



Software Manual



Board Stretcher™

Lumber Optimizing Program

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Revision Table

Date	Description of Revision	Author(s)	Rev Level
2023-01-20 Release	Orig. release (created 2023-01-04) replaces MiTek University training manual (dated 2017-02-20).	Michelle Weale	Orig. Release

Board Stretcher

Getting Started

Overview

Board Stretcher is a program that helps you optimize your use of lumber. It is installed on one or more computers in the production office.

There are three steps to optimizing with *Board Stretcher*. The process can be automated or manual.

1. Import design files for roof/floor trusses or wall panels.
Supported file types include: .OMN/.CUT/.DAT/.XML/.MIZ/.MME
2. The parts are automatically placed onto stock length boards. They are arranged to minimize waste or lumber cost.
3. A cutting file is output for the saw.
Supported file types include: .XML/.MDB/.MIZ

The program has a dedicated Lumber Yard for each saw. Set up the available grades, sizes and lengths that you have in your physical yard, and the program will make the most efficient use of the material.

This manual documents the stand-alone installation of *Board Stretcher*.

Optimization: How it Works

The program can optimize according to waste or cost.

The optimization method is as follows:

1. All imported parts are sorted into grade and then into size. They are sorted in descending order.
2. The longest part is placed first. It is placed on the longest stock length of the same grade and size.
3. The program considers if any parts will fit on the remainder of the board. It will identify two parts:
 - a. The part with the best matching angle to the preceding part.
 - b. The longest part that will fit on the remainder.

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4. The program compares the amount of waste or the material cost and identifies the part that achieves the lowest waste or lowest cost.
5. The longest part is then placed on the next size of stock length (if applicable), and the program rechecks the same two factors to find the best optimization for the parts on that stock length.
6. This is repeated for all stock lengths within the grade and size to see if the parts can be combined more efficiently.
7. After all stock lengths have been checked, the stock length with the lowest waste percentage or the lowest cost is selected.
8. This process is repeated for the next longest part and continues until all parts are placed.

There are several ways to customize the optimization, including using [Lumber Penalties](#), [Grade Replacement](#), [Lower Grade Fill](#) and [Remainders](#).

About this Manual

- Standard lengths are used for most images. See [Add Lumber to the Lumber Yard](#) for information on inputting stock lengths.
- If a field or option is not in this manual, it may relate to older saws, previous program versions, or a system default. Do not change these defaults unless you are asked to do so by a MiTek representative.

Terminology

The following terms are used in this manual.

- **Kerf:** The width of the saw blade, including the material removed by a saw stroke.
- **Lumber:** A board or group of boards. Various grades, sizes and lengths.
- **Boards:** A specific grade, size and length of lumber. The saw uses boards to create **Parts**.
- **Parts (cut parts):** The final cut part that is used in assembly. This piece of board is cut to the exact size and shape required for the truss, floor or wall panel.

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Opening and Closing the Program

To open: Select the desktop shortcut  or Board Stretcher.exe.

The default location is **C:\Program Files (x86)\MiTek\BoardStretcher**.

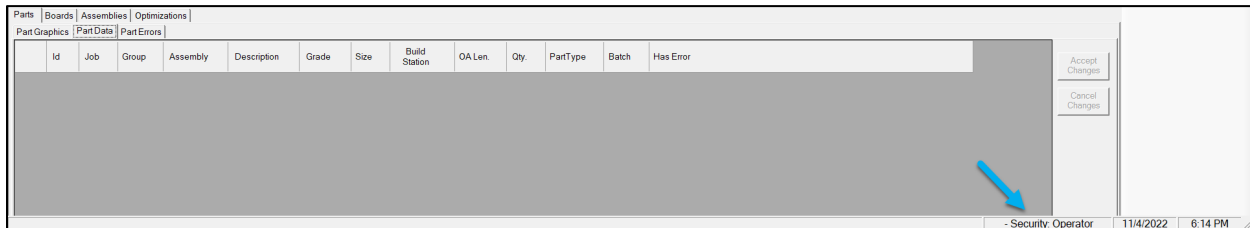
To close: Go to **File > Close**.



Select **Clear** to close a job file but keep the program open.

Access Levels

Your access level is shown at the bottom right of the program.

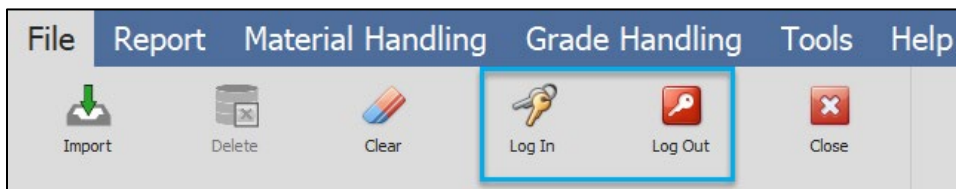


Standard Operator Access

This is available on start-up without a login.

Admin Access

You need admin access to change some settings.



1. Go to **File > Log in**.

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2. Type the username and password.
3. After editing the settings, go to **File > Log out**.

Note: See [Troubleshooting](#) if you have issues with the password.

Settings Migrator

The Settings Migrator is a fast and accurate tool to transfer your Saw Profile settings.

It can be used to copy settings when:

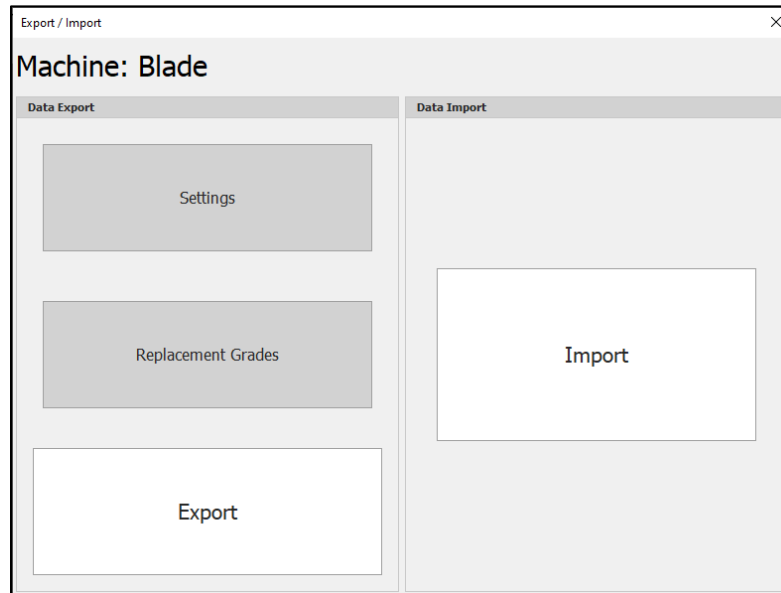
- Upgrading to a new version of *Board Stretcher*.
- Installing *Board Stretcher* on a different computer.
- Installing *Board Stretcher* at a different site.

Tip: Multi-site manufacturers can use the tool to set up a saw at one site, export the settings and use the settings.json file to set up the same saw at other sites.

Export

1. Select the **Saw Profile** on the sidebar that you want to export.
2. Go to **Tools > Export/Import**.
3. In the dialog:
 - a. Select **Settings** to export the Saw Profile, its Lumber Yard and configuration settings (including settings in the **Options** dialog such as file paths).
 - b. Select **Replacement Grades** to include **Higher Grade Replacement** and **Grade Replacement** settings in the export. These settings are separate because different sites may require different grade substitution options.

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Note: The buttons are gray when they are selected.

4. Select **Export**.
5. Save the settings.json file.

Import

1. Go to **Tools > Export/Import**.
2. Select **Import** in the dialog.
3. Select the settings.json file to import.
4. The Saw Profile configuration settings (and Replacement Grades, if included in the export) will be imported to the selected Saw Profile.

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Saw Profiles

Overview

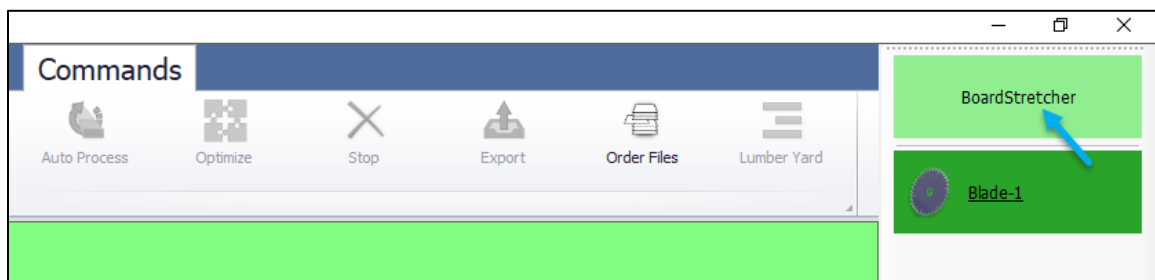
Each saw you use with the program needs to have a Saw Profile. Profiles allow you to customize your settings for the capabilities of each saw. For example, some of your saws may be able to process 20ft boards and some may be limited to 16ft, or you may have different printing or angle/bevel capabilities on different saws.

One saw can have multiple profiles. We recommend setting up a separate Saw Profile for each type of component you put through the saw, i.e., one saw has separate profiles for roof trusses, floor trusses and wall panels. This allows you to customize how the program optimizes each type and set up component-specific Lumber Yards, print options and other settings.

If you change a profile when a file is already imported, you must **Clear** the file (from the ribbon, **File > Clear**) and import it again to apply the options.

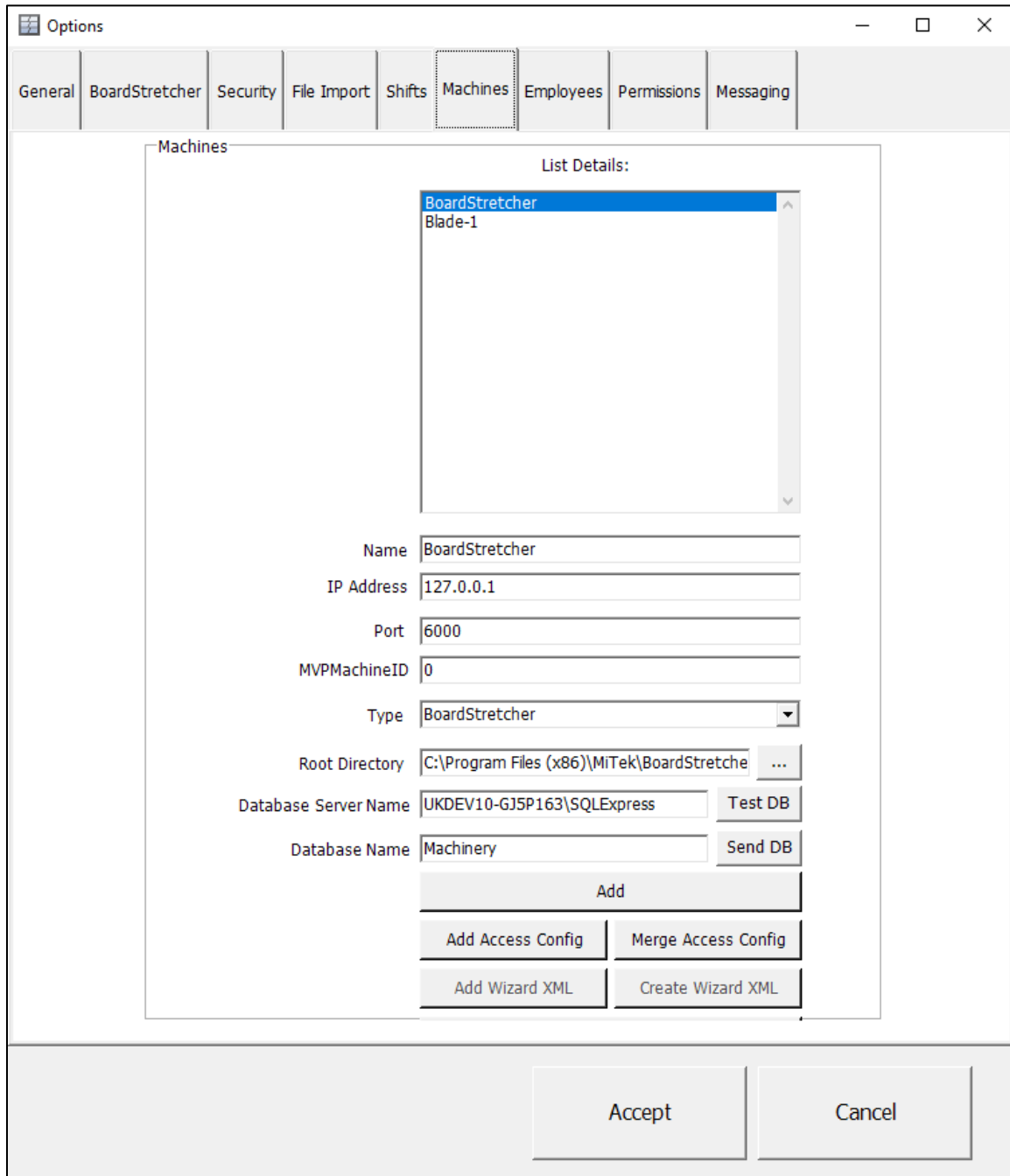
Add a Saw Profile

1. You need **Full control** access to any folders used by *Board Stretcher*. Use the [Folder Permissions](#) section in Troubleshooting to check whether you have the correct access before adding a Saw Profile.
2. Select the **BoardStretcher** profile on the sidebar.



3. Go to **Tools > Options**.
4. Go to the **Machines** tab.

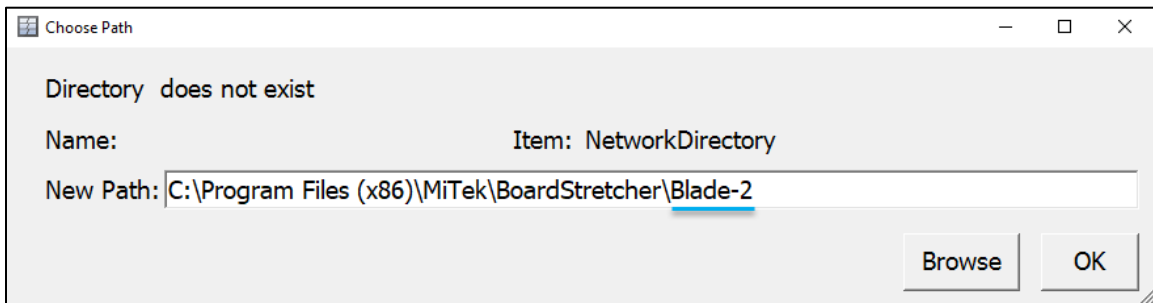
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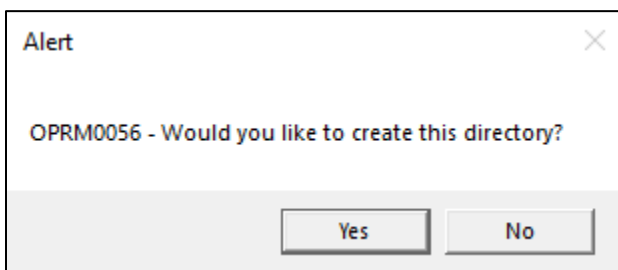
5. Change **Name** to the name for the profile. This can be any name that allows you to identify the saw and the purpose of the profile. The name is displayed in the Saw Profile sidebar.

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6. Your IP address should be populated automatically. It is used to connect to the database.
 - If your IP address does not change (i.e., it is static), do not change the address.
 - If your IP address changes regularly, type “localhost”, and an address will be shown that is not affected by IP address changes. Your IP address may change if, for example, it is regularly reassigned by the Internet Provider or you use a laptop and multiple networks.
7. Change **Type** to the type of saw. Use the drop-down to select it.
8. Select **Add**.
9. A dialog will be displayed. Type the saw **Name** at the end of the file location. This is the name input in step five. In the example below, the saw **Name** is Blade-2.



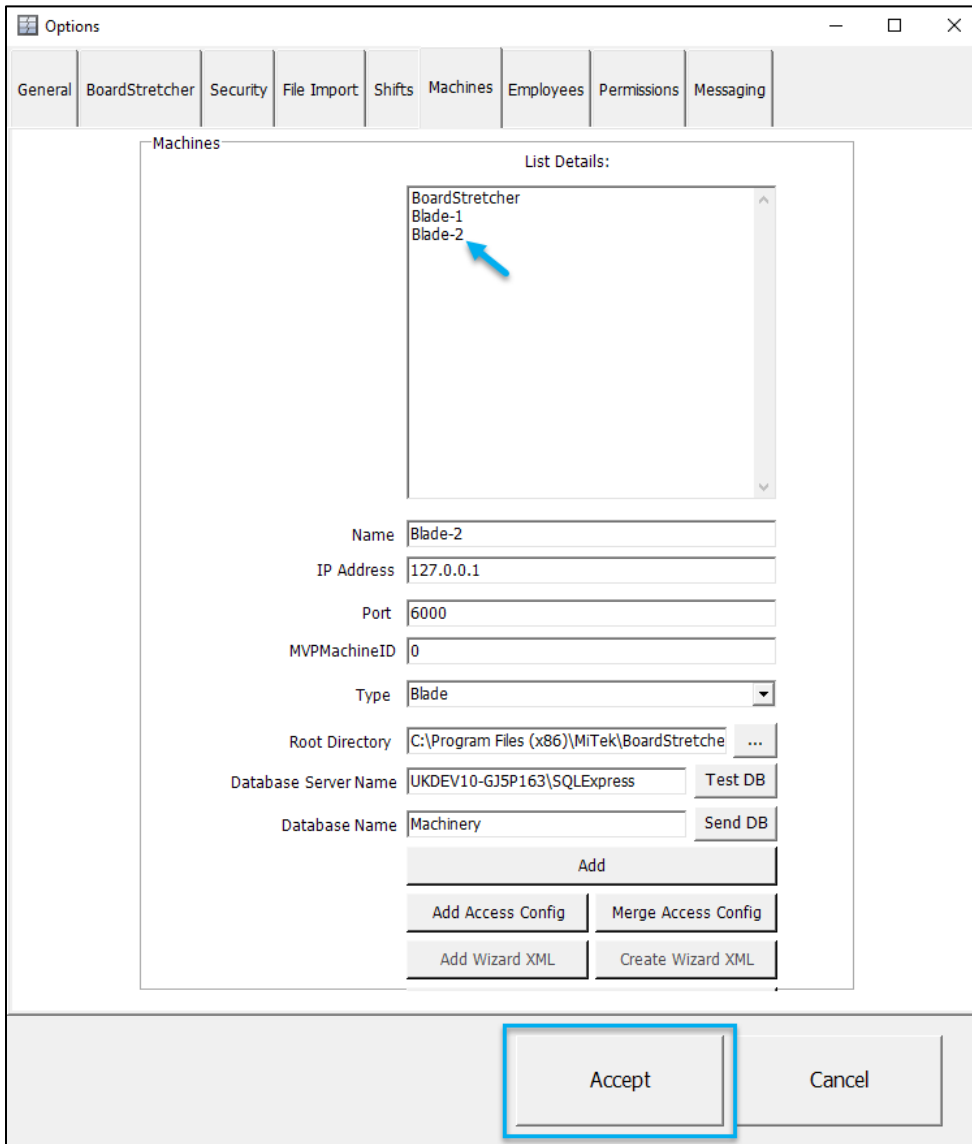
10. A dialog will be displayed. Select **Yes**.



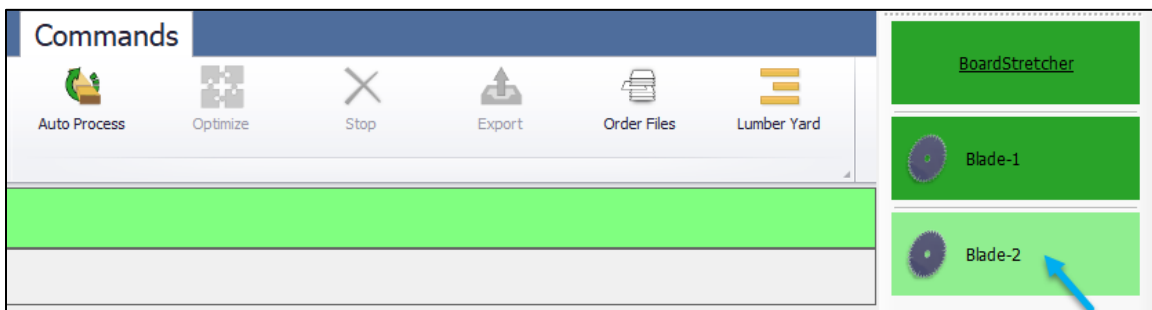
Note: You may need to repeat steps eight and nine. If you receive an Application Error, check that you have Full control access to the location, see [Troubleshooting: Folder Permissions](#).

11. The Saw Profile will be added to the list at the top of the **Options** dialog. Select **Accept** to close the dialog.

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The saw will be displayed on the Saw Profile sidebar:



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12. Go to **File > Close**. This completes the initial saw setup. Open the program again and continue with [Customize Saw Profiles](#) to set up the saw for use.

Note: If you need to create multiple Saw Profiles at the same time: follow steps one to eleven for each saw and once all saws are added, follow step twelve to complete the initial setup on all new Saw Profiles.

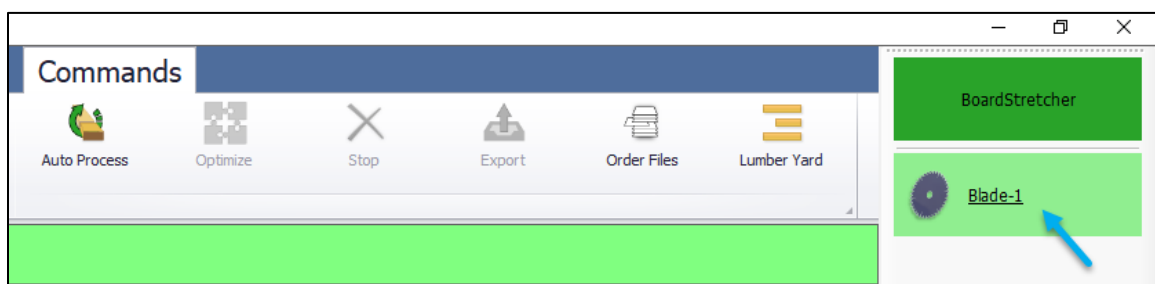
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Customize Saw Profiles

Overview

Once a Saw Profile has been added, you need to customize the file locations, pick list options, printing and optimization methods.

1. Select the **Saw Profile** on the sidebar.



2. Go to **Tools > Options**.

Many of the options will be set up by the MiTek representative during installation. The information below is a guide to the settings.

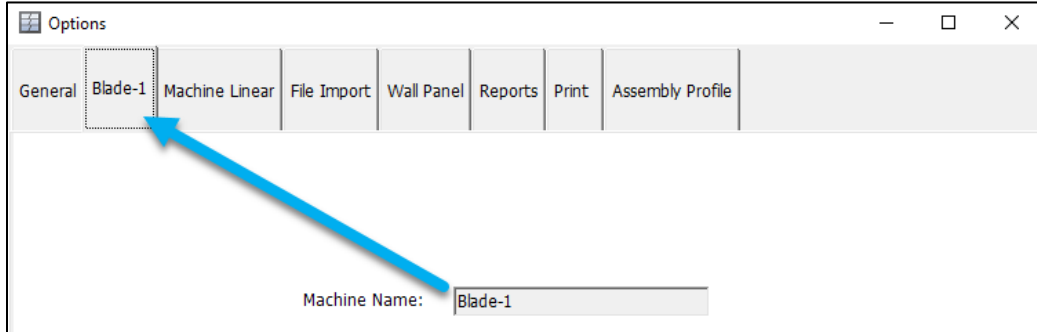
General Tab

Moving Average

This setting relates to a *DirectDrive*™ installation with the *BLADE*™ saw. Do not change this default unless you are asked to do so by a MiTek representative.

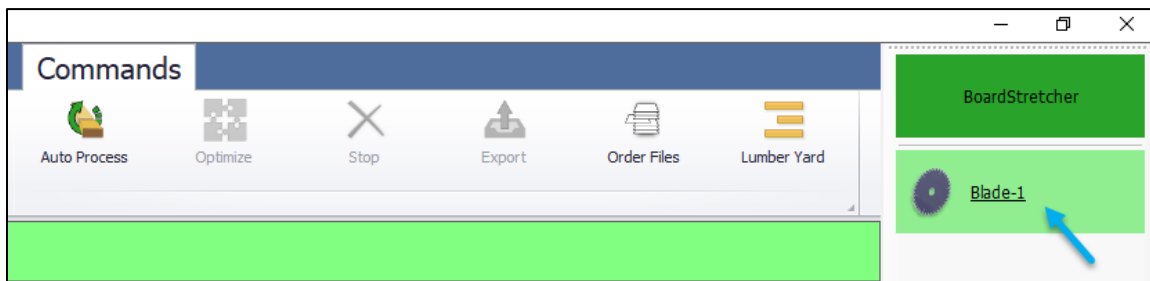
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“Blade-1” (Name of Saw Profile) Tab



Machine Name

This is the name of the Saw Profile. You can change the name of the saw on this tab. The name is shown in the Saw Profile sidebar.



Frame Number

BLADE saw serial number.

Use Legacy XML Format

Check this option when using the *Omni-Miser™* II saw. This allows .XML files to be imported and exported to this saw.

User Display: Display and Input Units

Select Imperial (feet and inches) or Metric (millimeters).

- Imperial measurements are provided using three pairs of numbers. For example, 12-06-08 is 12 feet, 6 inches and 8/16 inches (12' 6-1/2").
- Metric measurements are provided in whole millimeters.

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Note: When changing display and input units, the same unit must be chosen in the *BLADE* saw software before optimizing the job.

Square Cut

Set the angle that the saw uses as a reference for square cuts. The default *BLADE* saw reference is 90°.

Machine Linear Tab

Kerf

Set the blade thickness by inputting the default for a new blade i.e. **0.210**. This must be correct because the program considers the kerf during part placement, lumber selection and optimization.

Replace Grades

You can set up compatible grades for missing lumber and the program will automatically replace the missing lumber with the alternative during import. These options save time, for example, if you have taken overflow jobs from other manufacturers that stock different grades. Select **Yes** to enable the grade replacement options on the **Grade Handling** tab on the ribbon and then set up the [Higher/Grade replacements](#).

Maximum Part Length

Set the maximum part length according to the infeed for the saw.

Importing Parts with End/Rip Bevels Allowed

Check this option when setting up a *BLADE* Saw Profile.

If the profile is for a saw which cannot make angle or bevel cuts (e.g., some older versions of the *Omni-Miser™* I), check this option to cut the part at overall length and mark the angle or bevel cuts. The part can then be finished using a chop saw.

Remove End/Rip Bevels from Parts when Imported

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Do not check this option when setting up a *BLADE* Saw Profile.

If the profile is for a saw which cannot make angle or bevel cuts (e.g., some older versions of the *Omni-Miser I*), check this option to remove parts with end/rip bevels from the file during import. You can then import the file manually and process the parts with end/rip bevels on a compatible saw.

Default Lumber Penalties

These penalties provide a way to set up Lumber Penalties on the load source. Typically, loading from the automated bunks would be preferred. Setting a small penalty against the magazines and a higher penalty against manual feed would discourage the program from using boards from these sources unless necessary.

Note: This feature has been replaced by the ability to set Lumber Penalties on individual board lengths. A penalty system on the boards provides greater customization and may improve your optimization. See [Lumber Penalties](#) for more information.

Reset Optimization Settings

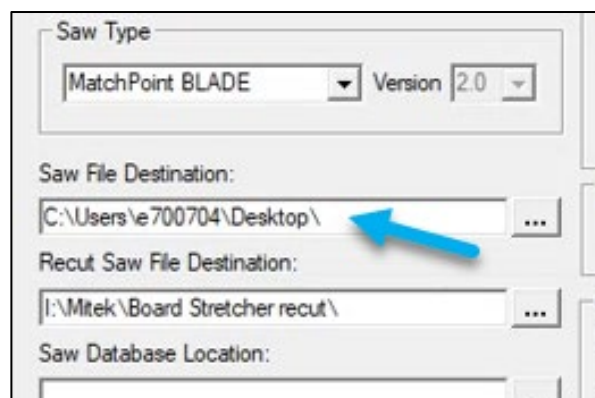
Do not use these unless you are asked to do so by a MiTek representative.

File Import Tab

This tab allows you to manage file imports and exports. Import locations are set up separately for [manual imports](#) (started manually by a user) and [auto imports](#) (typically triggered when a file is sent from a batching program, e.g., *MVP®*, *CyberSort™*). There is one default export folder for manual and automatic exports and the saw will process files in this folder.

MVP Tip: To find the file path to your saw files:

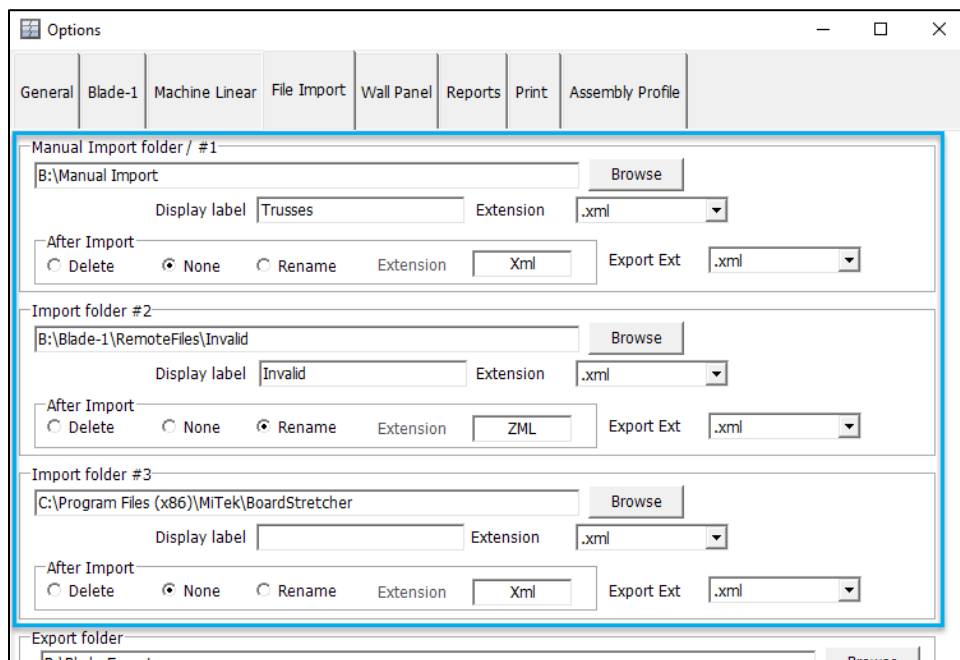
1. Open the **Saw Shop**.
2. Right-click on the saw and select **Properties**.
3. Copy/paste the file path shown in **Saw File Destination**.



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Manual Import Folders

The top section of the **File Import** options relates to file locations for [manual import](#).



There are three possible locations for default manual import folders. You do not need to use them all.

Auto Import Users

We recommend that one of the manual import folder locations is the **Invalid** folder. This allows you to import files with errors and fix the issues manually. The remaining options can be left at the default location or customized, if you want to import other files manually.

Manual Import Users

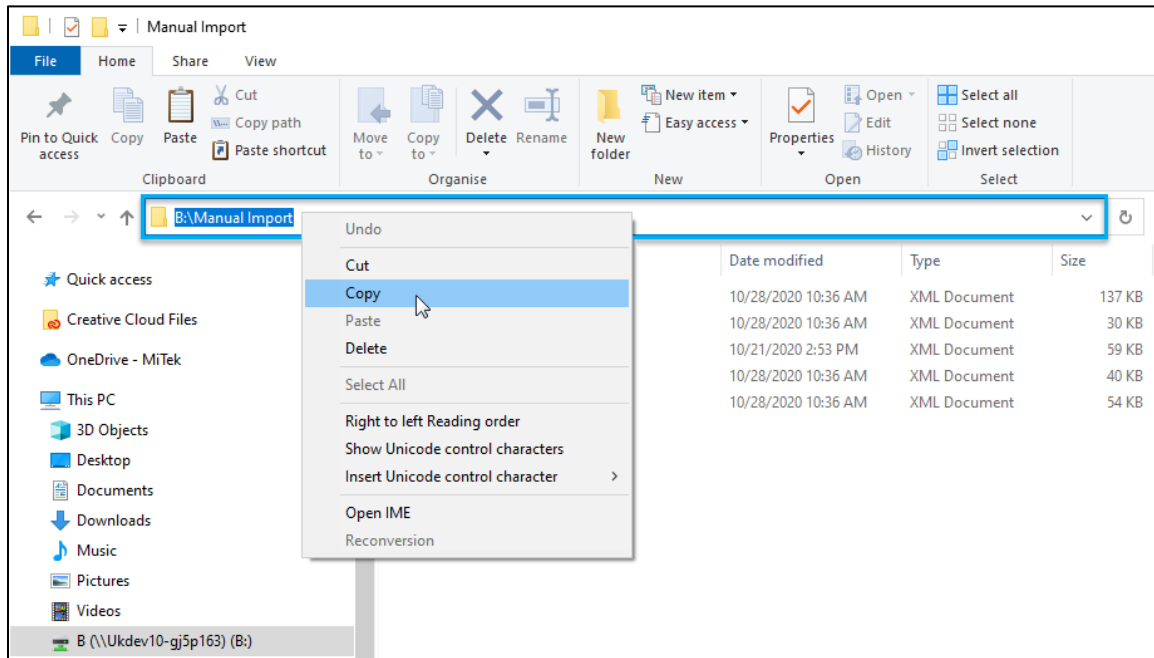
If you use manual import only, you can use the multiple locations to organize your files into job types, i.e., roof trusses, floor trusses and wall panels. Follow the steps below to set up a manual import location.

Manual Import Location Setup

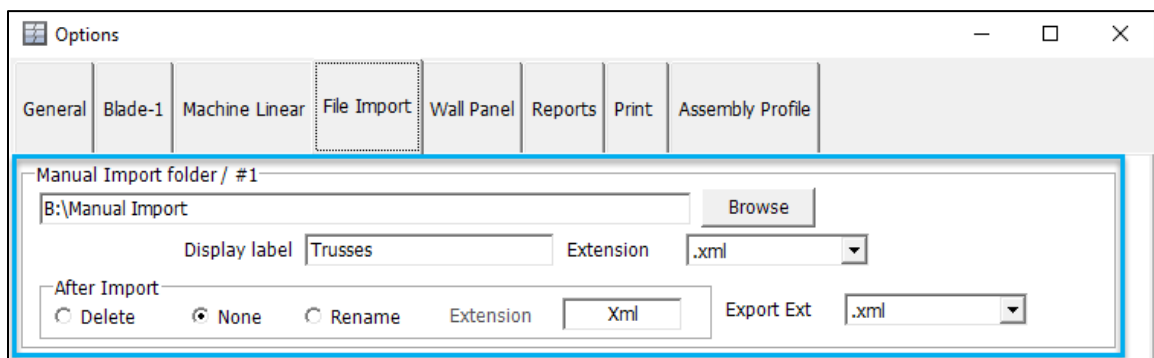
The quickest way to set your import folder location is to find it in Windows Explorer and copy the location address.

1. In Windows Explorer, left-click in white-space in the location bar.

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2. The location will change to a path. Right-click in white-space in the location address and select **Copy** from the menu.
3. Go to *Board Stretcher*.
4. Select the **Saw Profile** on the sidebar.
5. Go to **Tools > Options**.
6. Go to the **File Import** tab.



7. Left-click in the **Manual Import folder** field to activate the field.
8. Right-click in the same place and select **Paste** from the menu.

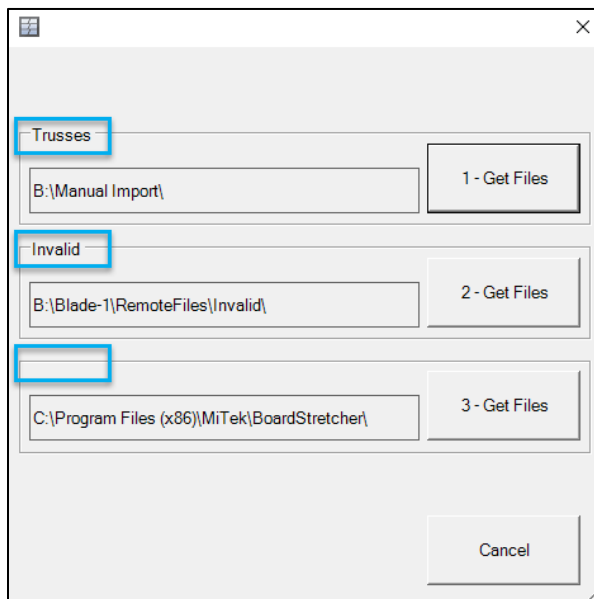
The location will be pasted correctly from Windows Explorer.

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Tip: Using **Browse** in the program will also allow you to navigate to the correct folder. CTRL+C / CTRL+V can be used instead of selecting Copy/Paste from the right-click menu.

- (Optional) In **Display label**, type a short name to be shown above the file location in the Import dialog. This can be very useful for identifying file locations with long or complex names.

Example:



- Select the file extension for the files you are importing from your design software into the program. The following file types can be imported:
 - .MIZ – Wall panel design files, typically exported as .MDB for the *Omni-Miser I*.
 - .OMN/.CUT/.DAT – Roof truss design files, typically exported to linear saws, e.g., *Servo-Omni™*, *Auto-Omni™*.
 - .XML – Universal file type, typically exported as .XML to the *BLADE* saw and *Omni-Miser II*.
 - .MME – File type used in Asia-Pacific.
- After import:** Choose what to do with the file after it has been manually imported. In most cases, we recommend checking **None**.

You can use **Rename** to identify files that have failed Auto Import and have been

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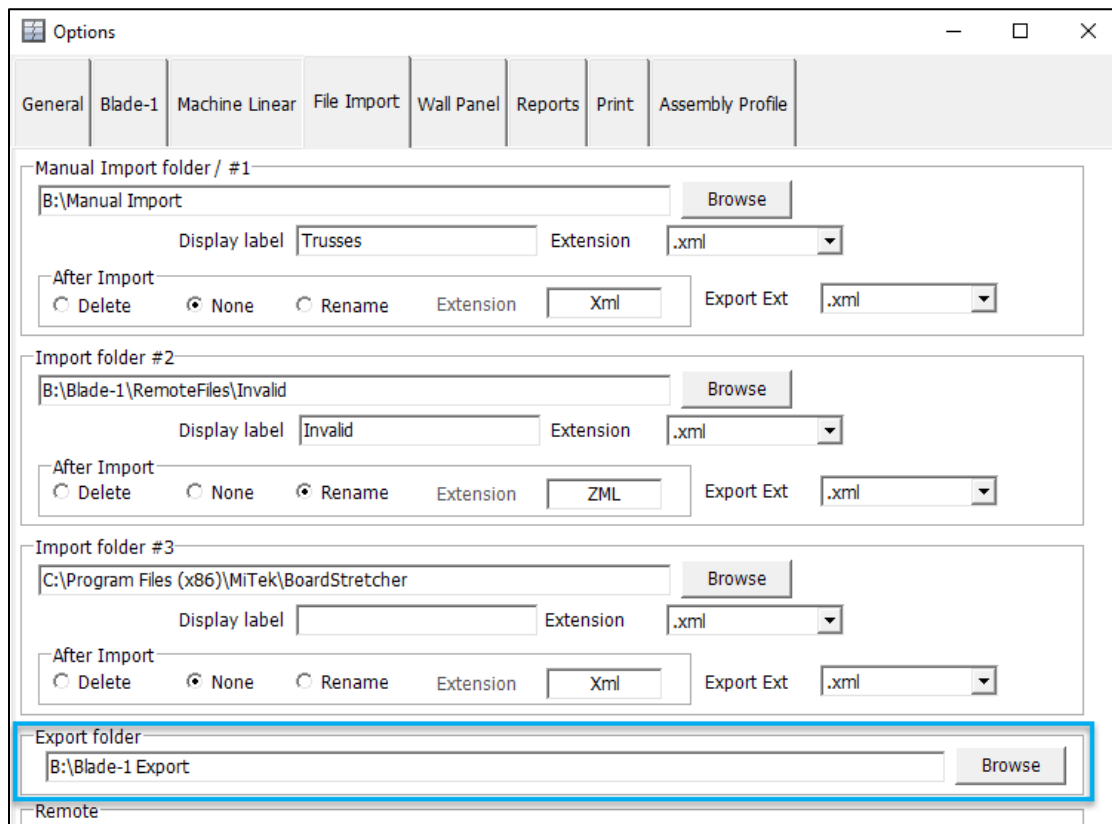
manually imported from the Auto Invalid Transfer folder. See [Auto Import: Managing the Auto Invalid Folder](#).

- Export Ext:** Set the file extension for the files you are exporting from *Board Stretcher* to be imported by the saw. Select .MIZ or .MDB if your Saw Profile is an *Omni-Miser I* or select .XML if your Saw Profile is a *BLADE* and *Omni-Miser II*.

Export Folder

This is the default folder for optimized files. The saw will process the files in this folder. Use steps one to eight from [Manual Import Location Setup](#) to add the folder location.

Note: If the saw is not on the domain, but is compatible with USB drives, files can be copied from the Export folder to a USB drive and loaded onto the saw from the drive.



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Remote (Auto Import locations)

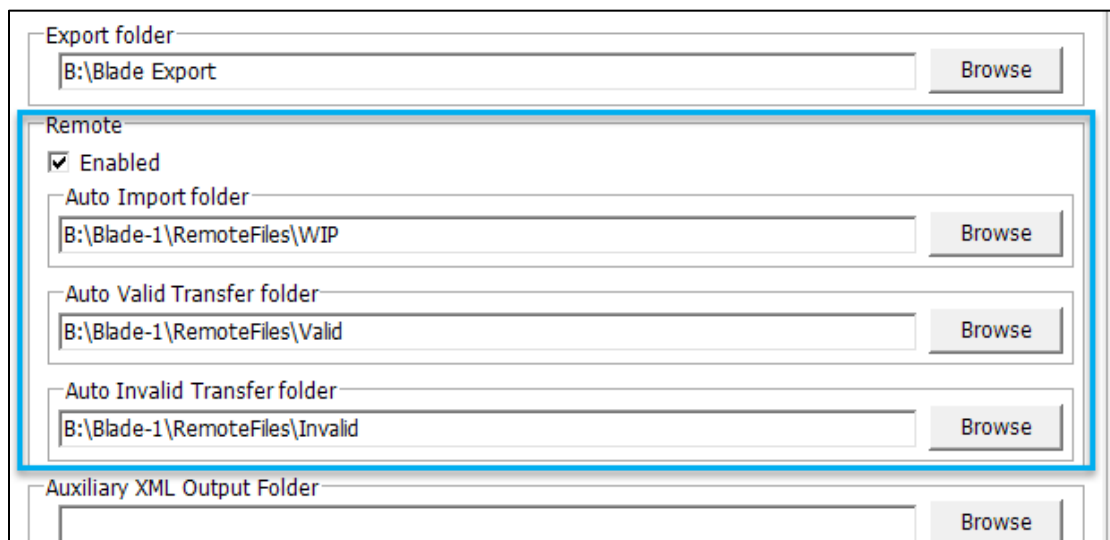
Check **Enabled** to use [Auto Import](#).

This feature allows files from your batching program (e.g., *MVP*, *CyberSort*) to be imported, optimized and exported by *Board Stretcher* for the saw to process. See [Auto Import](#) for more details about the process.

There are several locations related to Auto Import. The folders are created by default and should be placed on a network drive. As a user, you need to have the permission level of **Full control** over these folders (see [Troubleshooting: Folder Permissions](#)).

Example:

The top level folder name is the Saw Profile, i.e., Blade-1, followed by RemoteFiles and then the name of the Auto Import folders.



The screenshot shows a configuration window for Board Stretcher. The 'Remote' section is highlighted with a blue border. It contains the following fields:

- Export folder:** B:\Blade Export
- Remote:**
 - Enabled
 - Auto Import folder:** B:\Blade-1\RemoteFiles\WIP
 - Auto Valid Transfer folder:** B:\Blade-1\RemoteFiles\Valid
 - Auto Invalid Transfer folder:** B:\Blade-1\RemoteFiles\Invalid
- Auxiliary XML Output Folder:** (empty)

Tip: Using these naming conventions will help MiTek Automation Support to provide faster guidance.

Auto Import Folder (WIP)

This is the location that *Board Stretcher* watches for original files to import, optimize, and export automatically. This folder must not be used for other types of files (e.g., pick lists or attachments etc.). It is called WIP by default, which means that this is a “work-in-progress” folder where files are sent before they are imported.

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Auto Valid Transfer Folder (Valid)

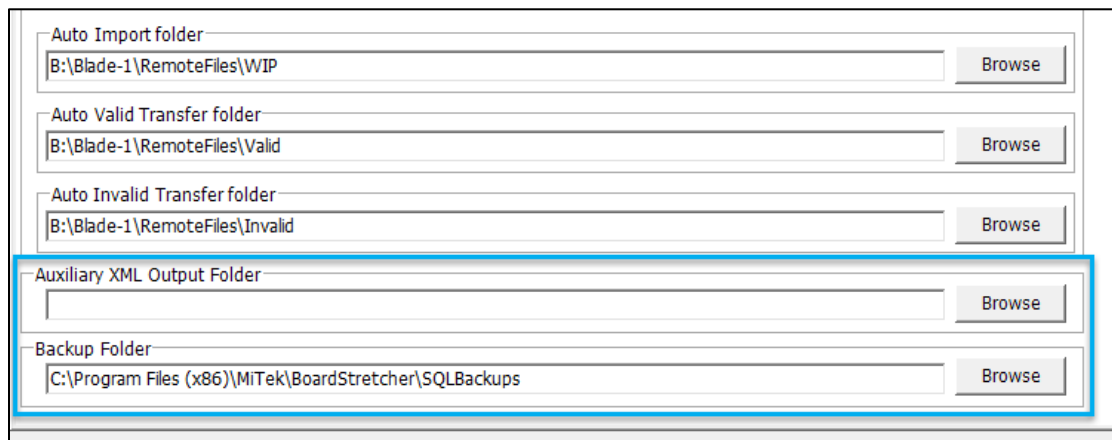
Original files are moved here when Auto Import (import, optimization and export) is successful. These files are the original, unoptimized files. The optimized files are sent to the default Export location.

Auto Invalid Transfer Folder (Invalid)

Original files are moved here when there is an issue with the file and *Board Stretcher* cannot process it.

Note: Add the same file location as one of your [manual import folders](#) to allow you to import the file manually and fix the issues. An Auto Process Errors report can be printed to notify you that a file has an error. See [Reports: Error Report Overview](#) for more information.

There are two further folder settings below the Auto Import locations.



The screenshot shows a configuration window with five folder settings, each with a text input field and a 'Browse' button:

- Auto Import folder: B:\Blade-1\RemoteFiles\WIP
- Auto Valid Transfer folder: B:\Blade-1\RemoteFiles\Valid
- Auto Invalid Transfer folder: B:\Blade-1\RemoteFiles\Invalid
- Auxiliary XML Output Folder: (empty)
- Backup Folder: C:\Program Files (x86)\MiTek\BoardStretcher\SQLBackups

The 'Auxiliary XML Output Folder' field is highlighted with a blue border.

Auxiliary XML Output Folder

Set the export location for an unencrypted version of the XML file (.XMLA). See **Output Auxiliary XML (.xmla)** for more information about this option.

Backup Folder

Set the location for the backup of the SQL database. Do not change this default unless you are asked to do so by a MiTek representative.

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Wall Panel Tab

Square Cut Only

Check this option if the saw cannot make angle or bevel cuts, e.g., some older versions of the *Omni-Miser I*.

3 x Search Pattern

Do not use this option unless you are asked to do so by a MiTek representative.

Add Part Print

Check to enable printing on wall panels.

Flip Print (.MIZ only)

Check to adjust the location of the print on the top and bottom board so the printing can be seen easily.

Regex

Do not use this option unless you are asked to do so by a MiTek representative.

Reports Tab

See Reports for more information about the Lumber and Board Pick Lists and the error report for files that fail Auto Import.

Print Tab

The print options relate directly to the saw type and available printers. If AGS™ printing is available, set your print options according to the installed print options. Example print options are also shown in [Part Information](#).

Consider what type of information you need on parts when setting up print options. Prioritize your options to ensure the most important information is printed. Options are not printed if they do not fit on the part. AGS printing is prioritized above custom print fields.

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Printer #1 to #3

Check **Available for use** on the relevant sides/edge and specify the valve type.

7-valve high (1 inch) text print will be used if there is not enough room for 16 or 32-valve high print or if the Small print only option is active (see below).

Print Head Options (*BLADE* saw only)

Small Print Only

Standard print height is a maximum of 4 inches. **Small Print Only** restricts the height to a maximum of 1.5 inches. This saves ink and the print may be easier to read because there is more space between each print option and the custom print field (if applicable).

Edge For Trusses

Print the same information on the edge of the truss that is printed on the front of the truss (excluding plate layout). This option allows you to see the job name, overall length, etc., to identify trusses quickly when stacked.

Truss Print Justify

These options determine where the text will be printed on each part. **Leading Edge** is the right edge and **Center** will position the print at the center of the part. **Trailing Edge** (left edge) is most often used because it places the print closest to the stacker.

Print Options

Braces

Include printing on purlin bracing for chords.

Assembly Guide System

Use *AGS* printing options (*BLADE* saw only). When used in conjunction with a MatchPoint Blade™ wood processing system, the *BLADE* Printer allows you to print member level information to assist in the truss or wall panel assembly process. The different printing options are outlined in Table 1 and Table 2. Refer to the image below Table 2 for face definitions.

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Table 1

Option	Description
A	Standard with every saw. Prints standard print fields on front face.
B	Uses two print heads to print standard print fields, joint and plate information, and joint alignment marks on face-up (on assembly tables) side of board.
C	Same as A, plus a second print head to print on the top edge of the board.
D	Same as B, plus a third print head to print on the top edge of the board.
E	AGS+: Uses two print heads to print everything in B, plus plate outlines in correct location and basic graphics on the face-up side.
	Tip: Best return on investment for truss assembly.
F	AGS+: Same as E, plus a third print head to print on the edge of the board.
	Tip: Best return on investment for wall panel assembly.

Table 2

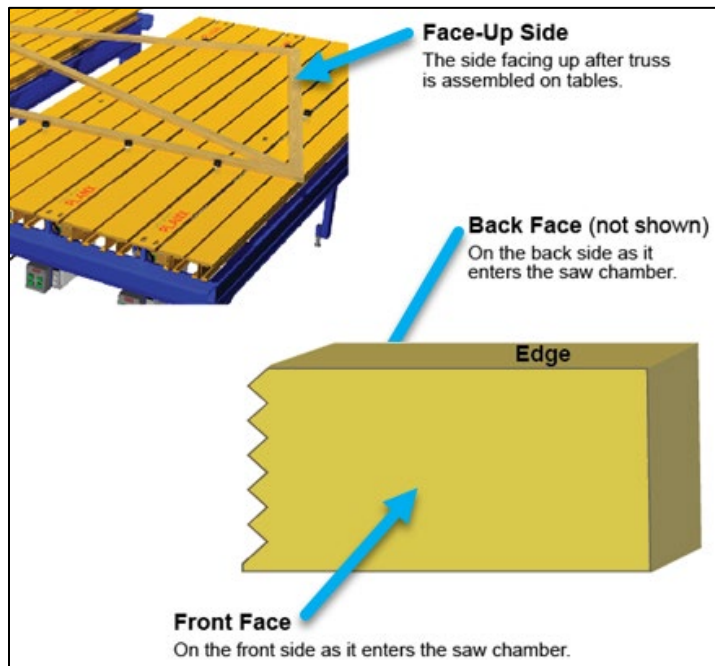
	# of Valves			Front	Rear	Edge	Face-Up Side (on assembly tables)					Front	Rear	Edge
	Front	Rear	Edge	Standard Print Fields			Joint #	Align. Marks	Plate Size	Plate Outline	Graphic	Wall Marks		
A	16	0	0	X										
B	16	7	0	X	X		X	X	X					
C	16	0	7	X		X						X		X
D	16	7	7	X	X	X	X	X	X			X		X
E	32	32	0	X	X		X*	X*	X*	X	X			
F	32	32	7	X	X	X	X*	X*	X*	X	X	X		X

* Print can be moved toward the top or bottom edge of the board so it is closer to the joint.

If you are unsure of the saw configuration, contact MiTek Automation on 800-523-3380.

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Face vs Face-Up



Top Plate Outlines (AGS Plus)

Print can include joint alignment marks for intersecting parts (e.g., locations for webs joining chords), joint number, plate size, outline, orientation and graphics (e.g., your company logo).

Bottom Plate Outlines

Plate size and orientation are printed. Select this option if you flip the truss to place the bottom plates and need an additional plate location on the back side.

Disable Part Types

Do not print webs.

Bottom Label

Print the plate label only on the back of the truss. Turn on **Bottom Plate Outlines** for plate size and orientation.

Tips:

- Custom print fields are set on the **Assembly Profile** tab.
- 32-valve printheads are required for front and rear to print braces, plate outlines and bottom labels.

Board Stretcher

Assembly Profile Tab

Select Assembly Type

Select whether the saw is used for trusses (roof), wall panels or floors.

Lower Grade Fill

Check to allow the program to automatically take parts and place them on a higher grade material if there is space on the end of a board. See [Grade Handling: Lower Grade Fill](#).

Optimization Method

There is a balance between achieving good parts optimization and maintaining the efficiency of assembling the parts.

- **Standard:** All parts in the file are optimized together. This will mix parts from all assemblies in the exported file. Consider your assembly processes and capacity when exporting from your batching software. Aim to take advantage of optimizing multiple assemblies while ensuring that the roofs/floors/walls can be assembled on the tables efficiently.
- **Strict:** Optimize each truss separately. Strict optimization also requires the [Out Board Sort Order](#) to be set to **Import File Order**. This option ensures that parts are exported in an order which allows the assembly of one truss at a time. The optimization may not be as effective because fewer parts are involved, but there may be time and cost benefits during assembly for customers with fewer staff and tables. This option maintains the batching applied in *MVP* or *CyberSort*.

Optimization Basis

Select to minimize **Cost** or **Waste** during optimization. Waste ([Length Penalties](#)) is most commonly used. The Cost basis ([Cost Penalties](#)) requires a user to maintain the cost of the materials in *Board Stretcher*.

Batch

Select **Yes** to cut truss by truss. Enable **Strict** in **Optimization Method** to optimize each truss separately.

We recommend creating a specific Saw Profile (and a specific *MVP* profile, if used) for cutting truss by truss to avoid changing your usual configuration to suit this output. This allows you to

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quickly switch to truss by truss for small runs or when cutting particular truss types to ship them together.

Create Batch Data

Use this option to customize the batching applied by *MVP*, *CyberSort* or *ShopNet*.

You can split one file into different batches and export them as one file. Alternatively, you can combine multiple files into one batch with one export file.

You can also use this option to create batches without batching software.

Use the [Batch tab](#), on the Assembly Profile tab, to create the batches.

Batching is useful if you want to:

- Optimize each job name, group, truss, assembly, description (e.g., all chords or all webs to go to one saw) or MVPTrussItemId separately.
- Optimize specific trusses together.
- Optimize the exported files for different saws.

Use Lumber Penalties

Select **Yes** to enable Lumber Penalties. See [Lumber Penalties](#) for more information.

Export/Import Tab

Output Auxiliary XML (.xmla)

The exported XML file is encrypted. If you need to use the final optimized lumber data to update your ERP or inventory software, check this option and add a location for the exported .XMLA files in the [Auxiliary XML Output Folder](#) field (on the **File Import** tab).

Invert Batch Order

This option can be used when cutting truss by truss or panel by panel. It reverses the batch order provided by the production software. The program will optimize truss by truss/panel by panel, in the reverse order. This can be useful if you need to flip the order that the trusses are bundled *after* the saw file has been produced.

To enable Invert Batch Order, change the following settings on the **Assembly Profile** tab in the **Options** dialog:

1. Set **Batch** to **Yes**.

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2. Set **Optimization Method** to **Strict**.
3. Set **Out Board Sort Order** to **Import File Order**.
4. Select **Accept** to close the dialog.
5. Reopen the dialog again (**Tools > Options > Assembly Profile**).
6. The **Invert Batch Order** checkbox is now available. Check the option.
7. Select **Accept** to close the dialog.

Out Board Sort Order

See [Customizing Reports](#).

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Custom Print Fields Tab

This tab allows you to specify what information is printed.

Tip: Check what the saw can print before setting Custom print fields. See [Print options](#) for a quick guide to AGS print options.

Print Selection

Select **Default** to print the JobName, Description and Quantity (of like parts).

Select **Custom** and use the table to set which fields/information you want to print. Each row is one type of print that can be customized to a particular length. The rows print in the priority order shown in the table, starting at the top of the table. To change the priority, left-click on a field within the row and use the arrow buttons to move the row. The **Add** button allows you to include another print field. Highlight a field and select **Remove** to delete the row from the table.

Field	Column	Length	Text
JobName	4	7	
Assembly	1	3	
Description	1	5	

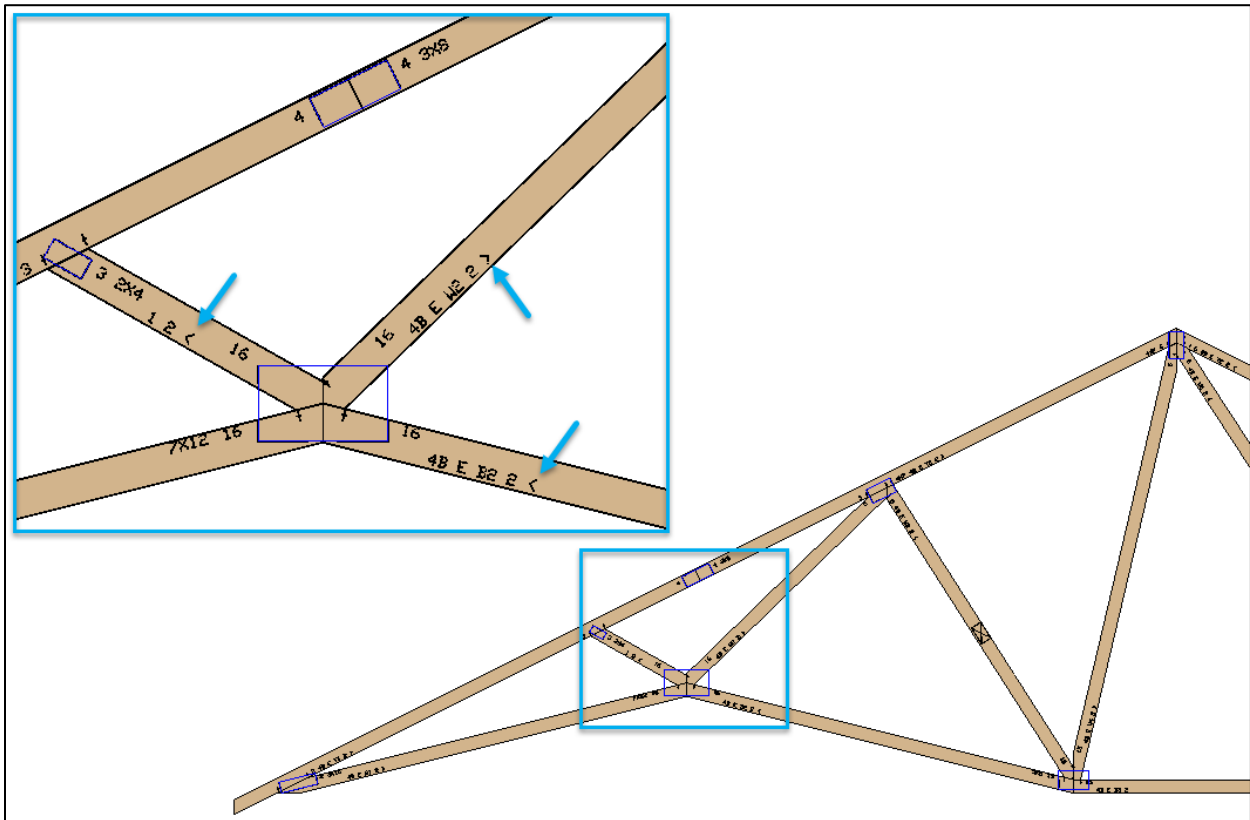
Field

Use the drop-down to select the field to display. Many fields are taken from the file (see **Parts > Part Data**) and are self-explanatory.

- **OverAllLengthFraction:** For Imperial measurements, select this field to display measurements with standard punctuation instead of hyphens. For example, 8-6-3 will be printed as 8' 6-3/16".
- **Side:** Print L or R to show whether the part is assembled on the left or right side of the truss. This option is typically used for wider spans. Parts can be sorted into separate carts or piles for assembly. The truss is divided at the peak to determine L and R.

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- **AOSide:** The same option as **Side**, but the truss is divided at the center of its span to determine L and R.
- **Text:** Print any custom text. Select **Text** in the **Field** drop-down list and input a short string into the Text column. The text will print directly before the next custom field. For example, you could add “qty” to print directly before the Quantity field, or you could print your company name at the end of each truss.
- **PartHighSide:** Print an arrow (< or >) to show which end is up. The arrow points to the end of the part that is higher (closer to the top of the truss) when it is assembled. No arrow is printed if the part is horizontal once assembled. This option is available for 3D file types and must be exported as .XML (*BLADE* saw).



Column and Length

The Column and Length options allow you to specify the exact part of a field to print. This is useful when the full field includes common characters or information that does not need to be printed. These options can make the print easier to read and reduce ink usage.

- **Column:** Set where to start the print, counting from the left. Type “1” to start from the leftmost character.

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- Length:** Set how many characters to display from the starting character set in **Column**. The start character is included in the print.

To set the **Length**, we recommend checking the standard sequence for a field and increasing this by at least two characters to ensure that all are captured. If the field only has four characters and you have allowed for a Length of 6, only four characters will be printed. For JobNames in particular, this ensures that when the number increases to the next ten or hundred, it will still print the increased number of characters.

Example 1:

The customer's **Description** field can include at least three characters.

	Id	Job	Group	Assembly	Description	Grade	Size
	49119	200434B		D	B3	2400F 2.0E SP	2x4
	49116	200434B		D	W3	No.2 SPF	2x4
	49133	200434B		C	ST7	No.2 SPF	2x4

All characters need to be printed on the truss.

1. Select **Description** in **Field**.
2. Type **1** in **Column** to start the print at the first character, i.e., “B”, “W”, or “S”.
3. Type **5** in **Length** to print all characters, i.e., “B3”, “W3”, or “ST7”, and leave the potential for an increase in the characters.

Example 2:

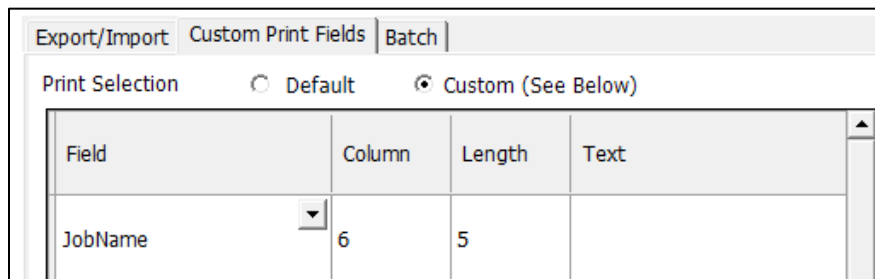
The customer's **JobName** field includes leading zeros at the start and the date at the end.

	Id	Job	Group	Assembly	Description	Grade	Size
	49090	0000012345-08192021		G	W3	No.2 SPF	2x4

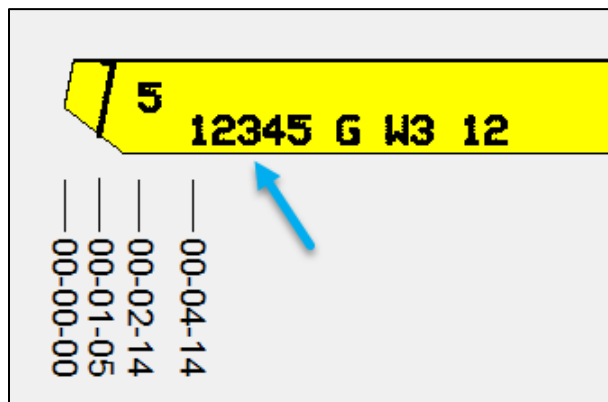
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“12345” needs to be printed on the truss. Increasing the **Length** to account for increasing numbers will not work in this case.

1. Select **JobName** in **Field**.
2. Type **6** in **Column** to start the print at “1”.
3. Type **5** in **Length** to print five characters, i.e., “12345”.



Result:



When the JobName reaches the next digit, i.e., 0000100000, change the **Column** value to **5** and the **Length** value to **6** to include the full number.

Batch Tab

When creating batch data in the program (see [Create Batch Data](#)), this tab allows you to specify how the assemblies are batched. The table functions the same as the [Custom Print Fields tab](#).

Messaging and Alerts Tabs (*Board Stretcher Profile Only*)

These settings relate to a *DirectDrive* installation with the *BLADE* saw. Do not change these defaults unless you are asked to do so by a MiTek representative.

Board Stretcher

Lumber Yard

Overview

The lumber types stocked at your facility need to be added to virtual Lumber Yards for each saw. To optimize parts, the program needs to match the lumber required in the job file with the lumber in the saw's virtual Lumber Yard.

We strongly recommend that you build your Lumber Yard for each Saw Profile by importing files using [manual import](#). All fields must match the job file exactly, including upper or lower case, spelling, punctuation and spaces. Using the lumber specifications from the job files will ensure that there are no entry errors.

Add Lumber to the Lumber Yard

The following sections describe adding lumber from an imported file, adding lumber manually and replacing lumber with a suitable existing grade. Lumber Penalty input is an advanced feature and is covered separately in the [Lumber Penalties](#) section.

Note: Stock Length Input

Actual length should be used when adding material to your Lumber Yard. The program adds the saw kerf to the overall length required for parts.

Example: Two 8ft parts cannot be cut from a 16ft board that is input as 16-00-00. However, the 16ft board is likely to be between $\frac{1}{4}$ in or $\frac{3}{8}$ in longer than 16ft. This measurement needs to be included in the stock length to allow the program to use the board.

We recommend measuring a sample of each length of board in your yard to find the average measurement for each standard length. This average length should be input as the stock length in the Lumber Yard.

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Tip: Increase the size of the **Required Lumber** area to ensure you can see all entries. Position your mouse cursor below the area until the arrow changes into the icon shown below.

Required Lumber						
	Id	In Stock	Grade	Size	Min Length	Max Length
▶	0	<input type="checkbox"/>	1650F 1.5E SPF	2x6	04-05-10	04-05-10
	1	<input type="checkbox"/>	2400F 2.0E SP	2x8	05-00-00	05-00-00
	2	<input type="checkbox"/>	2700F 2.2E SP	2x6	03-07-15	16-00-00
	3	<input type="checkbox"/>	Std Stud SPF/DF	2x4	02-00-11	05-04-04

Lumber Inventory						
Station #	Device	Enabled	Grade	Size	Length	Material
▶	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a1674

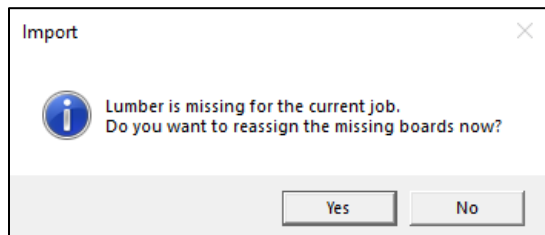
Hold down the left mouse button and drag the area down until all rows are visible.

Required Lumber						
	Id	In Stock	Grade	Size	Min Length	Max Length
▶	0	<input type="checkbox"/>	1650F 1.5E SPF	2x6	04-05-10	04-05-10
	1	<input type="checkbox"/>	2400F 2.0E SP	2x8	05-00-00	05-00-00
	2	<input type="checkbox"/>	2700F 2.2E SP	2x6	03-07-15	16-00-00
	3	<input type="checkbox"/>	Std Stud SPF/DF	2x4	02-00-11	05-04-04

Lumber Inventory						
Station #	Device	Enabled	Grade	Size	Length	Material
▶	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a1674

Add Lumber from an Imported File

When you import a file, a warning is shown if the Lumber Yard is missing the grades or dimensions required for the file.



Select **Yes** to open the Lumber Yard in a new window.

1. In the Lumber Yard window, under **Required Lumber**, the field **In Stock** will be unchecked if the lumber is missing from your Lumber Yard.

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Lumber Yard				
Required Lumber				
	Id	In Stock	Grade	Size
	0	<input type="checkbox"/>	2400F 2.0E SP	2x4
	1	<input checked="" type="checkbox"/>	No.2 SPF	2x4

2. Double left-click on the Id you want to add.
3. Left-click **Add to Manuals**.

Lumber Yard										
Required Lumber										
	Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count	
	0	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	08-03-08	14-00-00	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	58	
	1	<input checked="" type="checkbox"/>	No.2 SPF	2x4	01-09-10	14-00-00	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	118	

Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		

The lumber grade, size and length are added to your Lumber Yard. Note that the **Materials ID** is missing. This is the unique number for a grade and size of lumber that *MVP* and *Management*™ use to track and manage your lumber usage. **Note:** This feature is not currently available for wall panels.

Lumber Yard										
Required Lumber										
	Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count	
	0	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	08-03-08	14-00-00	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	58	
	1	<input checked="" type="checkbox"/>	No.2 SPF	2x4	01-09-10	14-00-00	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	118	

Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	14-00-00	00000000-0000-0000-0000-000000000000	0	0	0	00-00-00		

4. Hold down the left mouse button on the same Id, drag it to the entry in your inventory, and release the mouse button to copy the Materials ID.

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Required Lumber									
ID	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count	
0	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	08-03-08	14-00-00	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	58	
1	<input checked="" type="checkbox"/>	No.2 SPF	2x4	01-09-10	14-00-00	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	118	

Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	0	0	00-00-00			

- If you want to add multiple lengths of the same lumber, complete steps one to three again and use the **Length** drop-down list to change the length. If the length required is unavailable in the drop-down list, left-click on the **Edit** field for the row and adjust the length value in the Edit dialog (shown below).

Note: Pre-existing Lumber

If you find that the required lumber is already in the Lumber Yard but there is a difference in upper/lower case, punctuation or spaces:

- **If it is an error in the file** and the existing entry in the Lumber Yard is correct, use the guidance below for [Replacing Lumber with a Suitable Existing Grade](#).
- **If it is not an error** and the file contains the correct format for the lumber, add it to the Lumber Yard and delete the existing entry if it is incorrect.

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Add Lumber Manually (Without a File Imported)

1. Select the **Saw Profile** on the sidebar.
2. Double left-click on the **Id** field.
3. Left-click **Add to Manuals**.

Lumber Yard												
Required Lumber												
Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count				
Add To Manuals												
Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
>	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			

4. A new line will be added at the bottom of the inventory.

Lumber Yard												
Required Lumber												
Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count				
Add To Manuals												
Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
>	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	00-00-00			
	Manual	<input checked="" type="checkbox"/>		0x0	00-00-00	00000000-0000-0000-0000-000000000000	0	0	00-00-00			

5. If the lumber grade, size or length has been input before, use the drop-down lists on each field to select them. This ensures your input is consistent with the rest of your Lumber Yard.

If they do not exist, left-click the fields and type in the information. Alternatively, left-click on the **Edit** field for the row and change the values in the Edit dialog. Use the same format and naming conventions as the design files to ensure that they are compatible with your Lumber Yard.

6. The **Materials ID** is unique to a grade and size; e.g., No. 2 SPF 2x4 will have a different Materials ID to No.2 SPF 2x6.
 - a. For an existing lumber grade/size:

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- i. Left-click on the existing Materials ID and press CTRL+C to copy the ID.
 - ii. Left-click in the new field and press CTRL+V to paste the ID. You can also type into the field.
 - b. For a new lumber grade/size: when the first file is imported that uses the same Materials ID, copy the ID from the **Required area** in the Lumber Yard (see [step four of Add Lumber from an Imported File](#)).
7. Add more grades/sizes/lengths as required.
 8. Select **OK**.

Replace Lumber with a Suitable Existing Grade

This option can be used in several situations:

- If you have taken a job from another manufacturer that stocks different grades.
- If you have no stock of the required grade.
- If the text in the **Grade** or **Size** field is slightly different to your Lumber Yard. For example, the file has a Grade of “2x4 SPF No.2”. Your Lumber Yard has the same grade and size, but the size is not stated in the Grade name.

Note: Check availability

Check that the replacement lumber is physically stocked in the inventory (or will be available when the sawyer is ready to cut the parts). The replacement boards are not checked against the physical inventory software.

1. In **Required Lumber**, on the missing lumber row, left-click in the white area of the **In Stock** field. Any lumber in your inventory with suitable dimensions will be highlighted in green.

Board Stretcher

Required Lumber									
Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count	
0	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	08-03-08	14-00-00	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	58	
1	<input checked="" type="checkbox"/>	No.2 SPF	2x4	01-09-10	14-00-00	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	118	

Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	Substitute
	Manual	<input type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	14-00-00	739a728a-cb86-469b-a076-4b692cda37cb	0	0	0	00-00-00		

- If the grade is a suitable replacement, select it in the **Grade** drop-down list.
- Select **OK**.

Select **Yes** on the following warning.

Operator Message

You are wanting to substitute this board with this direct replacement? You might lose board or cost efficiency, since you aren't reoptimizing the file.

The Required lumber is now using one grade for all boards.

Required Lumber									
Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count	
0	<input checked="" type="checkbox"/>	2400F 2.0E SP	2x4	01-09-10	14-00-00	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	176	

- Select **OK** to close the Lumber Yard.
- Optimize the file and export it to the saw.

Board Stretcher

Lumber Yard Management

Set Lumber as Out of Stock/In Stock

You can uncheck the **Enabled** field to set the lumber as out of stock. The lumber will not be used during optimization.

Lumber Yard									
Required Lumber									
	Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count
		<input type="checkbox"/>							
Lumber Inventory									
	Station #	Device	Enabled	Grade	Size	Length	Materials ID		
		Manual	<input type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		
		Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		

If an imported file requires out-of-stock lumber, follow the process for [Replace Lumber with a Suitable Existing Grade](#) or [Add Lumber to the Lumber Yard](#).

Check **Enabled** again when the lumber is back in stock.

Remove Lumber from the Lumber Yard

You may need to permanently remove lumber if you no longer stock a specific item or remove lumber that was input incorrectly. Left-click on the **Edit** field for the row and use the **Delete** button.

The screenshot shows a 'Lumber Yard' dialog box with the following fields and values:

- Active:
- Priority: 0
- Grade: No.2 SPF
- Size: 2x4
- Length: 10-00-04
- Cost: 00-00-00
- Cost Penalty: 00-00-00
- Length Penalty: 00-00-00
- Materials ID: (empty)

At the bottom of the dialog, there are three buttons: 'Update', 'Delete', and 'Clear'. The 'Delete' button is highlighted with a red box.

Board Stretcher

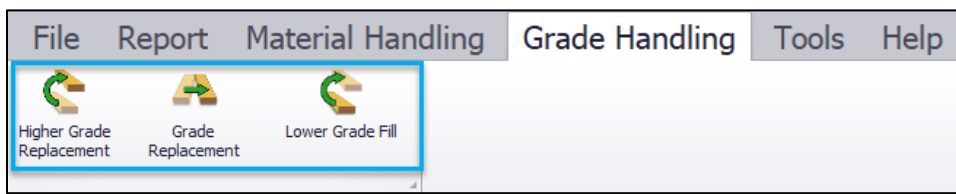
Grade Handling Tools

Overview


The Higher Grade Replacement and Grade Replacement tools allow you to set up alternatives when the exact lumber in the file is not available in your Lumber Yard. Once customized, *Board Stretcher* will automatically change missing lumber grades to stocked grades. The replacements can be set for all lumber in a grade or specific sizes in a grade.

Lower Grade Fill is an optimization option, allowing the program to place parts on the end of higher-grade boards.

The three options are available under **Grade Handling** on the ribbon.



Missing lumber will cause the [Auto Import](#) to error. Files with errors need to be [manually imported](#), optimized and exported. Setting up Higher Grade Replacement and Grade Replacement will save time by reducing the issues caused by missing lumber.

	DANGER
	You must ensure that the replacements are structurally equivalent. MiTek accepts no liability for errors with these settings.

Higher Grade Replacement

Use this tool to set up grades that can be placed on a higher-grade board.

This option is typically used when you are out of stock of the requested grade for a long time. Using a higher grade may be more cost effective than delaying the job.

Grade Replacement

Use this tool to set up equivalent replacements.

Board Stretcher

There are several situations where you could use grade replacement:

- You have accepted overflow jobs from other manufacturers that stock different grades.
- You are out of stock of a particular grade.
- You process job files that refer to the same grade or size differently.
- Example: You receive files that ask for “SPF No. 2” and “No.2 SPF”. You could also receive files that refer to the same size in different ways, such as “2x4”, “2X4”, and “2 x 4”. There should only be one entry in your Lumber Yard for a specific grade and size. Grade Replacement allows you to take account of these alternative naming conventions.

Set up Higher Grade or Grade Replacement

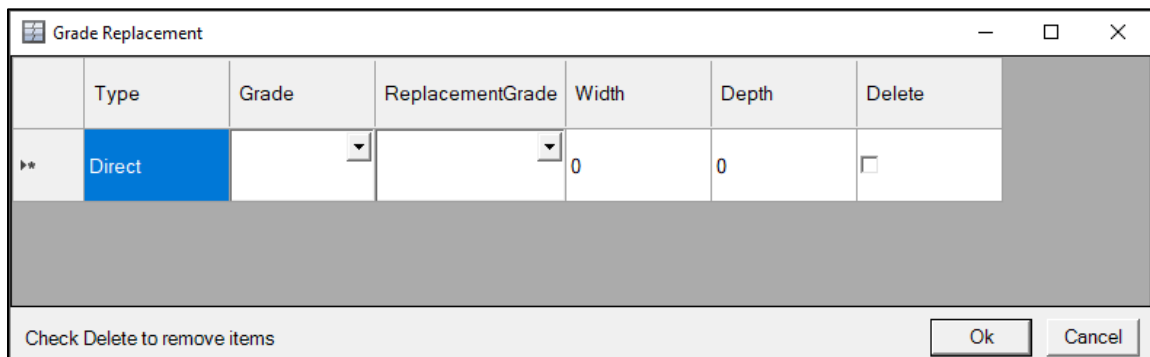
Firstly, enable **Replace Grades** in the **Options** dialog:

1. Select the **Saw Profile** on the sidebar.
2. Go to **Tools > Options > Machine Linear**.
3. Set **Replace Grades** to **Yes**.

Note: You may prefer to choose replacement grades on a job-by-job basis. If so, do not set up Higher Grade Replacement or Grade Replacement. When the file causes an error during [Auto Import](#), use [manual import](#) and select a higher grade or equivalent grade material to replace missing grades before optimizing the file. See [Replace Lumber with a Suitable Existing Grade](#).

Secondly, go to **Grade Handling** on the ribbon and select **Higher Grade Replacement** or **Grade Replacement** to set up the replacements.

1. Specify the lumber that needs to be replaced.



Board Stretcher

2. In **Grade**, left-click the drop-down arrow and select the required lumber if it is in the list. If it is not in the list, left-click in the Grade field and type the lumber grade.

Note: This entry must match the entry in the job file, including upper or lower case, spelling, punctuation and spaces. Using the lumber specifications from the job files will ensure that there are no entry errors.

3. In **Replacement Grade**, left-click the drop-down arrow and select the grade from your Lumber Yard to use as a replacement. If it is not in the list, left-click in the Replacement Grade field and type the lumber grade.

Note: This entry must match the entry in your Lumber Yard, including upper or lower case, spelling, punctuation and spaces.

4. The **Width** and **Depth** columns allow you to restrict the replacement to specific sizes.
 - To replace only 2x6 lumber, type “6” in the Width column and “2” in the Depth Column.
 - To replace 2x8 and 2x10 but not 2x4 and 2x6 etc., create two replacements: one for 2x8 and one for 2x10.

Leave the fields empty to apply the replacement to all sizes.

5. Select **OK** to save your changes.

Both replacement tools are run and applied during import.

Tip: You can remove a replacement by checking the box at the end of the row and selecting **OK**.

Board Stretcher

Lower Grade Fill

Use this option to place parts on the end of higher-grade boards.

There are two main benefits to Lower Grade Fill:

- You can avoid the additional cost of using another full board of lower grade lumber and avoid creating more remainders/waste.
- The remainder area on the higher grade may typically go to waste.

If the end of a board can be used for Lower Grade Fill or a [Remainder](#), the Lower Grade Fill is prioritized.

Set up Lower Grade Fill

Firstly, enable the **Lower Grade Fill** option.

1. Select the **Saw Profile** on the sidebar.
2. Go to **Tools > Options > Assembly Profile**.
3. Set **Lower Grade Fill** to **Yes**.

Secondly, select **Lower Grade Fill** on the ribbon to set up the replacements.

The dialogs for all three replacement types are very similar. See the description above for [Higher/Grade Replacement](#).

Lower Grade Fill is then applied when the file is optimized.

Board Stretcher

Material Handling Tools: Remainders

Overview

Remainders allow you to cut useable lengths from board waste. They can be set up at the *BLADE* saw or set up in *Board Stretcher*.

When you set up remainders in *Board Stretcher*, you specify the remainders you want to cut and set them in priority order. Once the parts in a job are placed during optimization, the program considers if there is any usable space left on the boards to cut one or more remainders.

- You can see how remainders will be placed on the boards in the [Board Graphics tab](#).
- You can see board and lumber efficiency (see [Board Data](#), [Lumber Data](#) and [Optimization](#)).

Note: Using remainders does not increase your lumber usage. Remainders are not considered as parts. Remainders will only be placed if there is enough usable space left on a board that already has parts placed on it.

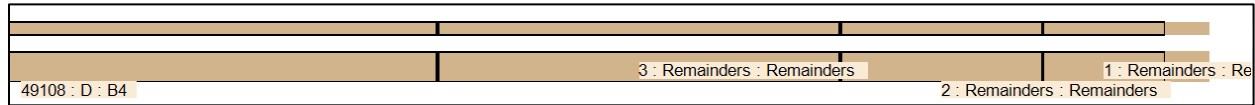
Example:

2x4 4ft, 2ft and 14.5in remainders are active for all grades and set in priority order from longest to shortest.

	Size	Active	Priority	Length	Part	Print	Station	Grade
Priority	2x4	Yes	1	04-00-00		Desc. ..	04-00-00	None <input type="button" value="v"/> None <input type="button" value="v"/>
		Yes	2	02-00-00		Desc. ..	02-00-00	None <input type="button" value="v"/> None <input type="button" value="v"/>
		Yes	3	01-02-08		Desc. ..	01-02-08	None <input type="button" value="v"/> None <input type="button" value="v"/>

On the Board Graphics tab, you can see the program has placed all three lengths on one board in order of priority.

Board Stretcher



The 4ft remainder is placed first after the part, but the remaining waste is not long enough for another 4ft, so a 2ft remainder is placed. The remaining waste is not long enough for a 2ft, so 14.5in blocking is placed.

Stock Sizes and Grades

Remainders can be set for all grades or specific grades only. For example, you may want to use Utility or No.2 SPF for wall blocks and set the more expensive grades for remainders of longer lengths.

In the dialog, each stock size is separated by a gray header. The selected remainder is highlighted in light blue.

Example:

2x6 and 2x4 stock sizes, each with a priority order. The 14.5in blocking is currently selected.

	Size	Active	Priority	Length	Part	Print	Station	Grade
Priority	2x6	Yes	1	03-00-00		Desc. ..	03-00-00	None No.2 SPF
		Yes	2	01-00-00		Desc. ..	01-00-00	None No.2 SPF
	2x4	Yes	1	04-00-00		Desc. ..	04-00-00	None None
		Yes	2	02-00-00		Desc. ..	02-00-00	None None
		Yes	3	01-02-08		Desc. ..	01-02-08	None No.2 SPF

Optimization

The effectiveness of the optimization with remainders is affected by the stock lengths in your Lumber Yard, the remainders you want to cut and the jobs themselves. The example below

Board Stretcher

shows the optimization results for the same job and the same remainder setup, but with different stock lengths in the Lumber Yard.

1. 16ft boards only
2. 16ft and 18ft boards
3. 16, 18, 20ft boards
4. 8, 10, 12, 14, 16, 18 and 20ft boards

	Files	Length Eff. wo Remainers	Volume Eff. wo Remainers	Remainder Percent	Total Length Eff.	Total Volume Eff.	BoardFeet
1	B014542	79.4%	79.4%	16.9%	96.3%	96.3%	1258.7
2	B014542	89.4%	89.4%	8.2%	97.6%	97.6%	1117.3
3	B014542	92.0%	92.0%	5.8%	97.8%	97.8%	1086.7
4	B014542	99.0%	99.0%	0.0%	99.0%	99.0%	1009.3

The **Length effectiveness without remainders** increases as the number of stock lengths increases. At the same time, the percentage of remainders cut decreases.

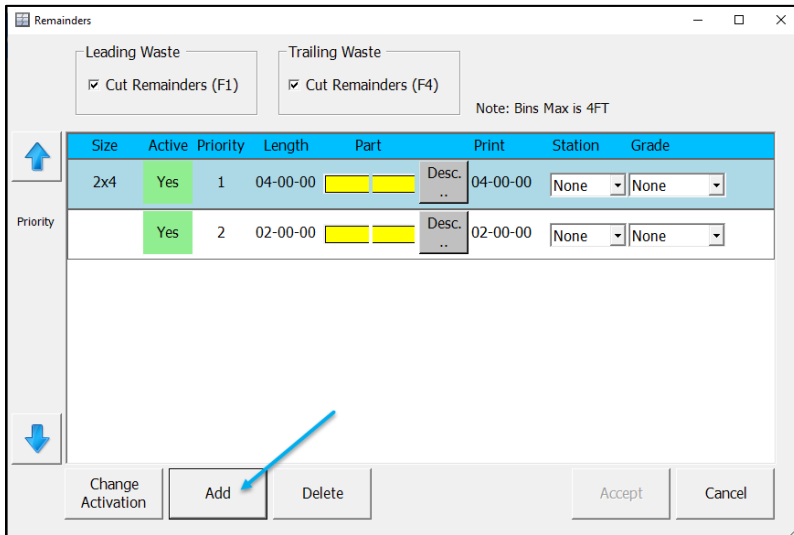
The **Total length effectiveness** remains high in all cases, showing efficient use of waste when remainders can be cut.

Tip: Remainders can be used to build a stock of smaller lengths instead of buying them.

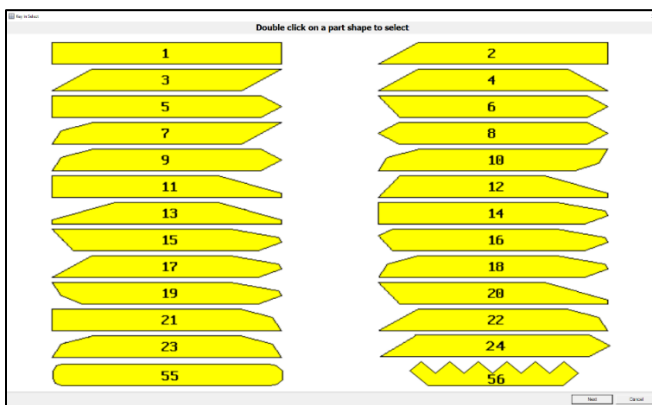
Board Stretcher

Add a Remainder

1. Select the **Saw Profile** on the sidebar.
2. Go to **Material Handling > View Remainders**.
3. Select **Add** in the dialog.

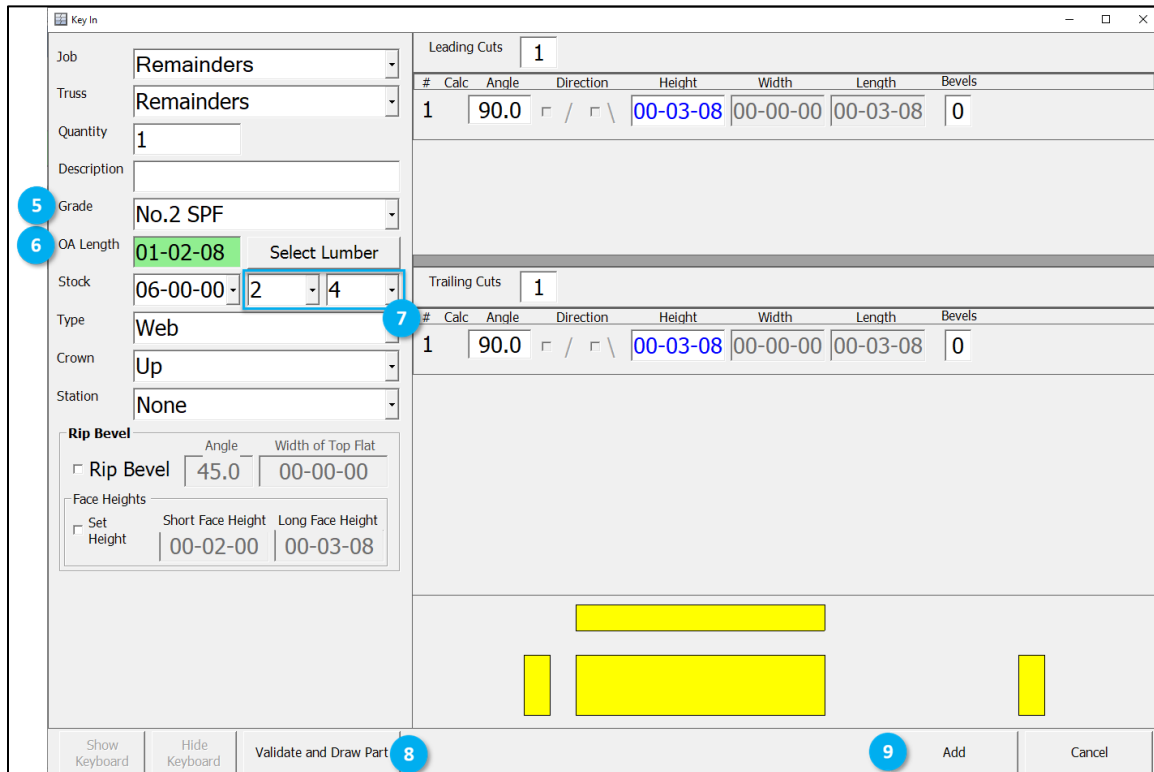


4. Double left-click a part profile to select the angle cuts required. Select profile **1** for 90° cuts.



Tip: If you require angles or bevels on the remainders, you could select 90° cuts to keep production running smoothly and finish the cuts on a chop saw.

Board Stretcher





5. Select the grade you want to use for the remainder. Select **None** if you want all grades to be included. Add multiple remainders if you want to apply it to some but not all grades.
6. Type the **Overall length** of the remainder you want to cut.
7. Select the stock size (do not change stock length, as long as the length is longer than the remainder).
8. Select **Validate and draw**.
9. Select **Add**.

Board Stretcher

Remainder Management

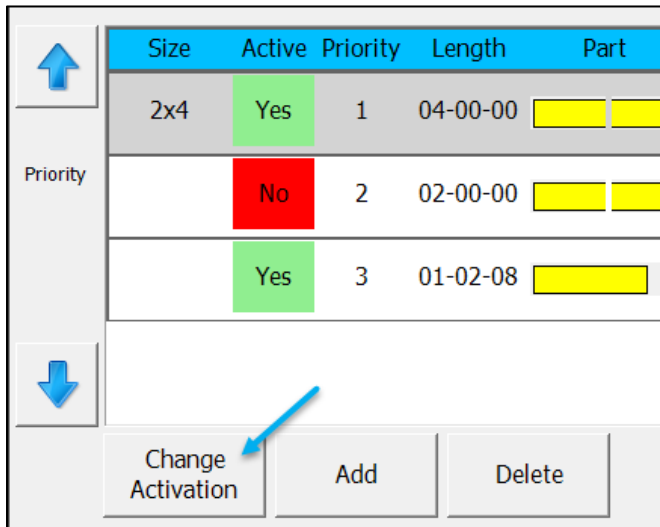
Changing Priority






Select a remainder and use the arrows   to change the order in which the program places the remainders on boards. Order the remainders with the longest length first. If the shortest length, for example, blocking, is first, the remainders will almost always be cut to the shortest length.

Deactivate or Delete a Remainder

Deactivate remainders if you want to stop producing the length temporarily. This is useful if you have too much stock of a particular length.

Double left-click a row to toggle between active/inactive or select a row and select **Change activation**. In the example below, the 2ft length is deactivated and the program will only try to place 4ft and then 14.5in remainders.

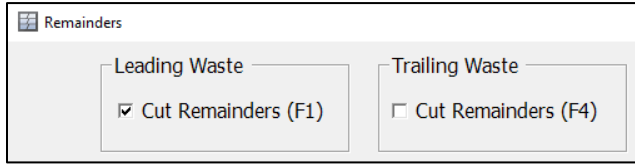


	Size	Active	Priority	Length	Part
Priority	2x4	Yes	1	04-00-00	 
		No	2	02-00-00	 
		Yes	3	01-02-08	

Change Activation Add Delete

Board Stretcher

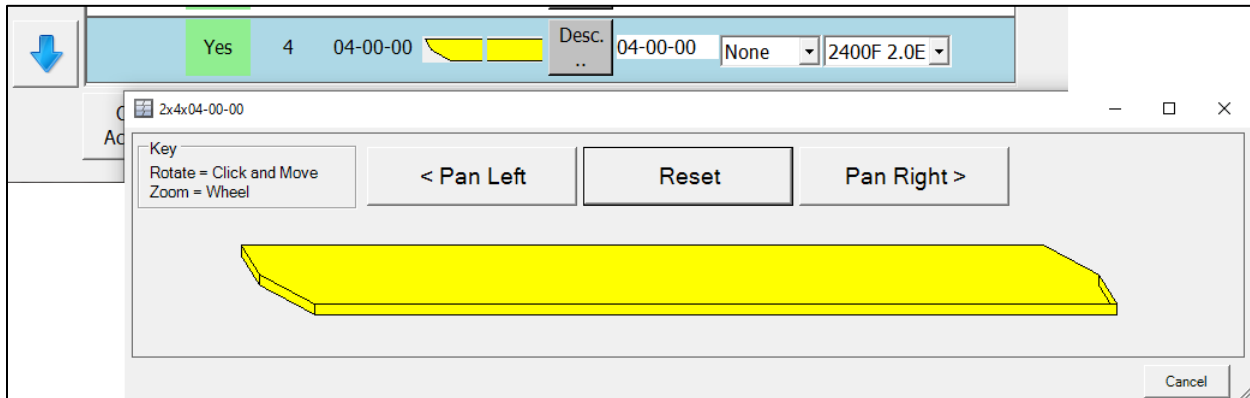
Leading Waste/Trailing Waste



Check the option for your saw. The *BLADE* saw cuts remainders from the leading waste only. *Omni-Miser* I and II saws cut remainders from trailing waste only.

Desc.

Select to view the remainder that will be cut



Station

Specify where the rollers send the remainders after cutting. *DirectDrive* installation only.

Grade

Select the grade you want to use for the remainder. Select **None** to include all grades.

Board Stretcher

Importing Files

There are three ways to import files.

Import

- Manually select one or several files for import.
- Selecting multiple files will batch them.
- View parts, review the optimization and fix errors.

Auto Process

- Manually select multiple files for import.
- The files will be processed and optimized individually.
- This method provides quicker import/processing times than **Import**, but you can still review and fix errors.

Auto Import

- The program watches a specific file directory (usually the export location from *MVP*, *CyberSort* or *ShopNet*) and automatically processes each file individually.
- Individual files are not combined into batches.
- Errors are reported.

Each option has benefits, and which options you use will depend on your processes.

See the following sections for more on each type of import.

Board Stretcher

Manual Import: Import and Auto Process

Overview

Import and **Auto Process** both allow you to:

- Import one file or multiple files.
- View the parts within a file.
- Review the optimization statistics.
- Fix any errors in the file.

The key difference between Import and Auto Process is how they handle multiple files.

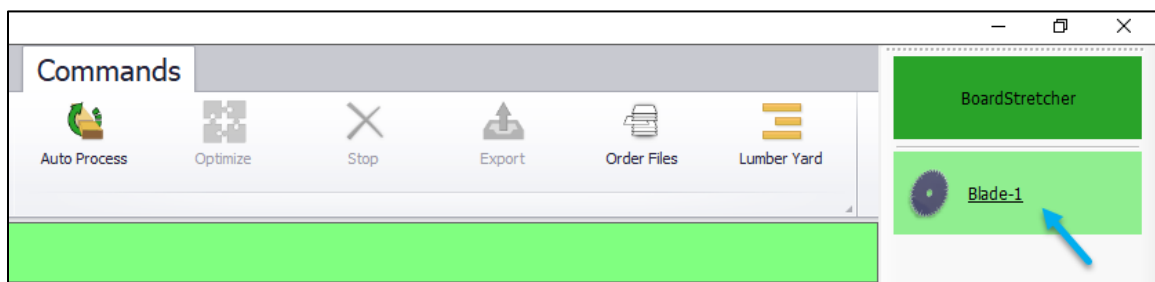
- **Import** — Multiple files are processed, optimized and batched together.
- **Auto Process** — Multiple files are queued. The files will be processed and optimized individually.

We strongly recommend that new customers use **Import**, followed by **Auto Process** for several weeks before changing to **Auto Import**. This has many benefits, including:

- Building up your Lumber Yard by using copy/paste from real job files to reduce errors.
- Working with your MiTek Representative to customize the optimization options for your company's needs.
- Learning how to fix issues with job files that cause errors during Auto Import. For example, an error will occur if the file contains lumber that does not match exactly with your Lumber Yard.

Manually Import a File

1. Select the **Saw Profile** on the sidebar.

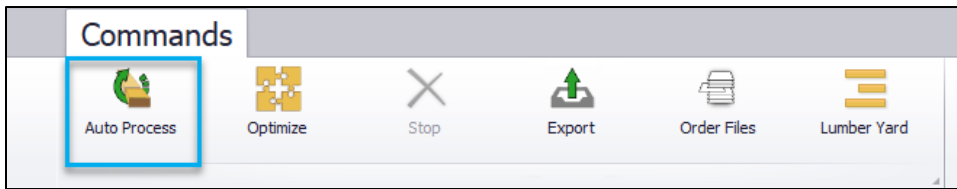


Board Stretcher

- To use **Import**, go to **File > Import**.



To use **Auto Process**, go to **Commands > Auto Process**.



The following steps are the same for both **Import** and **Auto Process**.

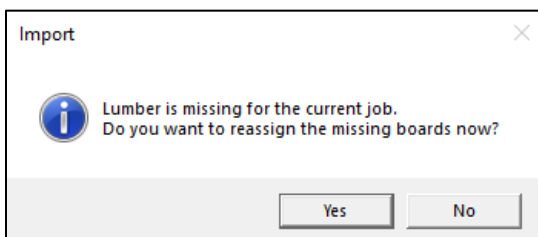
- Select **Get Files** next to the default location for your file. If the file is not in the default folder, use the Windows dialog to find the file. For default file location set-up, see [Manual Import Location Setup](#).

You can select multiple files by holding down CTRL or SHIFT as you select them.

Import — The files will be optimized together and combined into one export file.

Auto Process — The files will be queued, imported in turn, and exported as individual files.

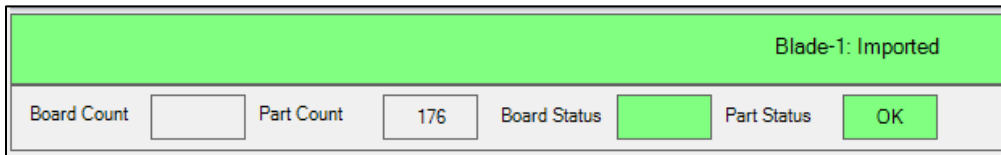
- A warning will be shown if the Lumber Yard is missing the lumber grades or lumber dimensions required for the file. Select **Yes** to open the Lumber Yard in a new window.



- In the Lumber Yard window, the **In Stock** field (under **Required Lumber**) will be unchecked if the lumber is missing from your Lumber Yard. You can replace the required lumber with a suitable existing grade or add the missing lumber to your Lumber Yard. See [Replace Lumber with a Suitable Existing Grade](#) or [Add Lumber from an Imported File](#).

- The Status Bar shows the total number of parts.

Board Stretcher

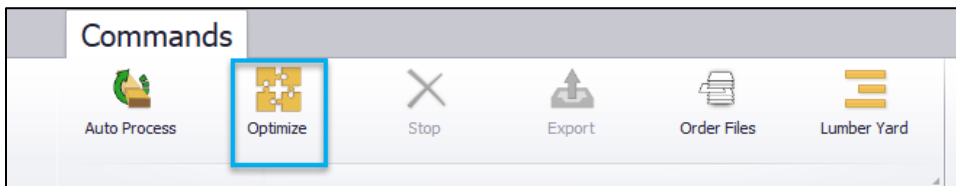


The status cells are color-coded:

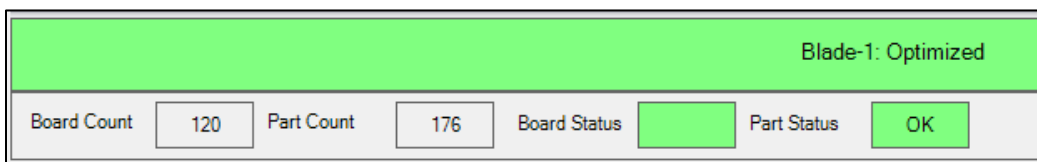
- **OK — Green:** Successful import, no issues with the file.
- **Warning — Yellow:** Warnings are typically addressed during optimization, but the warning will still be displayed. The file can be exported.
- **Error — Red:** Files with errors can be optimized but the part causing the error will be removed from the optimized file and the export.

For more information about Warnings and Errors, see [Part Errors](#).

7. Go to **Commands** and select **Optimize**. You can also stop the optimization from this ribbon, if required.



8. Once optimized, the Status Bar shows the total number of boards used and the total number of parts placed on the boards.



9. Use the tabs to review the optimization. The **Boards > Board Data tab** shows the waste lengths and efficiency data per board.

Board Stretcher

Parts Boards Assemblies Optimizations											
Board Graphics Board Data Board Errors Lumber Data											
	Id	Grade	Size	Length	Source	Batch	Parts	Waste	Length Eff.	Cost Eff.	Has Error
	8	No.2 SPF	2x4	18-00-00	Manual		3	00-00-14	99.6%		
	9	No.2 SPF	2x4	18-00-00	Manual		3	00-05-08	97.4%		
	10	No.2 SPF	2x4	18-00-00	Manual		3	00-00-15	99.6%		
	11	No.2 SPF	2x4	18-00-00	Manual		2	00-01-12	99.2%		
	12	No.2 SPF	2x4	18-00-00	Manual		2	00-05-10	97.4%		
	13	No.2 SPF	2x4	18-00-00	Manual		2	00-01-12	99.2%		
	14	No.2 SPF	2x4	18-00-00	Manual		2	00-05-10	97.4%		
	15	No.2 SPF	2x4	16-00-00	Manual		2	00-04-12	97.5%		
	16	No.2 SPF	2x4	16-00-00	Manual		2	00-02-01	98.9%		

10. The **Boards** > [Lumber Data tab](#) shows the optimization for each length of lumber. This includes the total board length (footage), the total length efficiency, and the total waste lengths after all parts have been cut.

Parts Boards Assemblies Optimizations														
Board Graphics Board Data Board Errors Lumber Data														
	Grade	Size	Length	Source	Quantity	Total Board Ln.	Length Eff.	Batch	BatchOrder	BoardOrder	Device	Scrap	TotalWasteLength	PartType
	No.2 SPF	2x4	18-00-00		14	252-00-00	98.5%				Manual		03-09-07	
	No.2 SPF	2x4	16-00-00		5	80-00-00	98.6%				Manual		01-01-00	
	No.2 SPF	2x4	14-00-00		27	378-00-00	99.3%				Manual		02-07-05	
	No.2 SPF	2x4	12-00-00		6	72-00-00	100.0%				Manual		-00-00-00	
	No.2 SPF	2x4	10-00-00		8	80-00-00	99.9%				Manual		00-00-08	

See [Viewing Imported Files](#) for more information about each tab.

You can also go to **Report** on the ribbon and check that the [Boards Pick List](#) and [Lumber Pick List](#) have the correct Out Board Sort Order options for the file. See the [Out Board Sort Order options](#) for more details.

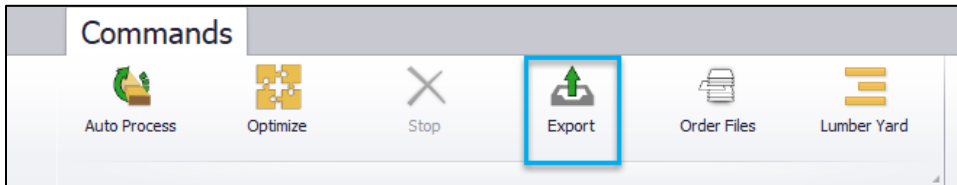
You can optimize the file again if you make changes in the Saw Profile options or the Lumber Yard that affect the active file.

Once you are satisfied with the optimization, the file is ready for the saw.

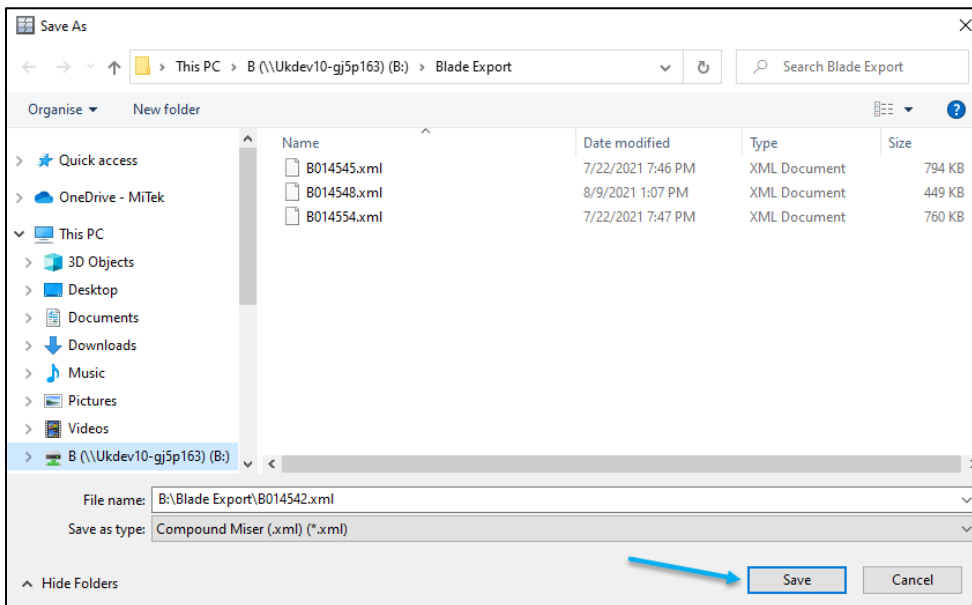
Board Stretcher

Note: If you want to cancel the import and clear the file from *Board Stretcher*, go to **File > Clear**. Do not use **Delete**.

11. Go to **Commands > Export**. This export creates the optimized file for the saw.



12. The default export location will be shown in the dialog. Select **Save**.



See [File Import Tab](#) for how to change the default export location.

13. The Board Pick List and Lumber Pick Lists will be created if they are active in the Saw Profile options. See [Running Reports](#).

14. If **Auto Process** is used, the next file is now imported. Start again from step four.

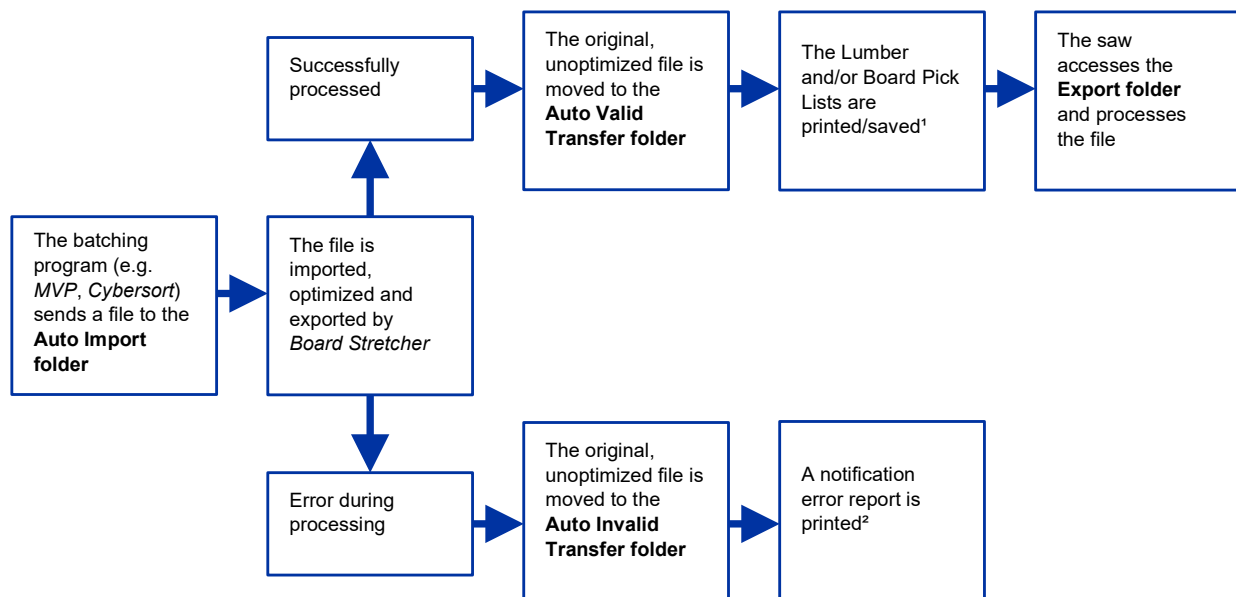
Tip: The same file can be imported into the program again, either as the original unoptimized file or as the exported, optimized file.

Board Stretcher

Auto Import

Overview

This feature allows you to import, optimize, and export files automatically. The standard workflow is shown below.



¹ See [Running Reports, Automatic](#).

² See [Auto Process Errors report](#). If this report is not enabled, the [Auto Invalid Transfer folder](#) will need to be checked regularly for files with errors.

Tip: You can manually copy/paste or drag/drop files into the Auto Import “WIP” folder and they will be processed automatically.

Setup

There are three folders used by the Auto Import process: Auto Import, Auto Valid, and Auto Invalid. See [Remote \(Auto Import locations\)](#) for more information.

After setup, the Auto Import process only requires user involvement when there is an error during processing.

Board Stretcher

Common Errors

If a file has an error, find the file in the Auto Invalid folder and use [manual import](#) to fix the issues. See [Part Errors: Auto Import](#) for examples of common errors.

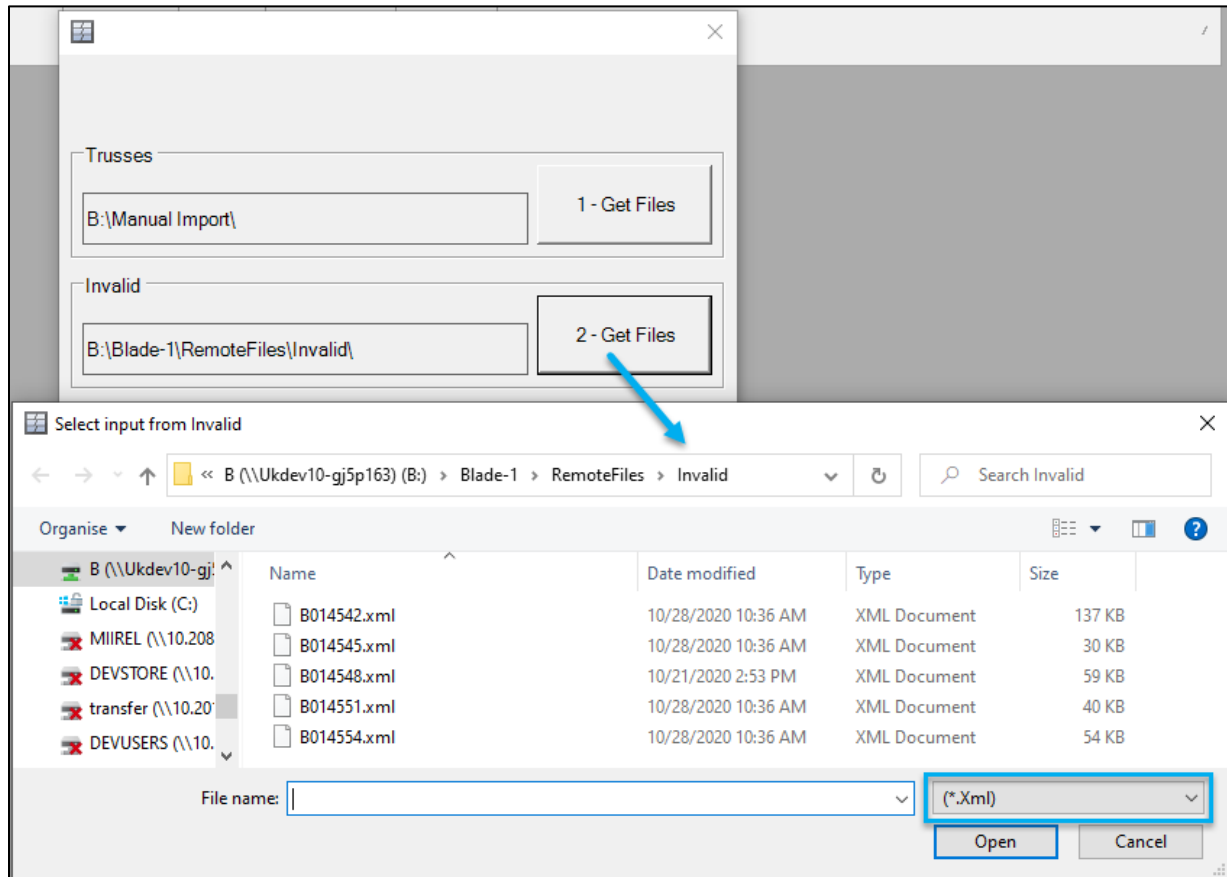
Managing the Auto Invalid Folder

A file with an error will stay in the Auto Invalid folder after you have used manual import to fix the error successfully. To avoid processing the same file multiple times, we recommend you either:

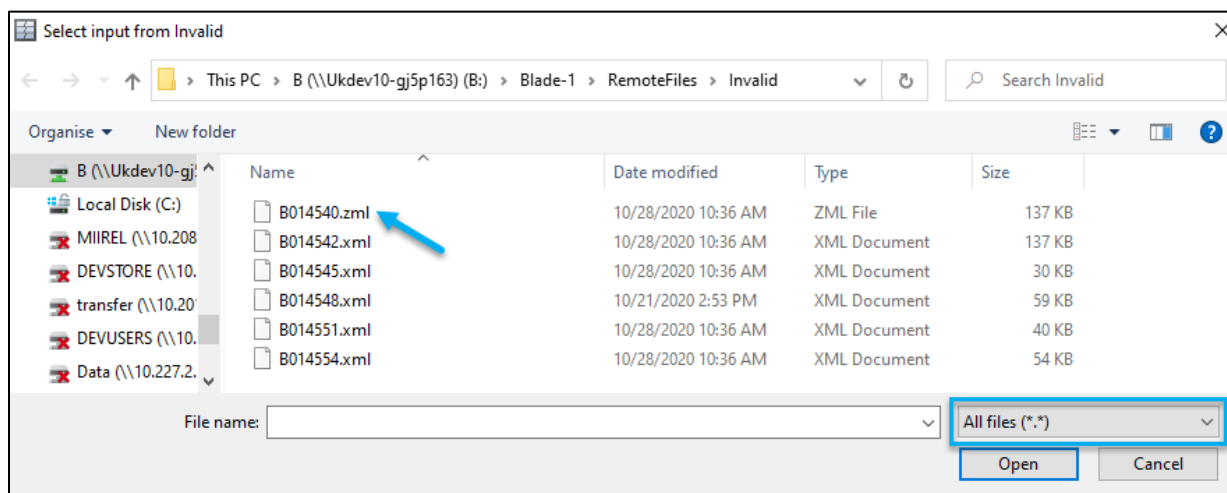
- Manually move the file to the Auto Valid Transfer folder after successfully exporting it using manual import.
- Use automatic renaming to change the file extension on the file after it has been manually imported. Follow the steps below to enable this option.
 1. Go to **Tools > Options > File import**.
 2. If you have not already done so, change one of your import folder locations to the [Auto Invalid Transfer folder](#) location. For more detail on this setup, see [Manual Import Location Setup](#).
 3. Type **Invalid** as the **Display label**.
 4. In **Extension**, select the real extension of the input file.
 5. In **Export Ext**, select the real extension for the export file.
 6. In **After Import**, check **Rename** and change the extension on the file to a “fake” extension, e.g., ZML.
 7. Select **OK** to save your changes.

When checking for new files that have failed Auto Import, select **Import > Get Files** on the **Invalid** folder location. You will only see XML files by default.

Board Stretcher



When you select **All Files** in the extension drop-down list, you will see the .XML and the .ZML files.



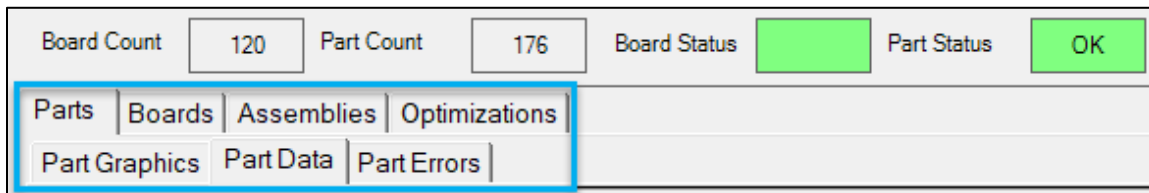
This renaming allows you to keep the files, mark that they have been successfully actioned and only view them when necessary.

Board Stretcher

Viewing Imported Files

Overview

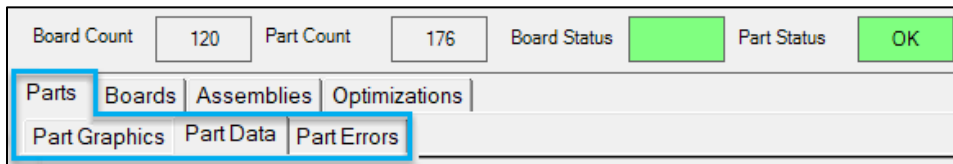
This section describes the Tab bar. This area shows you detailed information about the imported file and the optimization.



There are four primary tabs: Parts, Boards, Assemblies and Optimizations. The Parts and Boards tabs have secondary tabs.

The rows alternate between green and white in most tabs to make the screen easier to read.

Parts



Part Graphics

View 2D and 3D representations of the parts.

Controls

- Right-click on a part to select **View Part** (view the part in 3D in the [Part Information](#) window) or [Edit Part](#).
- Double left-click in white space (not on a part) to flip all the boards over.

Part Data

This tab lists the parts that will be exported to the saw.

Board Stretcher

Most fields in the Part Data tab are self-explanatory.

- The **Id** is the unique identifier for the part.
- **OA Len.** is the overall length of the part.
- **Group** is the wall panel bundle ID.
- **Assembly** is the truss. Wall panels do not have an assembly; the Wall panel ID is typically included in the description.
- **Description** is the part label.
- **Qty.** For trusses, this is the grouped quantity of a particular part. A line with a quantity of 0 is added to allow the assembly to be shown on the Assemblies tab. For wall panels, quantities are not combined; each is shown with a quantity of 1.

Right-click on a row to select [View part](#) or [Edit part](#).

- [View part](#): View the part in 3D in the Part Information window. You can also double left-click on a Part Data row to open the Part Information window.
- [Edit part](#)

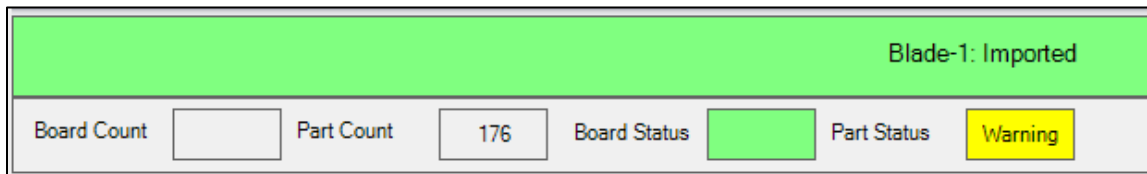
Note: **Build Station** displays which table the part will be delivered to when using *Board Stretcher* with a *DirectDrive* installation.

Part Errors

This tab shows warnings and errors when the file is manually imported.

Warnings

Files with **warnings** can be optimized and exported. The Status changes to **Warning** to notify you of an issue.



You will see the warning if you are using [manual import](#). For example, the warning “Invalid part – the stock length is less than the overall length” is addressed during optimization. In this case, the program will use a longer stock length to ensure that the part can be cut.

Board Stretcher

	Id	Job	Description	Level	Error Msg.
▶	49150	200434C	W1	Warn	Invalid part - the stock length is less than the overall length.

You will not see the warnings if you are using [Auto Import](#). Files with **warnings** are automatically optimized and exported.

Errors

Manual Import

During manual import, files with **errors** can be optimized but the part causing the error will be removed from the optimized file and the export. In **Parts > Part Data**, “X” is displayed in the **Has Error** field on the affected part.

Board Status 		Part Status Error							
mbly	Description	Grade	Size	Build Station	OA Len.	Qty	PartType	Batch	Has Error
	B1	1650F 1.5E SPF	2x6		---	1	BottomChord		X

The error will be shown in **Parts > Part Errors**. In the example below, the infeed is 16ft which is not long enough to process the part.

	Id	Job	Description	Level	Error Msg.
▶	3249940	667834-04	B1	Err	Invalid part overall length '19-01-00'. Part overall length must be between '00-03-00' and '16-00-00'.

To process the part, use manual import on a Saw Profile with an infeed over 19ft. Edit the quantity of all other parts to 0 to avoid duplication (see [Change the Quantity of a Part](#)), optimize and export the file.

Auto Import

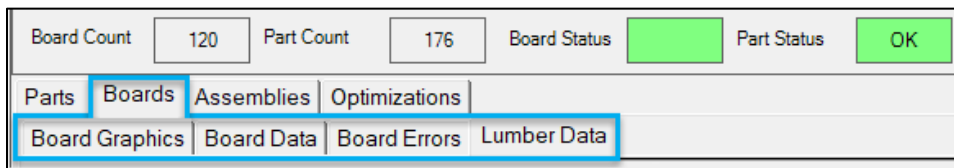
During Auto Import, files with **errors** cannot be imported, optimized or exported until the error is fixed. The file is moved to the [Auto Invalid Transfer folder](#) to allow you to manually import the file and fix the errors. The most common error occurs when the requested lumber is unavailable in the [Lumber Yard](#). When you manually import the file, this error will display as a warning dialog immediately after import.

Board Stretcher

Typical errors

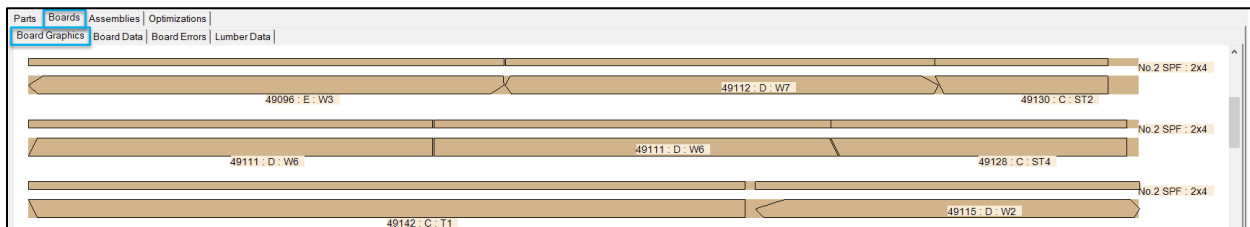
- Parts are too small for the saw to cut.**
 Example: wedges under 3 inches in length cannot be cut by the *BLADE* saw. Exporting a file with this error is reasonable because the parts would need to be removed from the file and processed at a chop saw.
- The length of the part is longer than the infeed.**
 Example: 20ft boards are required but the Saw Profile only has a 16ft infeed. This error requires a profile that has a 20ft infeed. If this is not possible, an engineer could make changes in the design file to reduce the length of the part.
- Characters included in the print that cannot be printed.**
 This includes ", used in some software to indicate inches. Designers should avoid most punctuation in the file, apart from dashes – and underscores _. The following characters cannot be printed and will cause an error: . ' " : ; ()[]{}^ \ . These should be removed from the design file before importing the file again.

Boards



Board Graphics

View 2D representations of the parts placed on the boards. These are the optimized positions for the parts. Each board shows the Part ID, Assembly and Description for each part placed.



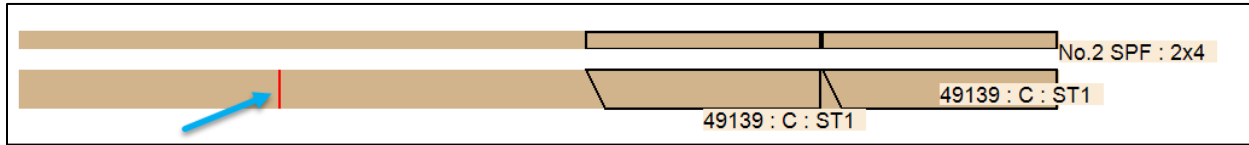
Controls

- Use the scroll wheel to zoom in and out and the scroll bars to view all the boards.
- Left-click on a part to view it in 3D on the [Part Information](#) window.

Board Stretcher

- Double left-click in white space (not on a part) to flip all the boards over.

A red line is shown on boards that have short parts.

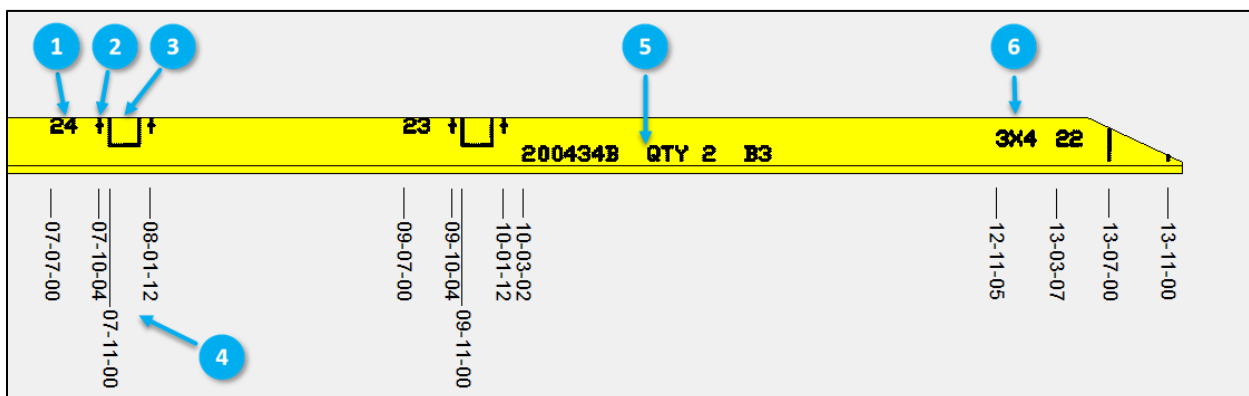


This line indicates that the program has shifted all parts to the right (front) to place the maximum number of parts on the board. The front of the last part must be placed to the right of the red line for the gripper to secure the board during cutting. [Remainders](#) can still be cut from the board, if there is space between the last part and the red line.

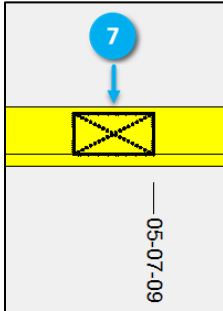
Part Information

Left-click on a board to view the Part Information. This window displays the part in 3D. The 3D view includes saw printing (see **Options > Print**). See the *BLADE* saw printer guide (or equivalent for the specific saw) for detailed information on printer setup.

1. Joint numbers.
2. Joint alignment marks for intersecting parts, e.g., location for webs to join a top/bottom chord.
3. Plate perimeter location.
4. The length from the end of the part to the start of the print mark.
5. Custom print fields. See [Custom print fields](#) for more information.
6. Plate size and orientation.
7. Purlin bracing for chords (see second image).



Board Stretcher



Note: Ensure that the *BLADE* saw and *Board Stretcher* configurations are the same.

Controls

- **Rotate the part:** Position your cursor on the part, hold down the left mouse button and move the mouse up or down.
- **View the end cut:** Position your cursor near the middle of the part, hold down the left mouse button and move left or right along the part, toward the end you want to view. The end cut is shown at the same angle as you were viewing the part. Use the **Reset** button to return quickly to the length view.
- **Flip the part:** If the print is upside-down when viewing the part, use the method above to view the part end-on and continue moving your mouse in the same direction. The part will flip and show the print in a readable orientation.
- **Zoom in/out:** Use the scroll wheel to zoom in and out. Use the **Reset** button to return quickly to the length view.
- Once you are zoomed in on a part, use the **Pan Left** and **Pan Right** buttons to move along the part quickly.

Board Data

View the optimization for each piece of board. This includes the waste lengths and efficiency data per board. The efficiency percentage is essentially how well the program has minimized waste on the boards that are used. The efficiency percentage also considers the number of saw strokes saved by single or multiple nested cuts.

Board Stretcher

Parts Boards Assemblies Optimizations											
Board Graphics Board Data Board Errors Lumber Data											
	Id	Grade	Size	Length	Source	Batch	Parts	Waste	Length Eff.	Cost Eff.	Has Error
	8	No.2 SPF	2x4	18-00-00	Manual		3	00-00-14	99.6%		
	9	No.2 SPF	2x4	18-00-00	Manual		3	00-05-08	97.4%		
	10	No.2 SPF	2x4	18-00-00	Manual		3	00-00-15	99.6%		
	11	No.2 SPF	2x4	18-00-00	Manual		2	00-01-12	99.2%		
	12	No.2 SPF	2x4	18-00-00	Manual		2	00-05-10	97.4%		
	13	No.2 SPF	2x4	18-00-00	Manual		2	00-01-12	99.2%		
	14	No.2 SPF	2x4	18-00-00	Manual		2	00-05-10	97.4%		
	15	No.2 SPF	2x4	16-00-00	Manual		2	00-04-12	97.5%		
	16	No.2 SPF	2x4	16-00-00	Manual		2	00-02-01	98.9%		

There are several ways to increase the efficiency, including using [Lumber Penalties](#) to encourage the program to prefer particular board lengths. The best way to customize this to your needs is to use [manual import](#) for several weeks and review the optimizations. If the program is not performing as you would like, we recommend you briefly read the section on [Lumber Penalties](#) before contacting your MiTek Representative to help you make changes to these areas and other settings.

Board Errors

See [Part Errors](#). This tab shows the same issues.

Lumber Data

View the optimization for each length of lumber. This includes the total board length (footage), the total length efficiency and the total waste lengths after all parts have been cut.

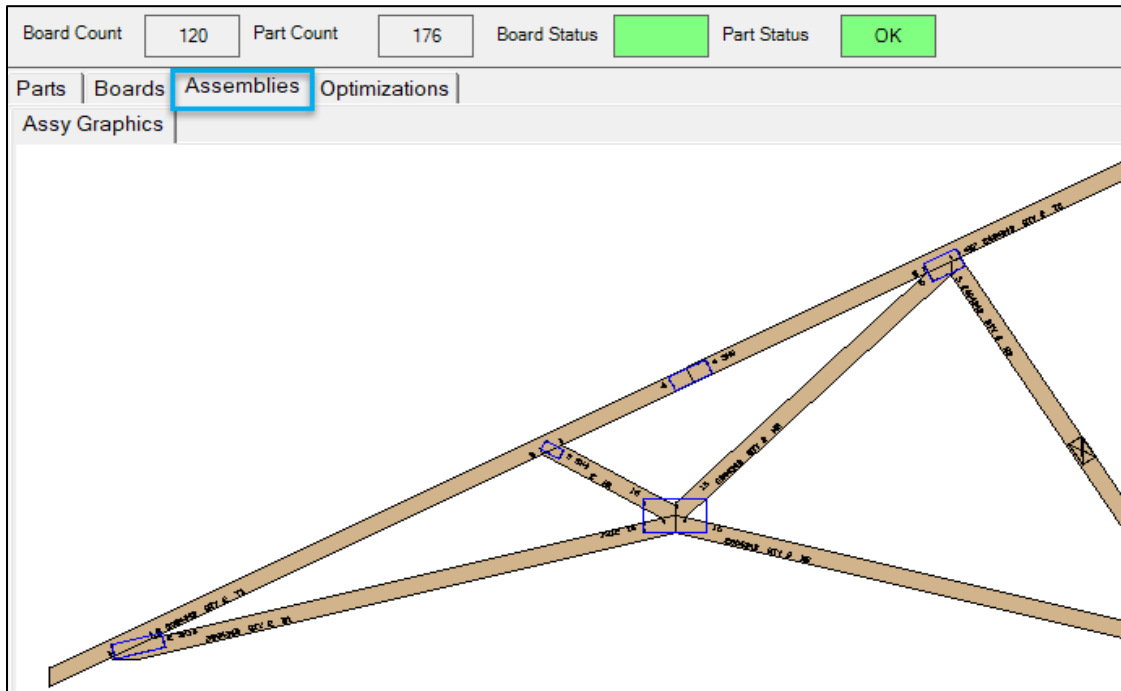
Board Stretcher

Parts														
Board Graphics														
Board Data														
Board Errors														
Lumber Data														
	Grade	Size	Length	Source	Quantity	Total Board Ln.	Length Eff.	Batch	BatchOrder	BoardOrder	Device	Scrap	TotalWasteLength	PartType
	No.2 SPF	2x4	18-00-00		14	252-00-00	98.5%				Manual		03-09-07	
	No.2 SPF	2x4	16-00-00		5	80-00-00	98.6%				Manual		01-01-00	
	No.2 SPF	2x4	14-00-00		27	378-00-00	99.3%				Manual		02-07-05	
	No.2 SPF	2x4	12-00-00		6	72-00-00	100.0%				Manual		-00-00-00	
	No.2 SPF	2x4	10-00-00		8	80-00-00	99.9%				Manual		00-00-08	

Assemblies

View 2D representations of the final fabricated trusses. This includes saw printing.

The image below represents a customer using AGS printing.



Controls

- Use the scroll wheel to zoom in and out and the scroll bars to view all the trusses.

Note: This tab will be blank if the file does not include roof/floor graphics.

Board Stretcher

Optimizations

View the optimization statistics for all manually imported files since the program was opened. The statistics from the day or session are deleted when the program is closed.

If you optimize the same file multiple times with different optimization options, you can compare the results to choose the most efficient setup.

Example:

	Date	Files	Length Eff. wo Remainders	Volume Eff. wo Remainders	Remainder Percent	Total Length Eff.	Total Volume Eff.	BoardFeet	Cost	Qty Parts Single Nested	Qty Parts Multiple Nested	Saw Strokes Saved
▶	9/2/2021 3:55 PM	B014545	98.4%	98.4%	0.0%	98.4%	98.4%	928.0	0.0	12	0	12
	9/2/2021 3:55 PM	B014548	94.6%	94.6%	0.0%	94.6%	94.6%	306.7	0.0	7	5	17
	9/2/2021 3:56 PM	B014554	97.2%	97.2%	0.0%	97.2%	97.2%	360.0	0.0	44	0	44
	9/2/2021 3:57 PM	B014635	97.4%	97.4%	0.0%	97.4%	97.4%	497.3	0.0	2	0	2
	9/2/2021 3:57 PM	B014754	98.8%	98.8%	0.0%	98.8%	98.8%	585.3	0.0	26	6	38

Columns:

- **Length Efficiency wo (without) Remainders** is the overall length of all parts divided by the length of all boards.
- **Volume Efficiency wo (without) Remainders** is the volume (board feet) of all parts divided by the volume of all boards.
- **Remainder Percent** is the length of remainder material divided by the length of all boards.
- **Total Length Efficiency** includes remainders in the overall length of all parts divided by the length of all boards.
- **Total Volume Efficiency** includes remainders in the volume (board feet) of all parts divided by the volume of all boards.
- **Board Feet** is the total board foot length for all parts (including remainders).
- **Cost.** Physical inventory management is typically maintained in software outside the program. However, costs can be added for stock lengths.
- **Quantity of Parts Single Nested** is the number of parts that share one common angle with another adjacent part on the board.
- **Quantity of Parts Multiple Nested** is the number of parts that share two or more common angles with another adjacent part on the board.

Board Stretcher

- **Saw Strokes Saved** indicates how many strokes are not required due to nesting the parts. The production rate increases when adjacent parts share common angles, because the saw can cut two parts with one stroke.

You can improve or change the optimization in several ways, including:

- [Lumber Penalties](#)
- [Remainders](#)
- [Lower Grade Fill](#)
- Changing the [Optimization Method](#) (**Tools > Options > Assembly Profile**).
- Changing the batching options in *MVP* or *CyberSort* to increase/decrease the number of assemblies that are optimized together.

Some options will reduce the optimization efficiency. See [Out Board Sort Order](#) in Customizing Reports for more information.

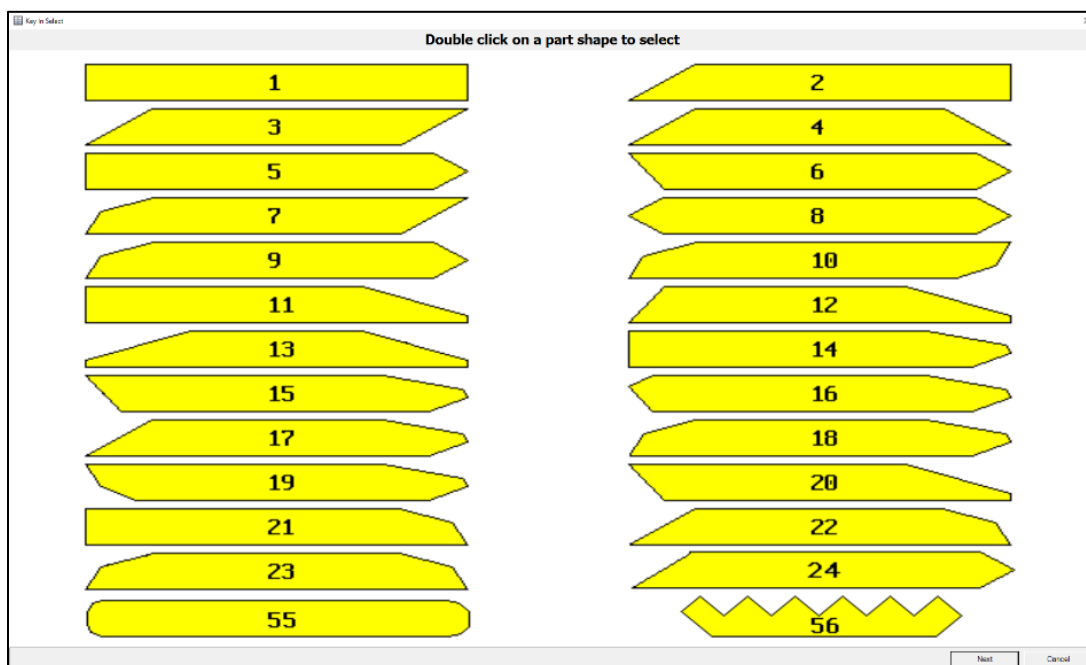
Board Stretcher

Add Parts

This option can be used with [manual import](#) to add extra parts to the file. For example, you need packaging material to secure trusses/wall panels for transportation, but you have no scrap.

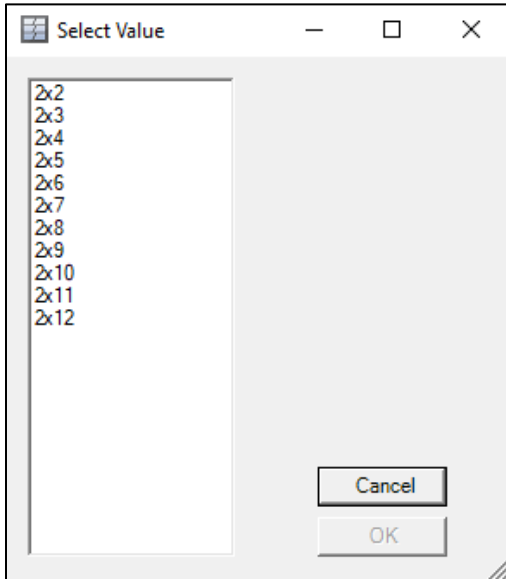
Tip: You can use the [remainder options](#) to build a stock of scrap for packaging purposes. Setting up remainders saves time by creating the necessary materials from the ends of boards (when possible).

1. Import the job file manually.
2. Go to **Tools > Add Part**.
3. Double left-click on a cut shape for the part.

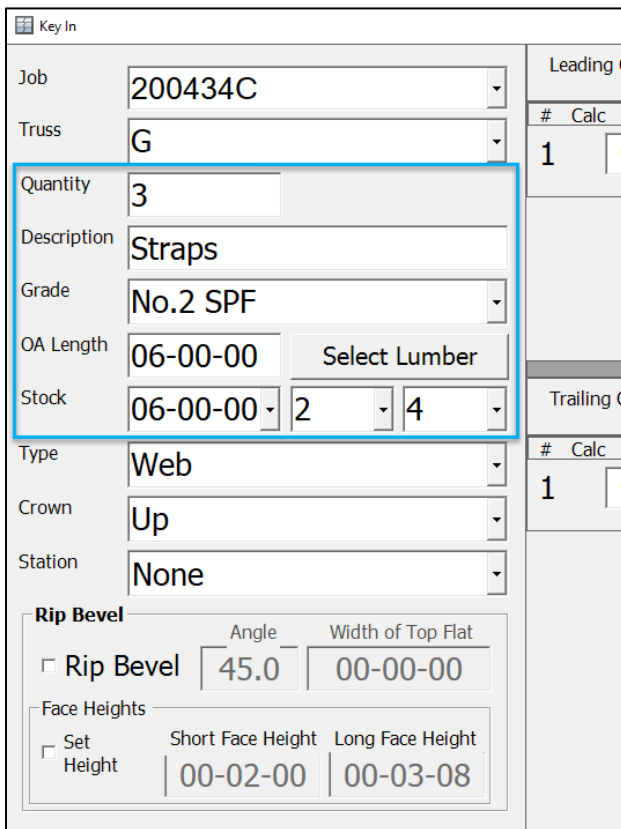


4. Double left-click on the size of the part.

Board Stretcher

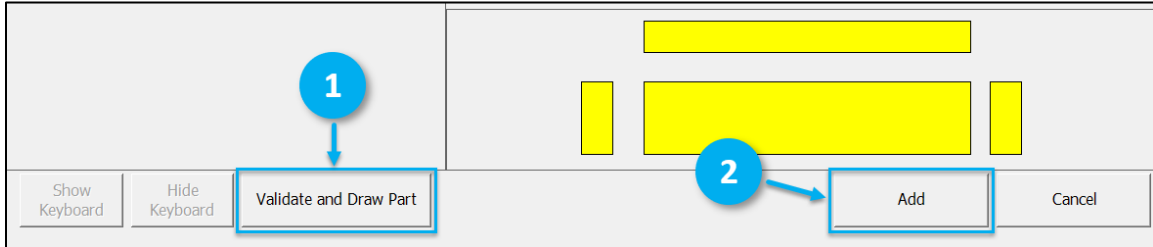


5. Edit the quantity of the part required, add a description for identification, and specify the grade and length. Change the stock length if the required length is longer than the default stock length.



Board Stretcher

- At the bottom of the dialog, left-click **Validate and Draw Part** and left-click **Add**.



- The part is added to the Part Data.

	Id	Job	Group	Assembly	Description	Grade	Size	Build Station	OA Len.	Qty.	PartType	Batch	H
	49149	200434C		G	W2	No.2 SPF	2x4	JigB	07-08-10	12	Web		
	49151	200434C		G	W7	No.2 SPF	2x4	JigB	05-10-08	12	Web		
	49150	200434C		G	W1	No.2 SPF	2x4	JigB	04-00-00	12	Web		
	49156	200434C		G	Straps	No.2 SPF	2x4	None	06-00-00	3	Web	Keyin	

When the file is optimized, additional parts will also be optimized with the job.

Board Stretcher

Edit Parts

We do not recommend editing the geometry of parts in *Board Stretcher*. The design file has been created according to engineering standards and changes may result in an engineering failure. We recommend that the design file is corrected and the corrected version is imported into the program.

There are situations where you may need to change the quantity of a part or parts.

Change the Quantity of a Part

1. Left-click in the **Qty** field.
2. Type the number of parts required.
3. Repeat as necessary for the parts you want to change.
4. Select **Accept Changes**.

Parts Boards Assemblies Optimizations													
Part Graphics Part Data Part Errors													
	Id	Job	Group	Assembly	Description	Grade	Size	Build Station	OA Len.	Qty.	PartType	Batch	Has Error
	49119	200434B		D	B3	2400F 2.0E SP	2x4	JigB	14-00-00	0	BottomChord	B014542-001	
	49116	200434B		D	W3	No.2 SPF	2x4	JigB	07-08-09	6	Web	B014542-001	
	49096	200434B		E	W3	No.2 SPF	2x4	JigB	07-08-09	2	Web	B014542-001	

Use **Cancel Changes** to undo all unaccepted changes.

If you want to use a scrap board for the part or the part is pre-cut (e.g., 08-08-10 studs are often bought in at length):

1. Manually import the file.
2. Edit the **Qty** field to zero to remove the part from the file.
3. Select **Accept Changes**.
4. Optimize the file and export.

Board Stretcher

If there is an issue with a cut part or parts and you need to recut them:

1. Manually import the file.
2. Edit the **Qty** field to zero for all parts except the part or parts you need to recut.
3. Select **Accept Changes**.
4. Optimize the file and export.

Board Stretcher

Reports

Lumber/Board Reports Overview

Reports are created for each saw. There are three reports: Lumber Pick List, Board Pick List and Inventory List.

Lumber List/Lumber Pick List

This is a report for the picker. All similar lumber is grouped. This makes collecting the lumber required quicker and easier.

Example:

Truss Inc 123 Chesterfield MO User@domain.co		Lumber Pick List			Example logo	
		Blade-1		MWeale		
		8/9/2021 1:07:01 PM				
						B014548.xml 200434D
<hr/>						
Grade 2400F 2.0E SP						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	14-00-00	Manual	8	112-00-00	16-00-00	
<hr/>						
Grade No.2 SPF						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	18-00-00	Manual	4	72-00-00	01-02-02	
2x4	16-00-00	Manual	13	208-00-00	02-03-03	
2x4	12-00-00	Manual	3	36-00-00	00-03-05	
2x4	10-00-00	Manual	2	20-00-00	01-01-15	
2x4	08-00-00	Manual	1	08-00-00	03-06-15	
<hr/>						
Grade Utility SPF						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	04-00-00	Manual	2	08-00-00	04-06-00	

Board Stretcher

Inventory List

This report shows the available lumber sizes and lengths, grouped by grade. It is the same as the Lumber Pick List. "Inventory" is displayed instead of the job file.

Example:

Truss Inc 123 Chesterfield MO		Lumber Pick List			Example logo	
User@domain.co		Blade-1	MWeale			
		8/9/2021 1:13:30 PM			Inventory	
<hr/>						
Grade 2400F 2.0E SP						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	14-00-00	Manual				
<hr/>						
Grade No.2 SPF						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	18-00-00	Manual				
2x4	16-00-00	Manual				
2x4	14-00-00	Manual				
2x4	12-00-00	Manual				
2x4	10-00-00	Manual				
2x4	08-00-00	Manual				
<hr/>						
Grade Utility SPF						
Size	Length	Source	Quantity	Board Ln	Scrap Ln	
2x4	04-00-00	Manual				

Board Stretcher

Board Pick List/Board List

This is a report for the sawyer. Lumber is organized into the order required by the saw.

Example:

Truss Inc 123 Chesterfield MO User@domain.co	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <h3 style="margin: 0;">Board Pick List</h3> </div>	Blade-1 8/9/2021 1:07:01 PM	MWeale <div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-15deg);"> Example logo </div>
			B014548.xml 200434D

Batch	Grade	Size	Length	Source	Part Type	Quantity
	No.2 SPF	2x4	18-00-00	Manual	BottomChord	4
	No.2 SPF	2x4	16-00-00	Manual	TopChord	13
	2400F 2.0E SP	2x4	14-00-00	Manual	BottomChord	8
	No.2 SPF	2x4	12-00-00	Manual	Web	3
	No.2 SPF	2x4	10-00-00	Manual	Web	2
	No.2 SPF	2x4	08-00-00	Manual	Web	1
	Utility SPF	2x4	04-00-00	Manual	Web	2

Running Reports

Automatic

The Lumber Pick List and Board Pick List can be run automatically when a file is exported. The reports can be printed and/or saved as PDF files.

Follow the steps below to enable this feature.

1. Select the **Saw Profile** on the sidebar.
2. Go to **Tools > Options > Reports**.
3. Check **Lumber List** and/or **Board List**.
4. Check **Printer** or **PDF** as the output type.
 - If you want to print, select your default printer. The printer must already be added to your computer in Control Panel (press the Windows key, type "Control Panel",

Board Stretcher

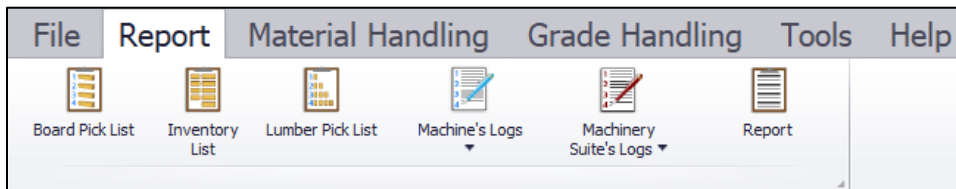
select the Control Panel app, go to Devices and Printers and follow the steps to add a printer).

- If you want to create a PDF, browse to the file location to save the PDFs. We recommend creating a “Pick List” folder in the same location as your RemoteFiles folder for Auto Import.

Manual

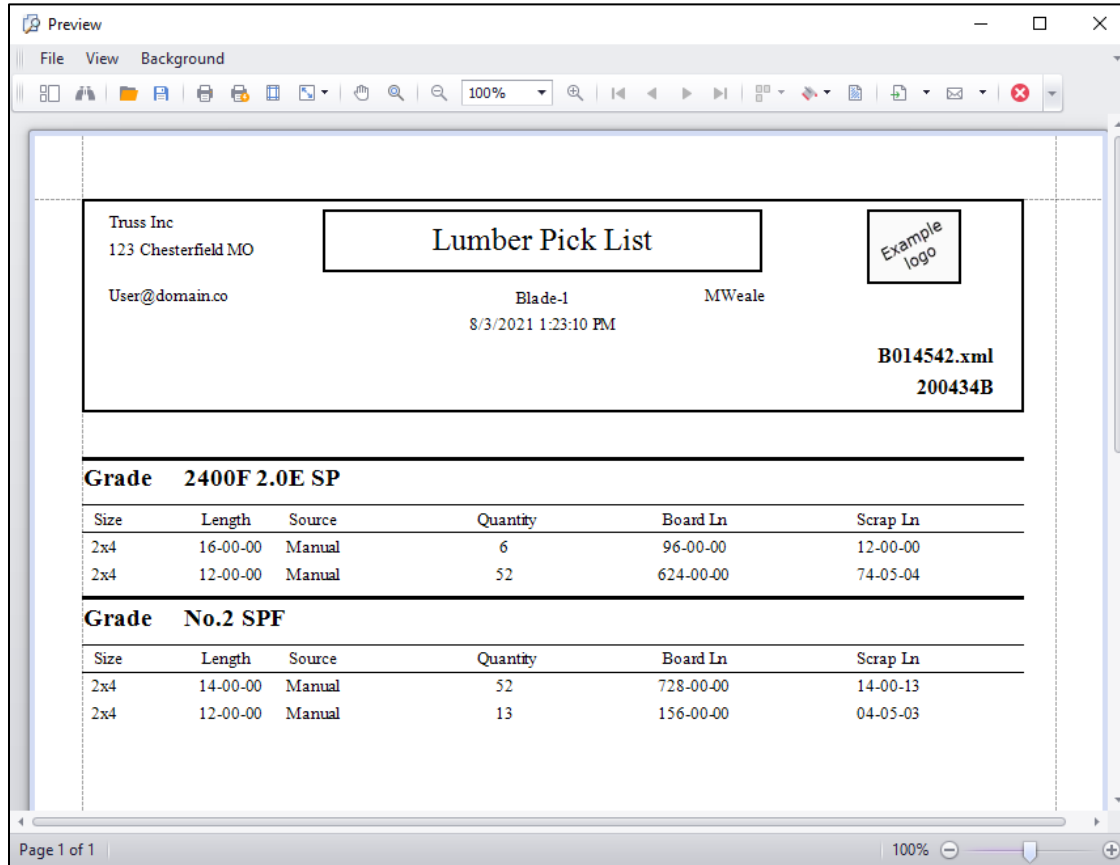
The Lumber Pick List and Board Pick List can be viewed after the file has been optimized.

Go to the **Report** tab on the ribbon and select the report required. The Inventory List is always available on the Report tab.



There are various tools in the **Preview** window, including save, export as a different file type, print, and tools to edit the page layout, background color and add a watermark.

Board Stretcher



Customizing Reports

Out Board Sort Order

This option controls the order of the Board Pick List and the order that the sawyer loads the saw.

There are many different ordering options. The suffix “A” or “D” indicates whether the boards will be organized in ascending or descending order.

The most frequently used options are by Board Length (D) or by Board Length (D), Thickness (D), Width (D), Grade (A). These options improve material handling on the Auto Deck and they tend to provide good sawyer and picker efficiency.

Many options will not affect the program’s optimization, but your sawyer’s efficiency may be affected. For example, if short lengths are sandwiched between longer lengths, the longer

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lengths may be prone to racking due to the movement of the Auto Deck. Descending board length (Board Length (D)) is a good option when this is an issue.

You can also choose to output each truss or each truss ID together (using settings from your batching program). This option provides the simplest loading and offloading from the saw, but the program's efficiency may be lower because it cannot combine parts from different trusses onto the same boards. To use the output order from *MVP* or *CyberSort*, select **Import File Order** or **Batch Order**.

Company Details on Reports

To display company information and a logo on reports, go to **Tools > Plant** and input the details required in the dialog. Use **Browse** to select a logo.

Select **Update** to save your changes. Select **Cancel** to close the dialog. The **Refresh** button will undo your changes.

Note: The logo will be displayed in grayscale on reports.

Error Report Overview

The **Auto Process Error** report can be printed to notify you that a file has an error and cannot be processed with [Auto Import](#). This method notifies you immediately and saves frequent checking of the [Auto Invalid Transfer folder](#) location for files with errors.

To enable the report for a saw, select the Saw Profile on the sidebar and go to **File > Options > Reports**. Under the **Errors** section, check **Send Auto Process Errors to Printer** and use **Select** to choose a printer.

Board Stretcher

Lumber Penalties

Overview

Lumber Penalties allow you to discourage *Board Stretcher* from using certain board lengths unless the part dimensions require the specific board. Penalties do not directly affect the board selection, but they are considered during optimization.

Why Use Lumber Penalties?

Save Money on Materials

Using 16ft or 14ft boards is likely to be more cost-effective than using 20ft boards. 20ft boards may give you a better optimization than the shorter lengths, but the higher cost of the 20ft boards results in higher costs overall. Lumber Penalties allow you to take this into account as part of the optimization.

Limit Use of Low Stock Materials

You have low stock of 16ft boards and the next delivery is in several weeks. Add a Lumber Penalty to 16ft boards to ensure that this length is only selected when necessary.

Note: Penalties can be added or removed from material as required.

Types of Lumber Penalties

The penalty can be a **Length Penalty** or a **Cost Penalty**. The penalty you use relates to the [Optimization Basis](#). Length Penalties are used with **Waste** optimization; Cost Penalties are used with **Cost** optimization. We recommend using Length Penalties. Cost Penalties require material costs to be maintained in the program.

Length Penalties

Length Penalties allow you to add a “fake” length of waste to a specific board. This length cannot be used for parts; it does not exist and will not be added to the export file. When the program optimizes the file, it aims to achieve the least waste. It considers the “fake” lengths of

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waste when choosing which boards to use. The greater the “fake” length of waste, the greater the discouragement for using the boards.

One of the benefits of this method is that you can penalize a specific board or boards. Not all boards need to have penalties assigned to them.

- If you add a significant Length Penalty to 20ft boards, e.g., 10ft, the program is likely to only select this board for parts over 18ft due to the amount of “fake” waste from the 20ft board.
- If you prefer to use more 16ft boards than 18ft boards, you could add a lower Length Penalty to the 18ft boards, e.g., 4ft 6in. This will still discourage the program from using the 18ft boards, but the “fake” waste is lower, so there is a greater chance that 18ft boards will be used if multiple shorter boards create more waste.

Note: If you maintain material costs in the program and choose to use Length Penalties, the material costs will not be considered.

Example:

A job requires No.2 SPF 2x4. The Lumber Yard has a range of lengths available.

Lumber Inventory											
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	20-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00	

Several 20ft and 18ft boards are selected when the file is optimized. This results in high efficiency but also higher costs. The lumber usage is shown in **Boards > Lumber Data**.

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Grade	Size	Length	Device	Quantity	Scrap	TotalBoardLength	TotalBoardEfficiency	TotalWasteLength
No.2 SPF	2x4	20-00-00	Manual	6		120-00-00	99.6%	00-05-13
No.2 SPF	2x4	18-00-00	Manual	10		180-00-00	98.6%	02-05-12
No.2 SPF	2x4	16-00-00	Manual	5		80-00-00	98.6%	01-01-00
No.2 SPF	2x4	14-00-00	Manual	23		322-00-00	99.6%	01-05-03
No.2 SPF	2x4	12-00-00	Manual	7		84-00-00	99.5%	00-04-12
No.2 SPF	2x4	10-00-00	Manual	8		80-00-00	99.9%	00-00-08
No.2 SPF	2x4	08-00-00	Manual	1		08-00-00	67.6%	02-07-02

The company decides that 20ft and 18ft material should only be used when the dimensions of a single part require it. They add high length penalties to the 20ft and 18ft boards:

Lumber Inventory											
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	20-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	10-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	09-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	10-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	08-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c	0	0	0	00-00-00	

When the file is optimized, 20ft and 18ft materials are not used.

Grade	Size	Length	Device	Quantity	Scrap	TotalBoardLength	TotalBoardEfficiency	TotalWasteLength
No.2 SPF	2x4	16-00-00	Manual	15		240-00-00	98.6%	03-05-08
No.2 SPF	2x4	14-00-00	Manual	29		406-00-00	99.4%	02-06-06
No.2 SPF	2x4	12-00-00	Manual	10		120-00-00	98.7%	01-06-08
No.2 SPF	2x4	10-00-00	Manual	10		100-00-00	99.4%	00-07-00
No.2 SPF	2x4	08-00-00	Manual	1		08-00-00	95.1%	00-04-12

The job is cut at a lower cost. The efficiency and the amount of waste have not changed significantly. Depending on the part dimensions and the range of lengths stocked, the efficiency may drop if the program has fewer lengths to choose from in the optimization.

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Set up Length Penalties

Follow the steps below to set the program to use Length Penalties.

1. Enable Length Penalties

1. Select the **Saw Profile** on the sidebar.
2. Go to **Tools > Options > Assembly Profile**.
3. Set **Optimization Basis** to **Waste**.
4. Set **Use Lumber Penalties** to **Yes**.

2. Create a Length Penalty

1. Select the **Saw Profile** on the sidebar.
2. Go to the **Lumber Yard**.
3. Left-click the **Length Penalty** field and type the amount of “fake” waste to add to the board. The image below shows the input for the penalties in the example.

The screenshot shows the 'Lumber Yard' window with two tables. The top table is 'Required Lumber' and the bottom table is 'Lumber Inventory'. In the 'Lumber Inventory' table, the 'Length Penalty' column for the first row is highlighted with a blue box and contains the value '10-00-00'.

Required Lumber												
	Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count			
Lumber Inventory												
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length Penalty	Edit	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	20-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	10-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	04-06-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	14-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00		
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	12-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		0	0	00-00-00		

Cost Penalties

Cost Penalties allow you to add a “fake” cost to a specific board. This cost will not be charged; it does not exist and will not be exported to management/inventory software. When the program optimizes the file, it aims to achieve the lowest cost. It considers the “fake” cost when choosing which boards to use. The greater the “fake” cost, the greater the discouragement for using the boards.

Cost Penalties are not used frequently because the material cost per board for **all boards** needs to be input and kept updated in the program. The dynamic lumber market makes it challenging to keep the cost and cost penalties up-to-date. When prices change, you cannot account for the price of lumber that was purchased at a different cost. Cost Penalties may not be appropriate for multi-site manufacturers, where lumber costs vary between sites.

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Example:

- If you add a significant Cost Penalty to 20ft boards, e.g., the board cost is \$3 and the penalty is \$5, the program is likely to only select this board for parts over 18ft due to the amount of “fake” cost from the 20ft board.
- If you prefer to use more 16ft boards than 18ft boards, you could add a lower Cost Penalty to the 18ft boards, e.g., the board cost is \$2 and the penalty is \$1. This will still discourage the program from using the 18ft boards, but the “fake” cost is lower, so there is a greater chance that 18ft boards will be used if multiple shorter boards cost more.

Set up Cost Penalties

Follow the steps below to set the program to use Cost Penalties.

1. Enable Cost Penalties

1. Select the **Saw Profile** on the sidebar.
2. Go to **Tools > Options > Assembly Profile**.
3. Set **Optimization Basis** to **Cost**.
4. Set **Use Lumber Penalties** to **Yes**.

2. Create a Cost Penalty

1. Select the **Saw Profile** on the sidebar.
2. Go to the **Lumber Yard**.
3. Left-click the **Cost Penalty** field and type the dollar amount of “fake” cost to one decimal place. As shown in the image below, to input three dollars, type “3”. One dollar fifty cents is “1.5”. The image below shows the input for the penalties in the example, plus a penalty on 16ft boards.

Lumber Yard											
Required Lumber											
Id	In Stock	Grade	Size	Min Length	Max Length	Min Lumber Length	Materials ID	Count			
Lumber Inventory											
Station #	Device	Enabled	Grade	Size	Length	Materials ID	Available	Cost Each	Cost Penalty	Length	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	20-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		3	5	00-0	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	18-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		2	1	00-0	
	Manual	<input checked="" type="checkbox"/>	No.2 SPF	2x4	16-00-00	a167cd6e-bc5e-4a1d-bc75-0b23b0e7ee4c		1.5	0.5	00-0	

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Additional Penalty Options

The following options are available in **Tools > Machine's Configuration**. Do not change these settings unless you are asked to do so by a MiTek Representative. Both options have separate settings for truss, floor and wall panels.

Optimize Longest Boards

The program will use the longest boards available. All [Lumber Penalties](#) are ignored.

Configuration Table	
	Name
▶	Eng.Floor.OptimizeWithLongestBoards
	Eng.Truss.OptimizeWithLongestBoards
	Eng.WallPanel.OptimizeWithLongestBoards

Optimize for Saw Performance

The program will use nested cuts to gain efficiency at the saw. If a board has an angled cut that matches another angled cut, the program will reorientate the board and nest the cuts.

Configuration Table	
	Name
▶	Eng.Floor.OptimizeForSawPerformance
	Eng.Truss.OptimizeForSawPerformance
	Eng.WallPanel.OptimizeForSawPerformance

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Troubleshooting

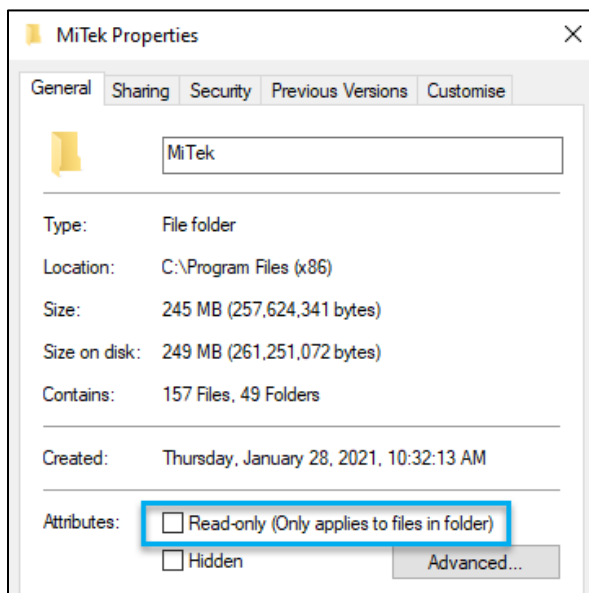
Cannot Log in as an Admin

There will be an issue with the password if the program is not closed at the end of each calendar day. If the admin password is not accepted, use the **previous password**. Alternatively, close the program and reopen it, then use the **current password** to log in.

Folder Permissions

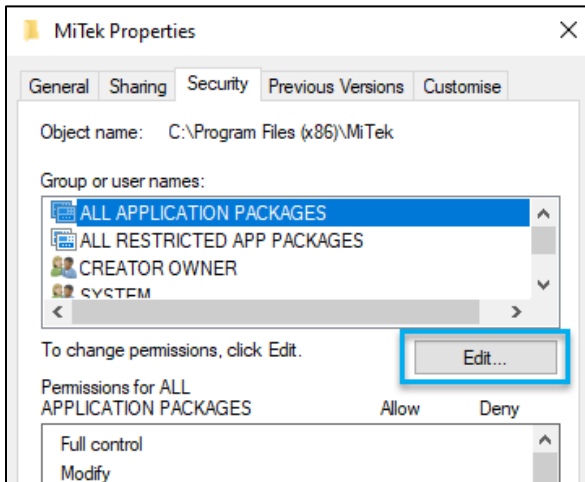
You need full read/write access (known as **Full control**) to any folders used by *Board Stretcher*. If you receive errors that refer to “Application has generated an unhandled exception”, this may be due to folder permissions.

1. In Windows Explorer, go to the folder containing the *Board Stretcher* installation. If the standard locations have been used, this is **C:\Program Files (x86)**, and the program will be in a folder called **MiTek**.
2. Right-click on the **MiTek** folder and select **Properties**.
3. On the **General** tab, uncheck **Read-only**.

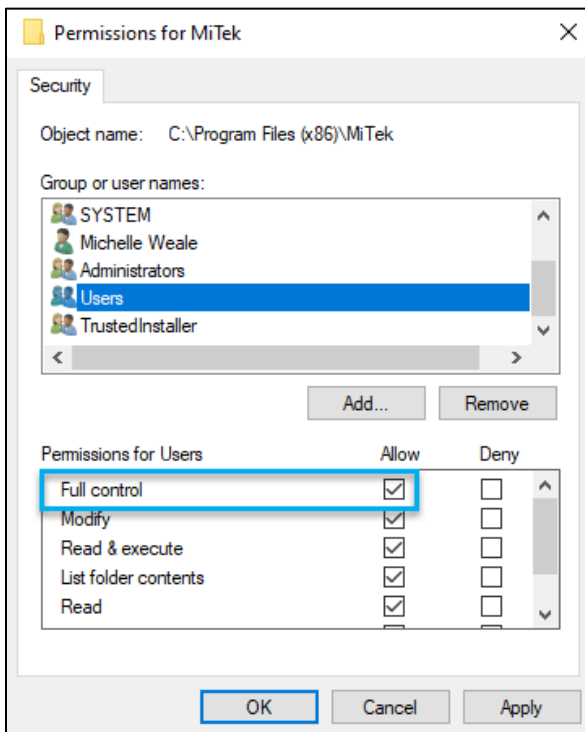


4. On the **Security** tab, select **Edit**.

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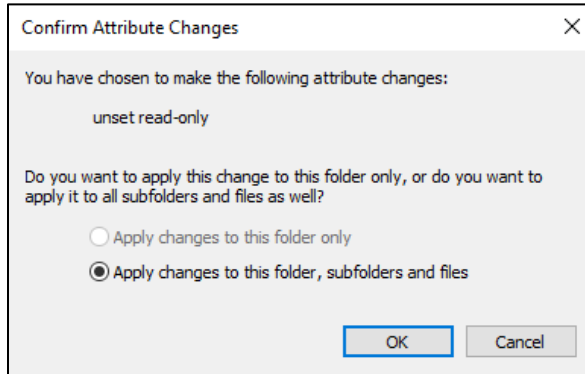


- In the **Group or user names** section, select **Users**. In the **Permissions for Users** section, check **Full control** in the **Allow** column.



- Select **OK** to close the dialog.
- Select **Apply** on the dialog that was behind it.
- A confirmation dialog will be displayed. Select **OK**.

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Note: You may see another dialog about Administrator permissions. Select **Continue**.

Back up *Board Stretcher* and its Database

We recommend that you back up your installation of *Board Stretcher* and its database before installing major Windows updates or before making changes to the drive/location where the program and the database are saved.

Back up the Installation

The default backup location is the local computer itself:

C:\Program Files (x86)\MiTek\BoardStretcher

Change this location to a network directory to ensure that your data is safe if there is an issue with the local computer.

The *Board Stretcher* .exe and .config files are saved in Backup.zip and a full copy of the *Board Stretcher* folder is saved in the location above, in the **tmp** folder.

To backup your installation of *Board Stretcher*:

1. Go to **Help > About**.
2. Select **Backup**.

Note: You may see some error dialogs. Select **Yes** or **OK** to continue.

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Back up the Database

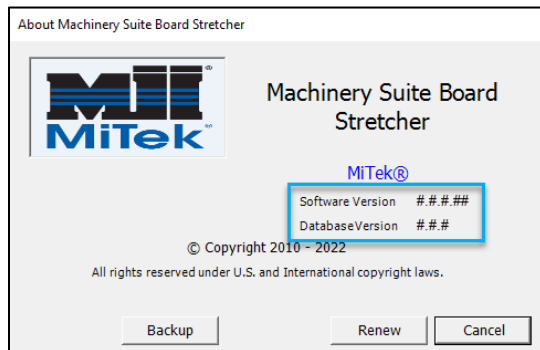
Typically, your *Board Stretcher* SQL database will be backed up at the same time as other SQL databases used for *MVP*, etc. If there is no backup plan, contact your IT to set this up.

One backup method that we recommend is a seven-day rolling backup, set up as a batch file Windows Task on the server. Each backup includes the day, i.e., MachineryMonday.bak, MachineryTuesday.bak, etc. and these files are overwritten the following week. This method can be used with full SQL or SQL Express.

Ensure that the backup location is a network directory to keep your data safe if there is an issue with the local computer.

Find Software and Database Version

A MiTek Representative may ask you for the version you are using to help troubleshoot issues. Go to **Help > About**.



Renew the Program License

The license remains active while the computer is connected to the internet and the program is being used. The license will expire if the computer is not connected to the internet and the program is not started for 21 days. You can also force a license renewal, if you know you will have an intermittent internet connection for a period of time.

To renew the license:

1. Go to **Help > About**.
2. Select **Renew**.

The license is now renewed for another 21 days.

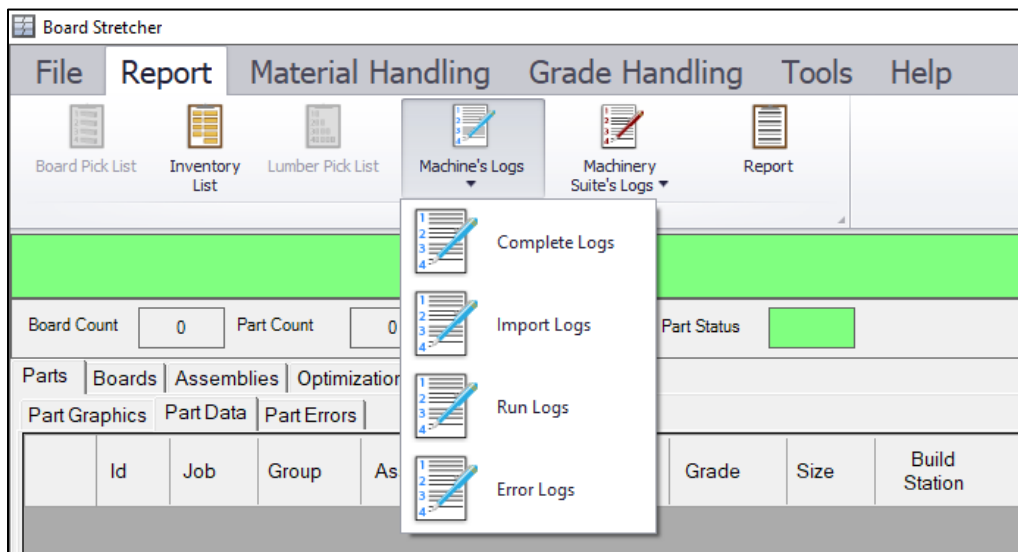
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Logs and Machine Configuration

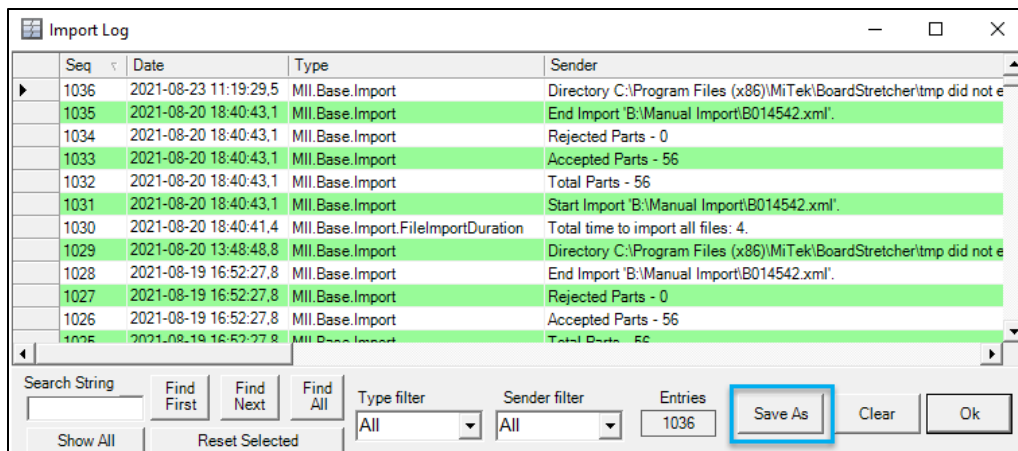
Logs

A MiTek Representative may ask you to open or save the Machine logs to help troubleshoot issues. There are four different logs: Complete, Import, Run, and Error.

1. Go to **Report > Machine's Logs** and select the requested log.



2. In the Log window, select **Save as** on the bottom toolbar.

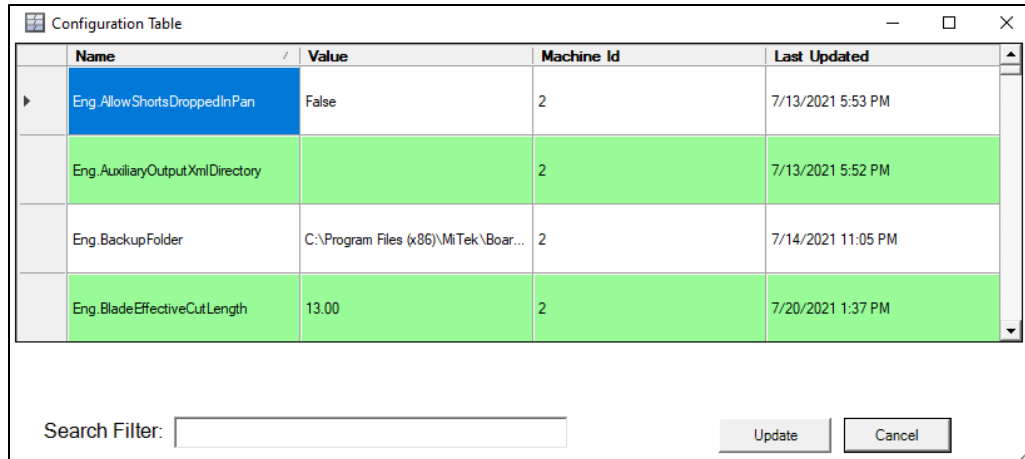


3. A file name will be suggested; change it if required. The default save location is **C:\Program Files (x86)\MiTek\BoardStretcher\Log**.

Board Stretcher

Machine Configuration

A MiTek Representative may ask you to open and edit the Machine Configuration to help troubleshoot issues. Go to **Tools > Machine's Configuration**.



The screenshot shows a window titled "Configuration Table" with a table of settings. The table has five columns: Name, Value, Machine Id, and Last Updated. The first row is highlighted in blue, and the other three rows are highlighted in green. Below the table is a search filter input field and two buttons: "Update" and "Cancel".

Name	Value	Machine Id	Last Updated
Eng.AllowShortsDroppedInPan	False	2	7/13/2021 5:53 PM
Eng.AuxiliaryOutput.XmlDirectory		2	7/13/2021 5:52 PM
Eng.BackupFolder	C:\Program Files (x86)\MiTek\Boar...	2	7/14/2021 11:05 PM
Eng.BladeEffectiveCut.Length	13.00	2	7/20/2021 1:37 PM

This is a view of the settings in the SQL database. Do not edit these fields unless you are asked to do so by a MiTek representative.

Contact MiTek

If you have a *Board Stretcher* issue that is not resolved by this manual, please contact MiTek Automation Support on 866-648-3587.

The MiTek representative may request a log or a copy of your database to help troubleshoot the issue.

To send a log:

1. Go to **Help > Support**.
2. On the **Report Problem** tab, input the relevant details and attach any relevant job files.
3. Select **Send**.

To email a copy of your database:

1. Go to **Help > Email Office Troubleshooting Data**.
2. Input the relevant details.
3. Select **OK**.