

# MiTek<sup>®</sup> Operation & Maintenance Manual

## Hornet<sub>saw</sub>

### *Linear Cut Processing Systems*



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## 2 Safety

Refer to the safety manual supplied by MiTek®.

### 2.1 Safety Precautions (Read these Precautions Before Use)

#### **WARNING**

- All personnel operating or working near this machine must read the safety manual.
- NEVER put fingers, hands, or any other body parts or clothing near moving machinery parts, including but not limited to cutting blades, sprockets, axles, and compressed air mechanisms.
- NEVER operate equipment if any of the safety guards are not properly installed.
- Machinery must NEVER be operated by anyone who has not read and understood the entire contents of this manual.
- Machinery should NEVER be operated by any individual who has not been properly trained how to use the equipment safely and properly.
- NEVER operate this system if there are known safety defects.

1.

### 2.2 Safety Features

#### 2.2.1 Emergency Stop Buttons/Mechanisms

- ENSURE all operators and other personnel around the equipment know the location of ALL safety stop (“Emergency Stop”) buttons/mechanisms and the purpose and proper procedures for using them.

#### 2.2.2 Safety Guards

- NEVER operate equipment if any of the safety guards are not properly installed.
- NEVER bypass, modify, or otherwise disable any of the safety guards.

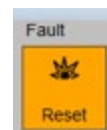
#### 2.2.3 Audible Alerts

- Whenever audible alerting features are in use, be sure to obey all warnings, cautions, or other instructions heard from the audible system.

## 3 E-Stop Pushbuttons

An E-stop cuts machine power but also throws a locking bolt through the saw blade to stop its motion.

- Push in an E-stop button to activate an E-stop.
- To deactivate an E-stop, pull out on the button, then press the Reset button.



## 4 System Overview

### 4.1 System Components

The system is comprised of these components:

- Infeed pusher – A pushing mechanism located on the infeed rail used to push materials through the cutting and labeling device. Has also been called pusharm or rabbit.
- Infeed rail—The table assembly that the board lays on prior to and while entering the cutting device. The infeed pusher is part of the infeed rail.
- Cutting device – The part of the machine that houses the saw blade.
- Printer – A device used to perform labeling or place other information onto the media being processed. One printer is included with every saw that prints on the edge of each part. If lumber is stacked 2-high at infeed, both parts receive printing. An optional face printer can print on the part face that is resting on the infeed conveyor. If incoming boards are stacked 2-high, only the bottom plate receives face printing. Fenceline printer is on every saw, bottom-plate face printer is optional.
- Outfeed – Area where processed items feed onto after some production process has been performed such as cutting, manual marking, routing, etc. Typically, items are pushed from an infeed, through a cutting device, then onto an outfeed area.
- Operator Interface – A device used for the operator to acquire and deliver information to and from the overall process. This is typically a computer monitor or touch-screen device which provides such functionality as: job processing, machinery status, executing machine commands, and many other functions related to the specific feature of the system.
- CutBuilder Automation™ software- CutBuilder Automation (CBA) is a package of software applications which make up the main user interfacing of the iN4 Solutions family of linear cut processing systems. CBA runs on a personal computer PC using the Microsoft Windows™ operation system. CBA is the main “world” the operator lives in regarding the information aspect of his/her job processing. The operator uses the information in CBA to carry out everything from starting a work on a job, to setting up batch processes, to optimizing materials, and managing past and future work.
- Swingarm—holds material against the fence while it prints

### 4.2 File Types

Cut sets can be imported as one of these types:

- .xml files is generated from MiTek production software. Can also be called a Virtek® LaserMC® file.
- .ehx is generated by MiTek Production software, including ShopNet™ software
- .wbx

## 5 Pre-Operation

### 5.1 Passwords

- Windows
- Interface password: Required to view or change the global settings screen
- Machine password: Required to view or change individual device settings

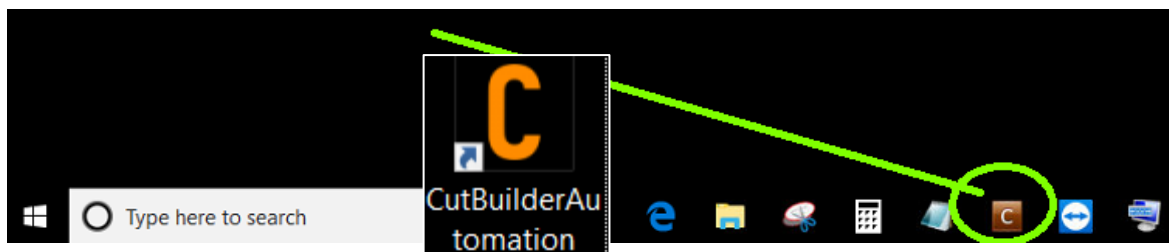
### 5.2 Pre-Operation Checks

Perform the steps shown here before beginning operations:

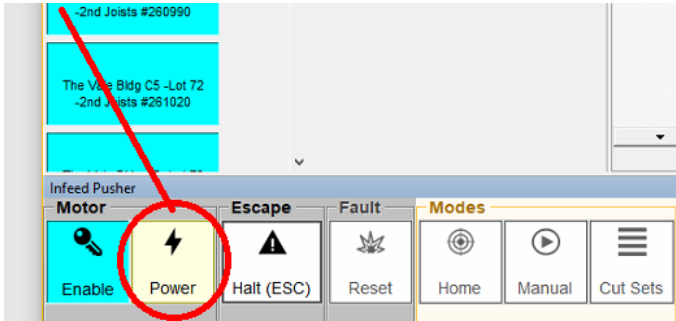
1. Safety – Ensure the area is safe for operation and everyone is clear of any potential hazards.
2. Power – Ensure the system has a power source and all control panels are turned on.
3. Air – If equipped with a compressed air system, ensure that it is providing the proper air pressure.
4. Sensors – Check sensors to ensure they are working properly.
5. Safety Switches – Check “Emergency Stop” devices to ensure they are working properly.
6. Printers – Ensure marking devices are on and working properly.
7. Feed Systems – Ensure all feed systems, if equipped, are working properly.

### 5.3 Starting the Computer & CutBuilder Automation™ Software

1. If the computer is not already on, start the computer by pressing its power button.
2. Observe that the computer is on by any of these methods:
  - a. Audibly by listening for the sound of the internal cooling fan inside the PC.
  - b. Visually by seeing an active light on the PC’s power button, if equipped with light, that the light is on.
3. Confirm that the PC is on at the computer monitor by visually seeing the computer’s normal functionality.
4. Login to Windows with your company-assigned Windows username and password.
5. Wait until all obvious startup activity has completed and the cursor is ready for use before proceeding to *Starting CutBuilder Automation Software* in the next section.
6. Start *CutBuilder Automation* by clicking the icon shown below.
7. After the program opens proceed to Powering Up the Motor Controls section to apply power to the control motors.



### 5.4 Powering Up the Motor Controls

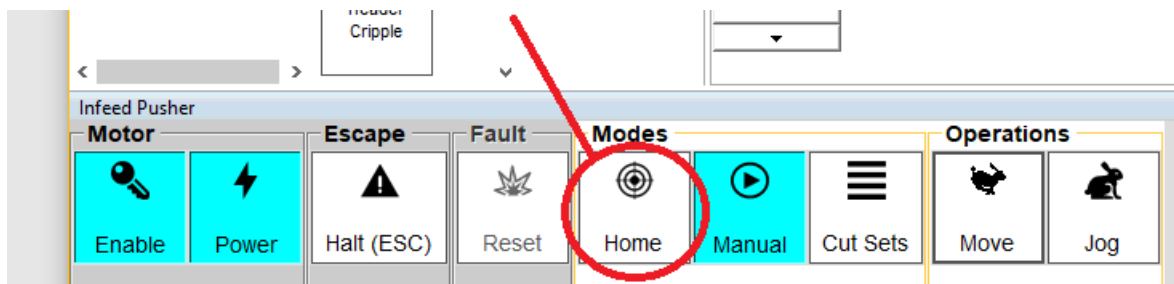


### 5.5 Homing the Pusher



1. To begin homing, press the button shown below

Note: If this button is flashing in color, this indicates homing is required and is the only option.



2. The pusher will begin moving toward the homing sensor. Once the pusher reaches the homing sensor, it will move the opposite direction, away from the sensor. Then, the pusher resets its internal reference and the pusher's homing is completed.

NOTE: For efficiency, always home the pusher before homing the saw.

### *5.6 Homing the Saw Angle*

Use the same process as Homing the Pusher, but from the Saw menu.

### *5.7 Preparing the Printer*

If the system is equipped with an inkjet printer, perform the following steps to maintain the best printing quality possible:

1. Visually inspect the nozzles on the front of the inkjet cartridges.
2. If any noticeable damage to any cartridges is found, replace the cartridge.
3. Clean, purge, and test the printer.

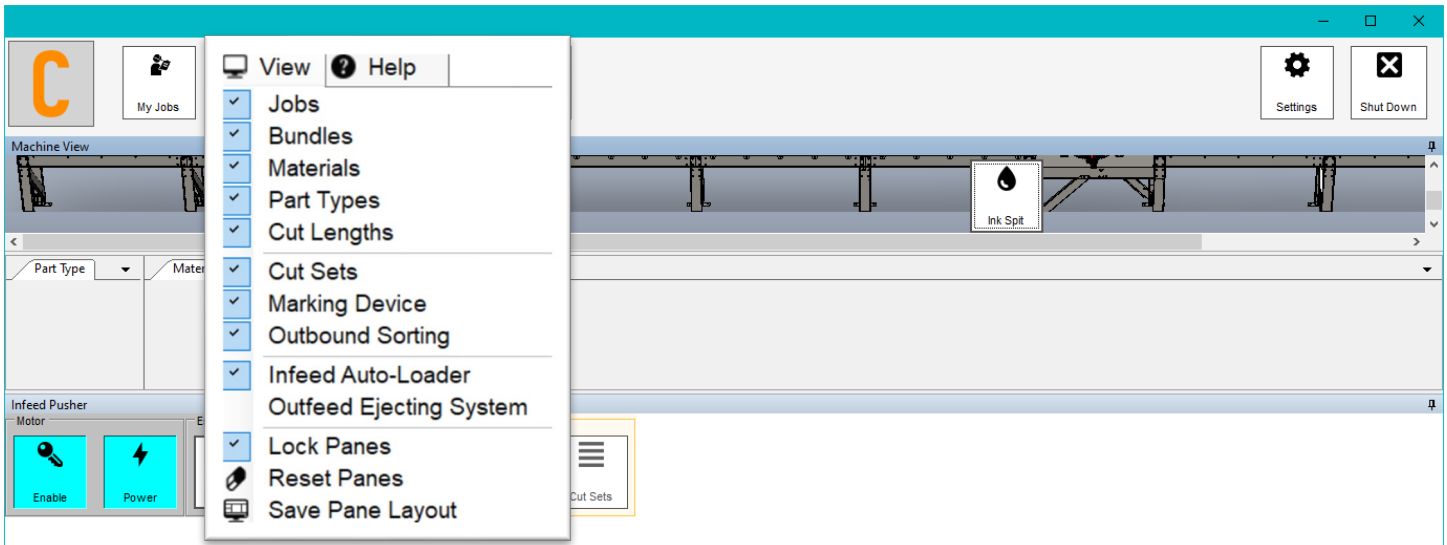
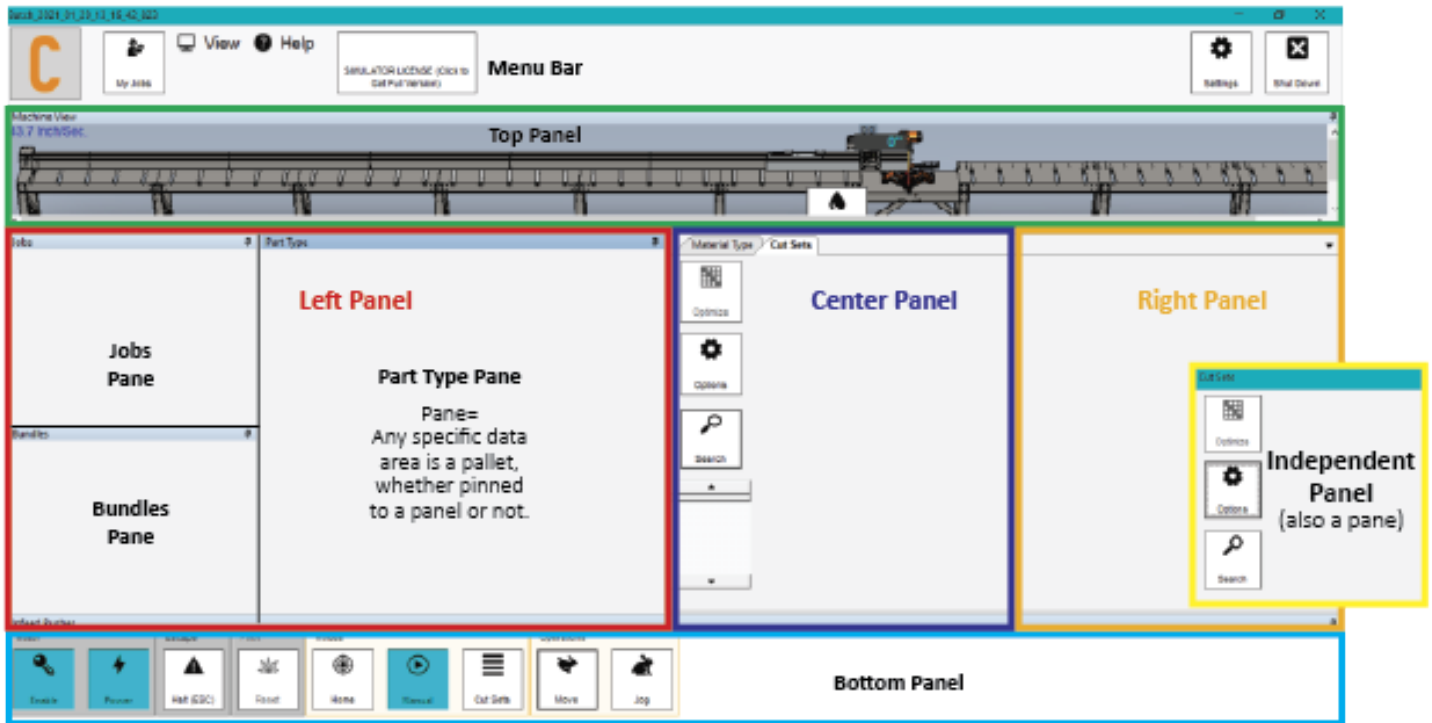


**PRINTER CARTRIDGES HAVE A  
SHELF LIFE OF 6 MONTHS!**



## 6 Operation

### 6.1 Navigating the Software

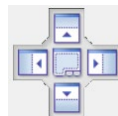


## 6.2 Customizing the Home Screen Panes

Since there is no operator password for this software, any changes described here affect all operators.

You can arrange your Home screen many different ways. Up to three different horizontal panels can be used to hold the many different panes. Generally, the Cut Set pane should be the largest.

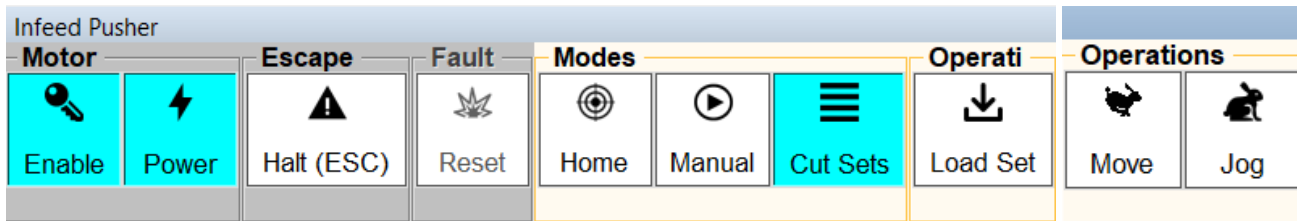
- Turn pallets on or off using the View menu in the menu bar.
- Arrange the panes by moving them to another panel and hovering over one of these pane-pinning icons that appear:



- View>Save Pane Layout saves the current pane configuration as the default.
- View>Lock Panes will prevent them from being moved. To move the panes, select View>Lock Panes again to remove the checkmark.
- View>Reset Panes returns to the default pane configuration (the configuration last selected with View>Save Pane Layout).

### 6.3 Control Buttons Overview

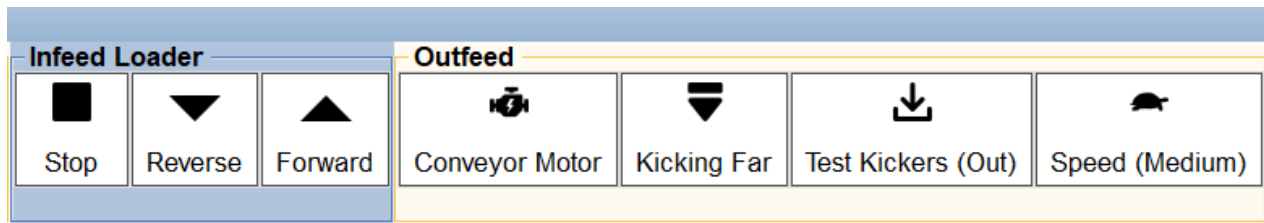
#### Standard Software Buttons



- **Motor > Enable** – Enables power to the motor system.
- **Motor > Power** – Activates power to the motor system.
- **Escape > Halt** – Stops the current command/process.
- **Fault > Reset** – Clears the halt command to allow processes to run.
- **Modes > Home** – Executes homing of the push arm.
- **Modes > Manual** – Changes the operational mode to “Manual” for using manual operations such as: moving pusher to a given location, jogging the pusher forward or backward, and other manual type of operations.
- **Modes > Cut Sets** – Changes the operational mode to “Cut Set” mode which is used for optimized cutting of full stock lengths into shorter cut lengths.
- **Operations > Load Set** – Available/Visible when in “Cut Set” mode. Pressing “Load Set” does the following:
  1. Sends the push arm to a location adequate for loading the machine with the stock length of the active cut set.
  2. Loads the marking device with the information required for the active cut set.
  3. Opens the “Cut Set Operations” window exclusively for performing cut set operations.
- **Operations > Move** – Allows the operator to input a distance and make the push arm move to the distance entered. Example: Set the push arm to a distance of 2 feet and use the push arm as a fixed jig stop for repeatedly cutting a large quantity of 2-foot pieces.
- **Operations > Jog** – Allows the operator to move the push arm forward or backward by a distance entered by the operator.

Optional Software Buttons (For Optional Equipment)

Some buttons described here are only on machines built in 2022 or later (generation 2).



- **Infeed Loader > Stop** – Stops the infeed conveyor.
- **Infeed Loader > Reverse** – Runs the infeed conveyor in reverse away from the infeed pusher assembly.
- **Infeed Loader > Forward** – Runs the infeed conveyor in a forward direction toward the infeed pusher assembly.
- **Outfeed > Conveyor Motor** – Turns the outfeed conveyor motor on.
- **Outfeed > Kicking Far/Near** – An option available to certain models is the existence of multiple kickers. This button toggles the outfeed kicking system to either use the “Near” kickers closest to the central operator of the system or the “Far” kickers furthest from the main operator location.
- **Outfeed > Test Kickers (Out/In)** – Used to for testing purposes only to check functionality of all pneumatic kicking mechanisms. Pressing “Test Kickers (Out)” will execute all kickers to extend out. Pressing “Test Kickers (In)” will retract the kickers back to their normal position. (\*Note: The system does not allow running the outfeed with the kickers extended out nor should the operator attempt to run the system with the kickers extended out).
- **Outfeed > Speed (Medium/Fast)** – An option available to certain models is the existence of multiple speeds. Used to switch the conveyor speed to one of two speeds: “Medium” or “Fast”.

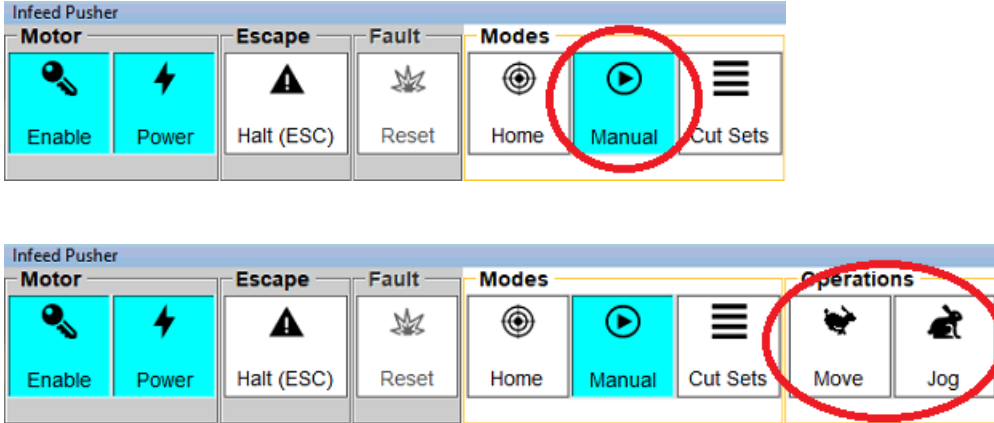
\*Note: Speed controls of this button are not relevant when in Cut Set Operations Mode. When in Cut Set Operations Mode, speeds are determined by each material type in the Materials Library settings of the software.

Live Deck Buttons



### 6.4 Manual Mode

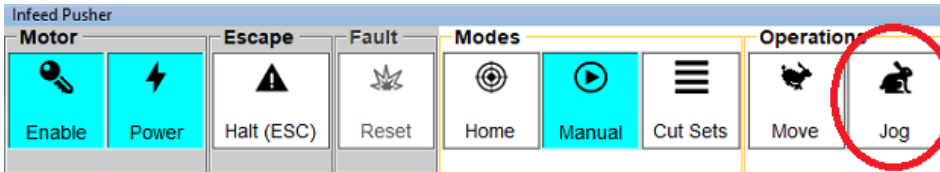
Manual mode can be used for simple tasks such as making the pusher arm move to a given location or moving forward or reverse for a given distance.



#### 6.4.1 Jog Pusher (Distance)

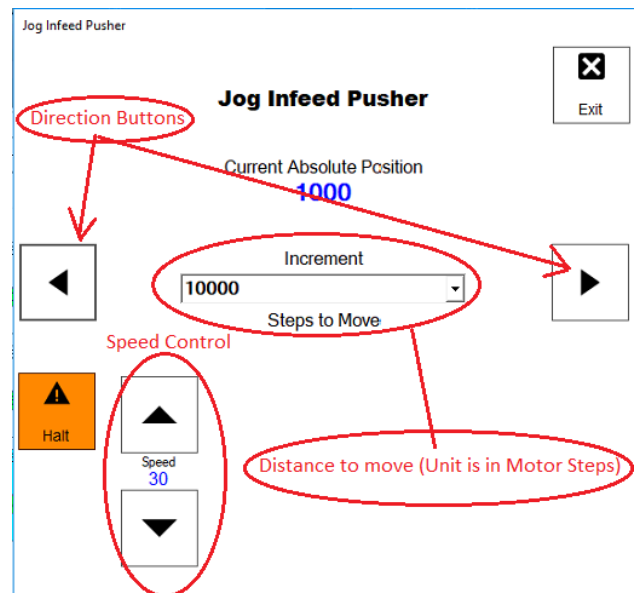
The “Jog” function is used to move the pusher either forward or backward a specified distance.

To begin jogging, press the “Jog” button as shown here:



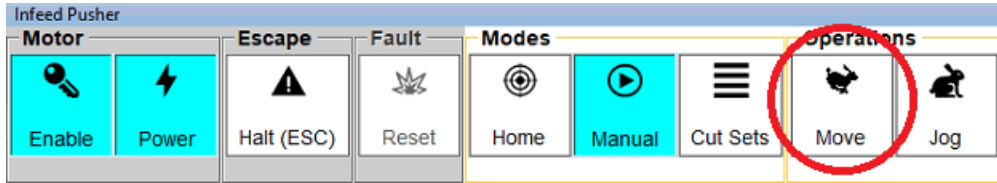
If wanting to move to a specified position, refer to the Move button.

The Jog Infeed Pusher window will appear. Speed and distance can be set by the operator. Pressing the right or left arrow buttons will move the push arm accordingly. See the diagrammed explanation below.



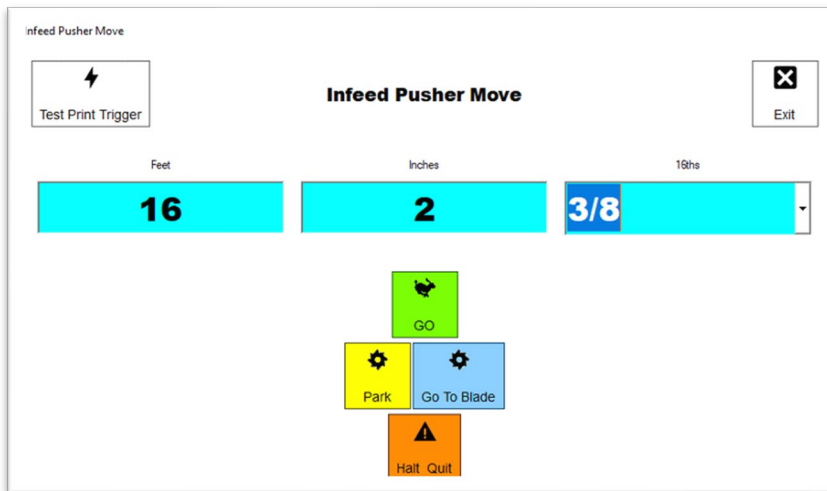
### 6.4.2 Move Infeed Pusher (Position)

The **Move** function of Manual Mode can be used to move the infeed pusher to a specified position.



The **Move** window will appear.

- Enter a distance, then select **Go** to execute and the pusher will move to the position entered. Example: The push arm will move to a position of 16' 2-3/8" from the cutting device blade.
- Select **Park** to quickly move the infeed pusher to its park position, which is at the end of the infeed conveyor, farthest away from the saw blade. The exact location can be adjusted using the **Load Offset** setting in the Infeed Pusher Settings screen.



## 6.5 Cut-Set Mode (Optimizing) / Job Manager

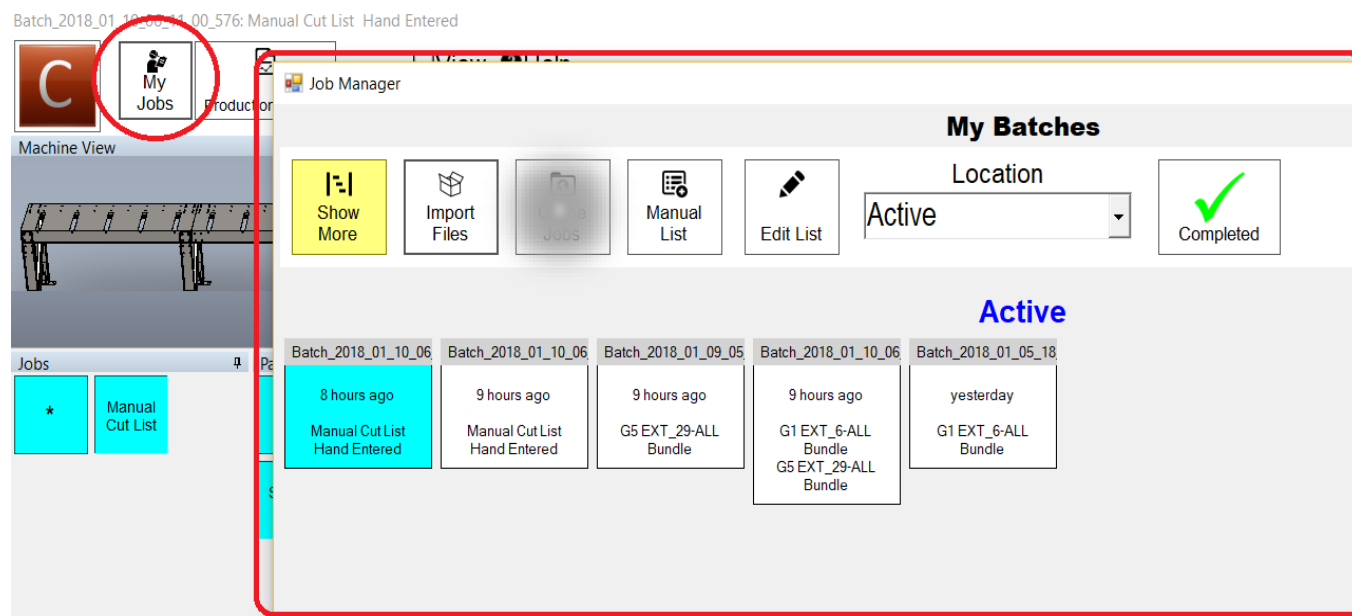
CutSet Mode is used for cutting entire lists of cut items from long stock lengths for optimal usage of material.

This section describes how to use the many features for optimizing material and easily managing jobs.

### 6.5.1 Job Management

Jobs are managed using the Job Manager window.

To open the Job Manager, press the **My Jobs** button.





### 6.5.2 Starting a New Job / Batch

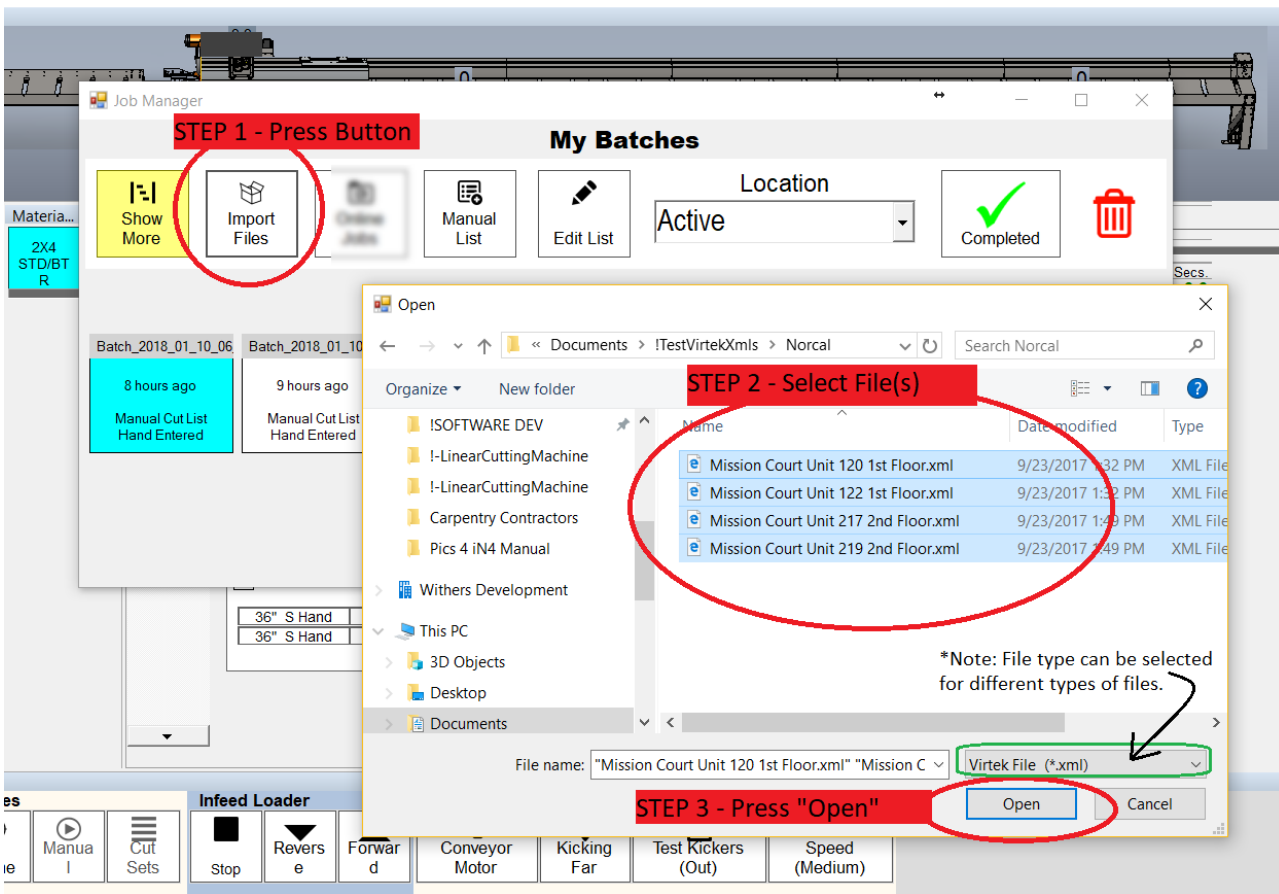
There are three methods available for starting a new cutting job:

1. Opening Files
2. Manually Entering

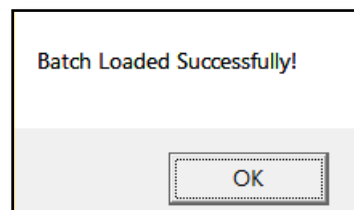
#### 6.5.2.1 Opening Files

To start a new cutting job by opening files, follow these steps, referring to the diagram below:

1. Select **My Jobs** from the menu bar.
2. Press the **Import Files** button.
3. Browse to and select the desired file(s).
4. Press **Open** to finalize and import the files.



Once your files are imported correctly, a confirmation window displays confirming successful processing.



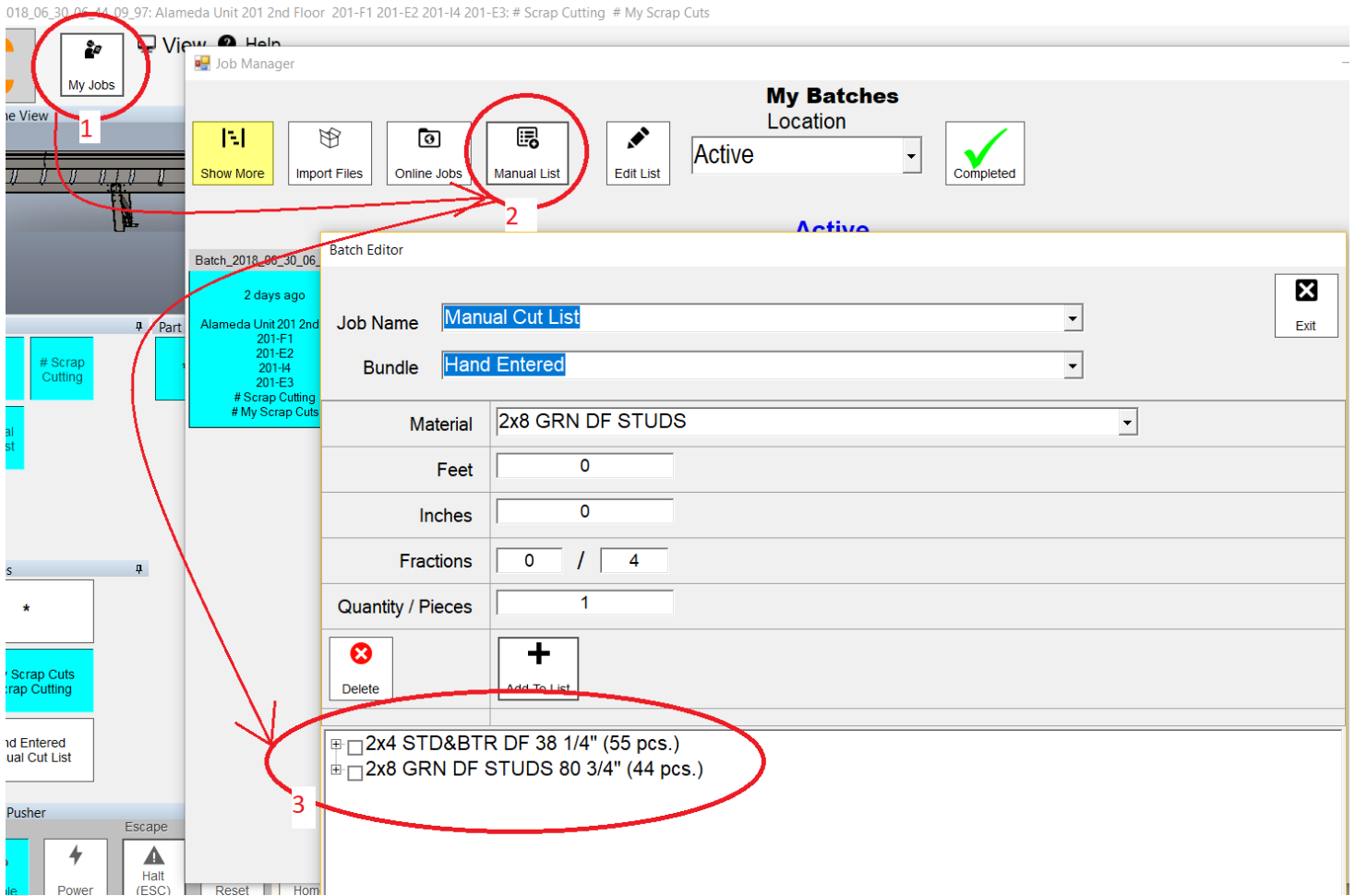
### 6.5.2.2 Manual Entry

A manual cut list can be created as opposed to importing a job. Manual entry jobs allow the operator to build a custom cutting list. Because the manual entry job is internally created as a batch in the software, it will behave much like any other job, meaning it can be optimized, has print labels, etc.

The following steps will guide you through the process of entering a manual list for cutting directly at the machine.

1. Go to **My Jobs**.
2. Tap on **Manual List**.
3. Build a cutting list by selecting desired material and entering length, quantity, then tap **Add To List**.
4. Tap **Exit** when finished.

NOTE: To return to the list to make changes, simply repeat the same steps.



### 6.5.3 Selecting What to Cut

Once jobs have been created/loaded as explained in the previous steps, the operator can make selections to control what to cut at any given time.

Example: A job contains all the parts of a house and has many different dimensional lumber in use. You want to cut only the part types that are 2x4s used for Bottom Plates and Top Plates. Toggles on those items, as shown below, and the cutting solution will only include those items in the cutting mix. When you want to cut the rest of the items, simply follow the same principal and toggle on the other items.

Toggle controls are available for: Job, Bundle, Part Type, Material Type, Length.

The turquoise below shows the buttons that are selected.

Batch\_2018\_07\_03\_13\_28\_09\_403: Alameda Unit 201 2nd Floor 201-F1 201-E2 201-I4 201-E3: Alameda Unit 202 2nd

Machine View  
0.0 Inch/Sec.

Jobs	Part Type	Mate...	(16) Cut P...
* # Scrap Cutting Alameda Unit 201 2nd Alameda Unit 202 2nd	* Bottom Plate	2X4 #2/BTR FT	*
<b>Bundles</b>			
* # My Scrap Cuts # Scrap Cutting	Critical Stud Header	2X4 STD/BTR R	168 (12)
201-F1 Alameda Unit 201 2nd Floor	Header Cap Header Cripple	2X6 #2/BTR FT	106 (2)
201-I4 Alameda Unit 201 2nd Floor	Jack Stud King Stud		56 (2)
202-F1 Alameda Unit 202 2nd Floor	Sill Cripple Stud		
202-E3 Alameda Unit 202 2nd Floor	Top Plate VTP		
202-I4 Alameda Unit 202 2nd Floor	Window Sill		
202-I5 Alameda Unit 202 2nd Floor			

Infeed Pusher Motor    Escape    Fault    Modes    Infeed Load

Enable    Power    Halt (ESC)    Reset    Home    Manual    Cut    Stop

Mode: 2 Home Step: 0 Move Step: 0 Cut Set Step: 0 Current Position: 255510 Reached target position 80108

### 6.5.3.1 Selecting Stock Lengths

Upon toggling any material type, a window will appear for selecting the stock length(s) to optimize cutting. Toggle on/off which stock lengths to use. The optimizer can utilize one or many different stock lengths. When multiple stock lengths are chosen, the optimizer will use all selected lengths and produce cut sets based upon whichever stock length would produce the least waste for each cut set created.

If you cannot find the stock length you are looking for, easily add/edit the stock length library by clicking the **Lengths** button in the lower left of the window to access the editor. Once you've made your selections, close the window by pressing the **Done** button.

Batch\_2018\_07\_03\_13\_28\_09\_403: Alameda Unit 201 2nd Floor 201-F1 201-E2 201-I4 201-E3: Alameda Unit 202 2nd Floor 202-F1 202-E2 202-E3 202-I4 202-I5: # Scrap

The screenshot displays the MiTek software interface. At the top, there is a status bar with the batch ID: "Batch\_2018\_07\_03\_13\_28\_09\_403: Alameda Unit 201 2nd Floor 201-F1 201-E2 201-I4 201-E3: Alameda Unit 202 2nd Floor 202-F1 202-E2 202-E3 202-I4 202-I5: # Scrap". Below this is a navigation bar with "View" and "Help" buttons. The main area shows a 3D model of a linear cut processing system with a "189 9/16\"/>

The "2X4 #2/BTR FT" window is open, showing a grid of stock lengths. The grid is as follows:

1 FT 0 IN 4 16ths	2 FT 0 IN 4 16ths	3 FT 0 IN 4 16ths	4 FT 0 IN 4 16ths	5 FT 0 IN 4 16ths	6 FT 0 IN 4 16ths
7 FT 0 IN 4 16ths	8 FT 0 IN 4 16ths	9 FT 0 IN 4 16ths	10 FT 0 IN 4 16ths	12 FT 0 IN 4 16ths	14 FT 0 IN 4 16ths
16 FT 0 IN 4 16ths	18 FT 0 IN 4 16ths	20 FT 0 IN 4 16ths	48 FT 1 IN 4 16ths	60 FT 1 IN 4 16ths	

At the bottom of the window, there are two buttons: "Lengths" and "Done". A red circle highlights the "Lengths" button. The background shows a 3D model of a linear cut processing system with a "189 9/16\"/>

The interface also includes a "Jobs" section with buttons for "# Scrap Cutting", "Alameda Unit 201 2nd", and "Alameda Unit 202 2nd". A "Bundles" section lists various units like "201-F1 Alameda Unit 201 2nd Floor". A "Part Type" section lists "Bottom Plate", "Critical Stud", "Header", "Header Cap", "Header Cripple", "Jack Stud", "King Stud", "Sill Cripple", "Stud", "Top Plate", "VTP", and "Window Sill". A "Mater..." section shows "2X4 #2/BTR FT" and "2X6 #2/BTR FT". At the bottom, there are control buttons for "Infeed Pusher Motor" (Enable, Power, Halt (ESC), Reset), "Modes" (Home, Manual, Cut), "Infeed Loader" (Stop, Reverse, Forward, Stacker), and "Outbound Sorting" (2x4 HF No.2 15, 2x4 HF No.2 148 1/2", 2x4 HF No.2 148 1/2").

### 6.5.3.2 Optimizing Material

After all your selections have been made, press the **Optimize** button, and the cutting solution will appear in the “Cut Sets” panel.

Batch\_2018\_07\_03\_13\_28\_09\_403: Alameda Unit 201 2nd Floor 201-F1 201-E2 201-I4 201-E3: Alameda Unit 202 2nd Floor 202-F1 202-E2 202-E3 202-I4 202

The screenshot displays the MiTek software interface. At the top, there is a navigation bar with a 'C' logo, 'My Jobs', and 'View' and 'Help' buttons. Below this is a 'Machine View' section showing a 3D rendering of the linear cut processing system with a speed indicator of '0.0 Inch/Sec.' and an 'Ink Spit' icon. The main interface is divided into several panels:

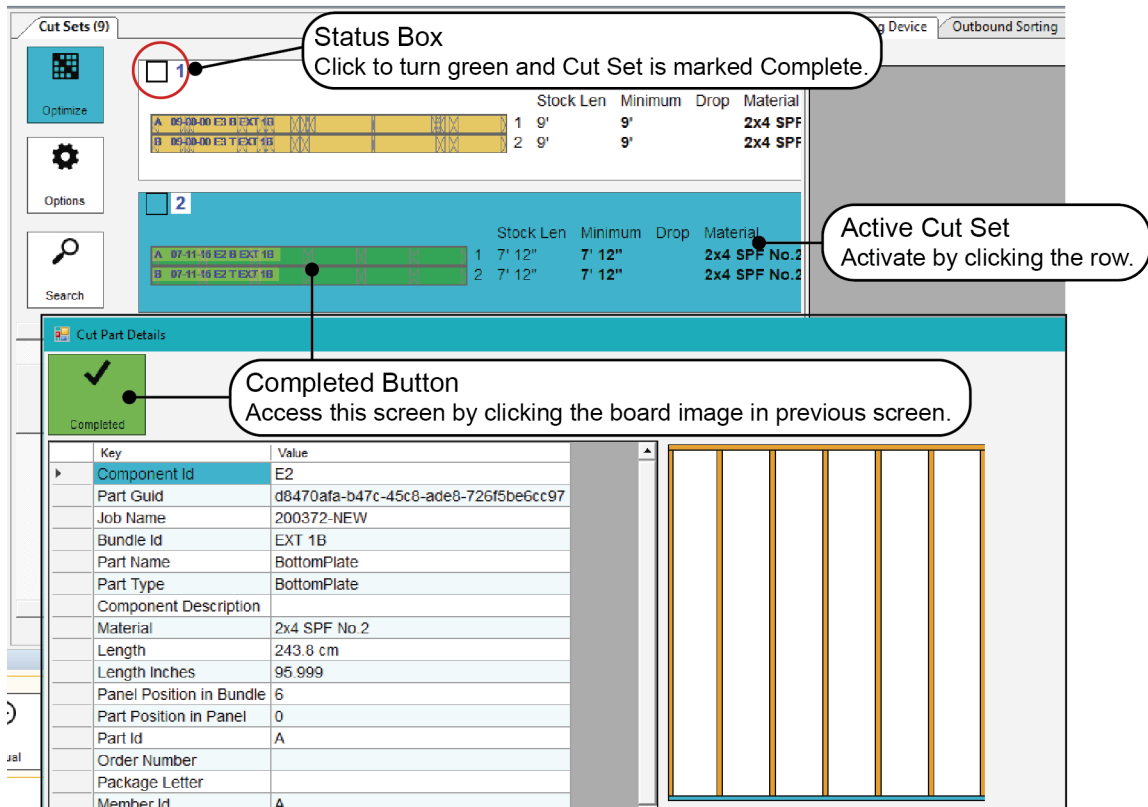
- Jobs Panel:** Contains columns for '# Scrap Cutting', 'Alameda Unit 201 2nd', and 'Alameda Unit 202 2nd'.
- Bundles Panel:** Contains a table with columns for '# My Scrap Cuts' and '# Scrap Cutting', listing various units like '201-F1 Alameda Unit 201 2nd Floor'.
- Part Type Panel:** Lists components such as 'Bottom Plate', 'Critical Stud', 'Header', 'Header Cap', 'Header Cripple', 'Jack Stud', 'King Stud', 'Sill Cripple', 'Stud', 'Top Plate', 'VTP', and 'Window Sill'.
- Mate... Panel:** Lists materials like '2X4 #2/BTR FT', '2X4 STD/BTR R', and '2X6 #2/BTR FT'.
- (16) Cut P... Panel:** Shows quantities for materials, such as '106 (2)' for '2X4 STD/BTR R' and '56 (2)' for '2X6 #2/BTR FT'.
- Cut Sets Panel:** A vertical sidebar on the right containing buttons for 'Optimize' (circled in red), 'Options', and 'Search'.

### 6.5.3.3 Cut Sets

After optimizing, the “Cut Sets” panel will display a cutting solution set up in a list of “Cut Sets”. Each row in this list is a Cut Set. Each Cut Set represents a board or stack of boards as they will be run through the machine, how they will be cut, and other details about the parts.

The Cut Sets window is interactive and can be used to:

1. **Activate Cut Set** – The active cut set is always indicated by its turquoise color. In the example, Cut Set number 1 is the active cut set. The active cut set is important as it is the start point for beginning cutting and represents the currently active setup to be run or running through the machine. To manually indicate an active cut set, select it by clicking anywhere there is text in the Cut Set row.
2. **View Cut Part Details and Printed Image** – Click the board image, and the Cut Part Details screen displays details about the Cut Set and shows an image of the printing that part will receive.
3. **Complete/Incomplete**— During normal operation the Hornet will automatically "complete" each cut set as it runs. On rare occasions, when a job fails to complete, use one of these methods to manually mark a set of cuts complete:
  - Click the board image, and the Cut Part Details screen appears. Select the **Completed** button to toggle between completed/not complete. The color green indicates a Completed status.
  - To complete all of the parts in a cut set at the same time, select the Status box located on the left-hand side of the cut set number. When the status box and the board images turn green, every board in that cut set is marked complete.



## 6.6 Operating Procedure

### 6.6.1 Loading Boards on Infeed

The saw is designed to cut boards stacked 2-high. This may be the top plate and bottom plate of the same wall panel, or it may be from different wall panels, depending on the optimization choices.

Manually loading boards onto the infeed conveyor:

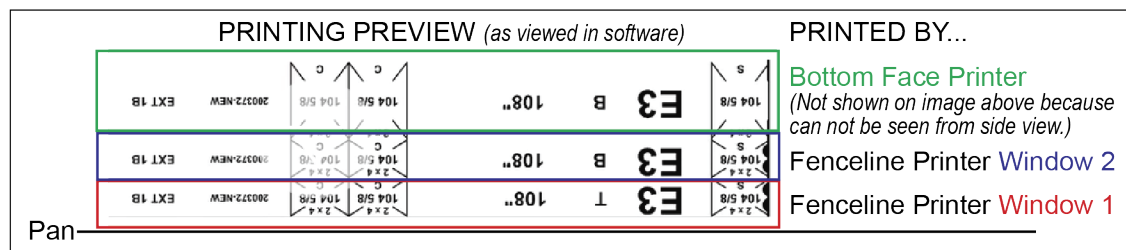
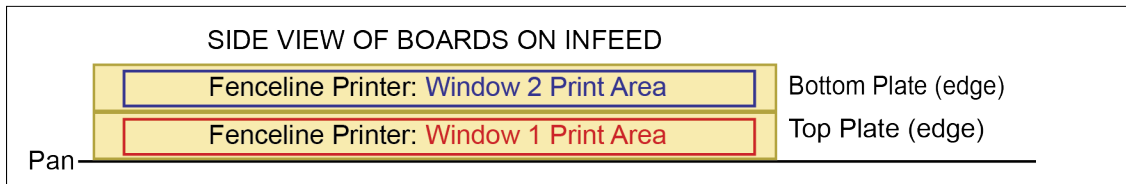
- Handles boards dimensional lumber from 2x up to 12", 3x up to 12", and 4x up to 12" wide.
- Load material onto the infeed conveyor on its wider surface (2x4, 2x6, etc.)
- Load 2x lumber stacked 2-high on infeed conveyor. Can also cut 2x lumber as a single board.
- Lumber thicker than 2x dimensional lumber can only be cut 1 board high.

Ensure the boards used:

- Have no staples and no standing water on them
- Are tight up against the pusher when placed on the infeed conveyor

Aligning the stacked boards:

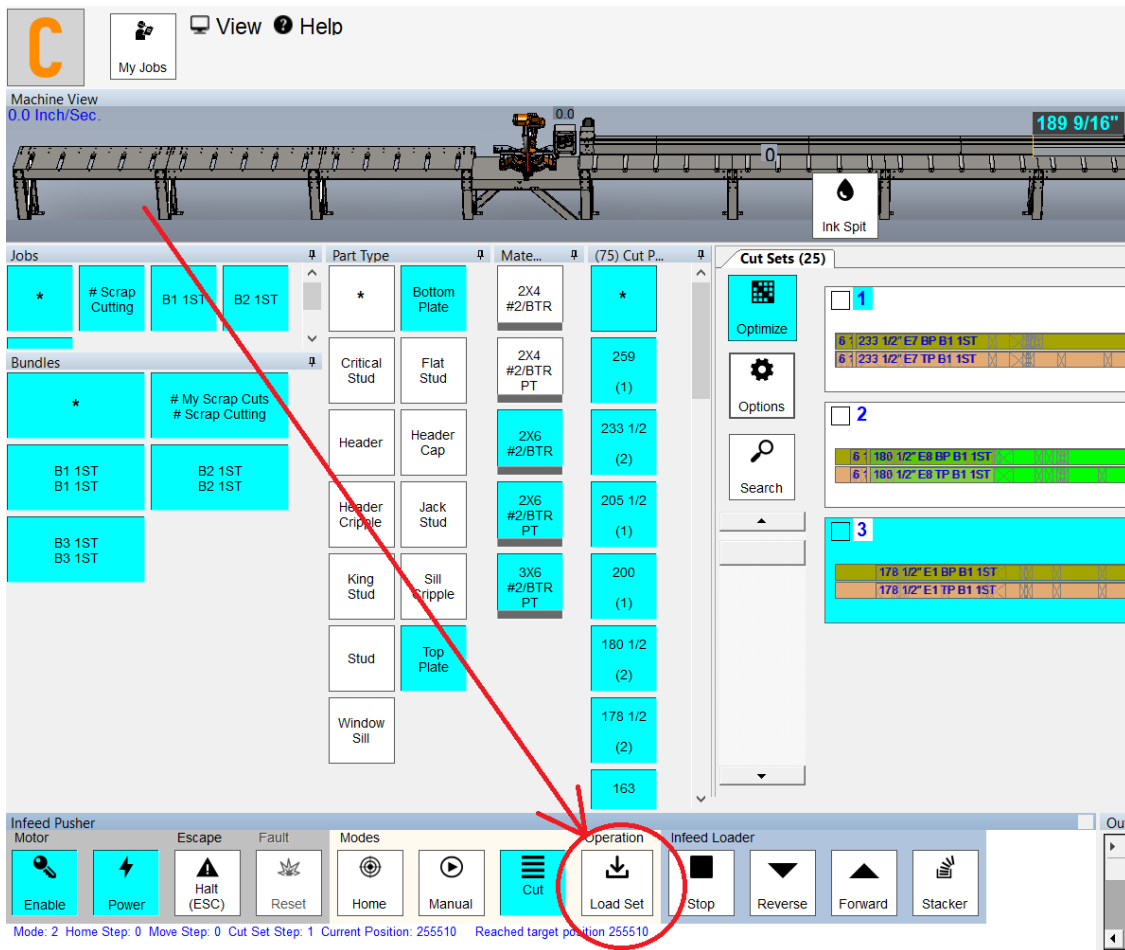
- If there is no Live Deck infeed conveyor, both boards must be loaded onto infeed rail tight against the pusher.
- If loading boards onto a Live Deck infeed conveyor, it is best to load with the top board extending over the end of the bottom board, toward the pusher, approximately 1-1/2" to 2". When the boards enter the infeed rail, the pusher will self-align the two boards.
- Normal use of the saw requires the two boards be the same length, although it is possible to cut using boards of different lengths.



### 6.6.2 Cutting Procedure

After loading material onto the infeed, perform these steps. Steps are explained in more detail in the pages immediately following these steps.

1. Select the CUT SETS button from the software.
2. Select the LOAD SET button. The Cut Set Operations window appears, and the next batch of Cut Sets are imported.



3. Verify the correct lumber is loaded.

**WARNING:** Before beginning cutting operations, check that the machine is safe and clear of all personnel and objects as the infeed pusher will be activated with motion.

4. Select the GO button from the software.

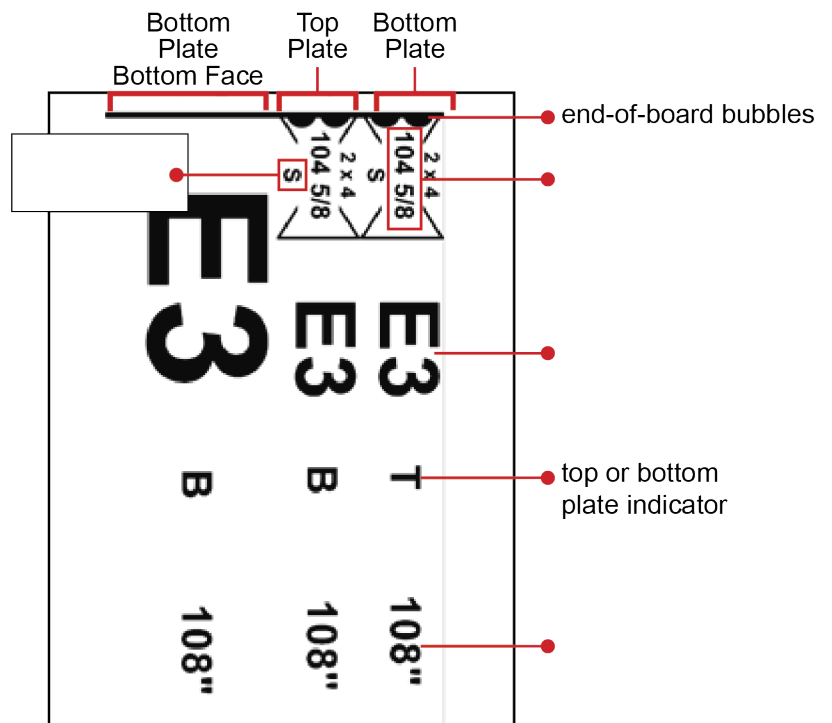


- All boards for the current Cut Set are cut, then the Cut Complete button appears.



- Click Cut Complete, and the next Cut Set is loaded.
- Once all Cut Sets are cut, select QUIT.
- Select the RESET button in the software.
- Select the LOAD SET button again to import another batch of Cut Sets.

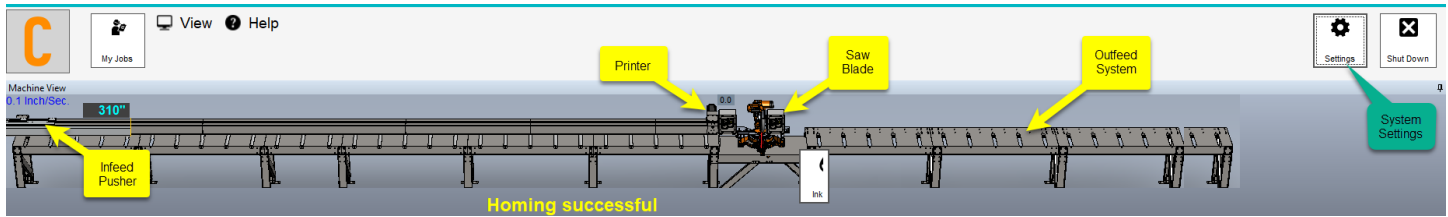
### 6.7 Reading the Printed Data



## 6.8 System Settings

### 6.8.1 Accessing the Settings Windows

#### Machine View Pane



Most settings can be accessed by clicking the component in the Machine View pane.

- The Component Settings windows labeled in yellow require the machine password to access.
- The System Settings window requires the interface password to access.

Once in the settings window, click on the left side and start typing, or double-click on the right side to highlight the number and replace it. Recommended settings are available, but be aware that there are many reasons for deviating from the recommended value. There is no undo, and the new settings are automatically saved once you close the window, so always document the settings used if they deviate from the recommendation.

## 7 Replacing the Saw Blade

### Supplies:

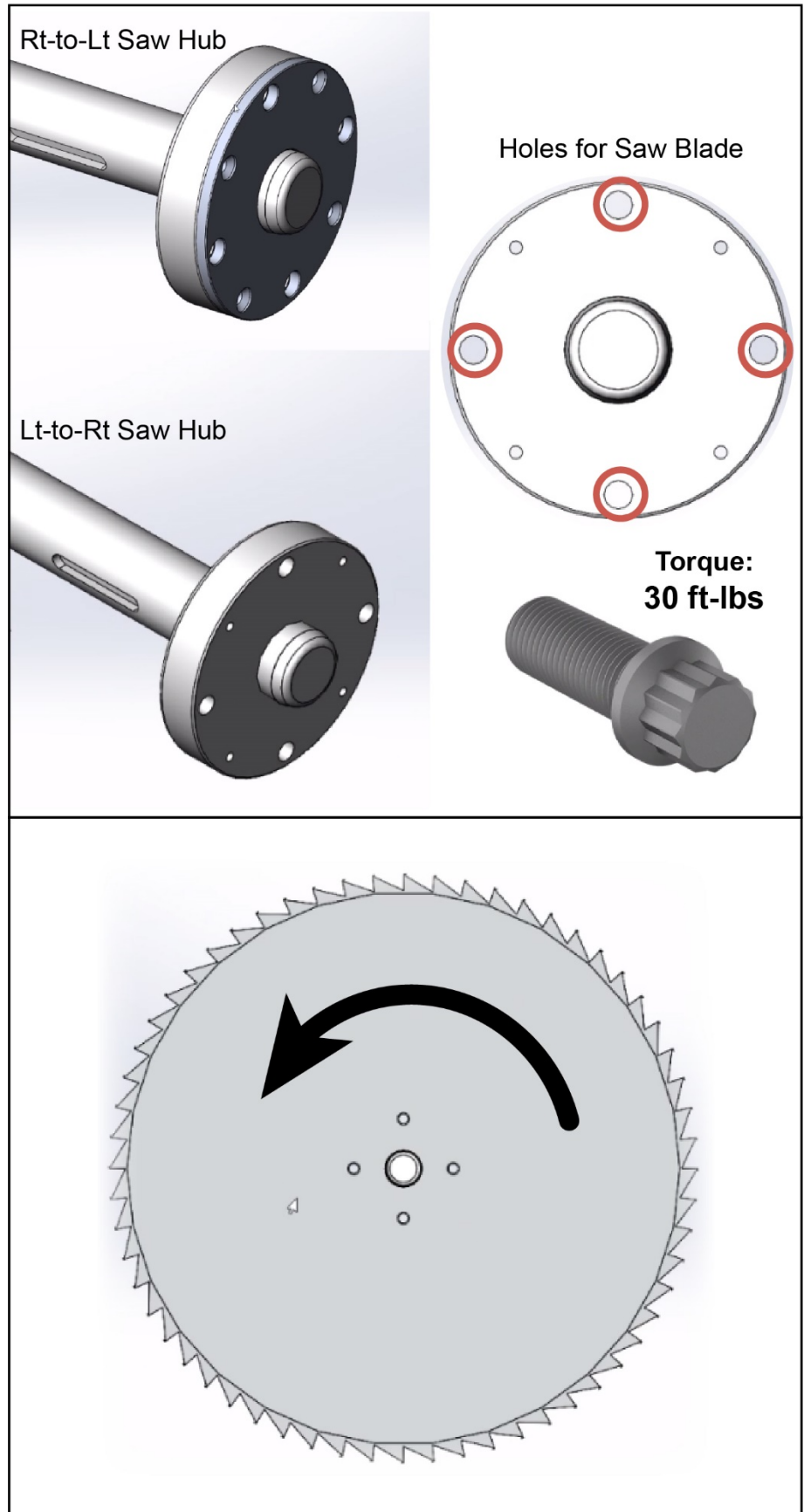
- 3/8" 12-point socket
- Torque wrench driver

### Frequency:

Recommended once a week for 1-shift operations, but adjust as needed for your schedule and environment.

### Procedure:

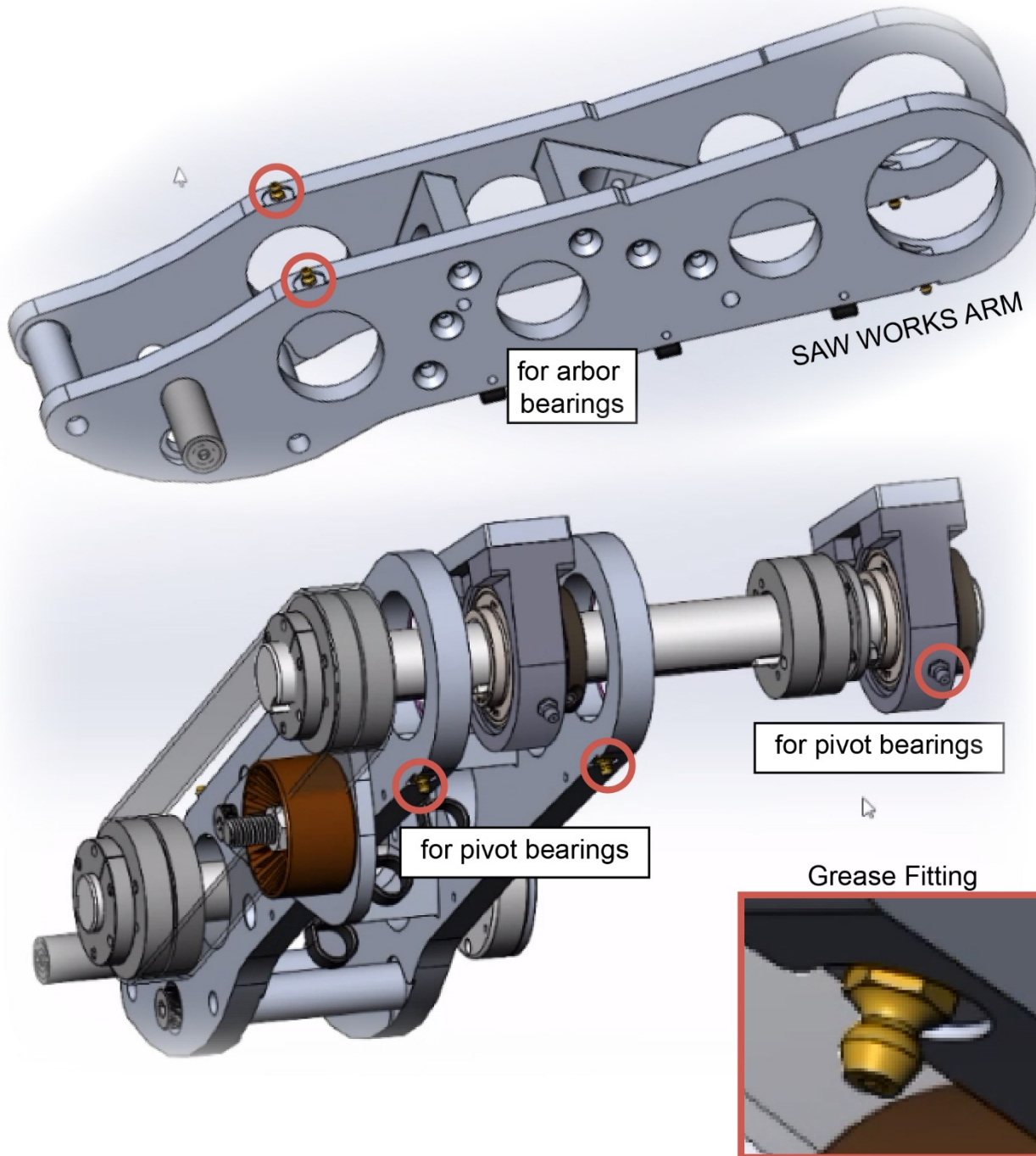
1. Lockout/tagout
2. Open saw chamber door.
3. Manually turn rotational assembly until the blade and hub are at a convenient angle.
4. Remove 4 bolts holding saw blade.
5. Remove saw blade and set aside for retipping or safe disposal.
6. Place new or sharpened saw blade on arbor.
7. Tighten the bolts to the torque specification shown in the graphic.



## 8 Preventive Maintenance

### 8.1 Lubrication

It is recommended to lubricate on the same schedule as your saw blade changes.



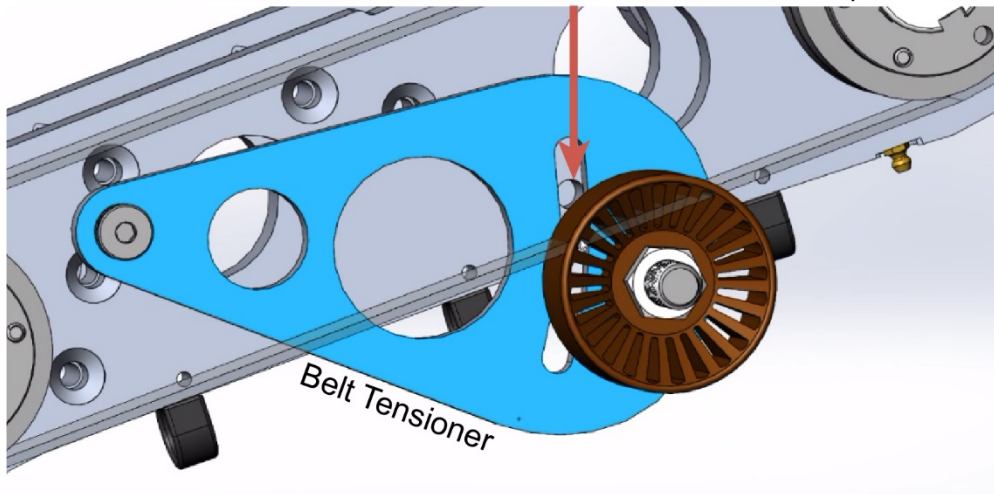
## 8.2 Belt Tensioning

Two belts need to be tensioned occasionally:

- Saw motor belt
- Saw arbor belt

Follow this graphic to tension the belt.

Locate bolt. Loosen nut on back side to move tensioner up or down.

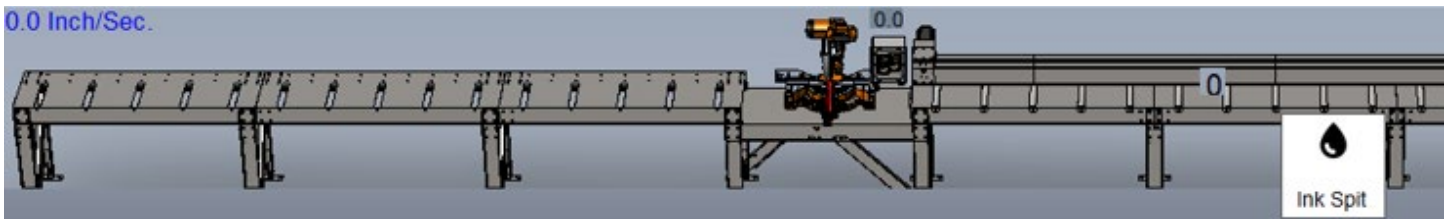


## 9 Printer

### 9.1 Cleaning the Printer

Perform these steps anytime the printer has had a break from printing for more than 30 minutes:

1. Lockout/tagout.
2. Observe these guidelines while following these steps:
  - Press lightly (dab), no NOT wipe.
  - Do not wipe the print cartridge with a dry cloth as it may scratch it.
  - Do NOT use a cloth that can leave lint behind.
3. Start by slightly wetting a non-abrasive, lint free cloth with distilled or deionized water, or use a wet wipe. You may wish to fold the cloth in quarters to prevent ink penetrating through to your fingers.
4. Dab lightly, one-at-a-time, on the face of the nozzles of each of the cartridges. Be careful not to push too hard as the cartridge could become unseated from inside its stall and cause damage to the printer.
  - Let the wet cloth dissolve any dried ink by holding it gently on each nozzle. When dried ink is dissolved, a small amount of fresh ink should flow through the nozzles and into the wet rag via capillary action.
5. Once the nozzles appear to be clean and only fresh ink is observed on the cleaning cloth, move to the next cartridge, and repeat for each cartridge.
6. Place a piece of scrap wood or paper in front of the printer to test for ink spray.
7. Press the **Ink Spit** button to make all the ink cartridges emit a burst of ink spray onto the scrap wood/paper.
8. Successful preparation of the inkjet printer is completed when a full, vertical line of ink is present for all cartridges. Repeat steps 2 through 5 until successful preparation of all cartridges is achieved.



## 9.2 Ink Cartridges

### 9.2.1 Storage and Environment

- Operating temperature of ink: 13°-35°C (55°-95°F)
- Storage & transportation temperature (anytime a cartridge is not propelling ink): 10°-35°C (50°-95°F)
- Shelf Life: 6 months (less if cartridge has been used)
- Do NOT shake the cartridge. Handle with care.

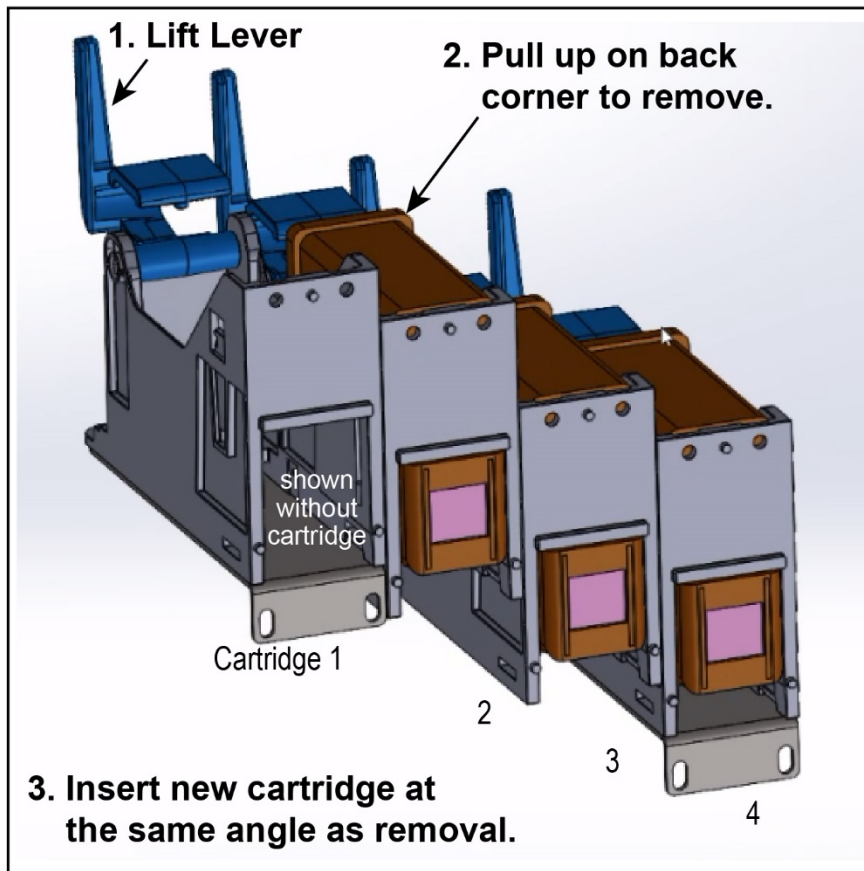
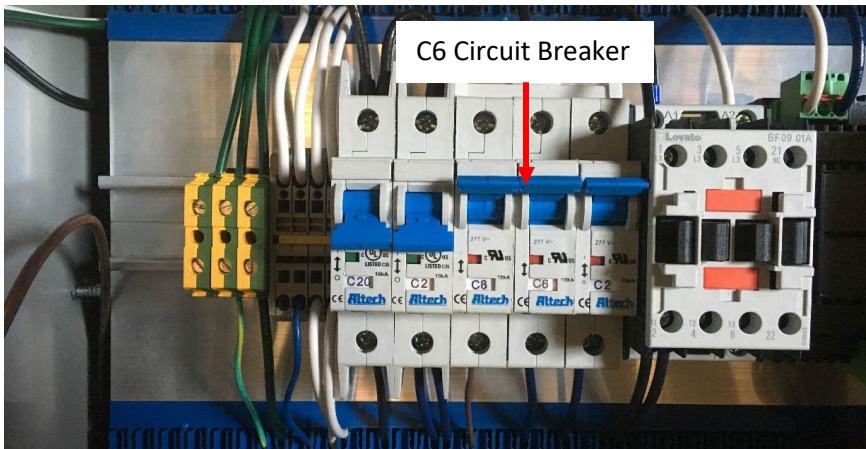
Take care never to let ink cartridges freeze. Freezing will cause the water in the ink to separate and will ruin the cartridge. Cartridges ordered from during the winter months must be shipped via air freight to ensure they are always kept above freezing temps.

### 9.2.2 Ordering Replacement Ink Cartridges

To Order more ink, please call MiTek customer support at 800-523-3380.

### 9.2.3 Removing and Replacing Ink Cartridges

- Always Power down the printer when changing the Print Cartridges. Use the C6 circuit breaker inside the electrical enclosure or lockout/tagout the entire saw.
- Never remove a cartridge from the stall assembly while the print head's green TRG light is flashing, or you risk damaging the cartridge and/or the print head.
- When replacing a cartridge, gently insert it at an angle where the far end drops into the carriage first.





#### 9.2.4 Re-Using a Cartridge After an Operational Pause

1. Once a cartridge has been used, follow these guidelines to improve its shelf life:
  - Unused for less than 1 day: Leave cartridges in machine and clean and purge before next use
  - Unused for more than 1 day: Remove cartridges from machine, clean as described in the cleaning section, and place in airtight container. Clean and purge before next use
  - Cartridges should always be stored with the nozzles facing down.
2. Upon removing the print cartridge from its container for re-use, clean as described in the cleaning section.
3. Install the cartridge according to the instructions in the Removing and Replacing Ink Cartridges section.
4. Press the Purge button to make all the ink cartridges emit a burst of ink spray onto scrap

## 10 Troubleshooting

Problem	Possible Causes	Corrective Action
<p><b>“Go” button missing / not appearing after pressing “Load Set” or loading a cut set.</b></p>	<ol style="list-style-type: none"> <li>1. Emergency Stop Active</li>   <li>2. Marking device not functioning properly or is in error state.</li>   <li>3. Unknown Event</li> </ol>	<ol style="list-style-type: none"> <li>1. Check Emergency Stop(s) and/or CutBuilder Automation for Emergency Stop warning and take proper actions to correct all safety issues if present.</li>   <li>2.               <ol style="list-style-type: none"> <li>a. Reset the printer.</li> <li>b. Replace damaged ink cartridge.</li> </ol> </li>   <li>3. Press “Halt” then press “Reset”, then retry resuming operations</li> </ol>