed along the bottom of the tempering bed (X-Axis).
  - **Long Side on Y –** The long side of the lite will be used as the base of the lite. Base of the lite will be placed along the left side of the tempering bed (Y-Axis).

  Note: The X-axis and Y-axis are relative to how the pattern is shown on the screen (X-axis is the bottom of the pattern; Y-axis is the left).

- **Allow Orientation Override –** Allows the orientation to be overridden if doing so will increase the tempering yield.
- **Minimum Spacing –** The minimum number of inches between lites.
- **Lite Size Factor –** This parameter controls the size of lites that may be placed together on a layout pattern. It defines a percentage of area. It sets the following limit:

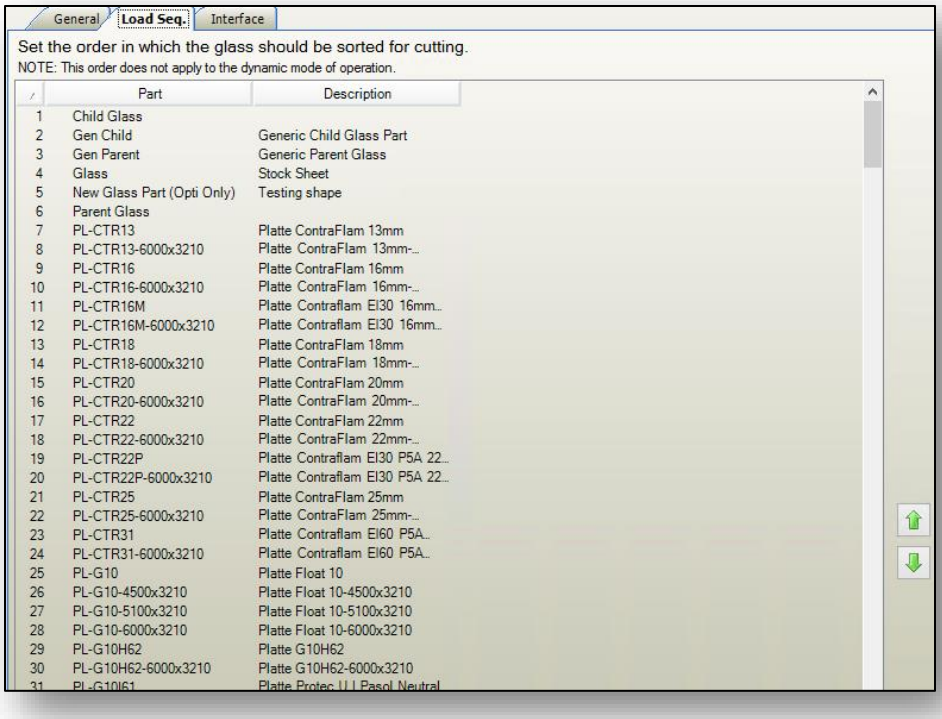
  Smallest Lite Area > LSF * largest lite area.
  LSF must be between 0 and 100%.

  Note: The LSF can be customized through a custom stored procedure in order to create a range of settings. Please contact FeneTech for more information.

- **Rack positions –** This determines how many racks can be included at any time around a tempering oven. In batch mode, this determines the size of the batch.
- **Delete Items Older Than –** Allows the user to specify per tempering machine how many seconds a pattern will remain queued at the Opti-Temp exit station. Defaults to 3600 second or one (1) hour. After the time is exceeded, the pattern will be cleared from the unload station.
- **Enable Sorting System –** Allows the Tempering machine to be linked to a sorting interface. This is only able to be selected for a dynamic Tempering machine. Contact FeneTech for more information about using sorting interfaces.

Load Sequence Tab

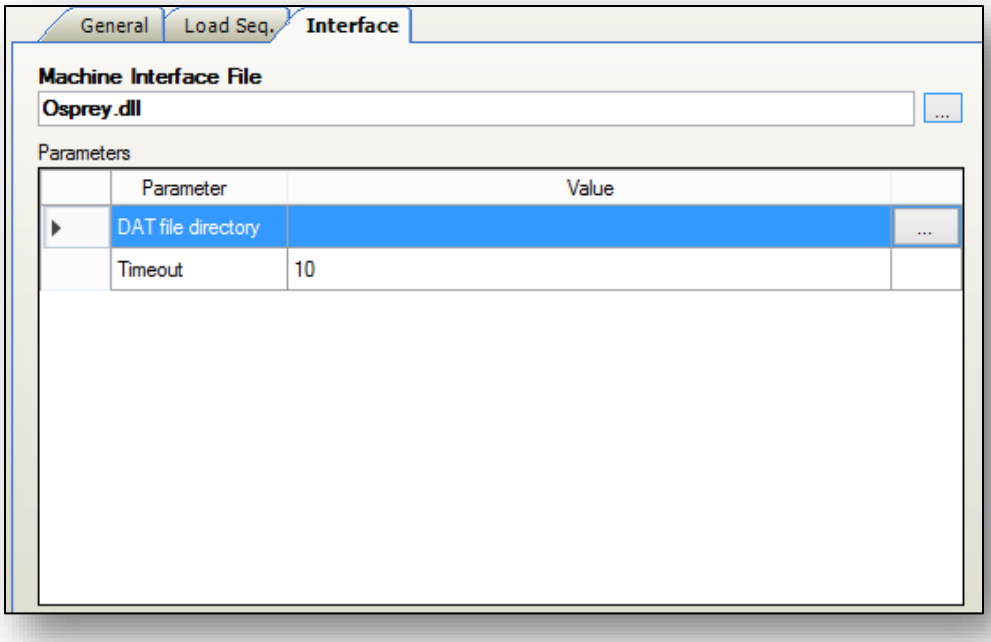
The 'Load Sequence' tab allows users to set the order in which the glass should be sorted for processing.



Use up/down arrows to arrange the sequence of the glass for tempering.

Interface Tab

The ‘Interface’ tab allows the user to configure the settings that are specific to the type of tempering machine being used.



The following fields exist in the 'Interface' tab:

- **Machine Interface File –** This field allows the user to specify what type of machine interface is in use. Selecting the ... button allows the user to select the DLL to be used.

  Note: For additional assistance with the DLLs, contact FeneTech.

- **Parameters –** Allows the user to set parameters for the machine.

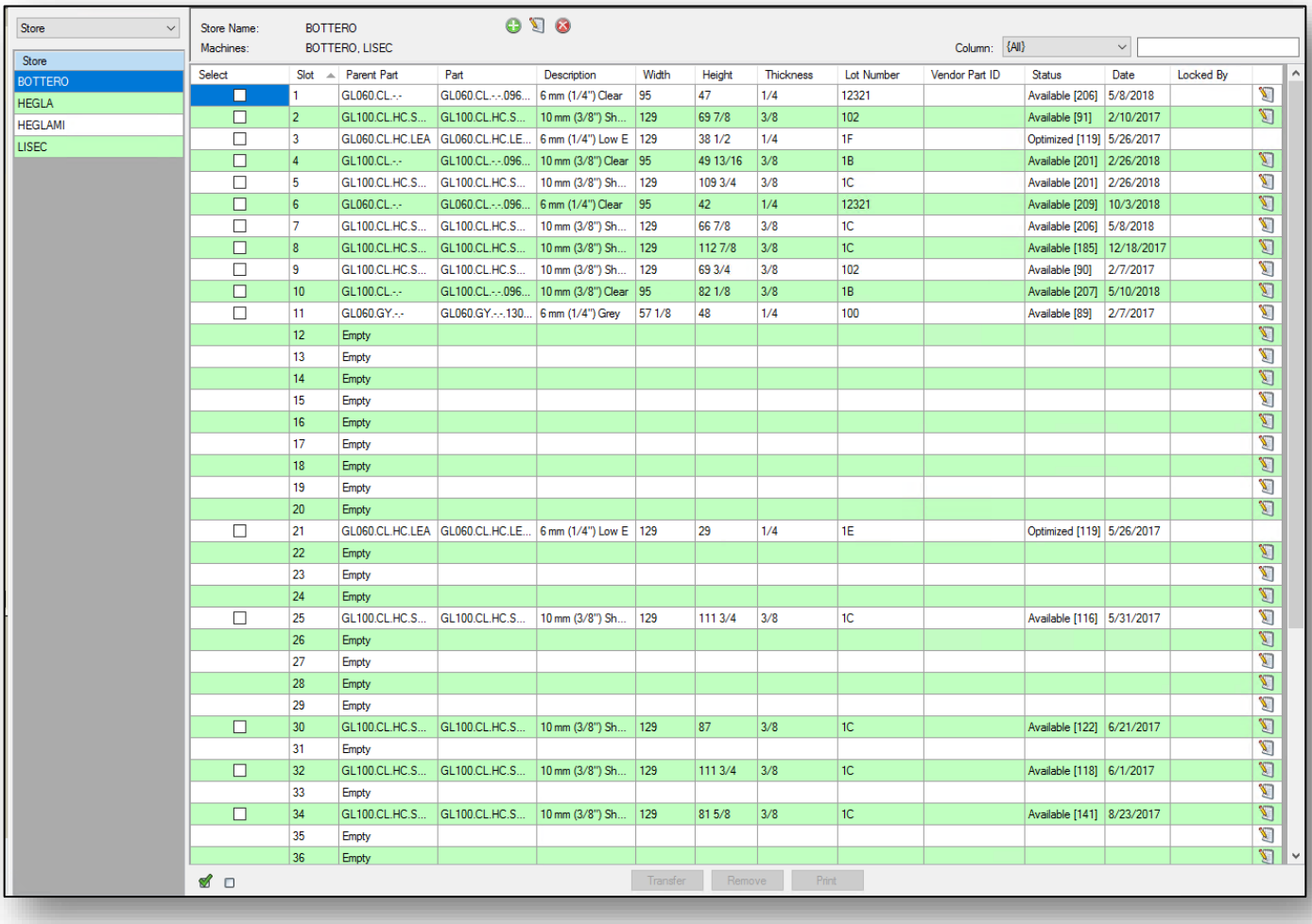
Note: The Osprey and Line Scanner interfaces are currently the only supported interfaces for Tempering Machines. All other .dll selections will not save to the machine upon leaving the machine window. Contact FeneTech for more information setting up the Line Scanner interface.

Loader Machines

When adding a new machine a Loader machine can be selected. Contact FeneTech for more information about using Loader interfaces.

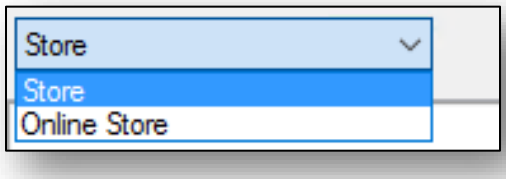
Stores

The 'Stores' dialog enables the user to manage the storage of remnant pieces. Generating 'Store' pieces in optimizations and manually creating store pieces are both viable ways to add remnant pieces to 'Stores'.

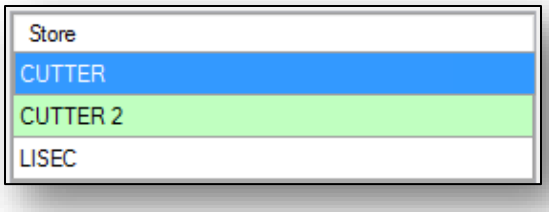


Select	Slot	Parent Part	Part	Description	Width	Height	Thickness	Lot Number	Vendor Part ID	Status	Date	Locked By
☐	1	GL060.CL.-.-	GL060.CL.-.-.096...	6 mm (1/4") Clear	95	47	1/4	12321		Available [206]	5/8/2018	
☐	2	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	69 7/8	3/8	102		Available [91]	2/10/2017	
☐	3	GL060.CL.HC.LEA	GL060.CL.HC.LE...	6 mm (1/4") Low E	129	38 1/2	1/4	1F		Optimized [119]	5/26/2017	
☐	4	GL100.CL.-.-	GL100.CL.-.-.096...	10 mm (3/8") Clear	95	49 13/16	3/8	1B		Available [201]	2/26/2018	
☐	5	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	109 3/4	3/8	1C		Available [201]	2/26/2018	
☐	6	GL060.CL.-.-	GL060.CL.-.-.096...	6 mm (1/4") Clear	95	42	1/4	12321		Available [209]	10/3/2018	
☐	7	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	66 7/8	3/8	1C		Available [206]	5/8/2018	
☐	8	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	112 7/8	3/8	1C		Available [185]	12/18/2017	
☐	9	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	69 3/4	3/8	102		Available [90]	2/7/2017	
☐	10	GL100.CL.-.-	GL100.CL.-.-.096...	10 mm (3/8") Clear	95	82 1/8	3/8	1B		Available [207]	5/10/2018	
☐	11	GL060.GY.-.-	GL060.GY.-.-.130...	6 mm (1/4") Grey	57 1/8	48	1/4	100		Available [89]	2/7/2017	
	12	Empty										
	13	Empty										
	14	Empty										
	15	Empty										
	16	Empty										
	17	Empty										
	18	Empty										
	19	Empty										
	20	Empty										
☐	21	GL060.CL.HC.LEA	GL060.CL.HC.LE...	6 mm (1/4") Low E	129	29	1/4	1E		Optimized [119]	5/26/2017	
	22	Empty										
	23	Empty										
	24	Empty										
☐	25	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	111 3/4	3/8	1C		Available [116]	5/31/2017	
	26	Empty										
	27	Empty										
	28	Empty										
	29	Empty										
☐	30	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	87	3/8	1C		Available [122]	6/21/2017	
	31	Empty										
☐	32	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	111 3/4	3/8	1C		Available [118]	6/1/2017	
	33	Empty										
☐	34	GL100.CL.HC.S...	GL100.CL.HC.S...	10 mm (3/8") Sh...	129	81 5/8	3/8	1C		Available [141]	8/23/2017	
	35	Empty										
	36	Empty										

Within the Store screen, users have the ability to select between store and online store. This will determine what list of store is shown.



Once a store type is selected, users are then able to select an individual store.

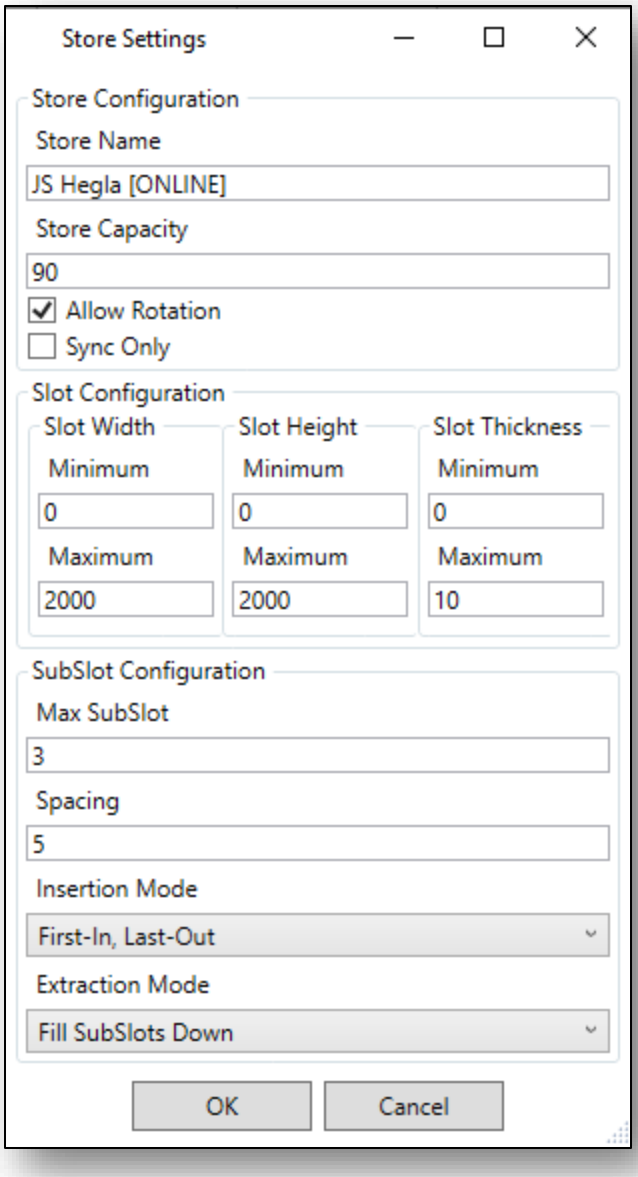


Once a store is selected, users are able to see the Store Name, the Machines assigned to consume and / or generate from the store, and the ability to add, edit, and delete the store.

Add / Edit a Store

Selecting the add or edit button will open the Store Settings screen. Here the user may edit the Store Name, as well as provide additional information about the store.

The following fields are available within the Store Settings screen:



- **Store Name** – Name given to the store. Will be what shows in all other screens referencing the store.
- **Store Capacity –** Total number of slots at this store location. The maximum number of slots is 32,767.
- **Allow Rotation –** Checkbox that indicates whether the store piece can be physically rotated before being added into the store system.
- **Sync Only** (Online Store Only) **–** When checked, manually adding, and removing within the store setup screen is removed. All store information will be synced to the store based on a separate online store/remnant system. When a remnant is consumed or generated, the store is indicated by OS, instead of the standard OS-[Slot Number].
- **Slot Width –** Allows a minimum and maximum width to be specified where items outside the specified dimensions will not be able to be stored. If left as 0 these settings are ignored.

- **Slot Height –** Allows a minimum and maximum height to be specified where items outside the specified dimensions will not be able to be stored. If left as 0 these settings are ignored.
- **Slot Thickness –** Allows a minimum and maximum thickness to be specified where items outside the specified dimensions will not be able to be stored. If left as 0 these settings are ignored.

SubSlot Configuration

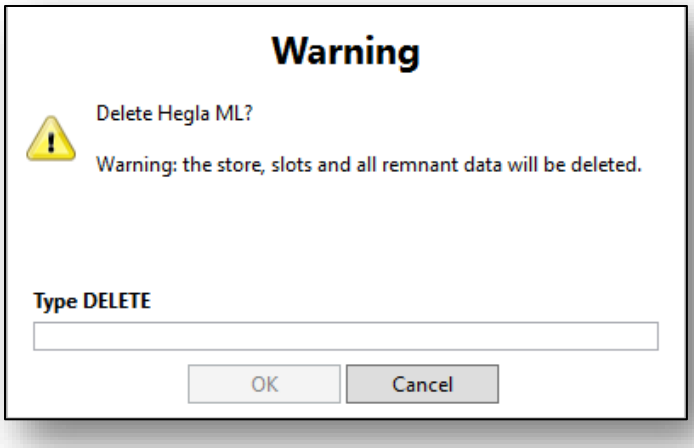
- **Max SubSlot** (Online Store Only) **–** Determines if the store allows for subslots within a single slot.
  - A value of 0 for the Max SubSlot indicates that there is no hard limit.
  - A value of 1 for the Max SubSlot setting will work as store has traditionally worked, where only one item is allowed in a slot.
- **Spacing** (Online Store Only) **–** Distance required between any two remnant pieces.
- **Insertion Mode** (Online Store Only) **–** Allows the user to indicate the method by which SubSlot values are updated within a single slot when a remnant is inserted.
  - **Insert By Index –** Currently, the only method of index inserts is by manual store manipulation in Store Setup.
  - **First-In, First-Out –** Remnants are placed at the end of the current slot. For example if SubSlots 1 and 2 are filled then the next remnant added to the slot will be placed in SubSlot 3. Note: What end of the slot is considered the 'end' depends on the Extraction Mode.
  - **First-In, Last-Out –** Remnants are placed at the beginning of the current slot. For example if SubSlots 1 and 2 are filled then the next remnant added to the slot will be placed in SubSlot 1 and the original remnants will move to SubSlots 2 and 3. Note: What end of the slot is considered the 'beginning' depends on the Extraction Mode.
- **Extraction Mode** (Online Store Only) – Allows the user to indicate the method by which SubSlot values are updated within a single slot when a remnant is removed.
  - **Fill SubSlots Down –** SubSlot values are shifted lower as they are extracted. This is meant for a storage system in which lower SubSlot values are chosen first. For example if SubSlots 1, 2, and 3 are in use and the remnant at SubSlot 2 is extracted, then the remaining remnants will occupy SubSlots 1 and 2.
  - **Fill SubSlots Up** – SubSlot values are shifted higher as they are extracted. This is meant for a storage system in which greater SubSlot values are chosen first. For example if SubSlots 1, 2, and 3 are in use and the remnant at SubSlot 2 is extracted, then the remaining remnants will occupy SubSlots 2 and 3.
  - **Maintain SubSlot –** Subslot values will remain unchanged when remnants are removed. For example if SubSlots 1, 2, and 3 are filled and remnant 2 is extracted, then the remaining items will still occupy SubSlots 1 and 3.

Note: The 'Sync only' store capability only works with machine interfaces that support Online Store / Remnant system, such as Bottero, Hegla, and Lisec.

Delete a Store

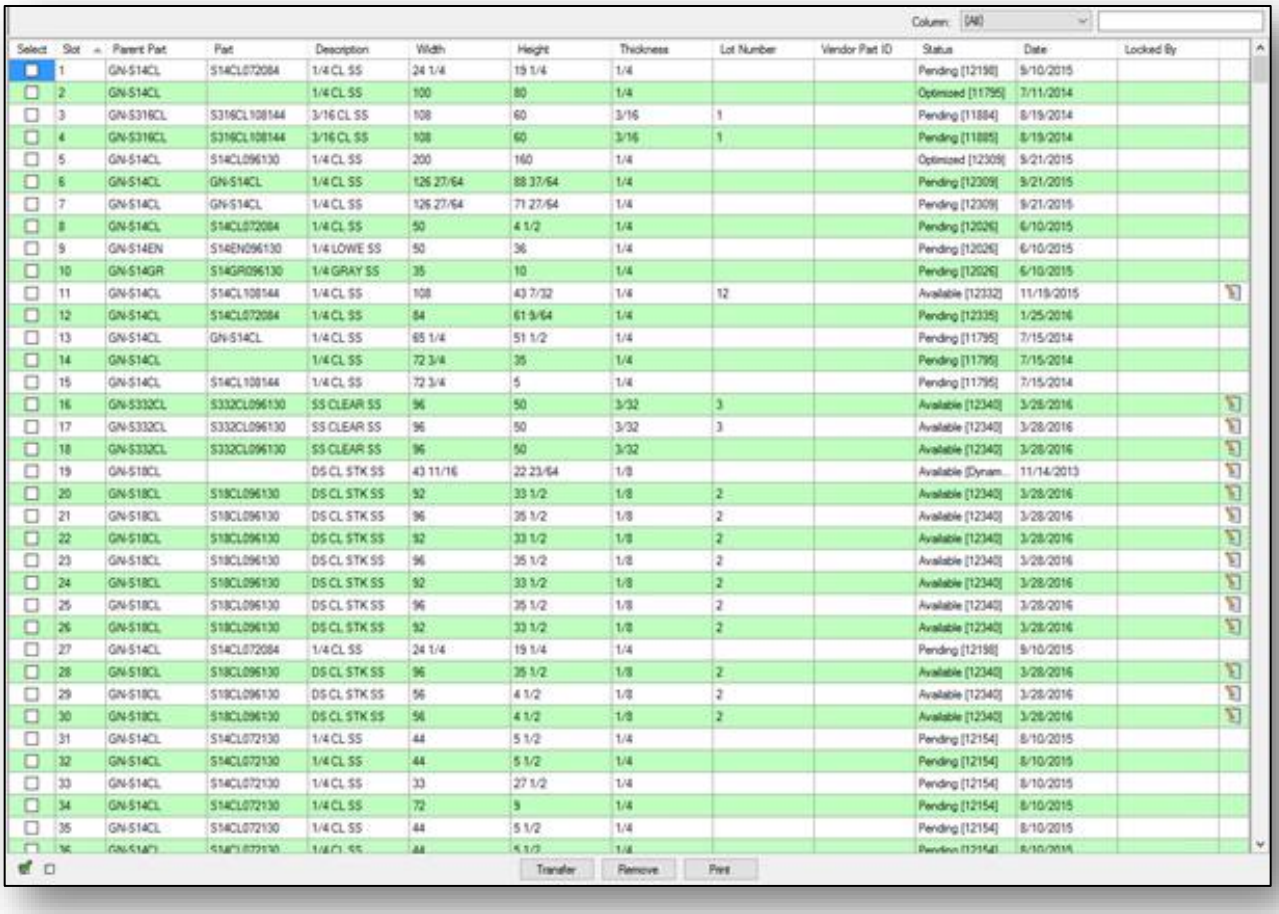
To delete a 'Store', complete the following:

1. Select the 'Delete' button to the right of the 'Store Settings' button.
2. When prompted, type the word 'DELETE' to successfully delete the 'Store'



Main Grid

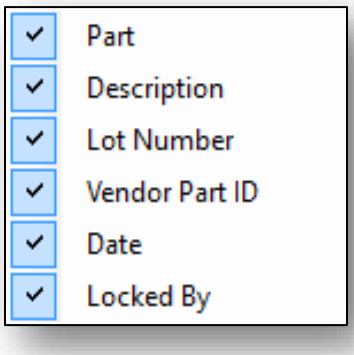
The main grid section of the store screen lists the slots within the store / online store location. Select and unselect all buttons are available in the top left corner. A 'Column' filter is also available. Select a column and the type criteria to filter the slot grid.



Select	Slot	Parent Part	Part	Description	Width	Height	Thickness	Lot Number	Vendor Part ID	Status	Date	Locked By
☐	1	GN-S14CL	S14CL072084	1/4 CL SS	24 1/4	19 1/4	1/4			Pending [12198]	9/10/2015	
☐	2	GN-S14CL		1/4 CL SS	100	80	1/4			Optimized [11795]	7/11/2014	
☐	3	GN-S316CL	S316CL108144	3/16 CL SS	108	60	3/16	1		Pending [11884]	8/19/2014	
☐	4	GN-S316CL	S316CL108144	3/16 CL SS	108	60	3/16	1		Pending [11885]	8/19/2014	
☐	5	GN-S14CL	S14CL096130	1/4 CL SS	200	160	1/4			Optimized [12309]	9/21/2015	
☐	6	GN-S14CL	GN-S14CL	1/4 CL SS	126 27/64	88 37/64	1/4			Pending [12309]	9/21/2015	
☐	7	GN-S14CL	GN-S14CL	1/4 CL SS	126 27/64	71 27/64	1/4			Pending [12309]	9/21/2015	
☐	8	GN-S14CL	S14CL072084	1/4 CL SS	50	4 1/2	1/4			Pending [12026]	6/10/2015	
☐	9	GN-S14EN	S14EN096130	1/4 LOWE SS	50	36	1/4			Pending [12026]	6/10/2015	
☐	10	GN-S14GR	S14GR096130	1/4 GRAY SS	35	10	1/4			Pending [12026]	6/10/2015	
☐	11	GN-S14CL	S14CL108144	1/4 CL SS	108	43 7/32	1/4	12		Available [12332]	11/19/2015	
☐	12	GN-S14CL	S14CL072084	1/4 CL SS	84	61 9/64	1/4			Pending [12335]	1/25/2016	
☐	13	GN-S14CL	GN-S14CL	1/4 CL SS	65 1/4	51 1/2	1/4			Pending [11795]	7/15/2014	
☐	14	GN-S14CL		1/4 CL SS	72 3/4	35	1/4			Pending [11795]	7/15/2014	
☐	15	GN-S14CL	S14CL108144	1/4 CL SS	72 3/4	5	1/4			Pending [11795]	7/15/2014	
☐	16	GN-S332CL	S332CL096130	SS CLEAR SS	96	50	3/32	3		Available [12340]	3/28/2016	
☐	17	GN-S332CL	S332CL096130	SS CLEAR SS	96	50	3/32	3		Available [12340]	3/28/2016	
☐	18	GN-S332CL	S332CL096130	SS CLEAR SS	96	50	3/32			Available [12340]	3/28/2016	
☐	19	GN-S18CL		DS CL STK SS	43 11/16	22 23/64	1/8			Available [Dynam...	11/14/2013	
☐	20	GN-S18CL	S18CL096130	DS CL STK SS	92	33 1/2	1/8	2		Available [12340]	3/28/2016	
☐	21	GN-S18CL	S18CL096130	DS CL STK SS	96	35 1/2	1/8	2		Available [12340]	3/28/2016	
☐	22	GN-S18CL	S18CL096130	DS CL STK SS	92	33 1/2	1/8	2		Available [12340]	3/28/2016	
☐	23	GN-S18CL	S18CL096130	DS CL STK SS	96	35 1/2	1/8	2		Available [12340]	3/28/2016	
☐	24	GN-S18CL	S18CL096130	DS CL STK SS	92	33 1/2	1/8	2		Available [12340]	3/28/2016	
☐	25	GN-S18CL	S18CL096130	DS CL STK SS	96	35 1/2	1/8	2		Available [12340]	3/28/2016	
☐	26	GN-S18CL	S18CL096130	DS CL STK SS	92	33 1/2	1/8	2		Available [12340]	3/28/2016	
☐	27	GN-S14CL	S14CL072084	1/4 CL SS	24 1/4	19 1/4	1/4			Pending [12198]	9/10/2015	
☐	28	GN-S18CL	S18CL096130	DS CL STK SS	96	35 1/2	1/8	2		Available [12340]	3/28/2016	
☐	29	GN-S18CL	S18CL096130	DS CL STK SS	56	4 1/2	1/8	2		Available [12340]	3/28/2016	
☐	30	GN-S18CL	S18CL096130	DS CL STK SS	56	4 1/2	1/8	2		Available [12340]	3/28/2016	
☐	31	GN-S14CL	S14CL072130	1/4 CL SS	44	5 1/2	1/4			Pending [12154]	8/10/2015	
☐	32	GN-S14CL	S14CL072130	1/4 CL SS	44	5 1/2	1/4			Pending [12154]	8/10/2015	
☐	33	GN-S14CL	S14CL072130	1/4 CL SS	33	27 1/2	1/4			Pending [12154]	8/10/2015	
☐	34	GN-S14CL	S14CL072130	1/4 CL SS	72	5	1/4			Pending [12154]	8/10/2015	
☐	35	GN-S14CL	S14CL072130	1/4 CL SS	44	5 1/2	1/4			Pending [12154]	8/10/2015	

Transfer | Remove | Print

The image below represents the column headings in the 'Store' tab. Right clicking on the column headers brings up the following menu allowing the user to hide or unhide columns.



- **Select –** Checkbox to select item.
- **Slot –** Store location's slot number. These remain static.
- **Parent Part –** The parent part of the store piece. Typically, this would be the 'Glass Type' / 'Interlayer Type' (required).

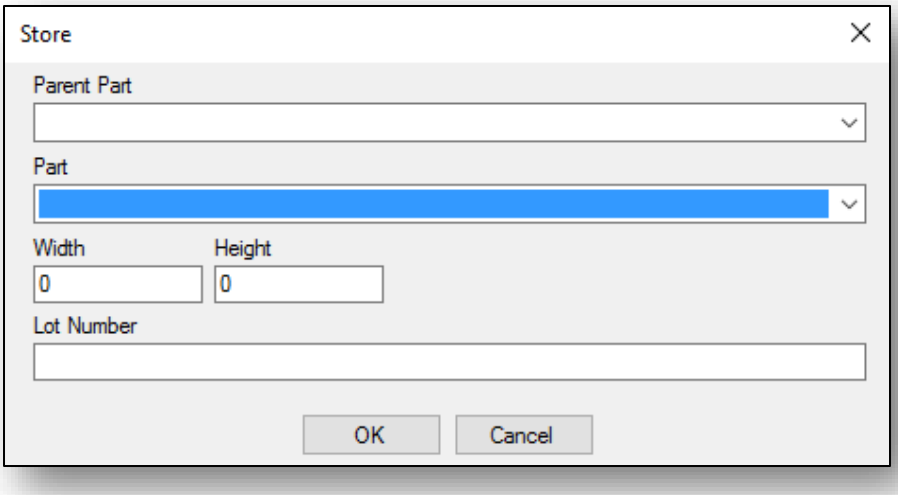
- **Part –** Stock sheet from which the store piece originated (optional).
- **Description –** Description of the part. If this is blank, this will be populated with a description of the 'Parent Part' (automatically filled based on 'Parent Part' and 'Part').
- **Width –** Store piece's width.
- **Height –** Store piece's height.
- **Thickness –** Thickness of the store piece. Automatically filled from the 'Part Tab' in 'Inventory' Setup based on the 'Parent Part' and 'Part'.
- **Lot Number –** Identifier of the lot from which the store piece originated. If 'Lot Tracking' is enabled for the machine or on the part from Core, this lot number is assigned by the Opti-Break user.
- **Vendor Part ID –** Alphanumeric identifier of the Vendor part from which the 'Store' piece was generated. This is different from the part number in that parts could potentially have the same number; the Vendor Part ID, however, distinguishes two of the same parts from different vendors.
- **Status –** The status of the 'Store' piece.
  - **Pending –** The 'Store' piece has been generated on a release, but the release has not yet been cut. Therefore, the slot is reserved for this store piece (which has yet to be broken out). The release number indicates what release generated this 'Store' piece.

    Note: 'Store' generated in 'Dynamic' mode will not receive a 'Pending' status because it is generated at the time of break out.

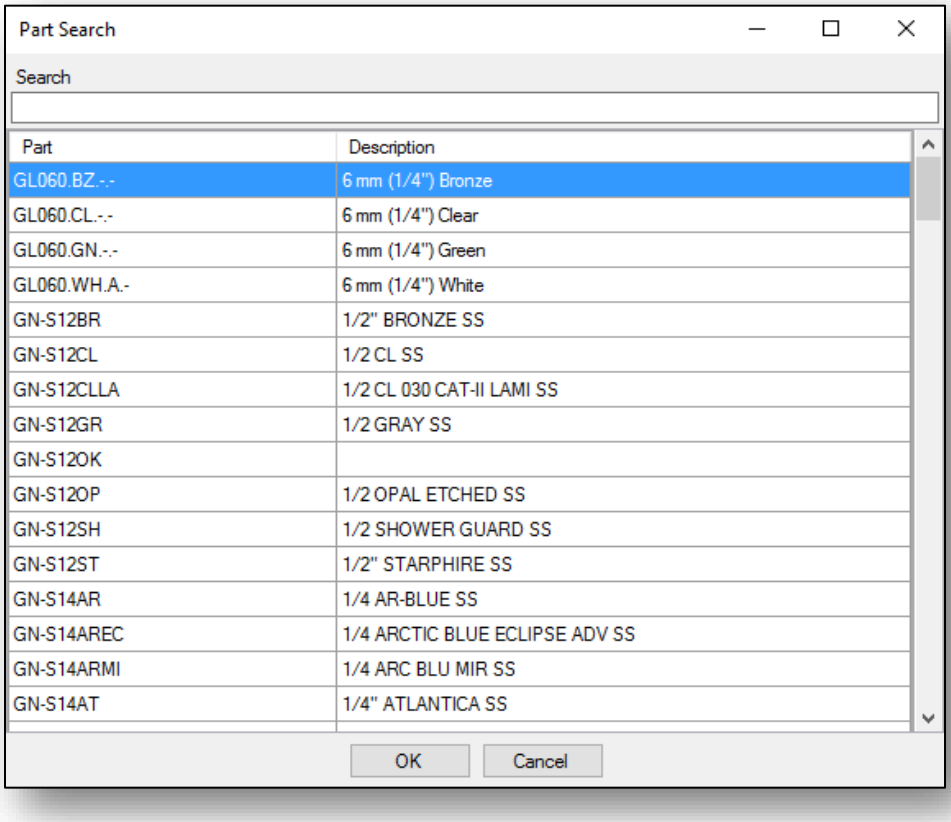
  - **Available –** Store piece is available to be used in *another* optimization. The release number indicates what release generated this 'Store' piece.
  - **Optimized –** The store piece has been optimized on another release. The release number indicates what release has consumed this 'Store' piece.

    Note: Users will not always see a release number following the status. If 'Manual' or 'Dynamic' follows the release status, this means that the store piece was manually added or that it was generated through a 'Dynamic' optimization. Neither of these secondary statuses will appear on pieces with a status of 'Optimized'.

- **Date –** Date in which the remnant was added to the store location.
- **Locked By –** Identifies the release that currently has the remnant pieces locked.
-  **Add / Edit –** Allows the user to manually add remnant in empty slots as well as edit existing remnant pieces that are marked 'Available'. The following screen will display when the add/edit button is selected:



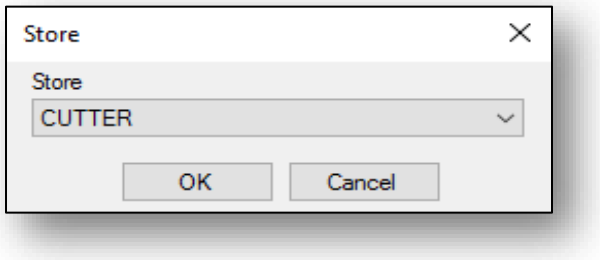
In this window, users will fill in the information to add a remnant piece or alter the existing fields when editing. The 'Parent Part' and 'Part' dropdowns have a selection labeled {Find} which displays a search window that allows the user to search by part number.



Action Buttons

Various actions can be done after selecting slots. To complete an action on all slots, use the 'Select All' and 'Unselect All' buttons in the top left corner.

- **Transfer –** Select an available remnant piece and select the 'Transfer' button to transfer the remnant piece to another store location. The following dialog screen will display to select the destination store location.



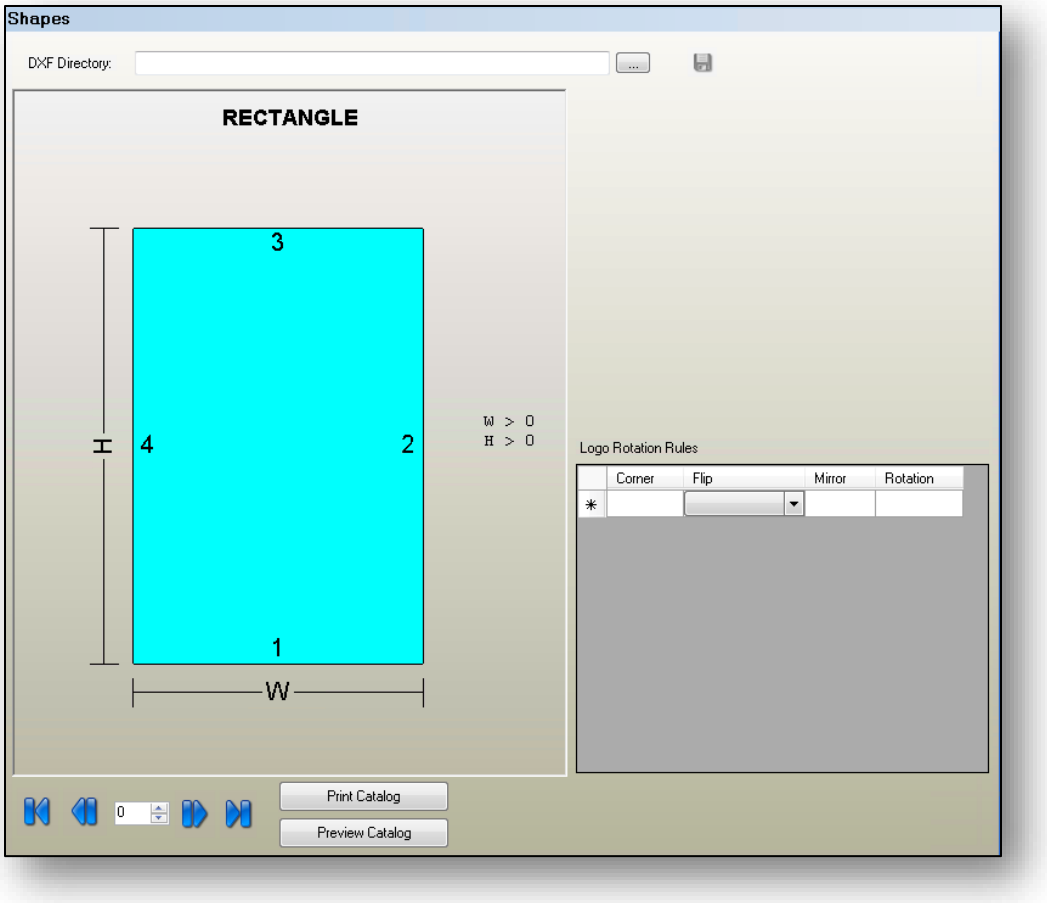
- **Remove –** Select an 'Available' remnant piece and select the 'Remove' button to remove the remnant from the store location.
- **Print –** Select remnant piece and select 'Print' to print store and online store labels.

Shapes

A standard shape library is provided with FeneVision Opti-Glass.

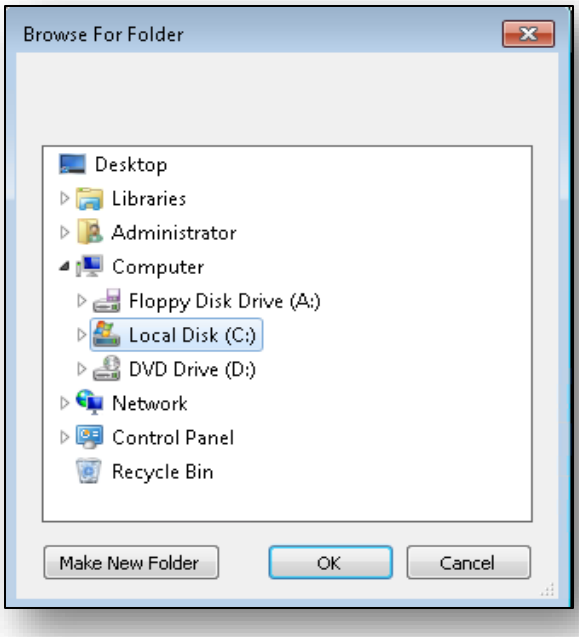
Catalog

Select the 'Shape' button. The 'Shapes' screen will appear.



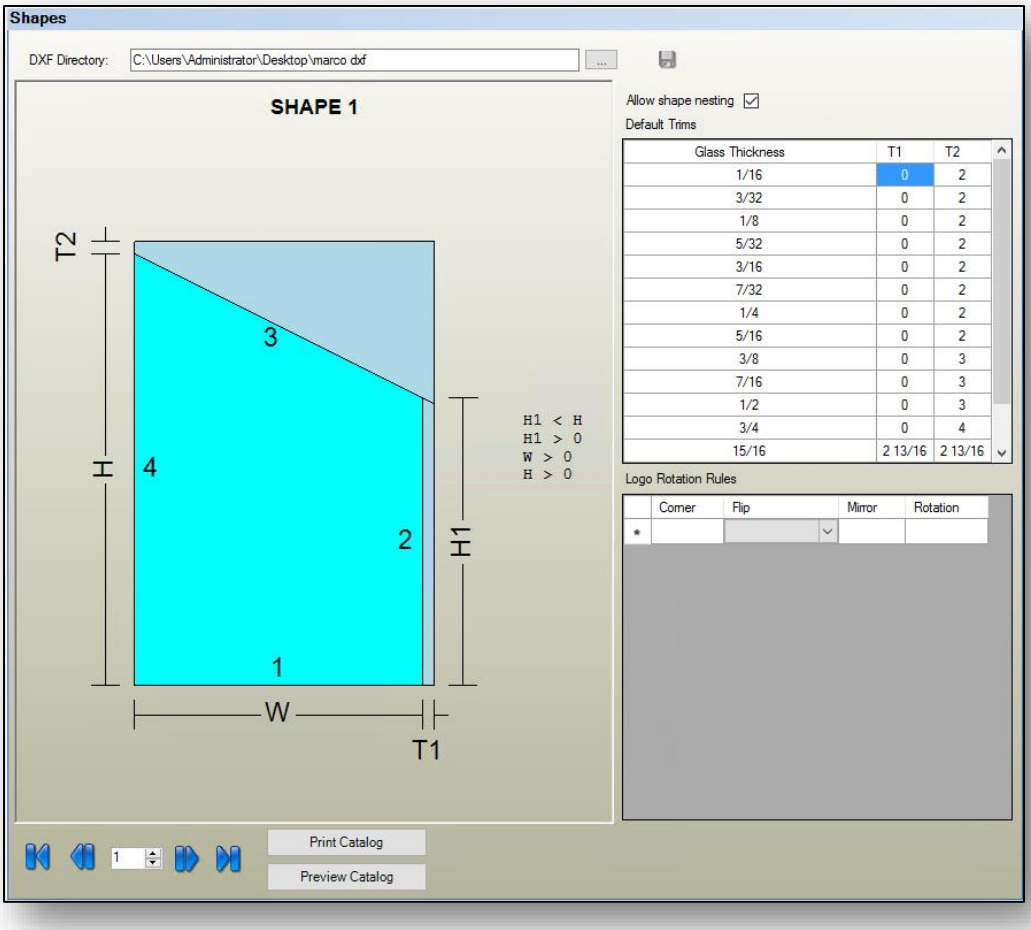
The following fields exist within the 'Shapes' screen.

- **DXF Directory –** To choose a DXF Directory, select  and navigate to the desired folder. The DXF directory should be used if DXFs are all saved in the same folder rather than order specific folders. This directory must be accessible from any machine running a FeneVision Opti application.



Note: Opti-Glass reads data from a single DXF layer. The optimizer starts with layer 0 and checks each subsequent layer until it finds data. The layer processing order can be overridden using the DXFLayerSelections Setup Parameter.

-  – Use the buttons to scroll through each shape one by one using the buttons at the bottom. A shape number can also be entered to jump directly to the shape desired.

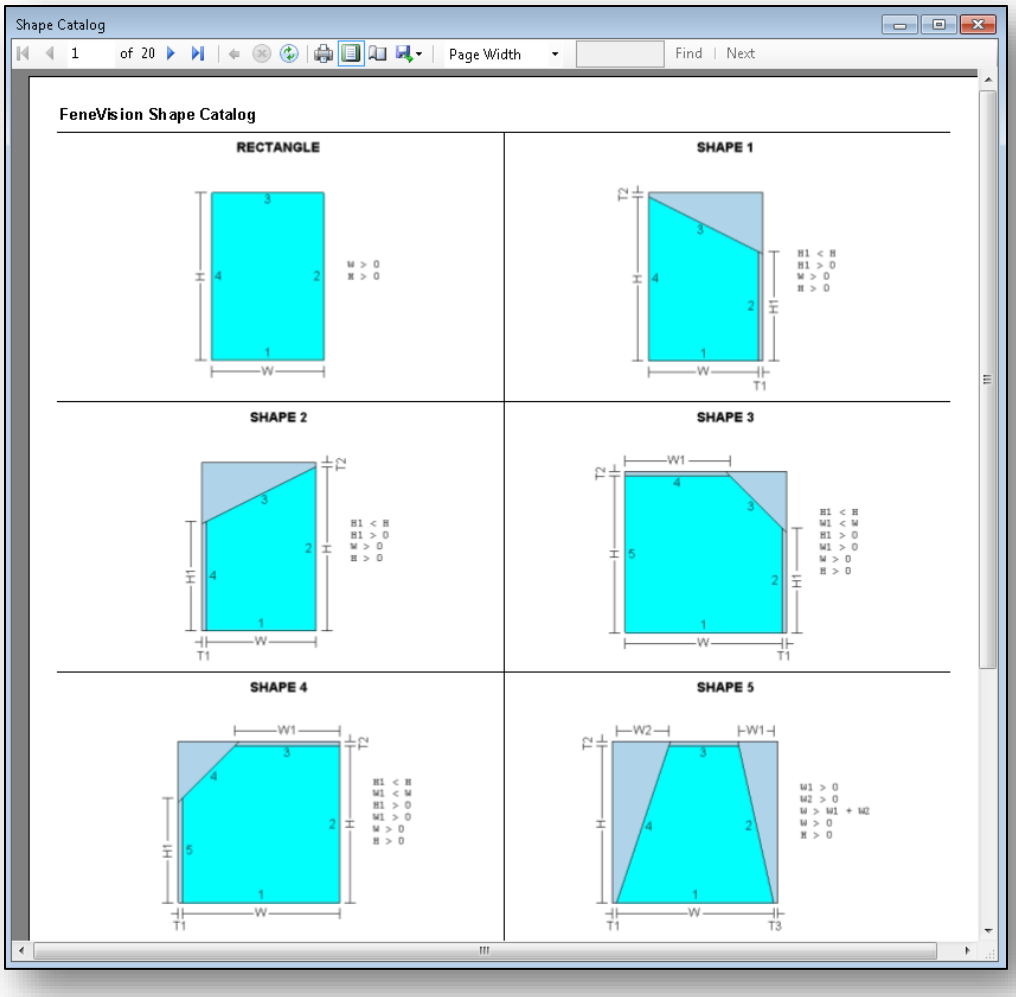


Within each shape, specify the default trims for each of the different thicknesses of glass. A grid is displayed to the right of the shape with the glass thickness and trims. The trim names can be seen as column headers in the grid. Additionally, these will appear on the shape to the left so that it is clear what value is being configured.

Note: Shape trims default to 3 x the thickness of the glass.

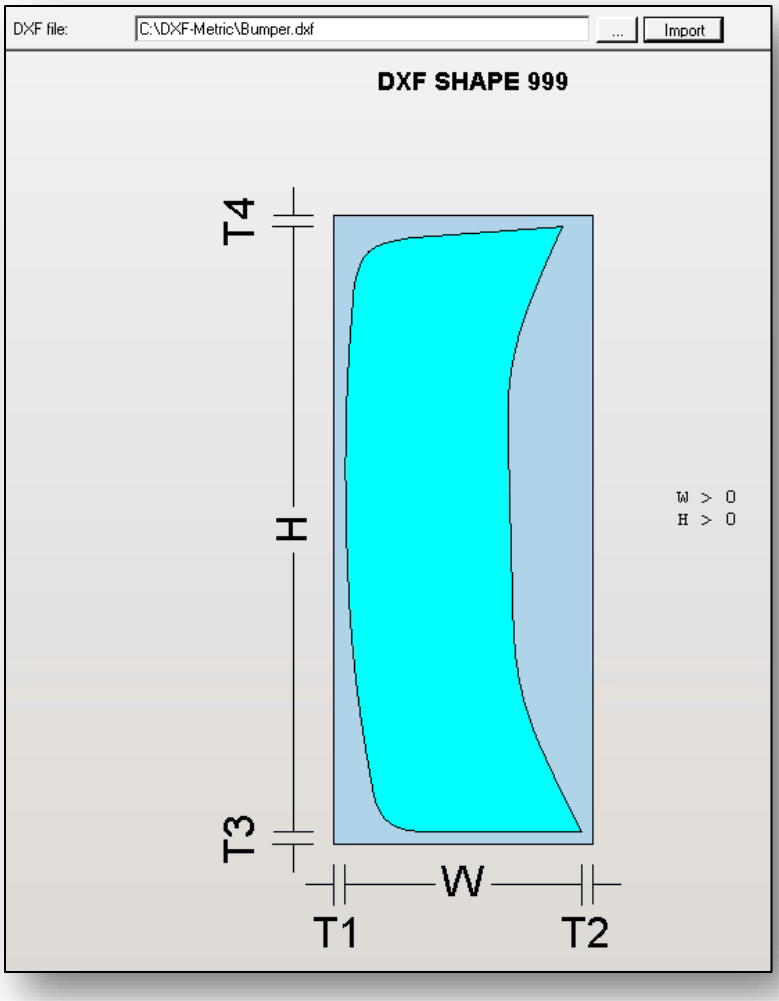
If a shape has the 'Allow shape nesting' checkbox above the 'Default Trims' grid then, that shape can be nested. Checking this checkbox enables shape nesting on this shape. Unchecking it disables this shape from nesting.

- Preview Catalog – Select to view the entire 'Shape Catalog'.
- Print Catalog – Print Catalog.



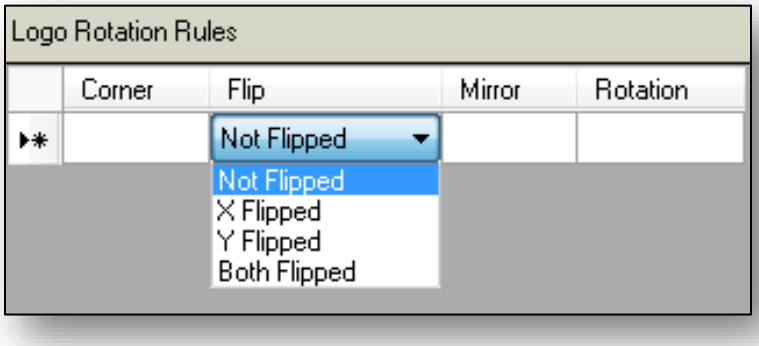
Shape 997 and 999 are the DXF shapes. If either of these is selected in the 'Shapes' screen a 'DXF file' option will appear under the 'DXF Directory'.

This allows the user to preview a DXF file. To do so, select  and navigate to the desired DXF file. Once it is selected, select 'Import'. This will update the image to show the DXF file as shown below.



Logo Rotation Rules

'Logo Rotation Rules' allow the user to configure rules for laser etching in addition to configuring how the logo will be flipped and rotated on a lite. The rules are based on the corner and the lite orientation as it is cut compared to how it was ordered.



- **Corner –** Indicates what corner the logo is in at the point of ordering. This is used to determine if the rule is applied. Corner '1' is the lower right corner (for all shapes). Corner numbering begins counterclockwise from the lower right.
- **Flip –** Indicates if the lite has been flipped from how it was ordered when placed on a pattern. This determines to which scenarios the rule will be applied.
  - **Not Flipped –** The lite was not flipped.
  - **X Flipped –** The lite was flipped across the X-axis.
  - **Y Flipped –** The lite was flipped across the Y-axis.
  - **Both Flipped –** The lite was flipped across the line X=Y.

- **Mirror –** Used to indicate if the logo will be mirrored in this corner. Set to '0' if it is not mirrored and '1' if it is mirrored.
- **Rotation –** Used to indicate if the logo will be rotated in this corner. Value should be set as the number of degrees the logo will be rotated.

For example:
- Corner = 1
- Flip = X Flipped
- Mirror = 1
- Rotation = 45

If the logo was ordered in corner '1' and the lite was flipped across the X-axis during optimization, then the logo should be mirrored and rotated 45 degrees.

Shape Nesting

If a shape has a diagonal edge, it may be possible for the optimizer to nest this shape with another similar shape. The phrase 'nest shapes' indicates the ability to align the diagonal edges of lites so that they can be placed closer together thus eliminating some of the scrap that results from cutting shapes. The optimizer will attempt to nest any shapes that have 'Allow shape nesting' enabled.

Note: Nesting assumes that lites can be in any sequence within the block. For example, if there are 5 lites on a sequenced optimization and lites 2 and 3 nest, it will be sequenced so that lite 1 is broken out first, the nested block of 2 and 3 is broken out next, then lite 4 followed by lite 5. Within the nested block it does not attempt to sequences 2 and 3.

Helper Cuts

Helper cuts are scores that are added to a shape to aid the operator in breaking out the shape. Users may indicate whether DXFs should automatically use helper cuts through the Shapes screen. Here the user may check the box "Automatic helper cuts" to indicate the need for helper cuts for DXF shapes.

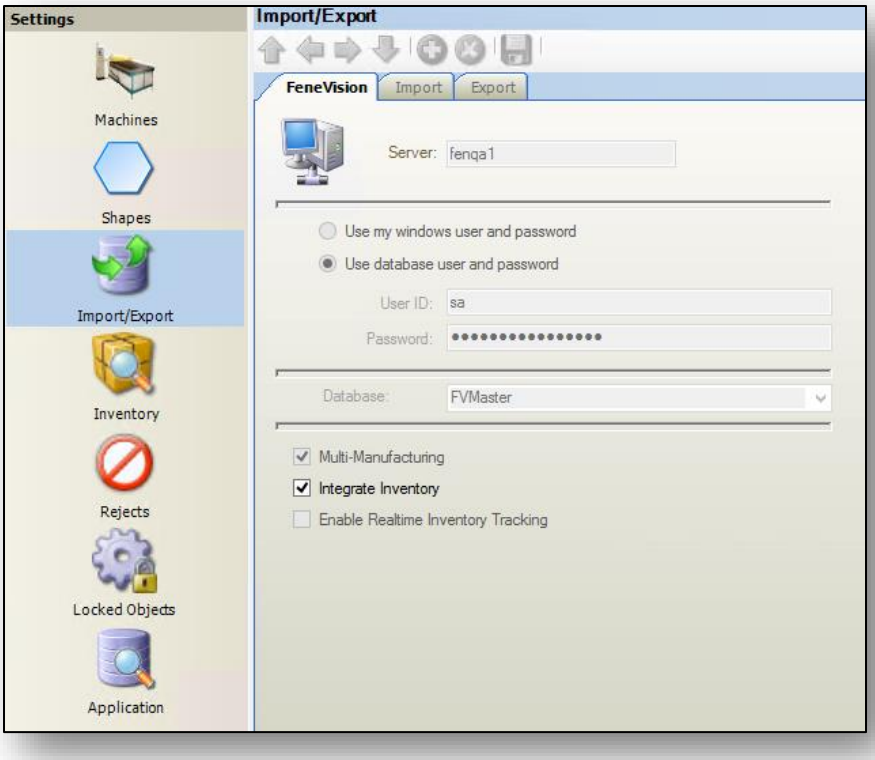
Note: All other shapes use database tables to determine whether it requires automatic helper cuts. Contact FeneTech for more assistance.

Import / Export

To access 'Import / Export' screen, select 'Settings'. Select 'Import / Export'.

The FeneVision tab sets up the integration of Opti-Glass with FeneVision Core. This is the database from which Opti-Glass imports glass parts, customer, and schedule information.

Note: Currently, the 'Import' and' Export' tabs exist for future enhancements. For now, these tabs will remain disabled.



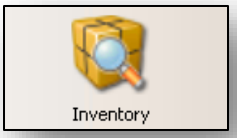
In the FeneVision tab, the following checkboxes exist:

- **Multi-Manufacturing –** Indicates if the database is configured with multiple locations. When multiple locations exist, users will be required to log in when opening Opti-Glass. The user's location, which is configured in Core, determines the location for Opti-Glass *(read only)*.
- **Integrate Inventory –** Ensures that inventory levels are synced across Core and Opti.
- **Enable Real Time Inventory Tracking –** Enabling 'Real Time Inventory' tracking will allow inventory to be relieved in real time as patterns are completed in Opti-Break.

> For example, if a release contains 10 patterns and is operating in 'Real-Time Inventory', then every time the user completes a pattern in Opti-Break, a quantity of 1 stock sheet is relieved. With 'Real-Time Inventory' disabled, Opti-Break does not affect inventory. The 10 sheets will be relieved when the pattern is 'Set Complete' in Opti-Break. This is configured in Core and is 'read only'.

Inventory

The 'Inventory' screen allows users to manually add and maintain 'Glass' and 'Interlayer' parts from FeneVision Core. To choose between 'Glass' and 'Interlayer', use the Part Type drop down at the top of the screen.

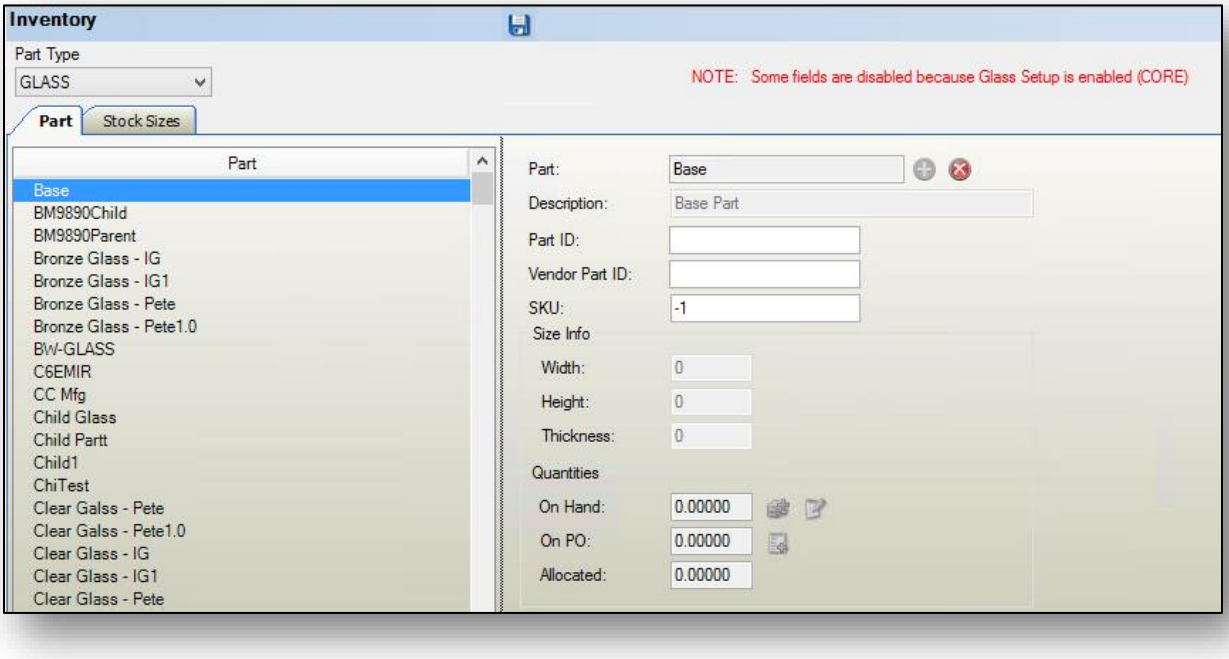


To access the 'Inventory' screen, select 'Settings' from the main menu on the bottom left then select 'Inventory'. A screen with two tabs, 'Part' and 'Stock Sizes' will appear.

Part Tab

The 'Glass' tab allows the user to select a part, delete a part, add new parts, and set the size and quantity information. If the inventory is imported from Core, these will already be set.

Note: Manual changes to the size and / or quantities of parts imported from Core cannot be altered.



The following fields exist in the 'Glass' tab of the 'Inventory Setup' screen:

- **Part –** Alphanumeric identifier of the part.
- **Description –** Description of the part.
- **Part ID –** *(Glass Only)* String value used to provide an alternate part number. This is used in machine interfaces to translate the Opti-Glass part number to a machine compatible part number.

  For example, stock size 'S14CL10284' is set up in FeneVision but the machine uses 'CL102' as its part number. The 'Part ID' would be set to 'CL102' – this insures that if the machine has any information to share, such as like cutting pressure or speed for this stock size, it knows what to do.

- **Vendor Part ID –** *(Glass Only)* Alphanumeric identifier of the Vendor part. This is different from the Part number, in that parts could potentially have the same ID; the Vendor Part ID, however, distinguishes two of the same parts from different vendors.
- **SKU –** *(Glass Only)* Stock keeping Unit. Stores and displays the value of a stock bar code number (optional).
- **Interlayer Tag –** *(Interlayer Only)* Identifier for interlayer parts in Opti racks. Interlayer parts do not physically get racked; the tag is used to tie the interlayer part and its mate glass part.

  For example, if a laminated unit is released and racked on rack 'HR1' and the Interlayer Tag is set to 'CL15' then the interlayer part will be racked on rack 'HR1-CL15' in the same slot as the mate glass pieces.

- **Optimize As (Interlayer Only)**
  - **Roll –** Optimize the release on an entire roll. The width of the available part to optimize on will use the max width of the machine optimizing the release.
  - **Sheet –** Optimize the release on a stock sheet. The width of the available part to optimize on will use the width from inventory setup.

    Note: When 'Sheet' is selected, interlayer optimizations function like glass optimizations.

- **Size Info**
  - **Width –** Stock sheet's width. Normally '0' for 'Parent' parts if the 'Parent' part is not a stock size.
  - **Height –** Stock sheet's height. Normally '0' for 'Parent' parts if the 'Parent' part is not a stock size.
  - **Thickness –** Stock sheet's thickness. Should be the same for a 'Parent' part and all of its 'Child' parts.
  - **Override Width For Optimization –** Check to allow the user to specify a width to be used for optimization that differs from the part's original width ('Interlayer' cutters only).
  - **Opt Width –** When 'Override Width for Optimization' is checked, the user can specify a new width in this field. Because interlayer parts come in large rolls, their width equals the entire roll. The 'Opt Width' is the increment into which the roll will be broken for cutting. This width can also be changed in the 'Optimization' tab ('Interlayer' cutters only).

- **Quantities**
  - **On Hand –** Number of stock sheets on hand.
  - **On PO –** Number of stock sheets on PO's that have not been received.
  - **Allocated –** Number of stock sheets allocated for orders that have not been produced yet (this number is not used with 'Real Time Inventory').

    Note: When utilizing the parent / child part functionality in FeneVision Core, the parent parts will not actually be stock sizes but rather a sum of the area of all stock sizes of that glass type currently on hand. Because of this, the quantities are not accurate for parent parts in Opti-Glass. To get accurate quantities for parent parts, the user should check inventory in Core.

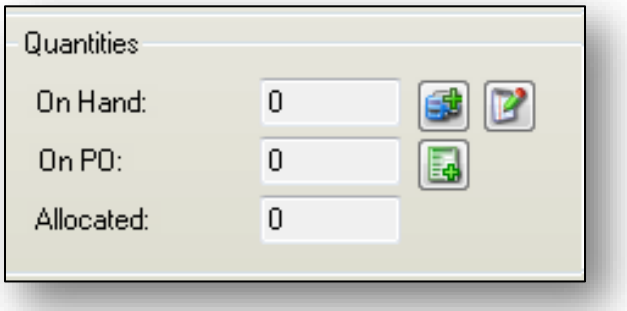
    Note: The following fields are disabled if Glass Setup is enabled in FeneVision Core: Description, On Hand, On PO, and Allocated.

Manually adjusting Inventory Quantities

If FeneVision Opti-Glass inventory is integrated with FeneVision, then the buttons in the 'Quantities' group will be *disabled*. The quantities are automatically updated from FeneVision.

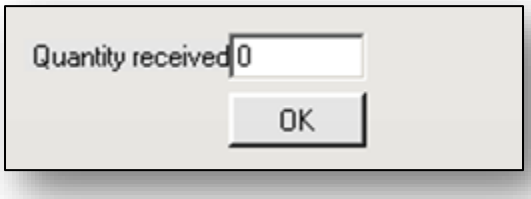
If Opti-Glass inventory is *not* integrated with FeneVision, then the three buttons in the 'Quantities' group *will* be enabled. This indicates that glass inventory is being managed via Opti-Glass and quantities will not be updated or synched from FeneVision.

The 'On Hand' and 'Allocated' quantities are used to determine the available inventory for optimization. If the 'On Hand' quantity is set to -1, then Opti-Glass *does not* manage inventory quantities for this part and assumes unlimited quantities are available for optimization.

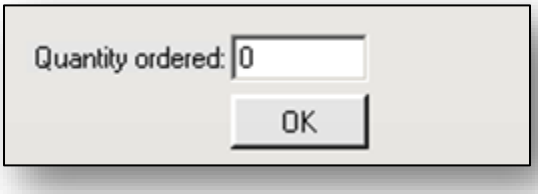


The three buttons have the following functions:

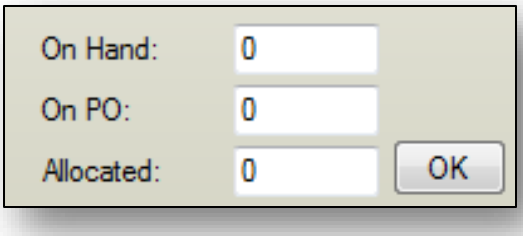
-  **Receive –** When activated, the following box is shown to accept a received quantity value. The value entered will be added to the 'On Hand' quantity and subtracted from the 'On PO' quantity. If quantity 'On PO' is 0, receiving will add to 'On Hand' but 'On PO' will remain 0.



-  **Order –** When activated, the following box is shown to accept an ordered quantity. The value entered will be added to the 'On PO' quantity. This is used to keep track of glass purchases not yet received. The user may choose not to update this information if keeping track of glass purchases is not needed.



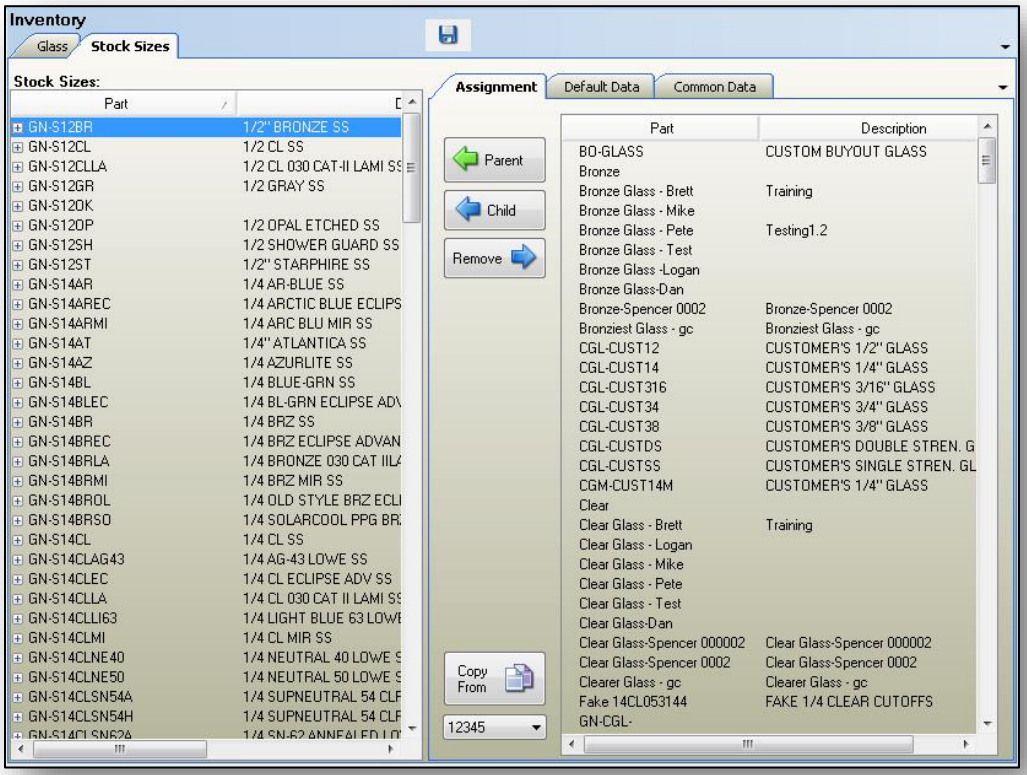
-  **Manual Edit** - When activated, the 'Inventory' fields become editable, allowing the user to manually enter each quantity. The values entered will replace their respective quantities when the user selects OK.



Note: Any negative number in 'On Hand' will be reset to -1, and negative numbers in the other fields will be set to zero.

Stock Sizes Tab

The 'Stock Sizes' tab allows additional configuration of part data.



The 'Stock Sizes' screen is divided into three tabs.

Assignment Tab

- **Assignment (Unassigned Parts Grid) –** This grid contains all parts that have yet to be assigned as a 'Parent' or a 'Child' part. Because of this, these parts cannot be used in cutting.
- **Parent –** A part that is designated as the 'Parent' can be one of two things:
  1. **Configured in FeneVision Core –** If parent / child relationships are configured in Core then inventory for the 'Parent' is a sum of the children. Because of this, the 'Parent' part cannot be a physical stock size but should rather be configured as a generic part to track total area on hand for this glass type. If parent / child

relationships are configured in Core they will be transferred to Opti-Glass when parts are synced so the user will not have to manually assign them here.

2. **Not Configured in FeneVision Core –** If parent / child relationships are not configured in Core, then the 'Parent' part could be a stock size. In this scenario, the 'Parent' part can be thought of as primary stock size while the children would be alternate stock sizes. To make an unassigned part a 'Parent', highlight in the grid to the right and select 

.

- **Child –** A part that is designated as a 'Child' will always be a physical stock size. If parent / child relationships are not configured in FeneVision Core, then the 'Child' part could be configured as an alternate stock size. To assign a part as a 'Child' part, first highlight the intended 'Parent' part in the left-hand list of stock sizes and then highlight a part in the Assignment tab and select 

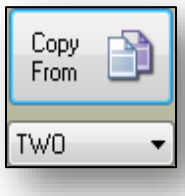
. This will move the part under the master part and remove it from the Assignments tab.
- **Remove –** Removes a part from the stock sizes list. The part will be available in the 'Unassigned Parts Grid'. To remove a part, highlight it in the left-hand grid of stock sizes and select 

.

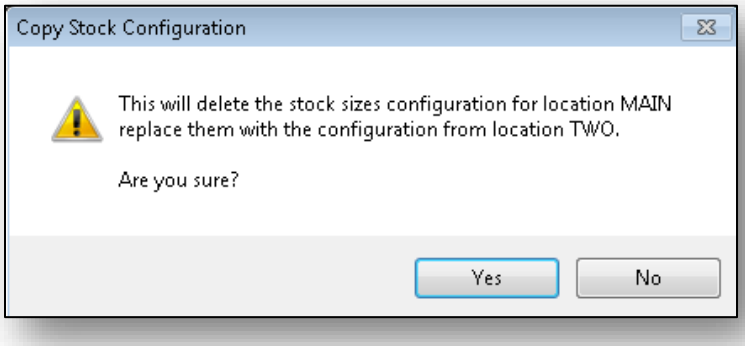
Copying Stock Configuration

Stock configuration can be copied from another location.

1. To copy stock configuration from another location, first, choose the location from which to copy in the drop-down represented in the image below, then select the 'Copy From' icon.



The following prompt will appear:

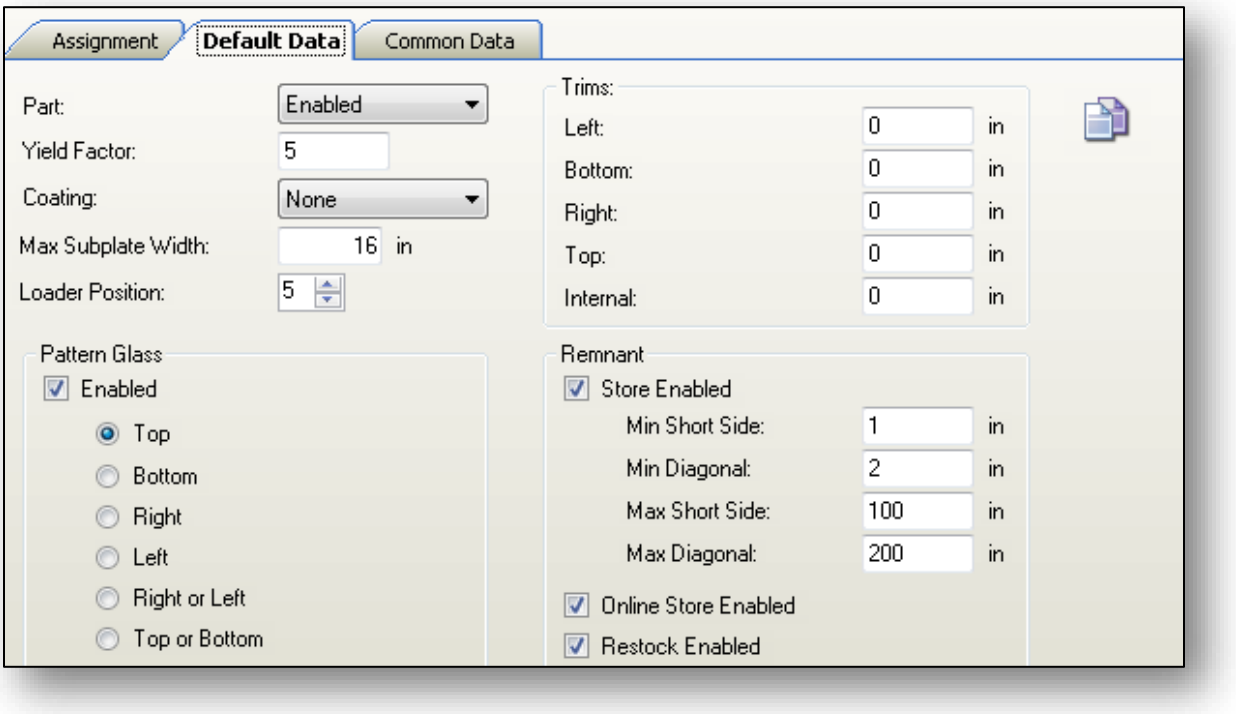


2. Selecting 'Yes' will copy the stock configuration information from the location indicated in the drop-down.
3. Selecting 'No' will cancel the operation.

Note: Copying stock configuration from one location to another must be performed carefully as this will completely delete the original configuration of the location to which it is being copied. If, for example, the user copies from a location that has not been configured, the location to which they are copying will no longer be configured.

Default Data Tab

In the 'Default Data' tab, there are several settings which can be configured to the specifications of each part in the 'Stock Sizes' tab.



In the 'Default Data' tab, there are several settings which can be configured to the specifications of each part in the 'Stock Sizes' tab.

Highlight the part to be modified in the 'Stock Sizes' grid to the left and change the settings using available fields.

- **Part –** Select one of the three options from the dropdown list:
  - **Disabled –** If a part is marked 'Disabled', it is not available for optimization. Stock sizes that are disabled are grayed out in the "Glass' tab of the 'Cutting' screen will not be able to be selected.
  - **Enabled –** To select a glass type, the user must have a stock size for that type of glass that is marked as 'Enabled' or 'Optional'. The 'Checked by default' and 'Not checked by default' are in reference to what stock sheets are selected when first navigating to the 'Optimize' tab in the 'Cutting' screen.
  - **Optional –** The stock size will appear in the optimizer but will not be checked by default during optimization.

- **Yield Factor -** This setting is used to perform yield comparisons between different sizes of the same stock, thus allowing the optimizer to give preference to one size over another. The Yield Factor can be any value greater than 0 and less than or equal to 100. Behind the scenes, all available sizes are optimized. The scrap of each size is multiplied by its corresponding yield factor, and the result is then compared to select the best pattern; the lowest result will have highest preference. The yield factors for two or more sizes can be the same if no preference is desired. The following internal calculation is used:
  - weightedWaste = patternWaste * (1 + ((100 - YieldFactor) / 100)

    For example, assume that there are 4 stock sizes that all generated a pattern with the same amount of scrap, 4.2 SqFt.

- Stock A has a Yield Factor of 100.
- Stock B has a Yield Factor of 90.
- Stock C has a Yield Factor of 50.
- Stock D has a Yield Factor of 5.

When deciding which pattern to keep, the algorithm compares the weighted waste as depicted below:

- Stock A's pattern will have a weightedWaste of 4.2 sqft. (Waste * 1.0)
- Stock B's pattern will have a weightedWaste of 4.62 sqft. (Waste * 1.1)
- Stock C's pattern will have a weightedWaste of 6.3 sqft. (Waste * 1.5)
- Stock D's pattern will have a weightedWaste of 8.19 sqft. (Waste * 1.95)

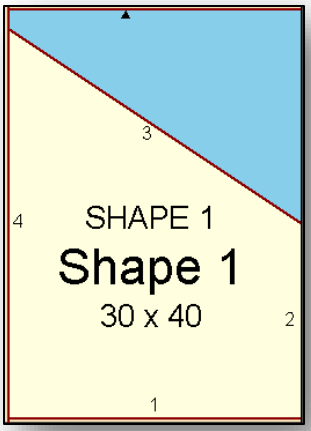
StockA will have generated the preferable pattern as the weightedWaste is the lowest.

Note: This value is set based on the default value from Inventory Setup; however, during the optimization, this field can be overridden.

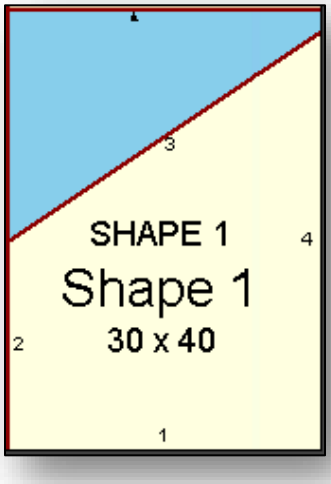
Note: When syncing 'Parent' / 'Child' relationships from Core, the default 'Yield Factor' will be set to 100.

- **Surface Direction –** Tells the cutting machine how the stock sheet will be placed on the cutting table. This gives it the ability to know how to orient the lite if the glass has a coating on one surface, a pattern texture on one surface, or the user cares about the tin surface.
  - **None –** No coating, pattern texture, and tin surface does not matter.
  - **Down –** The surface with the coating, texturing, or tinning is faced down.
  - **Up –** The surface with the coating, texturing, or tinning is faced up.
  - **Up and delete –** The surface with the coating, texturing, or tinning is faced up and edge deletion will occur.

  For each lite, the surface with the coating, texturing, or tinning is determined by the SURF attribute. The optimizer will assure that any shapes, including DXF files, are oriented such that the stock's 'Surface Direction' matches the SURF attribute on the lite. If they don't match, then the lite will be flipped so that it cuts properly. The following images represent this example:



Assume this glass is coated with the 'Surface Direction' set to 'Up'. If a lite is ordered for shape 1 with a SURF attribute value of 2 then the coating for this lite will be on the back. Since the stock is placed with the coating 'Up' the lite will be flipped so that surface 2 is faced up. Therefore, the lite will appear on the pattern like this.



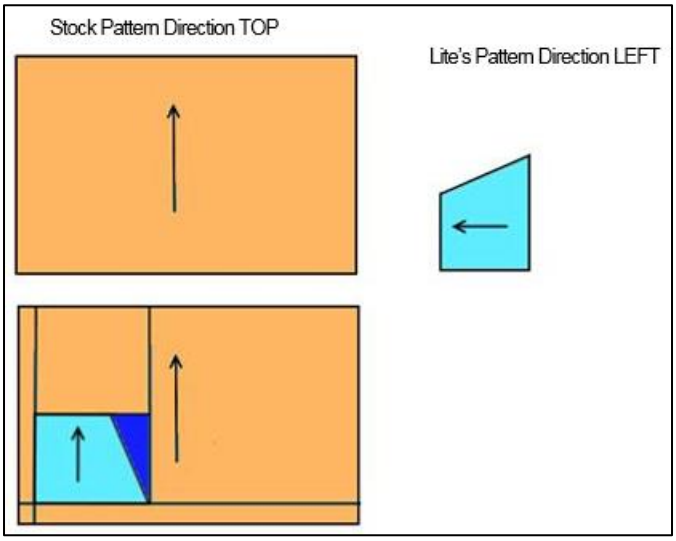
Note: The 'Surface Direction' setting needs to be set to 'UP' or 'DOWN' for glass marked as 'Pattern Glass' so that shapes can be orientated correctly. It is possible to set up patterned glass with no 'Surface Direction'; however, it is best to use them together.

In some cases, the user may care about what the tin surface of the glass is. For example, this might be important for glass that will be laminated or painted. However, there might be other lites from this glass type that the user does not care what side is the tin surface. In this scenario the stock 'Surface Direction' should be set to indicate if the tin surface will face up or down. For the lites that tin matters the SURF attribute should return the appropriate number

for what surface of the lite should match the tin surface. For lites that tin does not matter the SURF attribute should either return nothing or return 0. This would allow the optimizer to flip the lites that do not need tin on a specific side while still forcing the lites with a specific tin to be oriented to match the stock sheet's tin surface.

- **Max. Subplate Width –** Maximum width between any two X-axis cuts.
- **Loader Position –** If the cutting machine controls an automatic loader, this tells the cutting machine what position to retrieve the glass from the pattern to be cut.
- **Pattern Glass –** If glass has some pattern that is directional-specific, it is considered 'Pattern Glass' and configured here.
  - **Enabled –** Allows the user to enable the directional position of the pattern on glass.
    - **Top –** Pattern is running toward the top of the stock.
    - **Bottom –** Pattern is running toward the bottom of the stock.
    - **Left –** Pattern is running toward the left of the stock.
    - **Right –** Pattern is running toward the right of the stock.
    - **Right or Left –** Pattern is horizontal with no specific direction.
    - **Top or Bottom –** Pattern is vertical with no specific direction.

Note: Shapes will not nest on patterned glass.



Note: For a pattern to be respected during optimization, the algorithm needs to be aware each lite's pattern direction. To specify the lite's pattern direction configure 'PATDIR' attribute in FeneVision Core. The algorithm will assume 'PATDIR' is towards top for any lite optimized on pattern glass that does not have the 'PATDIR' attribute.

- **Trims –** Sets the trims (scrap) along the left, right, top, and bottom of the sheet to allow square cuts. Typically, all edge trims are triple the glass thickness with the internal trim as the smallest section that can be broken out.
- **Left –** Amount taken off the left side of the sheet.
- **Bottom –** Amount taken off the bottom of the sheet.
- **Right –** Amount taken off the right side of the sheet.
- **Top –** Amount taken off the top of the sheet.
- **Internal –** Internal trim. Assures that no two scores are within a certain distance of each other. Should be set to the smallest piece that can be safely broken out.

Note: All trims are relative to 'Zero Pattern Location' that resides in the lower left corner; therefore, if a left trim is set and then the 'Zero Pattern Location' is set to be on the right, the left trim will always appear on the right.

- **Remnant –** Scrap that can be stored for future use.
  - **Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Store'.
  - **Min Short Side –** Minimum length of the short side measurement that can be saved. Anything with a smaller short side than this is considered too small to save.
  - **Min Diagonal –** Minimum length of the diagonal measurement that can be saved. Scrap with a diagonal less than this is considered too small to save.
  - **Max Short Side –** Maximum length of the short side measurement that can be saved. Anything with a short side larger than this is considered too large for the store slots and will not be saved.
  - **Max Diagonal –** Maximum length of the diagonal measurement that can be saved. Anything with a diagonal larger than this is considered too large for the store slots and will not be saved.

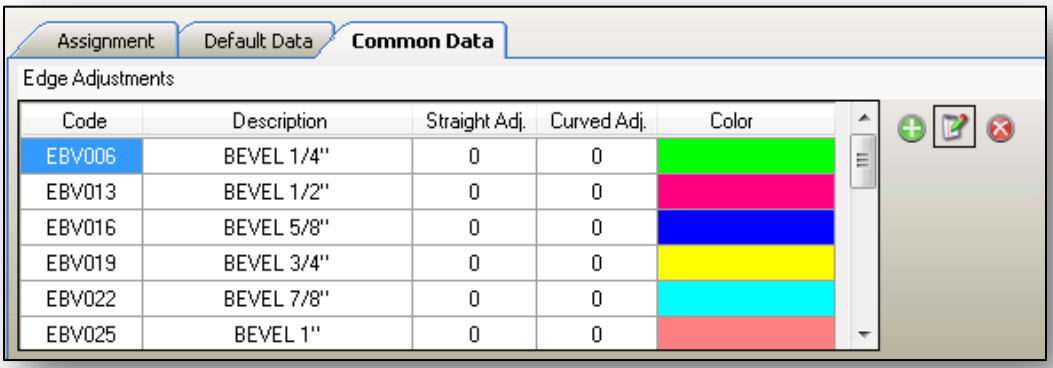
- **Online Store Enabled –** When checked, scrap from this stock size is eligible to be saved as 'Online Store'. Only unused 'X' plates at the ends of patterns are eligible to be saved as 'Online Store'.
- **Restock Enabled –** When checked, this enables the machine to save the unused portion of the last pattern in a batch without utilizing a 'Store' slot. The piece will be saved and placed back on the top of the stockpile and the algorithm will know to use it on the next pattern of that glass type.
-  – Copy / Paste. This allows the user to copy all settings from a 'Parent' part to its 'Child' parts. This button is only enabled on 'Parent' parts. When selected, the following screen appears.

Select the setting(s) to copy to child parts settings and select  commit the change.

Note: The following fields are disabled if Glass Setup is enabled in FeneVision Core: Part Enabled/Disabled, Surface Direction, and all fields in the Pattern Glass group box.

Common Data Tab

The 'Common Data' tab allows the user to configure edge adjustments for each edgework code per glass type.



The following columns exist in the 'Common Data' tab:

- **Code –** 'Edgework Code' configured in FeneVision Core. These need to be added in Opti-Glass in order to match the codes in Core.
- **Description –** Field to further describe the 'Edgework Code'.
- **Straight Adj. –** Amount to add to straight sides for this edgework code.
- **Curved Adj. –** Amount to add to curved sides for this edgework code.

  Note: When changing the adjustments for straight and curved edgework adjustments, the changes will not apply to releases that have already been optimized.

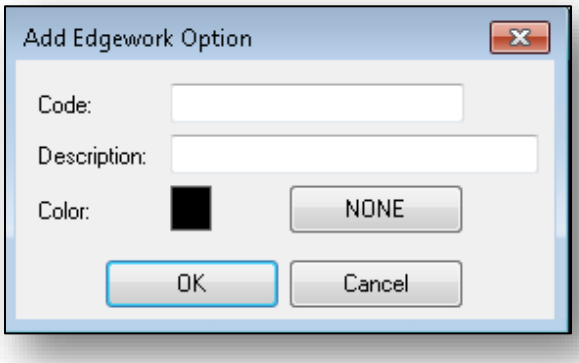
- **Color –** Color used to indicate which edges have this edgework.

  Note: For the color to appear on patterns 'Show Edgework' must be enabled in 'Application Setup'.

-  – Add, edit, or delete an edge code.

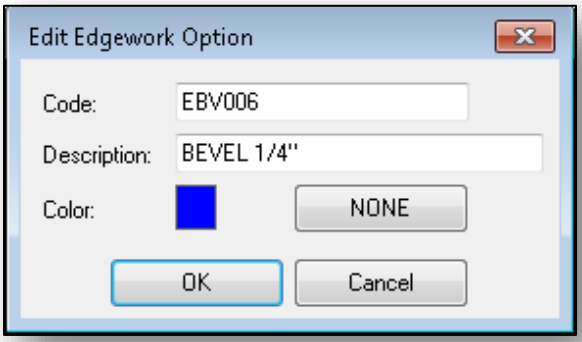
To add a new 'Edgework Code', complete the following:

1. Select 'Add'. The following screen will appear:



2. Enter the new edgework code and a description of the code.
3. To indicate a color to represent edgework for each *type* of edgework, complete the following steps:
   a. Select  .
   b. Choose from the available basic colors or select  to define custom colors.
   c. Select 'OK'. To cancel and return to the 'Common Data' tab, select 'Cancel'.

To edit an existing 'Edgework Code', complete the following:
1. Highlight the code to edit.
2. Select  . The following screen will appear:



3. Edit any or all the fields and select 'OK'. To cancel and return to the 'Common Data' tab, select 'Cancel'.

Note: Any additions or changes to the edgework options via the Common Data tab will require a restart of Opti-Glass. Upon leaving the inventory screen, the user will be prompted was a restart required message.

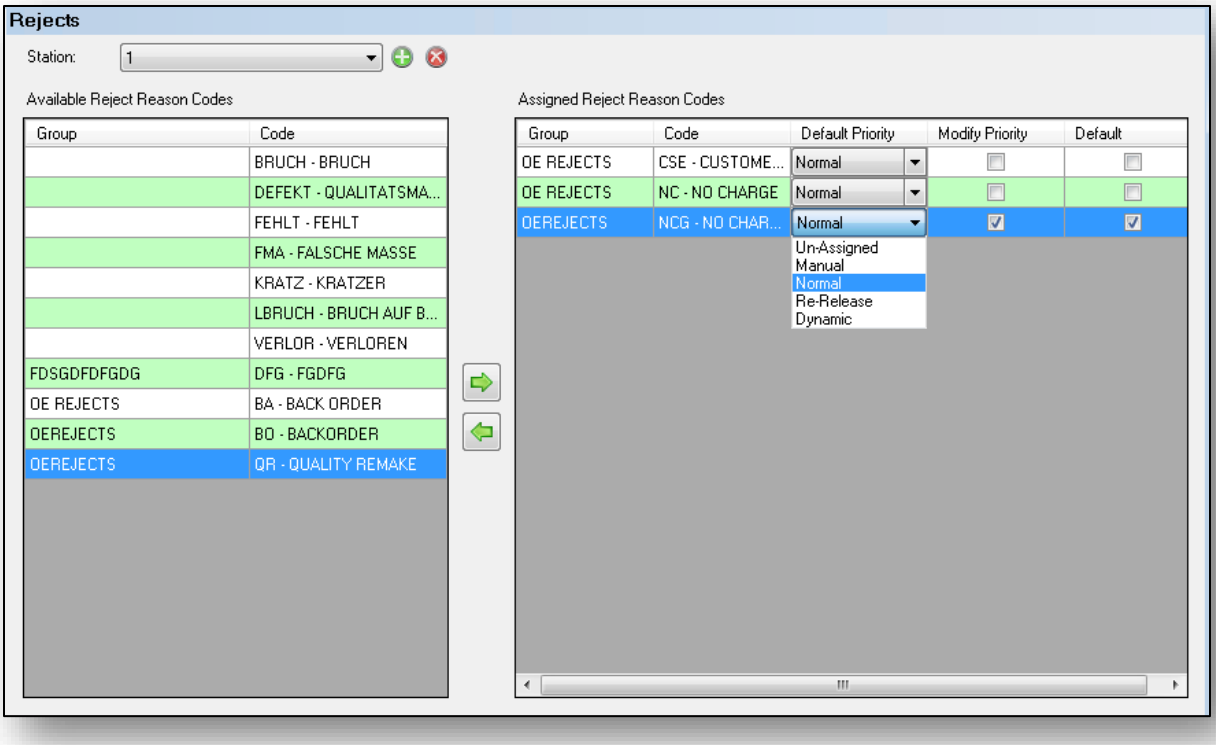
Rejects

'Reject Codes' allow the user to assign a reject reason when rejecting a lite. Reject codes are set up in FeneVision Core and are *synced* to FeneVision Opti-Glass.

To import 'Reject Codes' from FeneVision, *first* select the 'Import' menu.
1. Select 'Import'.
2. Go to the 'Transfer Data' tab.
3. Check  .
4. Select 'Transfer'.

To manually add 'Reject Codes' to a station, select 'Settings' from the main menu on the bottom left, then select 'Rejects'.

In the 'Rejects' screen, users can assign reject codes to stations. If users attempt to reject from that station, a dialog will appear asking that a code be chosen rather than simply rejecting the lite.



The 'Rejects' screen contains the following fields:

- **Station –** Dropdown that allows the user to choose the FeneVision Opti-Break / Opti-Temp station to which reject reason codes are to be assigned. This is intended to be configured on Opti-Glass or FeneVision Opti-Temp stations.
-  – Add or delete a station.
- **Available Reject Reason Codes –** Displays all available reject reason codes that have not been assigned to the selected station.
  - **Group –** 'Reject Group' configured in the 'Reject Codes' screen in Core.
  - **Code –** Code representing the reject reason.

- **Assigned Reject Reason Codes –** Displays all reject reason codes that have been assigned to the selected station.
  - **Group –** 'Reject Group' configured in the 'Reject Codes' screen in Core.
  - **Code –** Code representing the reject reason.
  - **Default Priority –** Priority that will be selected by default when code is selected during rejecting.
    - **Unassigned –** Not reprocessed until priority is set to one of the other levels.
    - **Manual –** Remake will be processed manually.
    - **Normal –** The remake is reprocessed as if a 'Reject Code' is not being used. The remake could be reprocessed automatically via 'Dynamic Mode' or included in another release.
    - **Re-Release –** Reprocessing will require that the remake be included in another release.
    - **Dynamic –** Reprocessed in 'Dynamic Mode' and not available to be included in another release.

  - **Modify Priority –** When rejecting from Opti-Break and Opti-Temp with a reject code that is marked 'Modify Priority', the user will have the ability to edit what priority will be assigned to the remake.
  - **Default –** The reject code that will be used by default for the selected station.

-  – Assign the selected reject reason in the ‘Available Reject Reason Codes’ grid to the selected station.
-  – Remove the selected reject reason in the ‘Assigned Reject Reason Codes’ grid from the selected station.

Note: Assigning ‘Reject Codes’ is optional. If ‘Reject Codes’ are assigned, the user will see a ‘Rejecting’ dialog when rejecting in FeneVision Opti-Break / Opti-Temp. If ‘Reject Codes’ are not assigned, Opti-Break / Opti-Temp will reject the lite with no dialog, and the lite will be submitted as a remake.

To add a station:

1. Select ‘Settings’.
2. Open ‘Rejects’.
3. Select ‘Add’ next to the station drop-down.
4. Enter a ‘Station ID’.
5. If entering a station ID that already exists, Opti-Glass will automatically select that station from the list.
6. If entering a new station ID, the application will add it to the list.

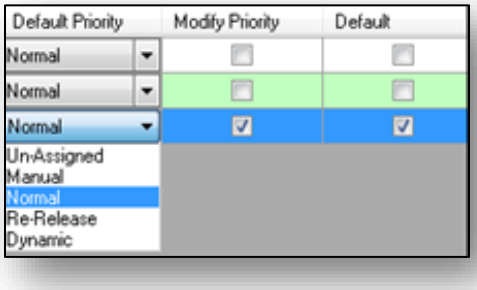
To delete a station:

1. Select ‘Settings’. Open ‘Rejects’.
2. Choose a station to delete.
3. Select ‘Delete’ next to the drop-down list.

Note: Keep in mind that deleting a station in this way will delete all the settings associated with that ‘Station ID’.

To add reject codes to a station:

1. Select ‘Settings’.
2. Open ‘Rejects’.
3. Choose a station.
4. Select a ‘Reject Code’. Move it to the assigned list using the right arrow.
5. Un-assign reject codes using the left arrow.
6. Users can multi-select ‘Reject Codes’ using ‘CTRL+ Clicking’ or SHIFT + Clicking’. ‘Reject Codes’ are assigned a priority of ‘Normal’ unless the setup parameter ‘RejectCodePriority’ is defined.



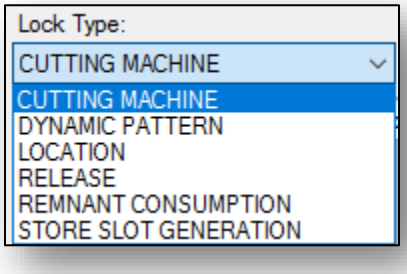
7. Checking ‘Modify Priority’ will give the operator at the station the opportunity to change the default priority.
8. Make one of the reject codes the default by checking the cell for ‘Default’.

Note: Each station can have only one default reject code.

Locked Objects

Locking items prevents two or more users from performing certain functions in FeneVision Opti-Glass. The 'Locked Items' screen displays the locks on various functions used in Opti-Glass.

To access the 'Locked Items' screen, go to 'Settings' >> 'Locked Objects'. The dropdown menu under 'Lock Type' will show the various functions that can be unlocked.



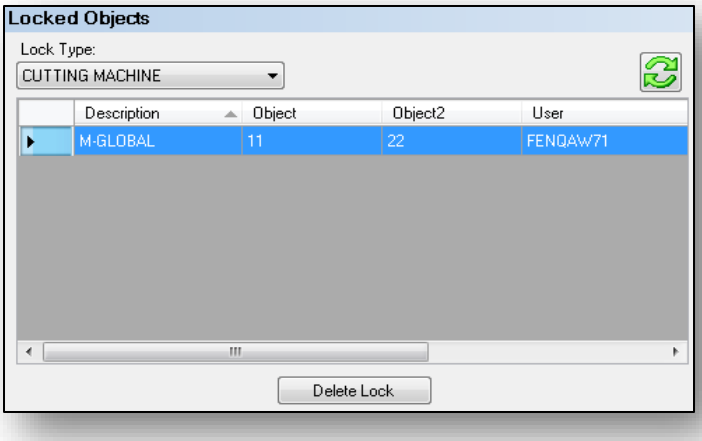
To unlock a function, highlight the function to be unlocked and select 'Delete Lock' at the bottom of the 'Locked Objects' screen.

- **Cutting Machine –** When Opti-Break is open with a machine selected, that machine will become locked so that no other users can open an instance of Opti-Break using that selected machine.
- **Dynamic Pattern –** When a pattern is run in dynamic mode of Opti-Break, a lock is created once the load file is generated via the Load Current Pattern or Auto-Load Pattern button. This allows users to recall the pattern if Opti-Break is closed unexpectedly.

  Note: By deleting the Dynamic Pattern lock, the user will no longer be able to recall the dynamic pattern in Opti-Break.

- **Location –** If the database is configured to have multiple locations, these locations can be locked when in use.
- **Release –** If a release is open in 'Cutting', 'View Cutting', 'Tempering', 'View Tempering' or Opti-Break, then it will be locked. Additionally, two different 'Cutting' tables cannot grab the same release or the same glass type for the same release.
- **Remnant Consumption –** When using dynamic mode in Opti-Break, a lock will be placed on the remnant as it is being consumed by the machine so that no other machine can try to consume the same piece at the same time.
- **Store Slot Generation –** When using dynamic mode in Opti-Break, a lock will be placed on the store slot being added to by the machine so that no other machine can try to use the same slot at the same time.

The following columns appear in the 'Locked Items' grid:



- **Description –** Describes what is locked. For example, if the 'Lock Type' is 'Cutting Machine' the machine's name will be shown in 'Description.
- **User –** Station ID of the user who has locked the object.
- **Date –** Date and time that the lock was initiated.

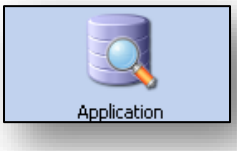
To delete a lock:

1. Select the appropriate lock type.
2. Select the lock to delete by clicking in the row header.
3. Select 'Delete Lock'.
4. The 'Refresh' icon allows the user to refresh the screen.

Note: If a user has locked an object and the application experiences an improper shutdown (e.g., a power outage or crash), the lock will not be cleared. If this happens, the user must manually delete the lock from the 'Locked Items' screen.

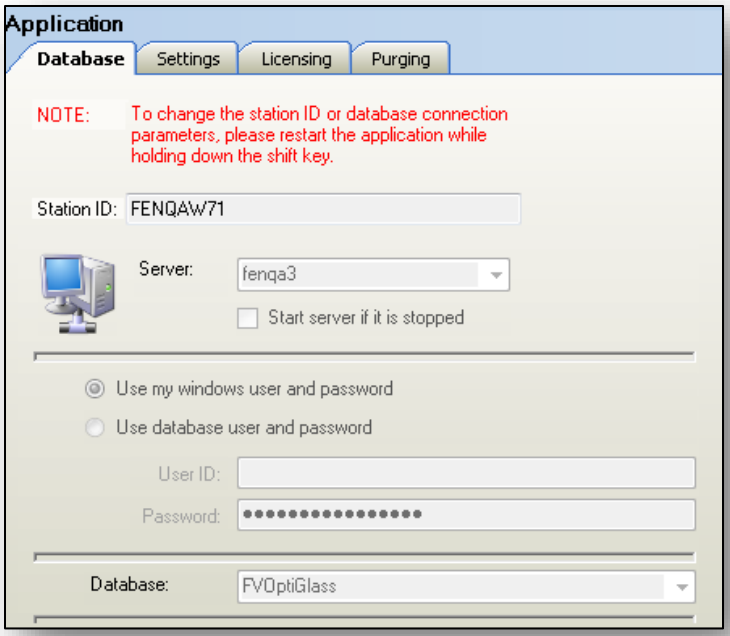
Application Setup

The 'Application Setup' screen contains tabs allowing the user to configure global settings and features of the FeneVision Opti-Glass application.



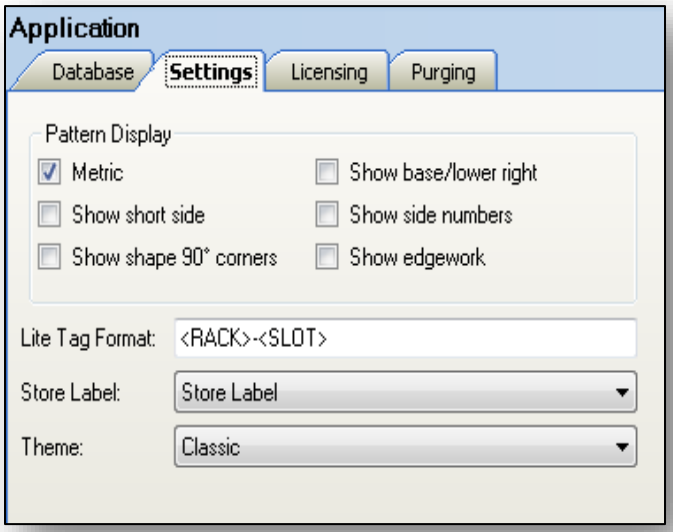
Database Tab

The 'Database' tab in the 'Application Setup' screen displays the application's database information and instructs the user on how to change the station ID or the database connection when logging in. The information displayed in the 'Database' tab is read only.



Settings Tab

The 'Settings' tab in the 'Application' setup screen is used to configure display preferences and specify a store label.



The top portion of the 'Settings' tab refers to the Opti-Glass Pattern Display.

- **Metric –** Checkbox indicating Metric or Imperial measurement display.
- **Show Short Side –** Indicates the short side of a lite. Marked by a black triangle.
- **Show Shape 90° Corners –** Indicates if a corner of a shape is 90 degrees. Only displayed on shapes (since rectangles have all 90° corners,) and marked by a black rectangle  in the corner.

- **Show Base/Lower Right –** Marked by a pentagon shape that is placed near the lower right corner of the unit. Point of the shape is on the base of the unit.
- **Show Side Numbers –** Side numbers displayed on lites next to each edge. The side numbers will appear on DXFs as well.
- **Show Edgework –** When checked, will allow the user to set a color at the 'Edgework Code' level. If the color is set, new lines will be drawn on the pattern displays to indicate which side contains edgework.

The 'Lite Tag Format' setting configures how individual lites are identified on any pattern displays. The data tags are enclosed between brackets (< >).

Data tags are replaced with the appropriate information and any other characters outside the brackets will be displayed 'as is'. The example shown in the above image displays the rack identifier and the slot number. The following data tags are available for the 'Lite Tag Format' field:

- **<TAG> –** Lite TAG attribute value.
- **<RID> –** Release identifier.
- **<RACK> –** Rack identifier.
- **<RACKID> –** Unique database rack identifier.
- **<RACKSEQ> -** Identifier of the rack sequence number.
- **<L2RACK> -** Rack identifier for level 2 racks.
- **<SLOT> –** Rack slot or position.
    - **Harp Racks –** Slot number.
    - '**A' and 'L' Frame Racks –** The position in the format of 'xx' / 'nn' where 'xx' is the stack position and 'nn' is the position within the stack. For example, 21.01 is the first stack on the second side of an 'A' frame rack, and it is the first piece within that stack.

- **<ASLOT> –** Similar to <SLOT>, except that the format for 'A' and 'L' frame racks changes to 1A, 1B, and 1C to identify the stack position on the first side, and 2A, 2B, and 2C to identify stacks on the second side of a rack.
- **<MSLOT> –** Manual slot.
- **<L2SLOT> -** Rack slot or position for level 2 racks.
- **<STACK> –** Rack side and stack.
    - '**A' and 'L' Frame Racks –** The position in the format of 'xx' where 'xx' is the stack position. For example, 21 is the first stack on the second side of an 'A' frame rack. The position within the stack is not shown.

- **<STACKID> -** Unique database rack side and stack identifier.
- **<ASTACK> –** Similar to <STACK>, except that the format for 'A' and 'L' frame racks changes to 1A, 1B, and 1C to identify the stack position on the first side, and 2A, 2B, and 2C to identify stacks on the second side of a rack. The position within the stack is not shown.
- **<KSTACK> -** Similar to <STACK>, except that the format for 'A' and 'L' frame racks changes to a single letter; A-J to identify the stack position on the first side, and K-T to identify stacks on the second side of a rack. The position within the stack is not shown.
- **<ORDER> –** Order number.
- **<ITEM> –** Order line item number.
- **<PART> –** Part number.
- **<POS> –** Cutting table rack position. This is a numeric value from 1 to the number of rack positions configured for the machine.
- **<BATCH> –** Batch number if running in batch mode.
- **<SUMP>** - Schedule number, unit number, master key (identifier of the part), and parent key (identifier of the part's parent in the BOM).
- **<SCHEDID> –** Schedule number.

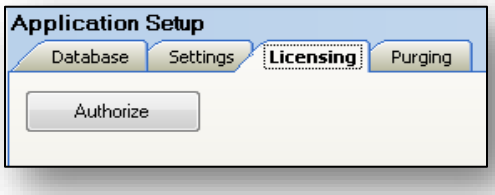
- **<UNITID> –** Unit number.
- **<MASTERKEY> –** Identifier of the part. Used in barcodes.
- **<PARENTKEY> –** Identifier of the part's parent in the BOM. Used in barcodes.

The remainder of the Settings tab consists of 'Store Label' selection and 'Theme:

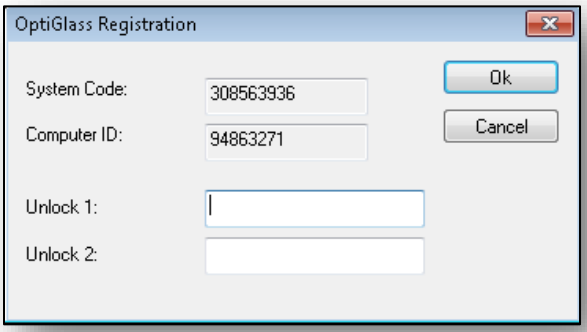
- **Store Label –** Dropdown to select the 'System Report' to use as the 'Store' label.
- **Theme –** Allows the user to switch the color theme of the application. The options are Dark, Medium, or Classic. This User Manual displays all screens in the 'Classic' theme.

Licensing Tab

The 'Licensing' tab in the 'Application Setup' screen is used to unlock the Opti-Glass features on the server, such as dynamic optimizing and glass storage.



To authorize optional functionality in the Opti-Glass application, select the 'Authorize' button. This will display the screen shown below. Contact FeneTech to receive the unlock codes. The user will need to provide the system code and the computer ID numbers to receive a valid unlock code.



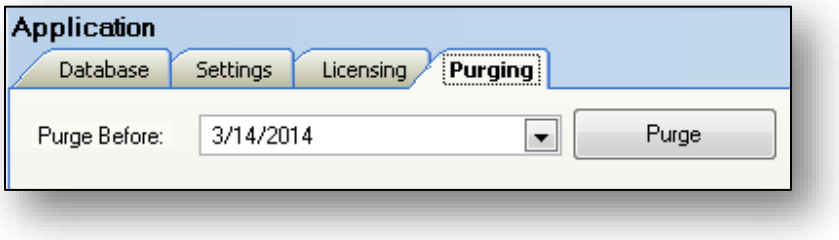
Note: When unlocking additional functionality, open Opti-Glass as an administrator. To do so, right click on the Opti-Glass icon and select 'Run as administrator'.

Purging Tab

The 'Purging' tab in the 'Application Setup' screen allows users to remove various data from tables and past data that is no longer needed. This can significantly decrease the size of the Opti-Glass database. FeneTech recommends running a purge when production is *not* active as this can slow server performance during the purge.

The 'Purging' functionality will apply to any releases where the run date is on or before the date specified by the user in the 'Purge Before' drop-down. The release is then marked as purged, which hides it from user view.

Once the date is specified, the 'Purging' functionality will apply toward any glass (racking, remake, order information included) and patterns associated with those releases then perform a hard delete against that release. Lot Tracking information, however, is still preserved, and historical yield data can still be queried.

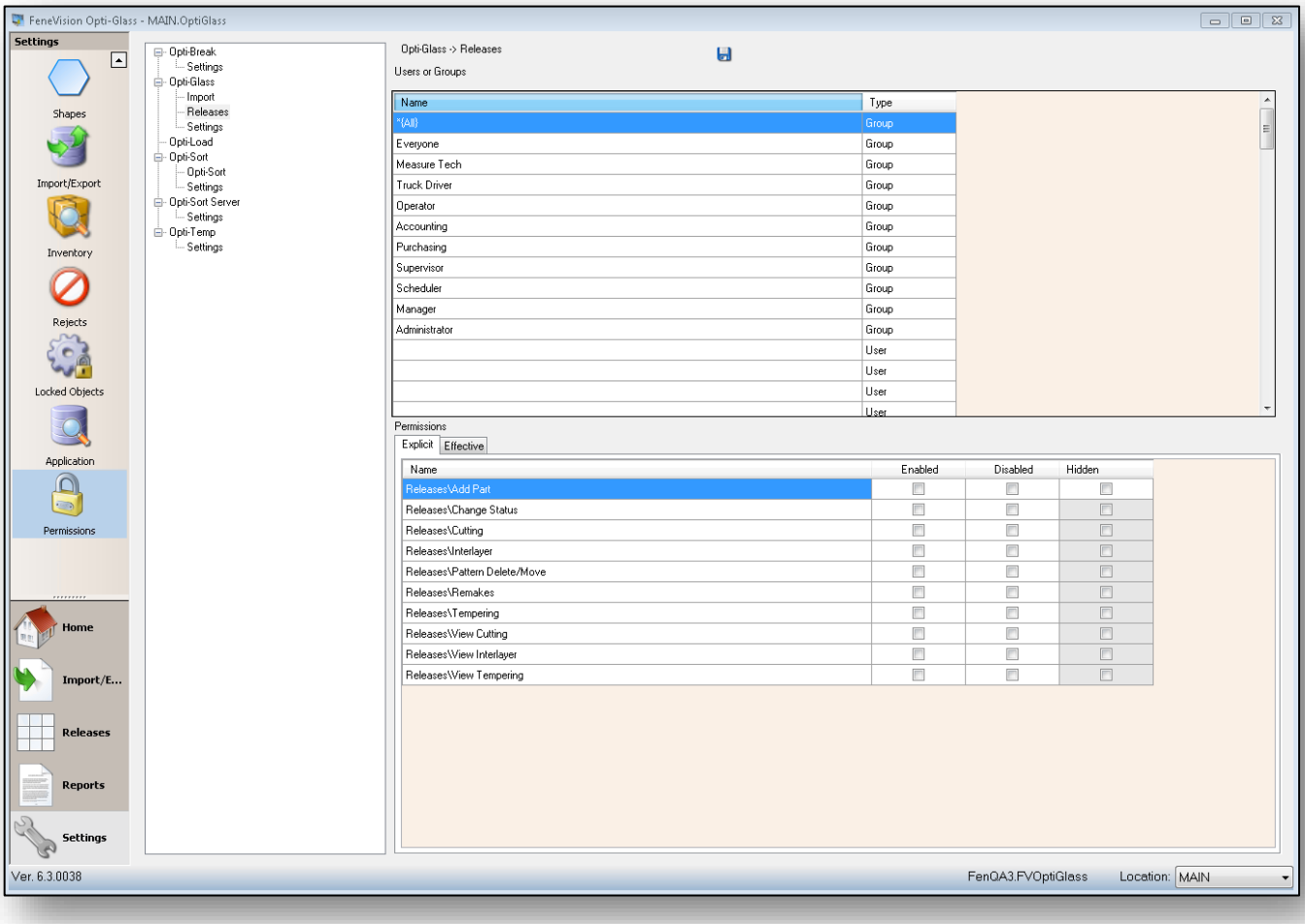


To use the 'Purging' tab, users indicate 'Purge Before' date. All data will be eliminated up to the date indicated.

Note: Users should set the 'Purge Before' date back far enough to be comfortable that there are no remakes for it. Once a purge has been performed, the data purged cannot be recovered.

Permissions

Permissions grant users the ability to enter different areas of the system, as well as complete different tasks. In order to configure, change, or revoke permissions, the user must belong to the FeneVision administrators' group.



The 'Permissions' screen consists of three sections:

- **Left side of the screen –** List of the all screens within FeneVision Opti applications that have permissions.
- **Users or Groups –** List of the individual users who have been set up in the system and the groups to which users can belong.
- **Permissions –** List of permissions corresponding to the selected screen.
  - **Explicit Tab –** This tab allows a permission to be to explicitly enable or disabled.
  - **Effective tab –** Shows the result of combining explicit permissions for the user and all groups to which the user belongs (available for users only). The precedence for combining permissions is:
    - **Group Permissions –** Lowest privilege groups up to highest privilege groups.
    - **User Permissions –** If set, user permission takes precedence over group permissions.

For example, if a user is in 'Supervisor' group, and the 'Supervisor' group does not have permission to access 'Remakes' (but the specific user has it enabled) the effective permission for this user would show 'Enabled'. However, if the user has no permission specified on the explicit tab, then it would fall back to the group

permission; therefore, the effective permission for this user would be disabled.

To change permissions, complete the following:

1. Highlight the menu on the left side of the screen.
2. Select the user or group to be adjusted in the 'Users or Groups' section of the screen.
3. Select the 'Explicit' tab.
4. Select the checkbox of each item to be enabled in the 'Enabled' column.
5. Select the checkbox for each item to be disabled in the 'Disabled' column. By default, the 'Administrators' group has permissions to everything and everyone else will have all permissions disabled.

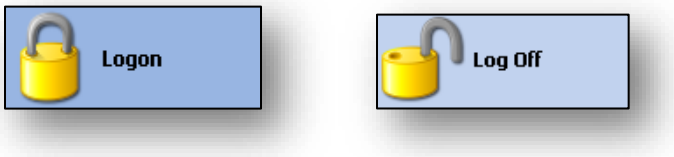
   Note: If permissions are revoked for a user, but the user is currently in a particular screen or other area of the system, then the user will continue to have permissions until the screen the user is in is closed and reopened. If permissions are added, the same rules apply--screens will need to be closed and reopened in order for permissions to be refreshed.

Column Management

Some of the columns existing in the various Opti-Glass screens are able to be moved or hidden. Others are to remain in a certain location. The following guidelines apply to column management in Opti-Glass.

- **Fixed Column –** The column cannot be hidden through the column editor, and it cannot be moved to another position in the grid. This column will always appear in the exact same place each time the screen is opened.
- **Required Column –** The column cannot be hidden through the column editor, but it can be moved to different locations in the screen.

Logon / Log Off



The 'Logon' / 'Log Off' button will only appear on databases that are utilizing the multiple location functionality. If on a multiple location database, the user will be prompted to sign in upon opening Opti-Glass.

The Login ID and Password are set up in FeneVision Core. There are two options for logging in.

- **FeneVision Authentication –** If the Core user is set up to use FeneVision Authentication then this option should be selected. In this case, there will be no 'Domain'.
- **Windows Authentication –** If the Core user is set up to use Windows Authentication then this option should be selected. In this case, the Domain will default to the current machine. To change the domain, type the desired domain followed by a back slash (\) in from of the username in the 'Login ID' field. The Domain should match with what is configured in Core.

If more than one language is configured through FeneVision Core, the language dropdown will also show with the default language selected.

The location at which Opti-Glass will be using once logged in is determined by the user's location from Core.

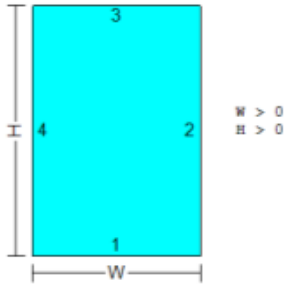
Note: At any point, the user can be changed by selecting 'Log Off' in the bottom left, then 'Logon'. Leaving the 'Settings' >> 'Import / Export' screen will also require the user to log in again since exiting this screen re-loads settings.

Appendix A

Shapes Catalog

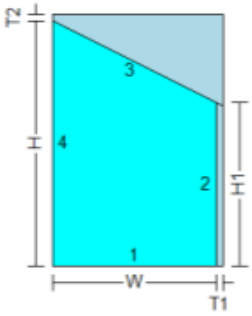
The 'Shapes Catalog' comprises a complete list of shapes available from FeneVision. The user will see these shapes' numbers in the 'Options Wizard'

RECTANGLE



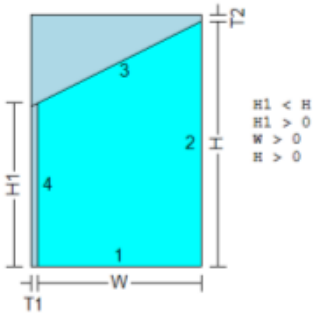
W > 0
H > 0

SHAPE 1



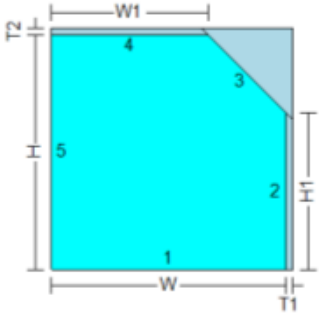
H1 < H
H1 > 0
W > 0
H > 0

SHAPE 2



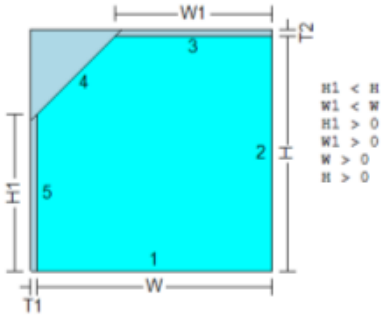
H1 < H
H1 > 0
W > 0
H > 0

SHAPE 3



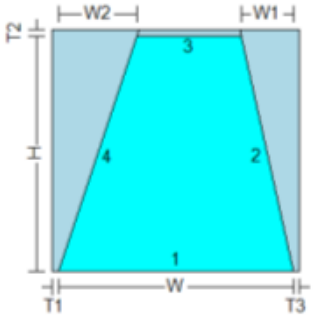
H1 < H
W1 < W
H1 > 0
W1 > 0
W > 0
H > 0

SHAPE 4



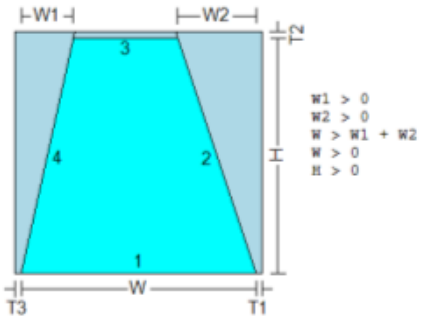
H1 < H
W1 < W
H1 > 0
W1 > 0
W > 0
H > 0

SHAPE 5



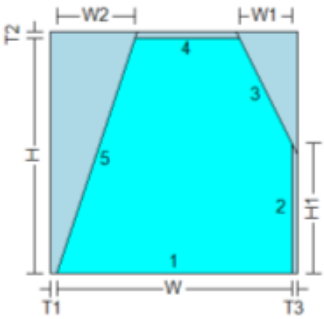
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0

SHAPE 6



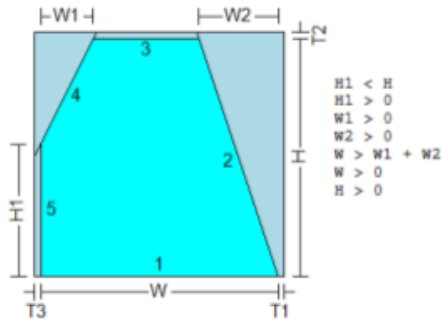
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0

SHAPE 7



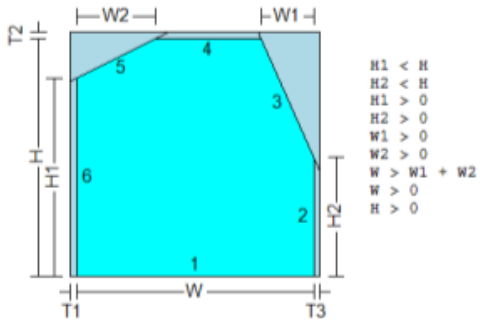
H1 < H
H1 > 0
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0

SHAPE 8



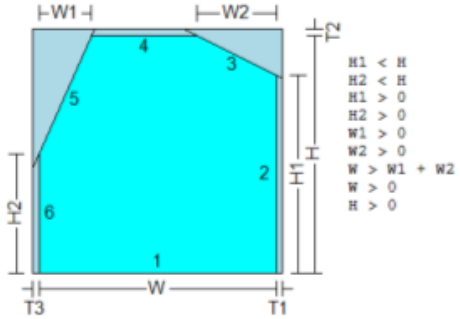

```
H1 < H
H1 > 0
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0
```

SHAPE 9



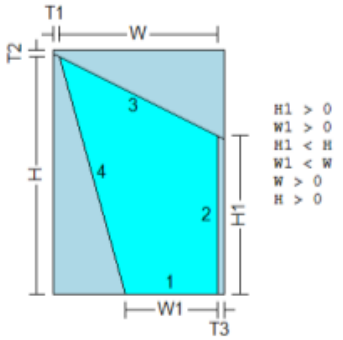

```
H1 < H
H2 < H
H1 > 0
H2 > 0
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0
```

SHAPE 10



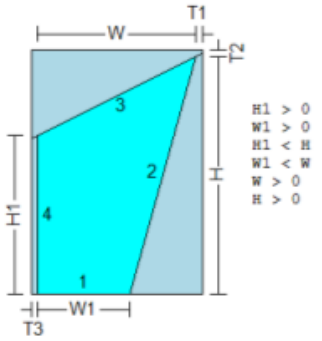

```
H1 < H
H2 < H
H1 > 0
H2 > 0
W1 > 0
W2 > 0
W > W1 + W2
W > 0
H > 0
```

SHAPE 11



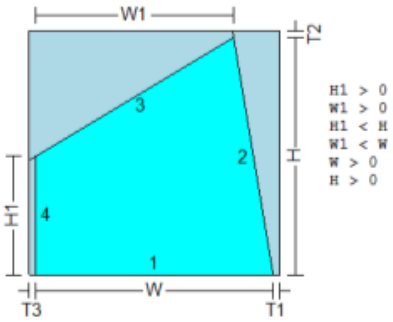

```
H1 > 0
W1 > 0
H1 < H
W1 < W
W > 0
H > 0
```

SHAPE 12



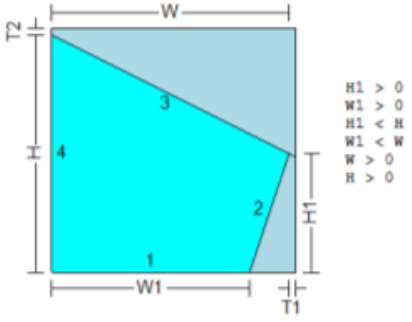

```
H1 > 0
W1 > 0
H1 < H
W1 < W
W > 0
H > 0
```

SHAPE 13



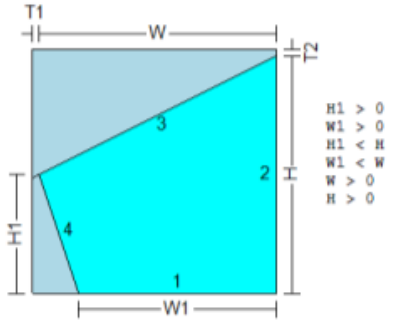

```
H1 > 0
W1 > 0
H1 < H
W1 < W
W > 0
H > 0
```

SHAPE 14



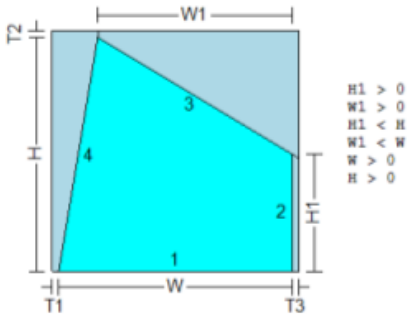

```
H1 > 0
W1 > 0
H1 < H
W1 < W
W > 0
H > 0
```

SHAPE 15

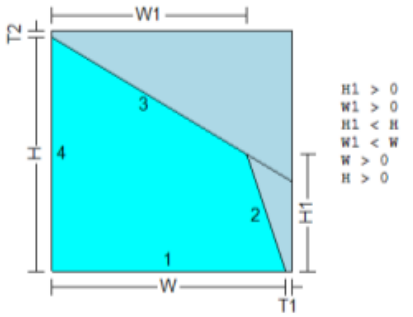



```
H1 > 0
W1 > 0
H1 < H
W1 < W
W > 0
H > 0
```

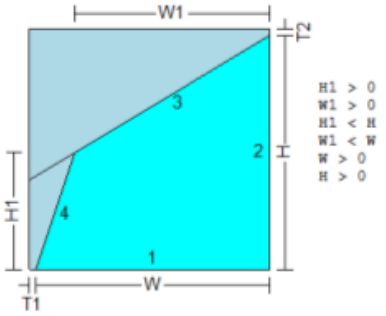
SHAPE 16



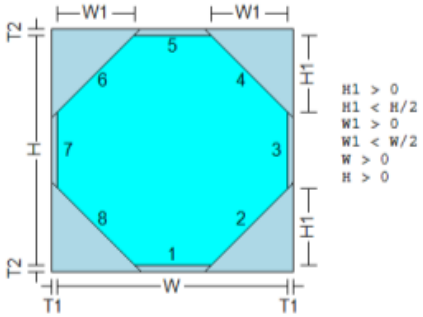
SHAPE 17



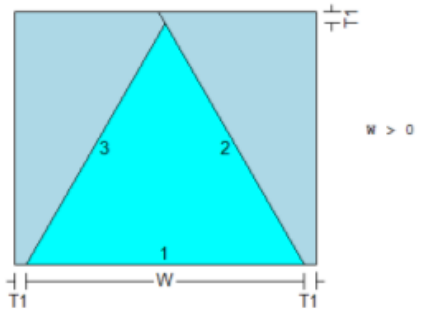
SHAPE 18



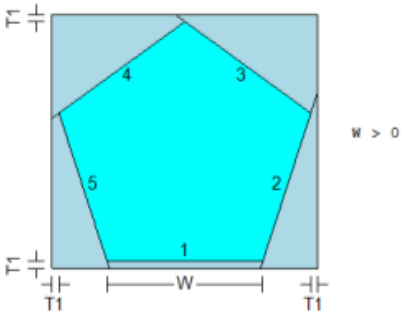
SHAPE 19



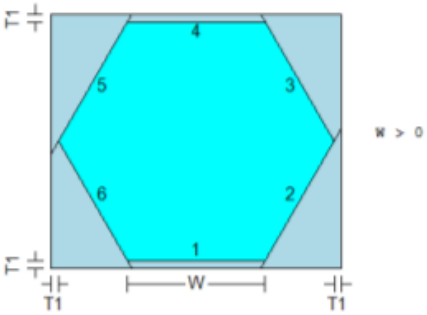
SHAPE 20



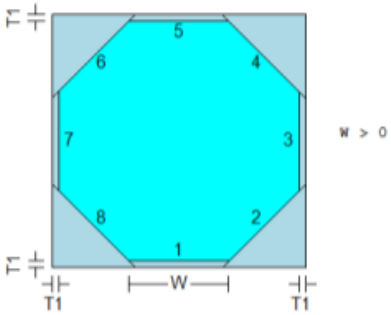
SHAPE 21



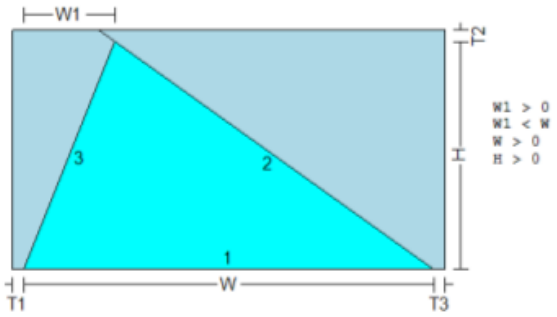
SHAPE 22



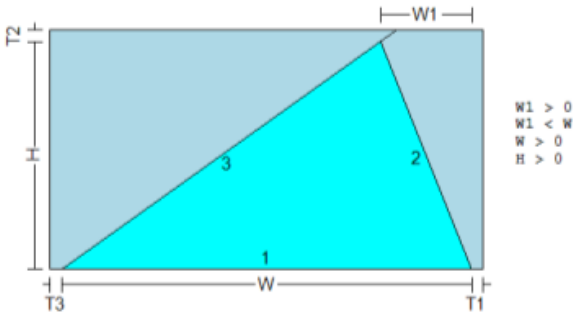
SHAPE 24



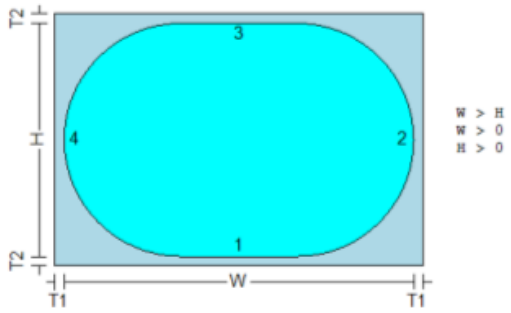
SHAPE 25



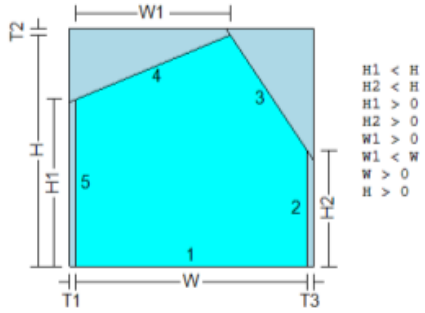
SHAPE 26



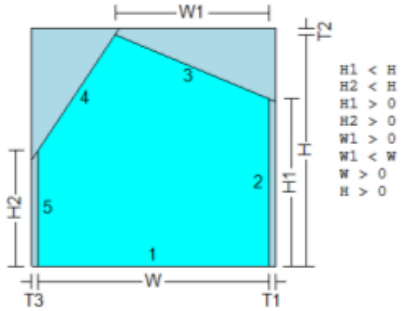
SHAPE 29



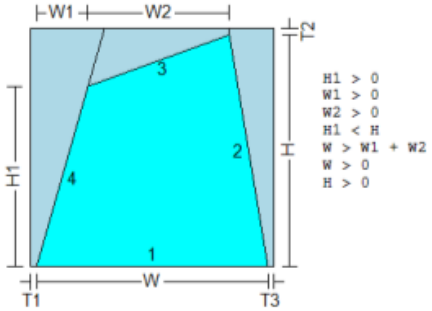
SHAPE 37



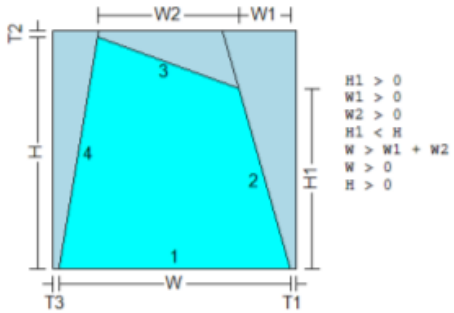
SHAPE 38



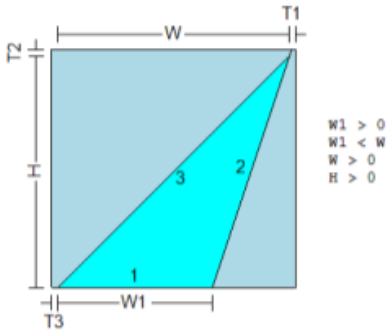
SHAPE 39



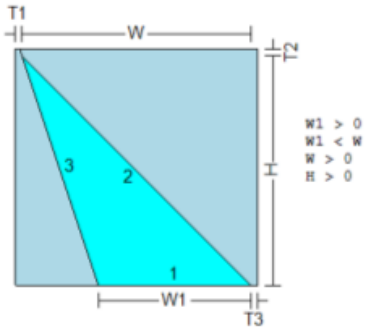
SHAPE 40



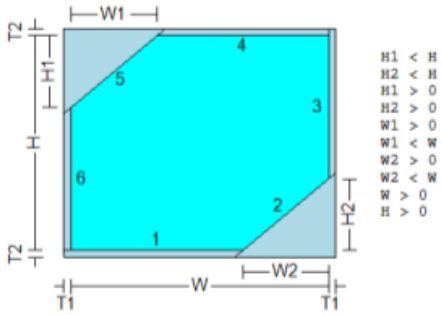
SHAPE 41



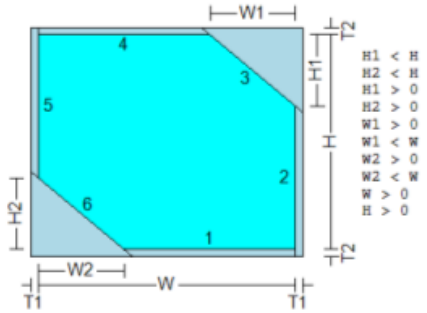
SHAPE 42



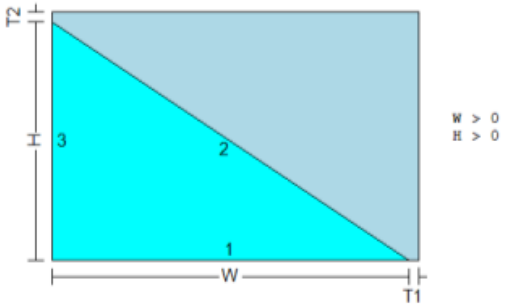
SHAPE 43



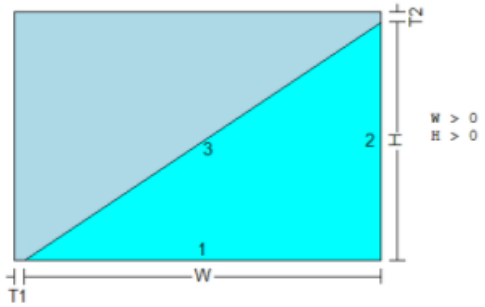
SHAPE 44



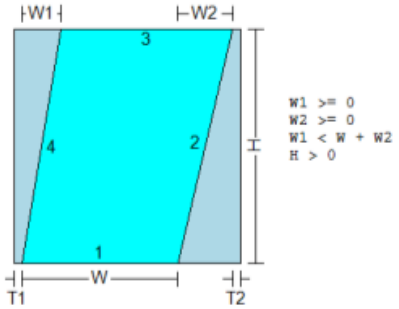
SHAPE 45



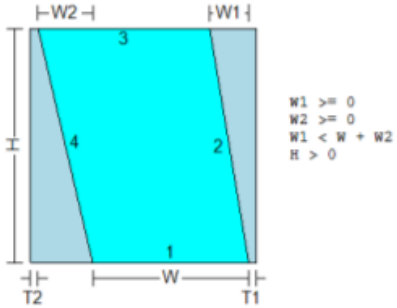
SHAPE 46



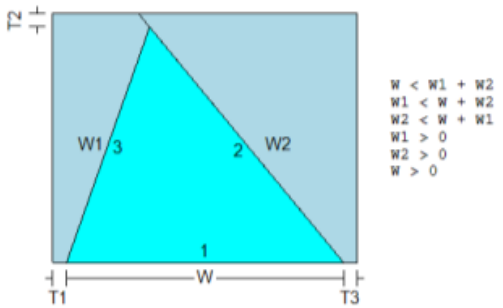
SHAPE 47



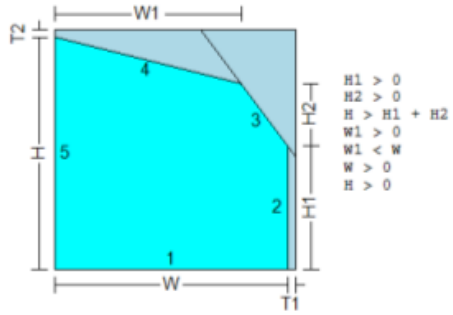
SHAPE 48



SHAPE 51

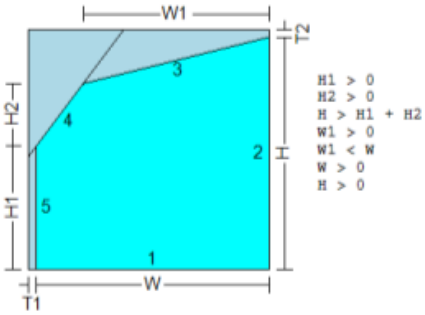


SHAPE 53



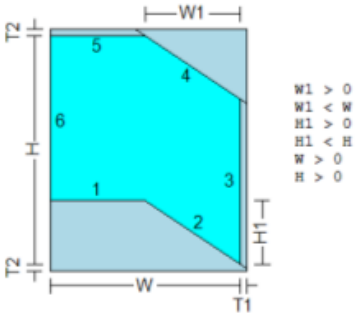

```
H1 > 0
H2 > 0
H > H1 + H2
W1 > 0
W1 < W
W > 0
H > 0
```

SHAPE 54



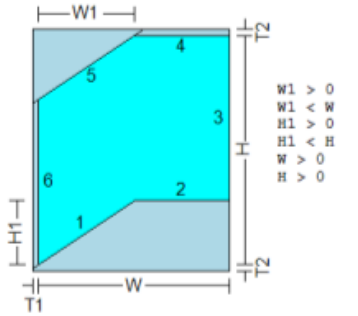

```
H1 > 0
H2 > 0
H > H1 + H2
W1 > 0
W1 < W
W > 0
H > 0
```

SHAPE 55



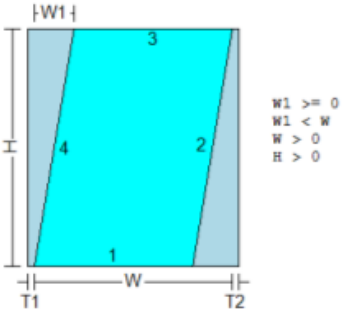

```
W1 > 0
W1 < W
H1 > 0
H1 < H
W > 0
H > 0
```

SHAPE 56



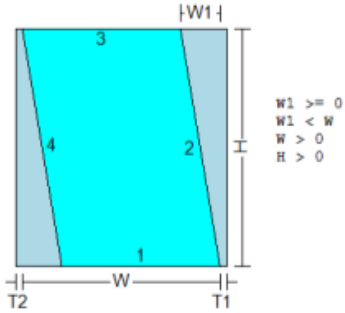

```
W1 > 0
W1 < W
H1 > 0
H1 < H
W > 0
H > 0
```

SHAPE 57



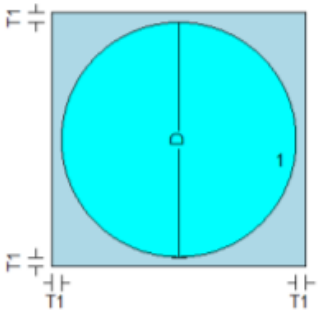

```
W1 >= 0
W1 < W
W > 0
H > 0
```

SHAPE 58



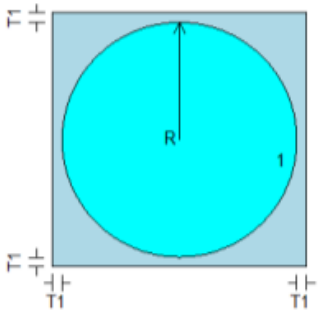

```
W1 >= 0
W1 < W
W > 0
H > 0
```

SHAPE 60



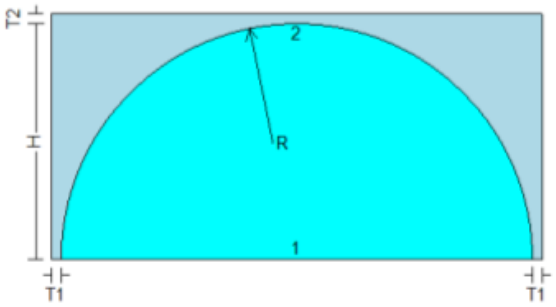

```
D > 0
```

SHAPE 61



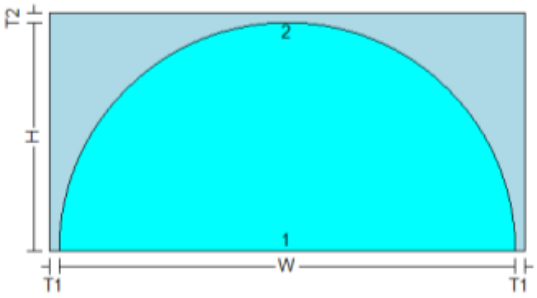

```
R > 0
```

SHAPE 62



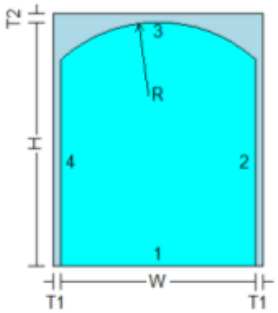

```
H > 0
R >= H
```

SHAPE 63



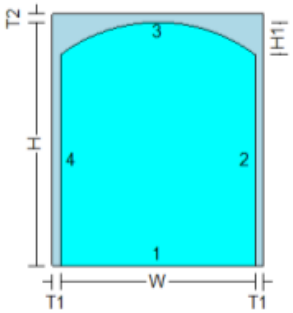

```
H <= W/2
W > 0
H > 0
```

SHAPE 64



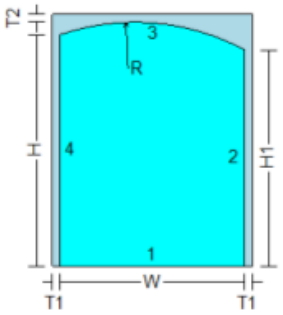

```
R >= W/2
H > R-SQRT(R^2-W^2/4)
0 < R-SQRT(R^2-W^2/4)
W > 0
H > 0
```

SHAPE 65



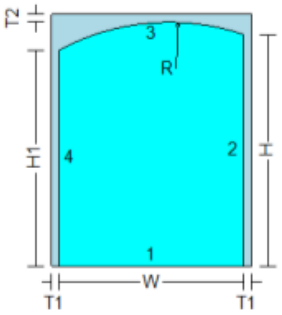

```
H1 <= W/2
H1 <= H
H1 > 0
W > 0
H > 0
```

SHAPE 66



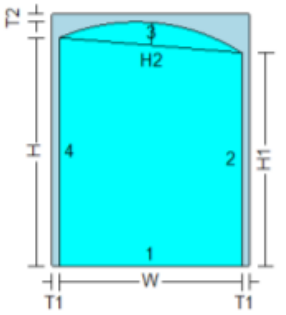

```
H1 <= H
R >= SQRT((H-H1)^2 + W^2)/2
H1 > 0
H > 0
W > 0
```

SHAPE 67



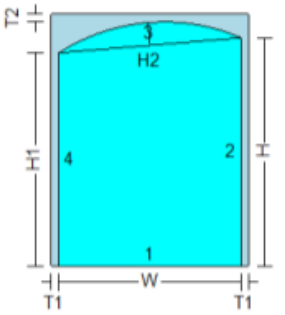

```
H1 <= H
R >= SQRT((H-H1)^2 + W^2)/2
H1 > 0
H > 0
W > 0
```

SHAPE 68



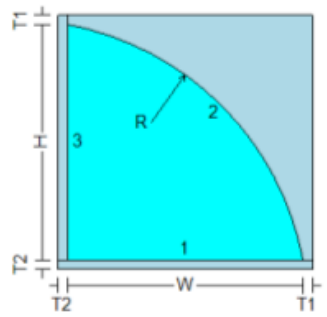

```
H1 <= H
H2 <= SQRT((H-H1)^2 + W^2)/2
H2 > 0
H1 > 0
W > 0
H > 0
```

SHAPE 69



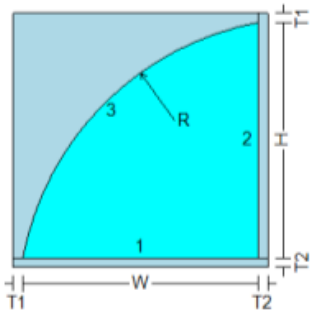

```
H1 <= H
H2 <= SQRT((H-H1)^2 + W^2)/2
H2 > 0
H1 > 0
W > 0
H > 0
```

SHAPE 70



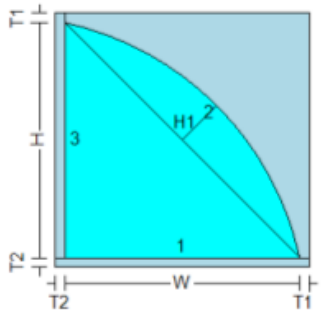

```
R >= SQRT(W^2 + H^2)/2
W > 0
H > 0
```

SHAPE 71



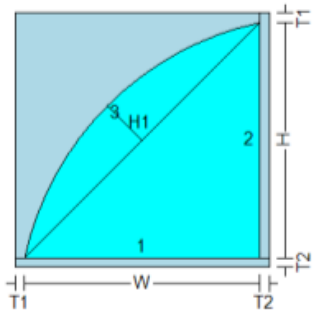

```
R >= SQRT(W^2 + H^2)/2
W > 0
H > 0
```

SHAPE 72



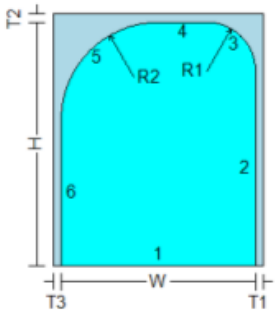

```
H1 <= SQRT(W^2 + H^2)
H1 > 0
W > 0
H > 0
```

SHAPE 73



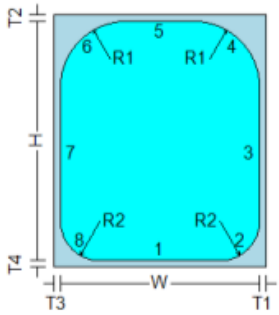

```
H1 <= SQRT(W^2 + H^2)
H1 > 0
W > 0
H > 0
```

SHAPE 74



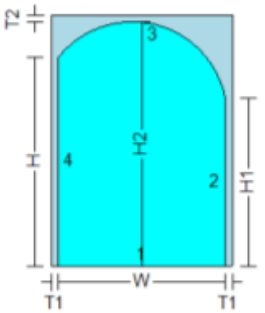

```
W >= R1 + R2
R1 > 0
R1 <= H
R2 > 0
R2 <= H
W > 0
H > 0
```

SHAPE 75



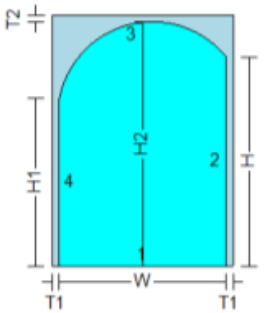

```
H >= R1 + R2
R1 > 0
R1 <= W/2
R2 > 0
R2 <= W/2
W > 0
H > 0
```

SHAPE 76



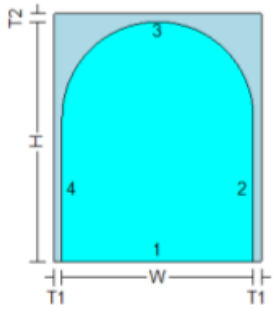

```
W > 0
H > 0
H1 > 0
H2 > 0
H >= H1
H2 > (H + H1)/2
```

SHAPE 77



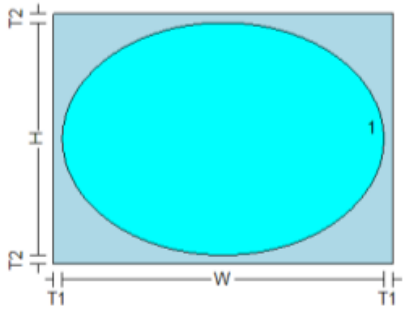

```
W > 0
H > 0
H1 > 0
H2 > 0
H >= H1
H2 > (H + H1)/2
```

SHAPE 78



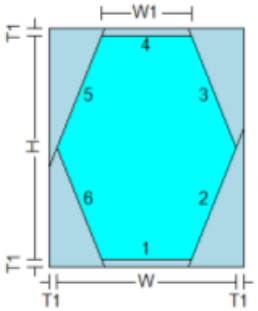
H >= W/2
W > 0
H > 0

SHAPE 81



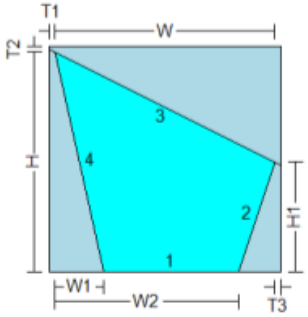
W > 0
H > 0

SHAPE 91



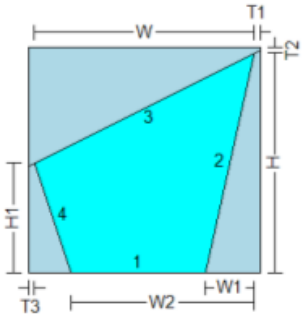
W1 > 0
W1 < W
W > 0
H > 0

SHAPE 92



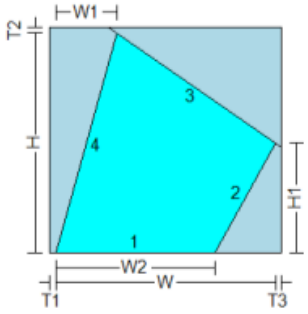
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W1 < W2
W2 < W
W > 0
H > 0

SHAPE 93



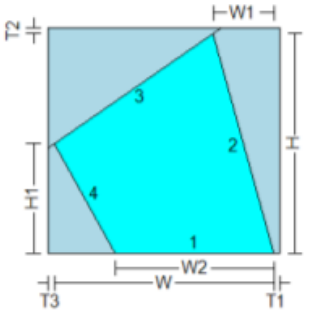
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W1 < W2
W2 < W
W > 0
H > 0

SHAPE 94



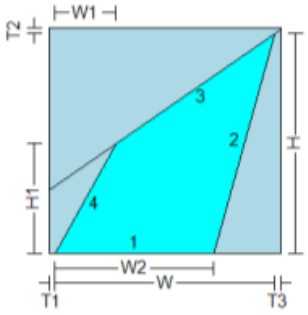
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W2 < W
W > 0
H > 0

SHAPE 95



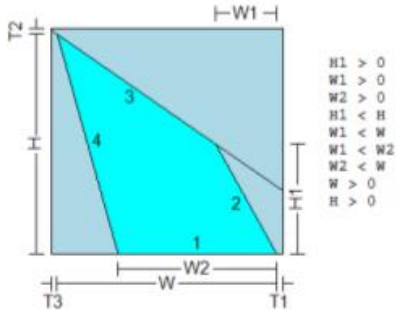
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W2 < W
W > 0
H > 0

SHAPE 96



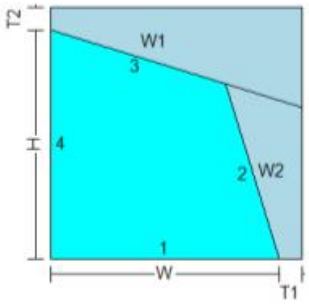
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W1 < W2
W2 < W
W > 0
H > 0

SHAPE 97



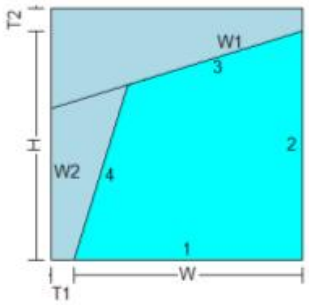

```
H1 > 0
W1 > 0
W2 > 0
H1 < H
W1 < W
W1 < W2
W2 < W
W > 0
H > 0
```

SHAPE 100



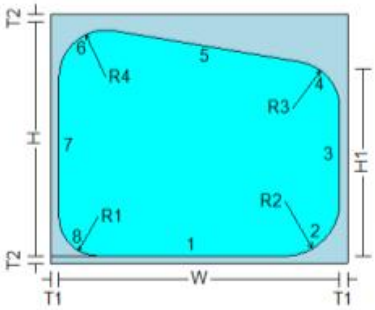

```
W > 0
H > 0
W1 + W2 > SQRT(W^2 + H^2)
W2 < SQRT(W^2 + H^2) + W1
W1 < SQRT(W^2 + H^2) + W2
```

SHAPE 101



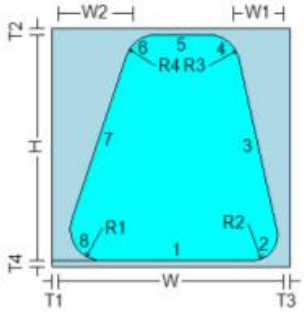

```
W > 0
H > 0
W1 + W2 > SQRT(W^2 + H^2)
W2 < SQRT(W^2 + H^2) + W1
W1 < SQRT(W^2 + H^2) + W2
```

SHAPE 103



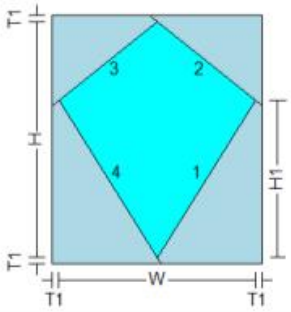

```
R1 > 0
R2 > 0
R3 > 0
R4 > 0
H >= R1 + R4
H1 >= R2 + R3
W >= R1 + R2
W >= R3 + R4
H1 <= H
W > 0
H > 0
```

SHAPE 113



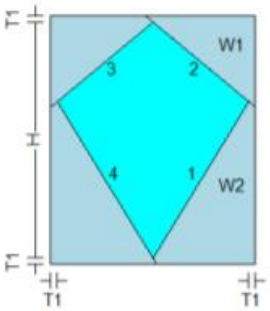

```
R1 > 0
R2 > 0
R3 > 0
R4 > 0
W1 >= 0
W2 >= 0
H >= R1 + R4
H >= R2 + R3
W >= R1 + R2
W >= R3 + R4
W > 0
H > 0
```

SHAPE 116



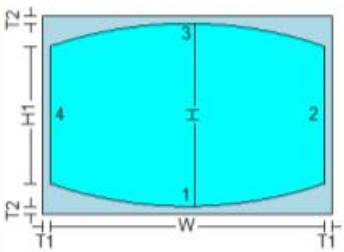

```
H1 > 0
H1 < H
W > 0
H > 0
```

SHAPE 117



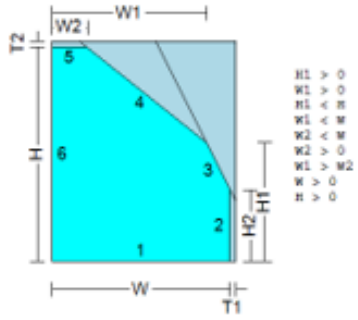

```
W1 > 0
W2 > 0
H > 0
H < W1 + W2
```

SHAPE 119

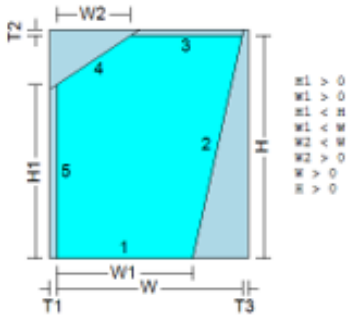



```
H1 > 0
H1 < H
H-H1 < SQRT(W^2+((H-H1)/2)^2)
W > 0
H > 0
```

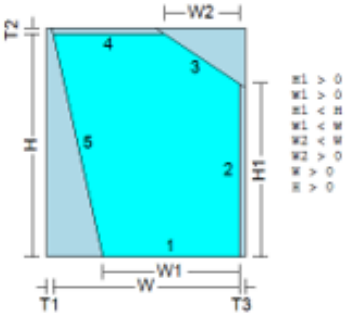
SHAPE 129



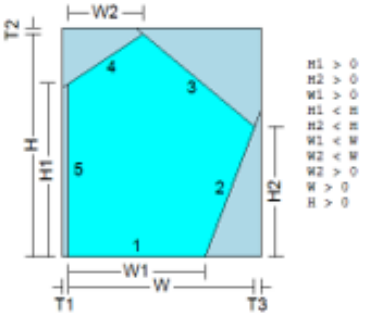
SHAPE 130



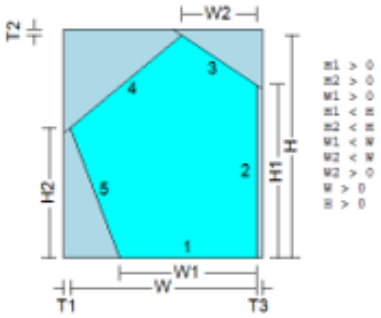
SHAPE 131



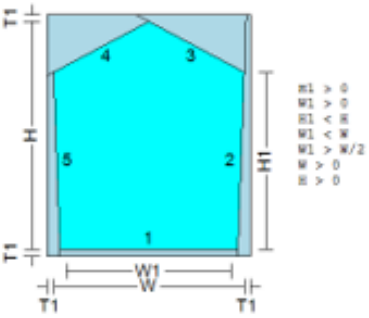
SHAPE 132



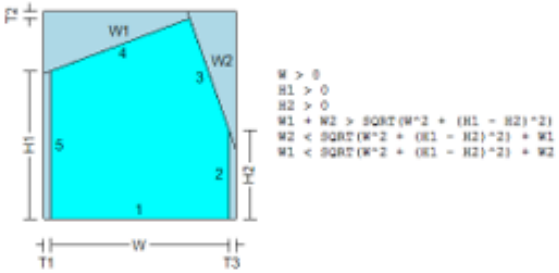
SHAPE 133



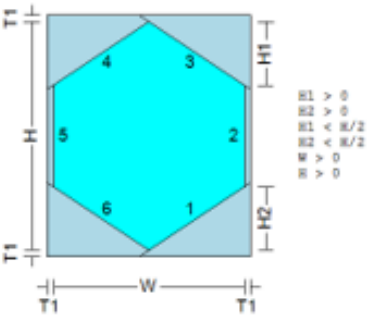
SHAPE 134



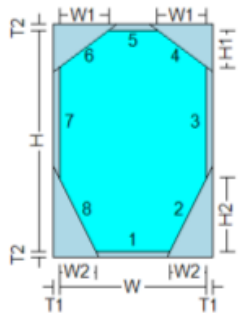
SHAPE 135



SHAPE 142

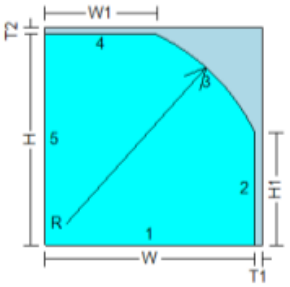


SHAPE 144



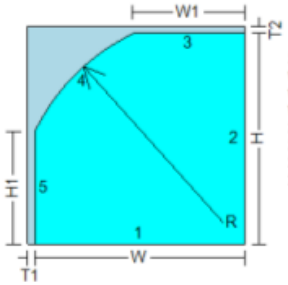

```
H1 > 0
H1 < H/2
H2 > 0
H2 < H/2
W1 > 0
W1 < W/2
W2 > 0
W2 < W/2
W > 0
H > 0
```

SHAPE 152



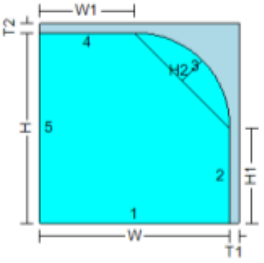

```
H > 0
W > 0
W1 > 0
W > W1
H1 > 0
H > H1
R >= 0
R*2 >= SQRT((W - W1)^2 + (H-H1)^2)
```

SHAPE 153



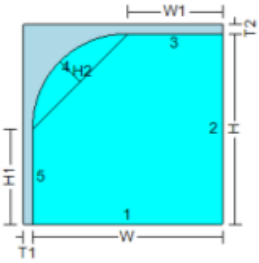

```
H > 0
W > 0
W1 > 0
W > W1
H1 > 0
H > H1
R >= 0
R*2 >= SQRT((W - W1)^2 + (H-H1)^2)
```

SHAPE 154



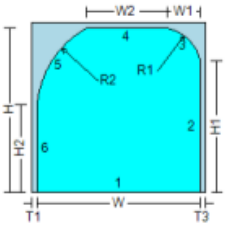

```
W > W1
W1 >= 0
H > H1
H1 >= 0
H2 > 0
H2*2 <= SQRT((W - W1)^2 + (H - H1)^2)
```

SHAPE 155



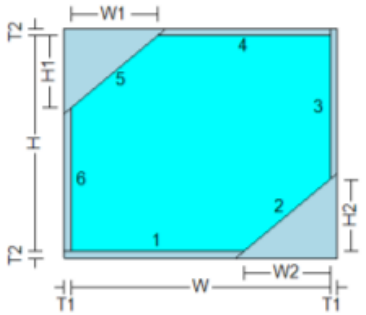

```
W > W1
W1 >= 0
H > H1
H1 >= 0
H2 > 0
H2*2 <= SQRT((W - W1)^2 + (H - H1)^2)
```

SHAPE 156



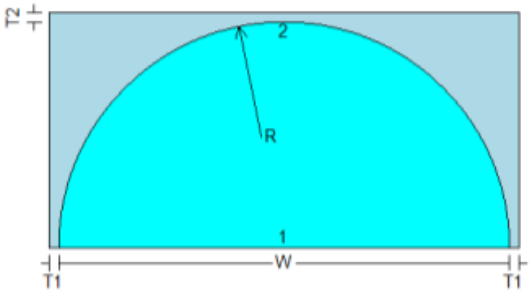

```
W > 0
H > 0
W > W1 + W2
W1 > 0
W2 > 0
H > H1
H1 > 0
H1 > H2
H2 > 0
R1 >= 0
R2 >= 0
R1 * 2 >= SQRT(W1^2 + (H-H1)^2)
R2 * 2 >= SQRT((W-W1-W2)^2 + (H - H2)^2)
```

SHAPE 157



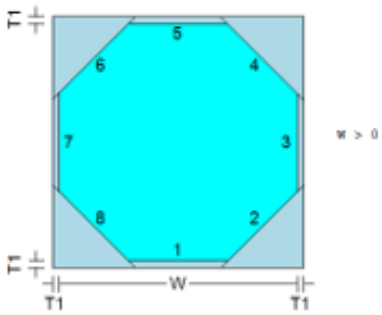

```
H1 < H
H2 < H
H1 > 0
H2 > 0
W1 > 0
W1 < W
W2 > 0
W2 < W
W > 0
H > 0
```

SHAPE 160

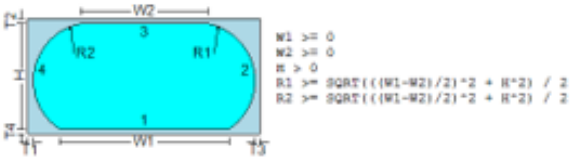



```
W > 0
R >= W/2
```

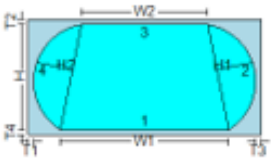
SHAPE 162



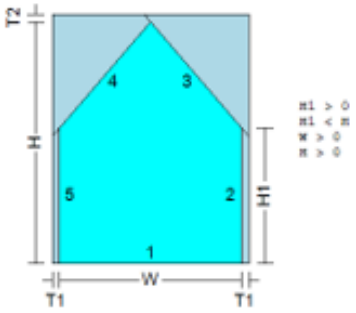
SHAPE 169



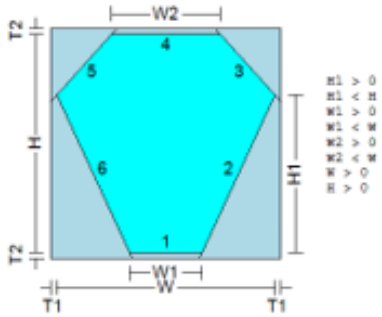
SHAPE 170



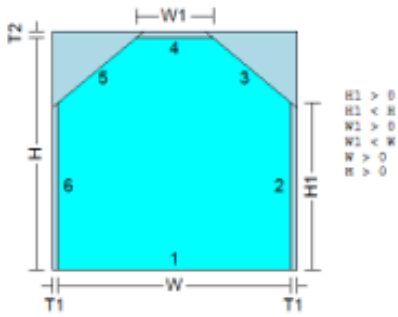
SHAPE 215



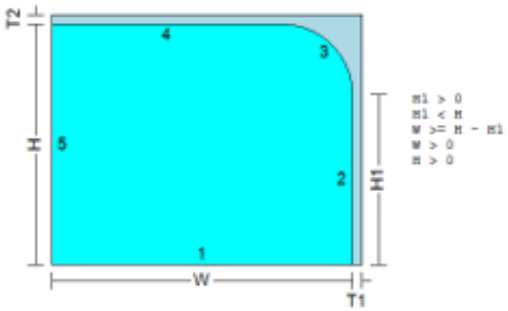
SHAPE 237



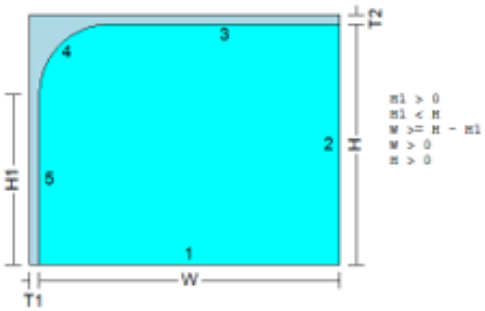
SHAPE 238



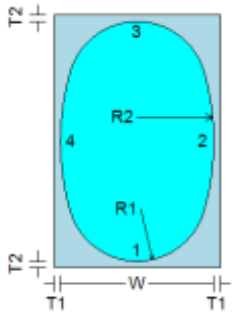
SHAPE 254



SHAPE 255

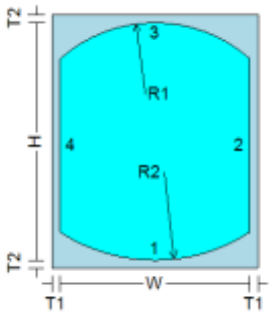


SHAPE 261



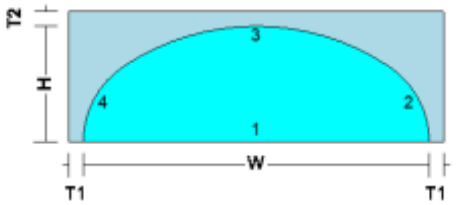
R1 > 0
R2 > 0
R1 < W/2
R2 > W/2
W > 0
H > 0

SHAPE 262



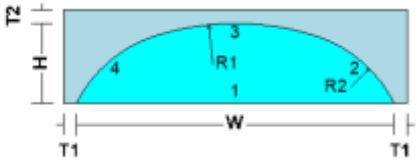
R1 > W/2
R2 > W/2
W > 0
H > 0

SHAPE 263



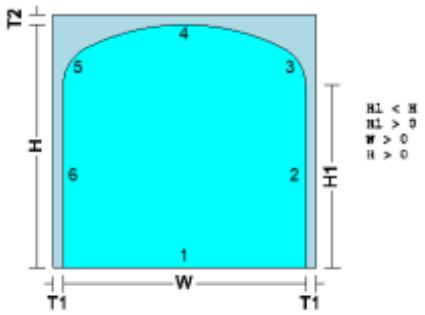
W > 0
H > 0

SHAPE 264



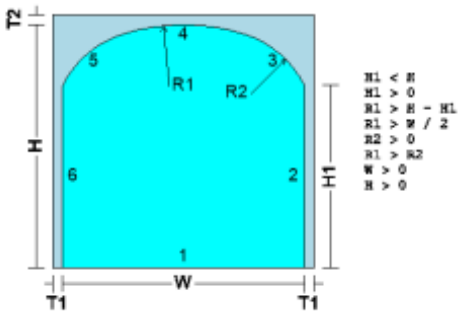
R1 > H
R1 > W / 2
R2 > 0
R1 > R2
W > 0
H > 0

SHAPE 265



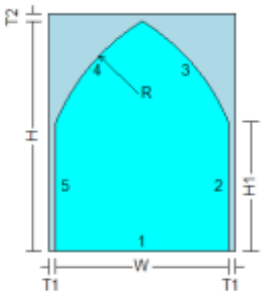
H1 < H
H1 > 0
W > 0
H > 0

SHAPE 266



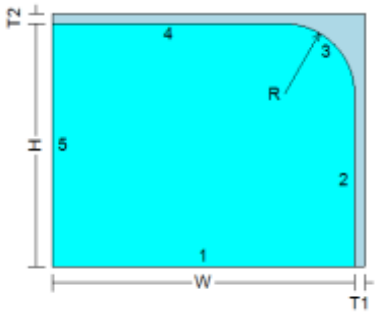
H1 < H
H1 > 0
R1 > H - H1
R1 > W / 2
R2 > 0
R1 > R2
W > 0
H > 0

SHAPE 272



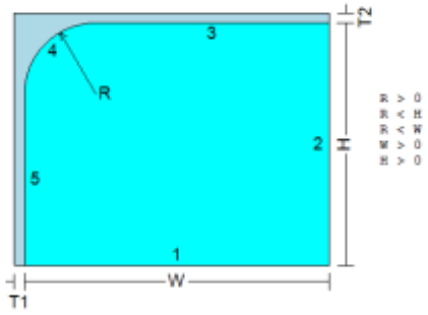
H1 > 0
H1 < H
R > W/2
R >= ((W^2)/(8*(H-H1)))+(H-H1)/2
W > 0
H > 0

SHAPE 277

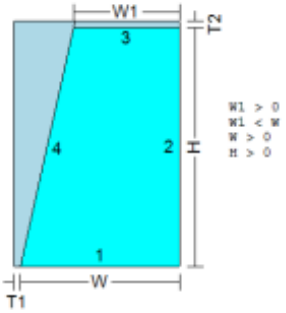


R > 0
R < H
R < W
W > 0
H > 0

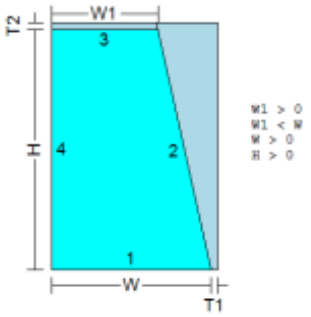
SHAPE 278



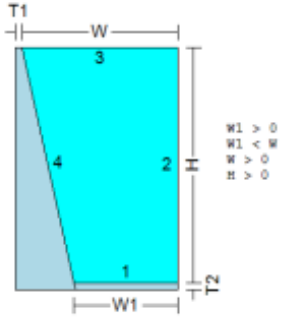
SHAPE 301



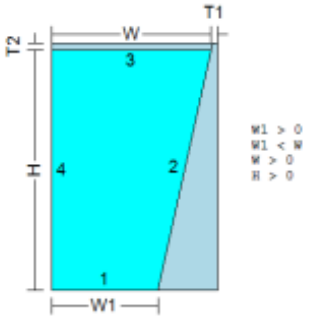
SHAPE 302



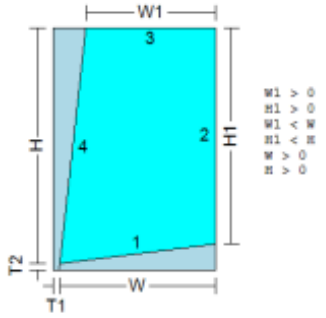
SHAPE 303



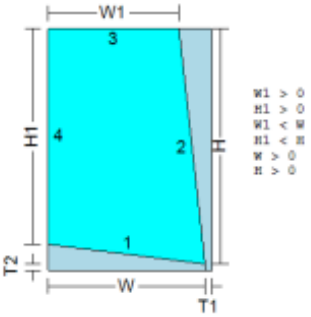
SHAPE 304



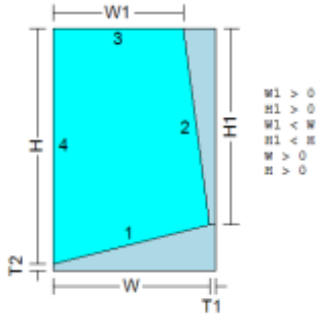
SHAPE 305



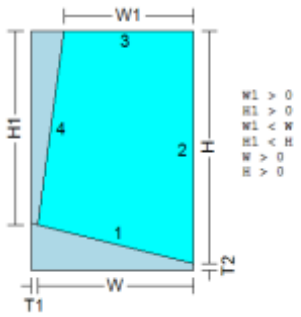
SHAPE 306



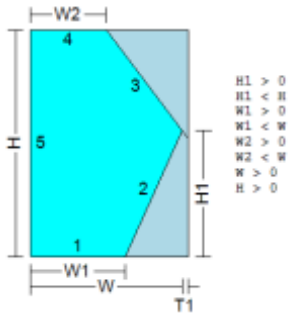
SHAPE 307



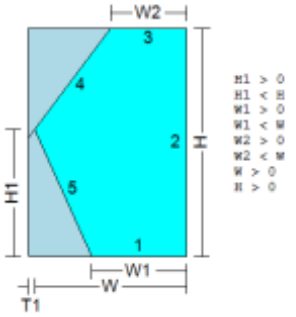
SHAPE 308



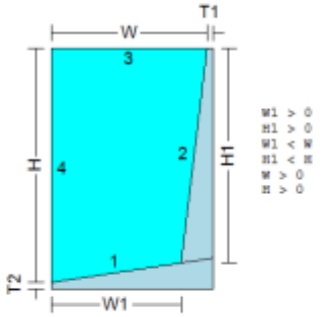
SHAPE 309



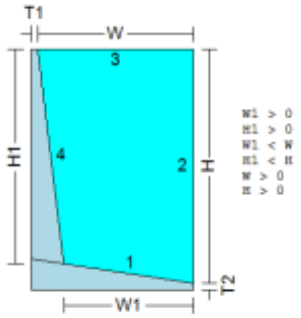
SHAPE 310



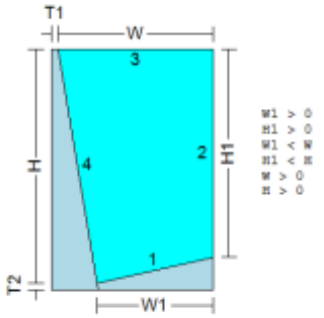
SHAPE 311



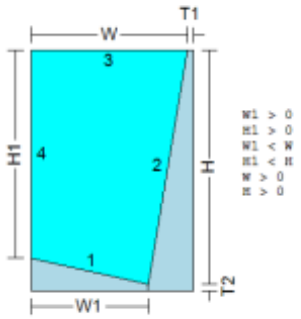
SHAPE 312



SHAPE 313



SHAPE 314



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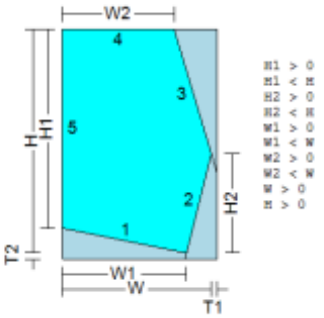
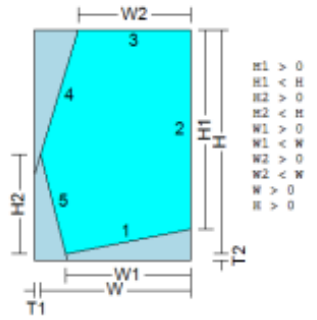
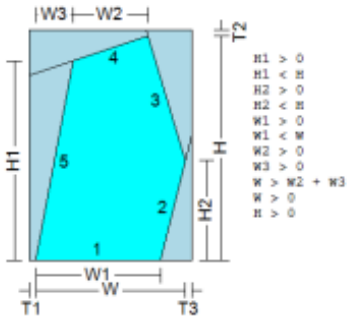


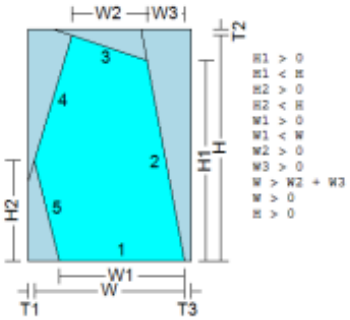
SHAPE 316



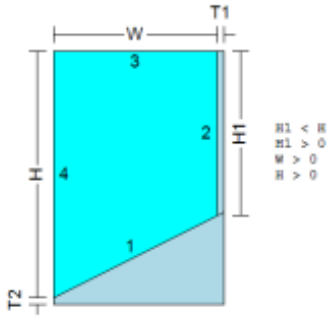
SHAPE 317



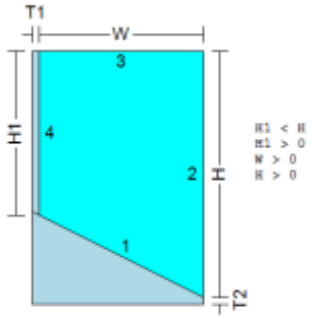
SHAPE 318



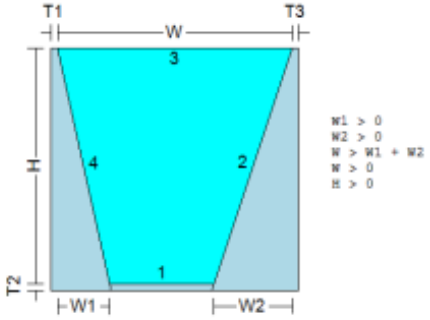
SHAPE 319



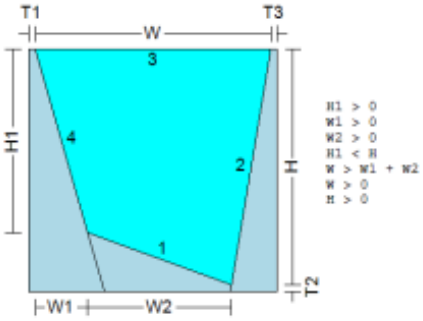
SHAPE 320



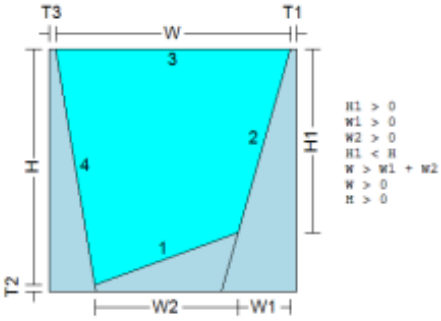
SHAPE 321



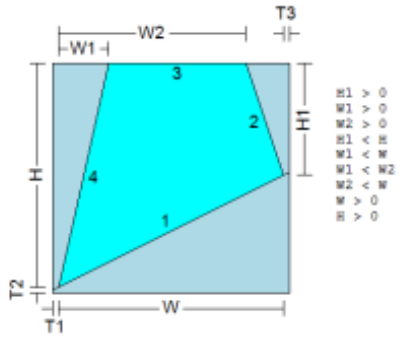
SHAPE 322



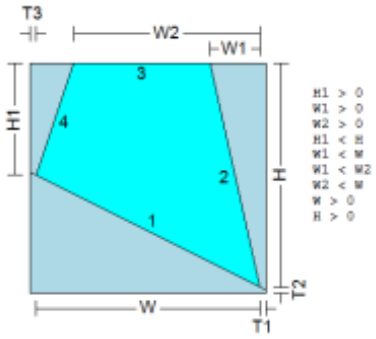
SHAPE 323



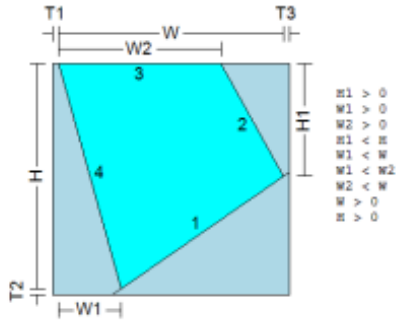
SHAPE 324



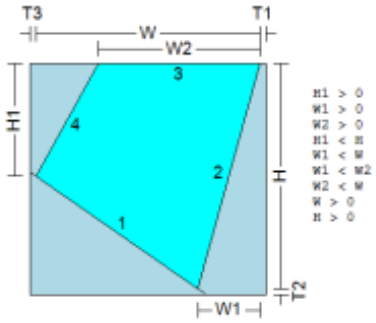
SHAPE 325



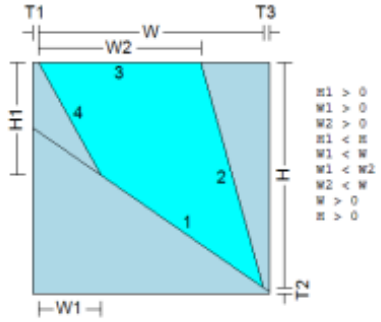
SHAPE 326



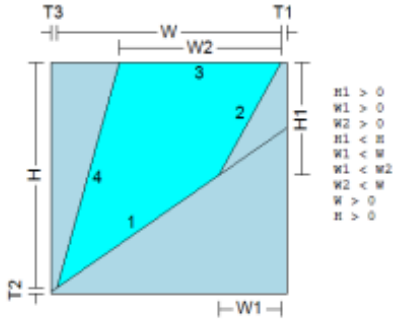
SHAPE 327



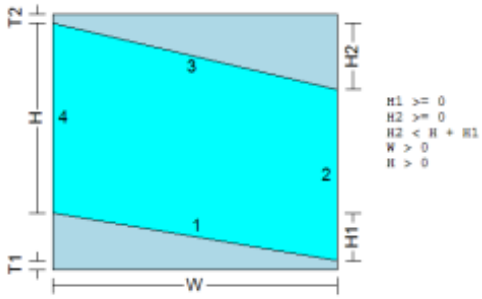
SHAPE 328



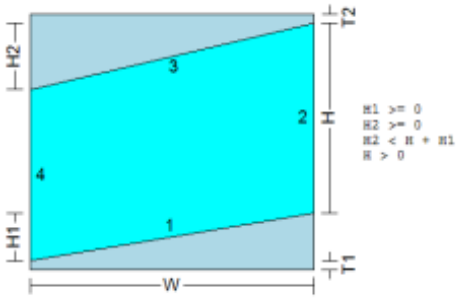
SHAPE 329



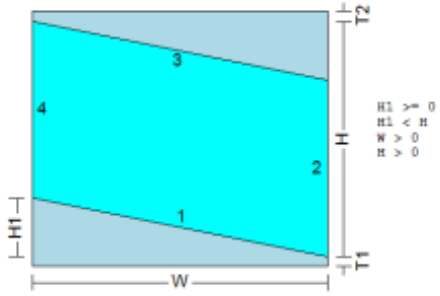
SHAPE 330



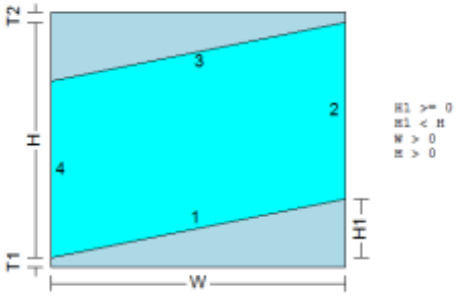
SHAPE 331



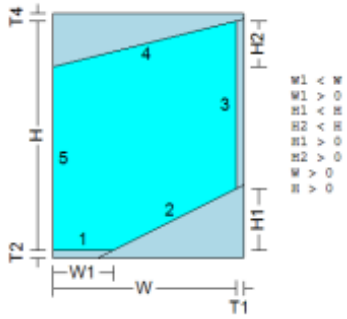
SHAPE 332



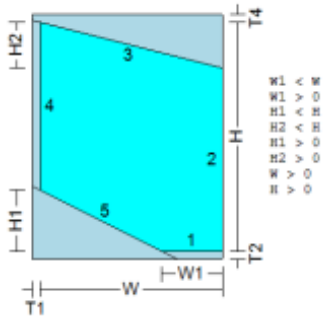
SHAPE 333



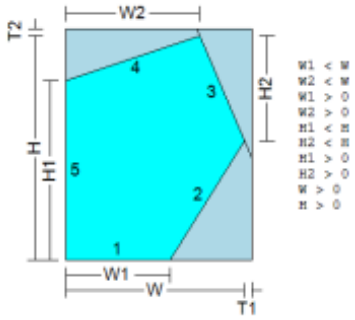
SHAPE 334



SHAPE 335



SHAPE 336



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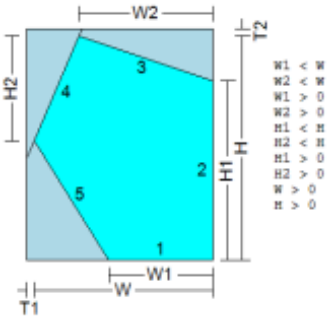
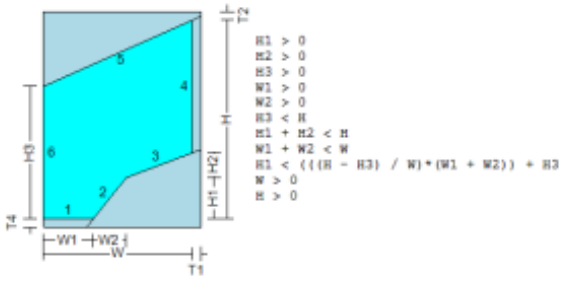
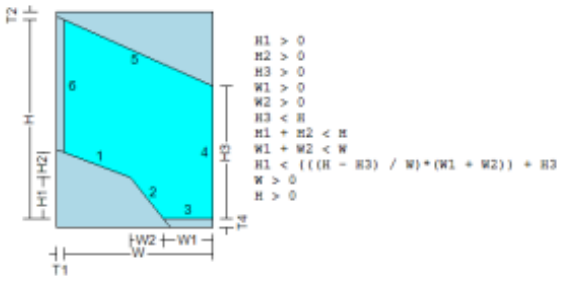


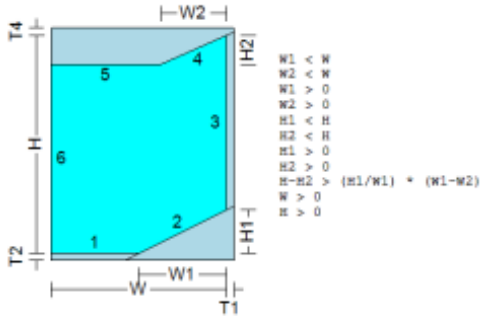
SHAPE 338



SHAPE 339

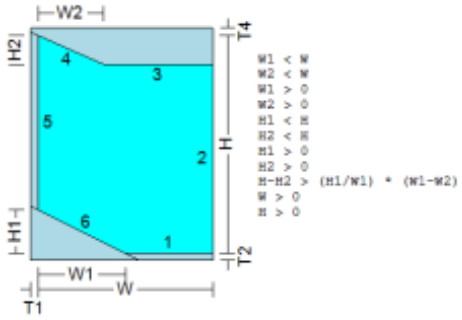


SHAPE 340



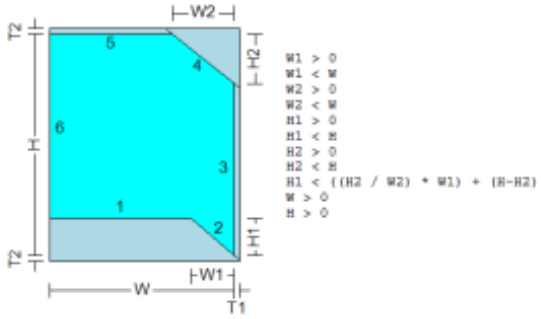

```
W1 < W
W2 < W
W1 > 0
W2 > 0
H1 < H
H2 < H
H1 > 0
H2 > 0
H-H2 > (H1/W1) * (W1-W2)
W > 0
H > 0
```

SHAPE 341



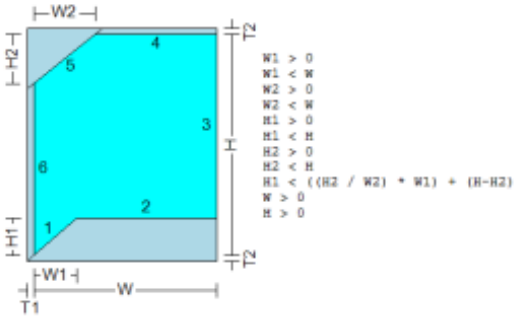

```
W1 < W
W2 < W
W1 > 0
W2 > 0
H1 < H
H2 < H
H1 > 0
H2 > 0
H-H2 > (H1/W1) * (W1-W2)
W > 0
H > 0
```

SHAPE 342



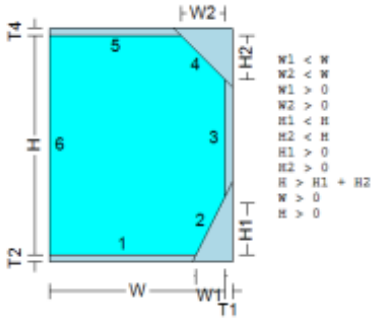

```
W1 > 0
W1 < W
W2 > 0
W2 < W
H1 > 0
H1 < H
H2 > 0
H2 < H
H1 < ((H2 / W2) * W1) + (H-H2)
W > 0
H > 0
```

SHAPE 343



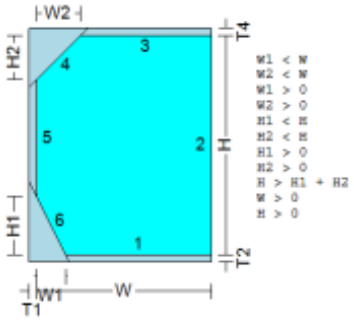

```
W1 > 0
W1 < W
W2 > 0
W2 < W
H1 > 0
H1 < H
H2 > 0
H2 < H
H1 < ((H2 / W2) * W1) + (H-H2)
W > 0
H > 0
```

SHAPE 344



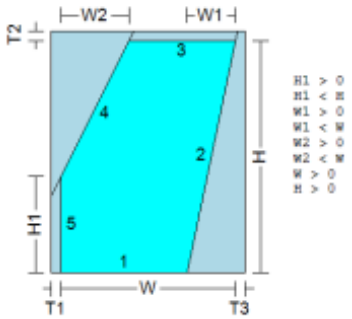

```
W1 < W
W2 < W
W1 > 0
W2 > 0
H1 < H
H2 < H
H1 > 0
H2 > 0
H > H1 + H2
W > 0
H > 0
```

SHAPE 345



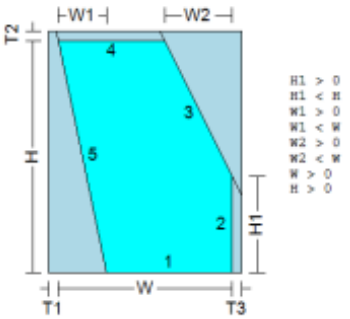

```
W1 < W
W2 < W
W1 > 0
W2 > 0
H1 < H
H2 < H
H1 > 0
H2 > 0
H > H1 + H2
W > 0
H > 0
```

SHAPE 346



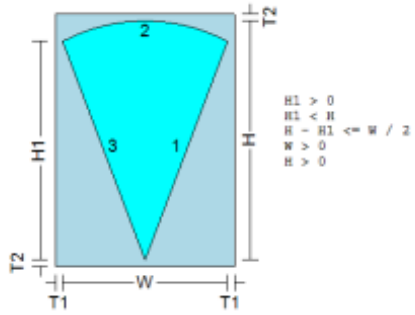

```
H1 > 0
H1 < H
W1 > 0
W1 < W
W2 > 0
W2 < W
W > 0
H > 0
```

SHAPE 347

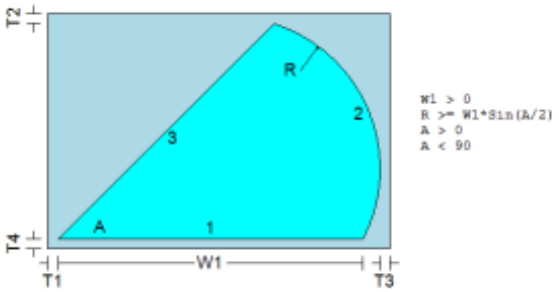



```
H1 > 0
H1 < H
W1 > 0
W1 < W
W2 > 0
W2 < W
W > 0
H > 0
```

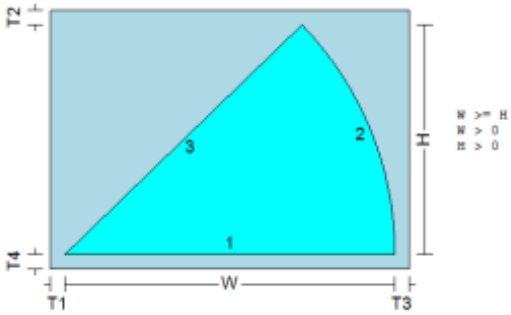
SHAPE 401



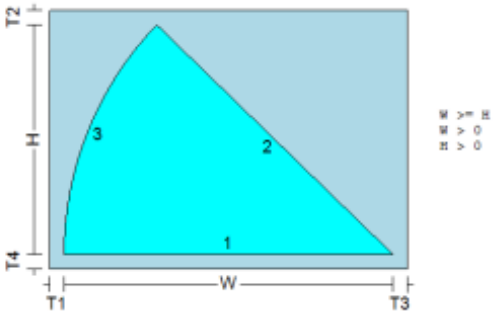
SHAPE 402



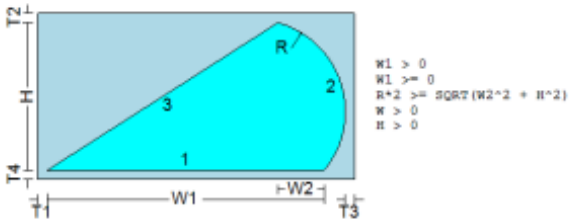
SHAPE 403



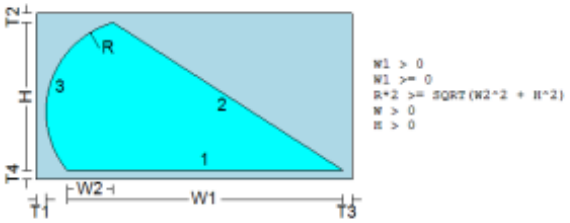
SHAPE 404



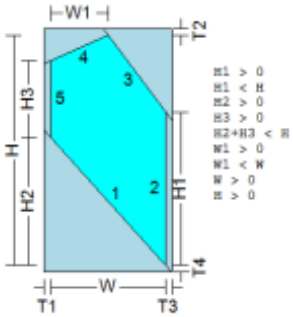
SHAPE 405



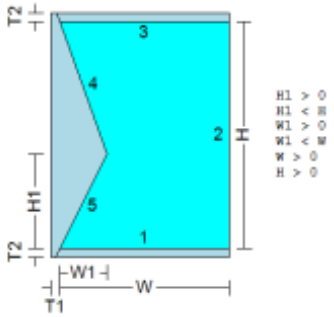
SHAPE 406



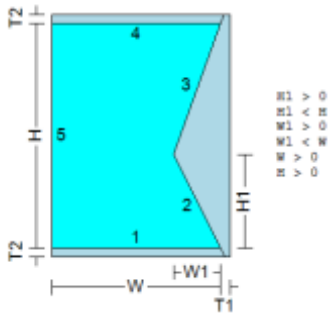
SHAPE 500



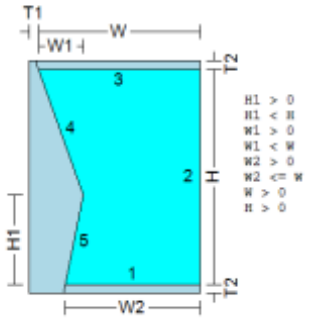
SHAPE 501



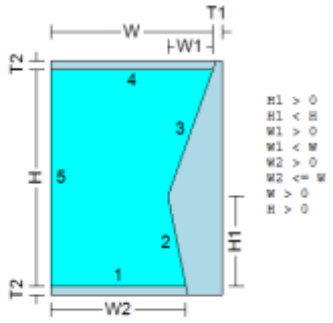
SHAPE 502



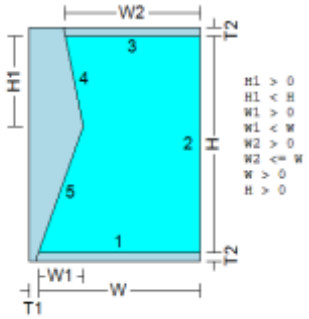
SHAPE 503



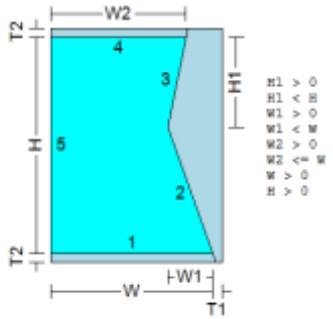
SHAPE 504



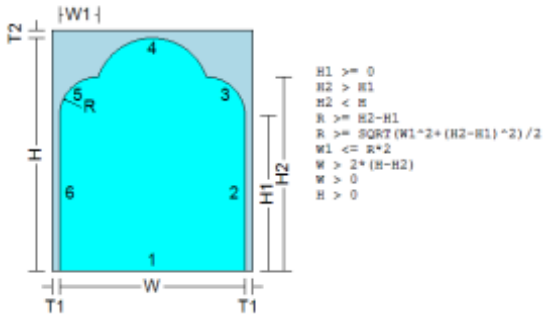
SHAPE 505



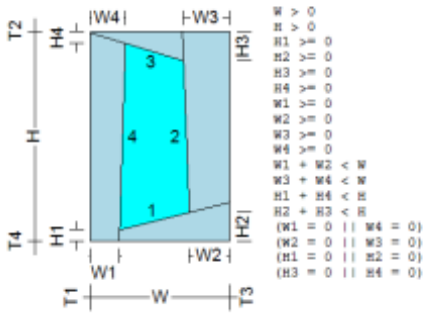
SHAPE 506



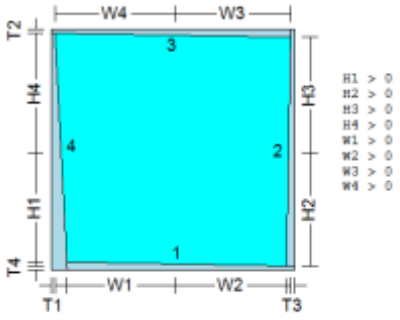
SHAPE 811



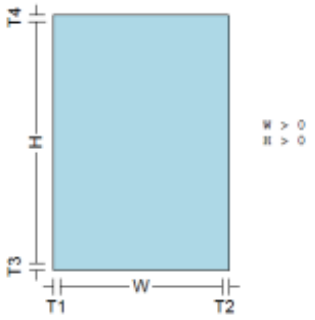
SHAPE 901



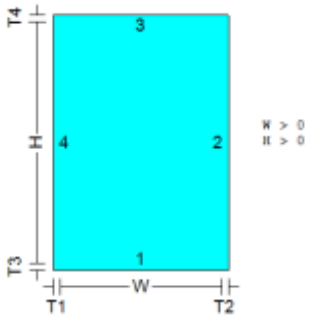
SHAPE 902



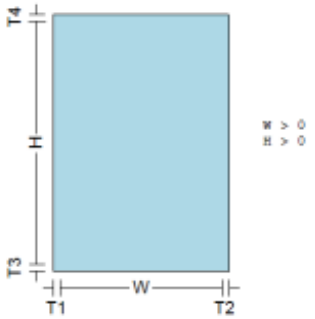
DXF - EDGEWORK SHAPE 997



TEMPLATE SHAPE 998



DXF SHAPE 999



Appendix B

FeneVision Opti Scripting

FeneVision Opti-Glass exposes the following methods and data structures to the FeneVision Core scripting engine.

Methods

GetShapeData returns a shape data object based on the supplied shape parameters.

Syntax

data **= GetShapeData(** *param* **)**

Return Value

Returns *a ShapeData1* data type with resulting shape information.

```
ShapeData1
      W           - block width
      H           - block height
      Total       - total side length
      SideCount   - total number of sides
      S1          - side 1 length
      S2          - side 2 length
      S3          - side 3 length
      S4          - side 4 length
      S5          - side 5 length
      S6          - side 6 length
      S7          - side 7 length
      S8          - side 8 length
      A1          - corner 1 interior angle
      A2          - corner 2 interior angle
      A3          - corner 3 interior angle
      A4          - corner 4 interior angle
      A5          - corner 5 interior angle
      A6          - corner 6 interior angle
      A7          - corner 7 interior angle
      A8          - corner 8 interior angle
```

Parameters

param A *ShapeParam1* data type populated with the required shape parameters.

Example

```
Dim data As ShapeData1
Dim param As ShapeParam1

param.ShapeNo = 1
param.W = 30
param.H = 40
param.H1 = 15

data = GetShapeData(param)

retval = data.S1
```

```
or

retval = SideLength(1)
```

GetShape returns a shape object based on the supplied shape parameters.

Syntax

shape **= GetShape(** *param* **)**

Return Value
Returns *a shape object* with extended methods.

Parameters
param A *ShapeParam1* data type populated with the required shape parameters.

Example

```
Dim data As ShapeData1
Dim param As ShapeParam1

param.ShapeNo = 1
param.W = 30
param.H = 40
param.H1 = 15

Dim shape as Shape

set shape = GetShape(param)

shape.AdjustShapeSide(0, 0.5, 0.5)  'add 0.5 to all sides
shape.AdjustShapeSide(2, 0.5, 0.5)  'add 0.5 to side 2
shape.AdjustShapeSide(3, 1, 0.5)    'add 1 to side 3, add 0.5 to side 3 if curve

param = GetShapeParam(shape)
```

Scripting Methods

```
int         SideCount                    - returns number of sides in the shape
single      FullWidth                    - returns shape bounding rectangle width
single      FullHeight                   - returns shape bounding rectangle height
single      TotalLength                  - returns total length of all sides
single      SideLength(int sideNumber)   - returns length of specified side
single      CornerAngle(int corner)      - returns interior angle of specified
                                           corner
bool        IsCurved(int sideNumber)     - returns true if side is an ARC or CIRCLE
```

Appendix C

FeneVision Core Import Requirements

Schedules

FeneVision Opti-Glass by default will import any production item with a part type assignment of 'Glass' assigned to a production rack and slot. Production item width and height are preserved unless overridden by production attributes.

Orders

Opti-Glass by default will import any order detail part item with a part type assignment of 'Glass'. Order item width and height are preserved unless overridden by production attributes. FeneVision Core must be configured to generate the bill of materials and attributes at the time of order entry.

Edgework

By default, Opti-Glass will import and apply edgework based on option codes unless EW-x production attributes exist on the glass part. The import assumes an option structure that is based on the 'All Sides' and 'Select Sides' option structure.

Appendix D

DXF Files

FeneVision Opti-Glass reads data from a single layer. The optimizer starts by looking for a layer named 'GLASS'. If it is found, the layer is used. If it is not found, layer 'zero' is checked for data. If no data is found on layer 'zero', then it checks each subsequent layer until it finds data and will attempt to optimize the data that is found. The layer processing order can be overridden using the DXFLayerSelections described in more detail below.

Appendix E

Import

FeneVision Opti-Glass by default will import any production item identified as inventoried and with a part type assignment of ‘Glass’ in FeneVision Core.

Appendix F

General Setup Parameters (FeneVision Opti-Glass)

- **AlwaysUseRemakeColorForRemakes (SYSTEM) –** When present and set to false, remakes that are to be racked on a rack that is around the table will NOT show as a remake, and instead will look like a normal production piece. When this setting is set to 'True' or when the parameter does not exist, all remakes will display in the standard remake color.
- **DefaultDXFPath (SYSTEM) –** If the SP-FILE parameter does not include a full path, this is the path used to find DXF files. This can now be changed in the application.
- **DXFLayerSelections (SYSTEM) –** DXF layer processing sequence. A value of FAB; GLASS; LITE will cause the optimizer to look for layers named FAB, GLASS, and LITE in that order. If these layers are not found the optimizer will start with layer zero and check each layer for data.
- **DynamicOptimizationSettings (SYSTEM) –** If set to 1, enables Settings button in Opti Break.
- **ForceFillerCompletionDate (SYSTEM) –** If non-zero, dynamic filler releases will be forced to complete on the release run date. If '1', Dynamic filler releases will be treated as filler indefinitely.
- **GlassType (SYSTEM) –** Glass part type number.
- **HomeSite (SYSTEM) –** URL of the page to display when the 'Home Page' icon is selected.
- **ImportAllOptionCodes (SYSTEM) –** If set to '1' or missing, imports from FeneVision Core will include all option codes and attributes. If set to '0', only required option codes and attributes are imported. This was added because some Core configuration had many lengthy options.
- **ImportByBatch (SYSTEM) –** Boolean value that indicates if the import screen should show schedules and batches. When true, the user is unable to select production days (and schedules within them to import). Instead, the user checks off batches within schedules and imports them.
- **ImportByBatchDays(SYSTEM) –** Used in conjunction with Setup Parameter 'ImportByBatch'; shows the number of days back to look for schedules.
- **InventorySalesOrderQtyExcludeRelievedItems(SYSTEM) –** If set to '1', allocate transactions will set the QtyOnSalesOrder equal to the negation of the quantity to allocate.
- **LiteColorAttribute (SYSTEM)** – When this is set, Opti applications will use a color attribute, configured in FeneVision Core, to determine what color a lite should be filled in with. This will give users an extra level of control over how patterns are displayed to their users. The optimization color can be set as a question being answered during order entry in Core. When a certain question option is selected, it sets an attribute which will override the Opti colors.

  Note: If the color is mis-typed/not found, the default from ProdTypes table will be used.

- **ReportServerURL (SYSTEM) –** URL to reporting services server—same as Core
- **ReportServerFolder (SYSTEM) –** folder where reports can be found–same as Core
- **RejectCode (SYSTEM) –** Reject code to use when rejecting glass at FeneVision Opti-Break.
- **RejectCodePriority (SYSTEM) –** The default reject priority to give reject codes. Default is 'Normal' unless this Setup Parameter is set.
- **RejectPartType (SYSTEM) –** Reject part type number to use when rejecting glass at FeneVision Opti-Break.

Appendix G

Production Attributes (configured in FeneVision CORE)

The following option production attributes can be configured in FeneVision CORE to be used by Opti-Glass

- **CUT –** Attribute that indicates if a given lite will be cut in house. If this attribute is not present it will be treated as glass that needs cut. The possible values for this attribute are 0 and 1. 0 means it was supplied by the customer and

will NOT be available to put on a cutting release. 1 means it needs to be cut and will be available to put on a cutting release.

- **SP-ID** – Shape number for the shape catalog. Formatted as SHXXX where XXX represents the shape number. SH998 used for templates.
- **SP-FILE** – Path or filename of DXF to be used for the unit. SP-ID should return SH999 or SH997 when a DXF is used.
- **SP-W, SP-WX, SP-H, SP-HX, SP-R, SP-RX, and SP-D –** Shape dimensions where X represents the dimension number (ex. SP-H1)
- **ED-X –** Attributes to indicate which edge will be deleted. For example, if the attribute 'ED-1' has a value of 10 on a metric database, then 10 mm will be deleted from edge 1. 'ED-0' is used to delete all edges.
- **EW-X –** Edgework code. X can be between 0 and 8 and represents the edge of the shape the EW will be applied to. EW-0 sets all edges. This attribute's value must be a valid EW code.
- **SURF –** Attribute indicates what surface of the lite has coating. This attribute should return a number between 1 and 6. From the outside of a structure looking in, the odd numbers equal outside panes; the even numbers equal inside panes. For the SURF attribute to properly flip lites during optimization, the stock sheet must have coating specified.
- **HS –** Heat strengthened identifier used for process filtering.
- **TP –** Tempered identifier used for process filtering.
- **PATDIR –** Attribute to indicate the direction of the pattern on the lite. Available values are 'L' (left), 'T' (Top), 'R' (Right), and 'B' (Bottom). If the pattern is two-directional, either value representing each od the directions is acceptable. (e.g., if the pattern direction is left and right, either 'L' or 'R' would result in the lite being optimized properly).
- **TAG –** User text displayed in pattern lite tag. (see Lite Tag Format in the 'Settings Tab' of 'Application Setup')
- **LOGO –** Indicates the location of the laser marking as specified and viewed from the outside.
    1. Lower Right
    2. Upper Right
    3. Upper Left
    4. Lower Left