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The Challenge Machinery Company
6125 Norton Center Drive
Norton Shores, MI 49441-6081 USA

ChallengeMachinery.com

TC Touch Screen Control ***Operating Instructions***



SOUTHWEST
BUSINESS PRODUCTS LTD.

— From Bindings to Branding —

**NOTICE: To download the latest
version of this manual, visit:**
www.challengemachinery.com/support

F.254-TC
August 2015

1.0 Introduction

THIS IS A SUPPLEMENT MANUAL and is to be used in conjunction with the main instruction manual that was included with your machine. If you do not have a copy, or to download the latest version, visit: www.challengemachinery.com/support. All Challenge manuals are designed to help you get the most from your Challenge equipment. Keep manuals in a safe, convenient place for quick reference by operators and service personnel.

CAUTION

SAFETY ALERT! This symbol means **CAUTION: Personal safety instructions!** Pay special attention to the instructions in bold type. Personal injury may result if the precautions are not read and followed.

READ THIS MANUAL BEFORE OPERATING! Follow precautions and instructions given and you should have years of trouble-free operation. If after reading the manual questions still remain, contact your Authorized Challenge Dealer.

FOR PARTS AND SERVICE contact the Authorized Challenge Dealer from whom you purchased your machine. Always give the **SERIAL NUMBER** and **MODEL** of your machine to ensure the best possible service.

Take a few minutes right now to **RECORD YOUR MACHINE SERIAL NUMBER** in the space below. Also, be sure to fill out the warranty card accompanying your machine and return it **DIRECTLY TO CHALLENGE**.

If you bought a used machine, it is important to have the following information on record at Challenge. Copy this page, fill in the information and send it care of The Challenge Service Department, 6125 Norton Center Drive • Norton Shores • MI 49441-6081.

| | | |
|--------------------|----------------|-----|
| CHALLENGE MODEL | SERIAL NUMBER | |
| ATTN | COMPANY | |
| ADDRESS | | |
| CITY | STATE/PROVINCE | ZIP |
| PHONE | DATE INSTALLED | |
| DEALER NAME & CITY | | |

* WARRANTY INFORMATION *

It is very important that you read and understand the conditions outlined in the *Warranty Information Sheet* attached to the outside of the shipping container of your machine.

The *Warranty Information Sheet* must be filled out completely and returned to THE CHALLENGE MACHINERY COMPANY in order for the warranty to be issued for this machine.

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2.0 Touch Screen Care and Cleaning

Do not use sharp objects such as a ballpoint pen when using the touch screen. A light touch of the finger is all that is necessary. The TC touch screen display and control console can be cleaned using a mild water-based soap solution.

 **NOTE** DO NOT use petroleum or oil based solvents as they will damage the touch screen and control console.

3.0 Cutter Operation

IMPORTANT: DO NOT ATTEMPT TO OPERATE YOUR CUTTER UNTIL YOU HAVE THOROUGHLY READ AND UNDERSTAND ALL OF THE INSTRUCTIONS FOUND IN THE OPERATOR AND INSTRUCTION MANUALS INCLUDED WITH YOUR CUTTER. CALL YOUR AUTHORIZED CHALLENGE DEALER IF YOU STILL HAVE ANY QUESTIONS.

3.1 Main Power and Start Up

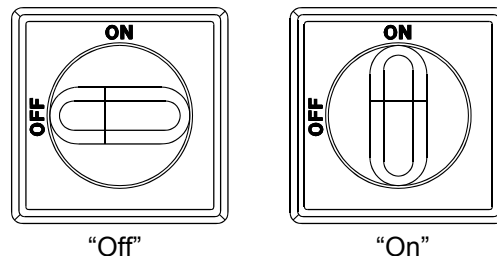


Figure 1 - Main Power Switch

Power is brought to the machine when the main power switch is turned to the “ON” position. The display takes about 14 seconds to power up. NOTE: If the knife and clamp are not in the “up” position, the display will prompt the operator to raise them prior to presetting the backgauge by pressing OK then pressing the cut buttons.

3.1.1 Presetting the Backgauge

After a beep there will be a dialog box on the display asking you for Preset or No Preset as shown similar to below:

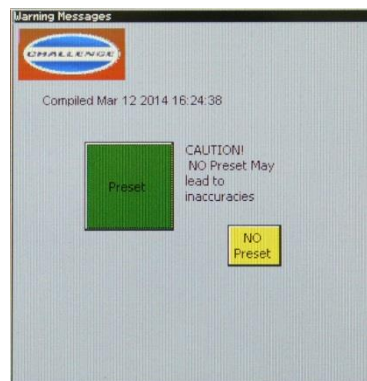


Figure 2

The advantage of No Preset is time. You will not have to wait for the backgauge to preset and coordinate the display with the actual backgauge display. Choose this option only if the machine was shut off normally and the backgauge has not been moved while the power was off. If the machine is new or the backgauge has been moved while the power was off, you must choose Preset. If in doubt, press Preset. Caution! If the backgauge has moved while the power was off and you select No Preset, the backgauge may crash and cause damage to the machine. Use the No Preset option with caution! If in doubt, select Preset.

3.2 Table Light On/Off Switch (Champion 305 Models)

On Champion 305 model cutters, the table light can be turned on and off using a switch located under the arch (Figure 3). The table light will also turn on and off with the main power or when the screen saver is activated, provided the table light switch is in the “on” position.

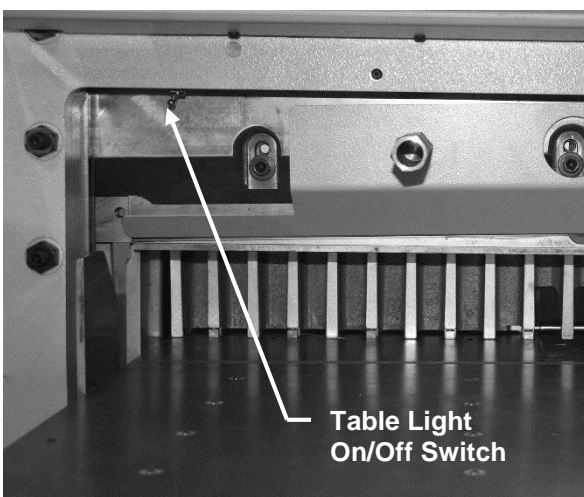


Figure 3

3.3 Backgauge Control Hand Wheel

The backgauge position can be controlled manually by using the Backgauge Control Hand Wheel located at the front of the table. Turning the wheel clockwise brings the backgauge forward. Turning the wheel counter-clockwise sends the backgauge backward. The more the wheel is turned, the faster the backgauge moves.

To ensure accurate cuts, the backgauge must be brought to the cut position from the rear. By moving the backgauge back past the desired cut position then forward to it eliminates any possible positioning error that may occur due to backlash in the backgauge nut and lead screw.

To disable the Backgauge Control Hand Wheel in order to prevent unwanted movement of the backgauge due to accidentally bumping the wheel, press the “Hand Wheel” key located in the lower left area of the screen. Red indicates the hand wheel is disabled, green indicates it is enabled.

3.4 Making a Cut

Place the paper against the side guide and backgauge. To initiate a cut cycle, simultaneously press and hold both cut buttons. To complete the cycle, continue to hold the cut buttons until the knife comes all the way down to the table. If the buttons are released at any time, the knife and clamp will

3.0 Cutter Operation

immediately return to the “up” position. Both cut buttons must be released before a new cut can be made.

⚠ CAUTION DO NOT ATTEMPT TO REMOVE TRIM UNTIL THE KNIFE AND CLAMP HAVE STOPPED IN THE UP POSITION! Due to static buildup, fine trim may have a tendency to stick to the clamp or knife surfaces. Fingertips might be drawn into the knife by the clamp if this is attempted. Wait until the knife and clamp have BOTH STOPPED MOVING before removing stock trim.

3.4.1 Turning Off the Hydraulic Motor (Some Models)

On models where the hydraulic motor continues to run between cuts, the hydraulic motor can be shut off at any time by pressing the “Stop Motor” key. The hydraulic motor will also shut off when the screen saver is activated.

3.5 Jogging Aid

All Challenge paper cutters include a jogging aid as standard equipment. Additional jogging aids can be purchased by contacting your authorized Challenge dealer. The jogging aid allows the operator to load and align stock without placing hands or arms under the clamp and knife area.

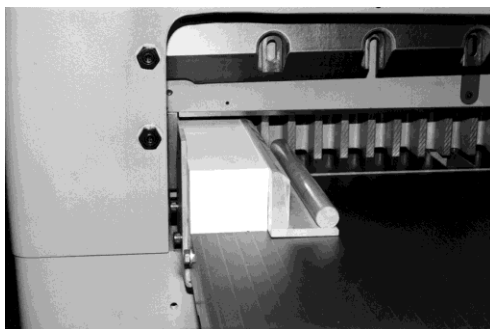


Figure 4

Load and align the paper against the side guide as shown in Figure 4, then square it to the backgauge before making a cut.

⚠ CAUTION Always remove the jogging aid from the table before making a cut.

3.6 Pre-Clamping

All TC paper cutters are equipped with a low-pressure clamping feature, which allows the operator to clamp paper under low pressure before beginning the cut cycle. To use this feature, press down on the foot switch or foot treadle located at the front of the machine until the clamp comes down on the paper. To raise the clamp, release the foot switch or treadle. To make a cut, keep the foot switch or treadle pressed while pressing the cut buttons. Release the foot switch once the cut has been completed. Avoid placing hands under the clamp.

3.7 Electric Eyes

The electric eyes prevent reaching into the cutting area while a cut is being made. If the beams are broken while a cut is being made, the knife and clamp will return to the “up” position.

3.8 False Clamp Plate

The false clamp plate is an attachment that reduces the creasing of paper caused by the clamp. Using the false clamp plate, however, limits the smallest cut dimension. Some models have a built-in sensor that detects when the false clamp plate is installed. Some models detect when the false clamp plate is in its holder. Some models have an externally mounted switch that tells the computer whether the false clamp plate is installed or not. In all cases, the computer must know whether the false clamp plate is installed or not in order to properly allow or restrict certain backgauge positions accordingly.

3.9 Sleep Timer

The sleep timer determines how much time the machine waits to go to sleep after non-use. The easiest way to wake the machine is to break the eye beams by waving your hand anywhere in between them. You can also wake up the machine by touching anywhere on the screen or by pressing one of the cut buttons. To adjust the sleep timer setting, go to Maintenance > Setup > Parameters > Sleep Timer.

3.10 Operating Tips

- Use a jogging aid to align stock. This will reduce the chance of an accident by not having to reach under the knife or clamp. Likewise, use the backgauge to push out stock before removal.
- Never attempt to remove paper trim clinging to the blade or clamp until they have stopped moving!
- Carefully lay out each sheet before you start cutting. Find the best-cut pattern to give you the most pieces out of the sheet. If the sheet will be folded, be sure the grain of the paper is running in the same direction as the fold or you will get a rough edge on the fold.
- If an accurate cut is necessary for close register work, you **MUST** have a sharp blade in the cutter. A dull blade will pull or draw the stock and cause uneven cutting. See Knives section, below.
- Clamp pressure should not be increased to eliminate draw without first checking for knife sharpness. Draw from a dull knife can only be eliminated by installing a sharp knife. See Knives section, below.
- Appropriate clamp pressure will vary from one stock to another. As a rule, you should have enough pressure to securely hold the stock but not so much that the stock is unacceptably deformed. Excessive clamp pressure causes pile distortion and inaccurate cutting.
- To make stock slide as easily as possible on the cutter table, wash the table with non-offset powder or with a silicone/rust preventative.
- Mark the gripper edge and the guide edge of printed stock and make sure the first cuts are with these guide edges against the backgauge.
- Measure printed stock to check for shrinkage or expansion of the paper from humidity. You may have to disregard the printed cut lines and make your own.
- If you notice the knife and clamp returning before the cut is complete, then the electric eyes are probably being triggered accidentally. A tie or loose clothing may cause this to occur.

4.0 TC Control Panel

There are three main modes of operation for all TC model paper cutters:

- **Manual Backgauge Control Mode (Section 4.1)**
- **Job Mode (Section 4.2)**
- **Maintenance Mode (Section 4.3)**

4.1 Manual Backgauge Control Mode

This is the first screen you see after the preset screen. This screen can be used for manual positioning of the backgauge.

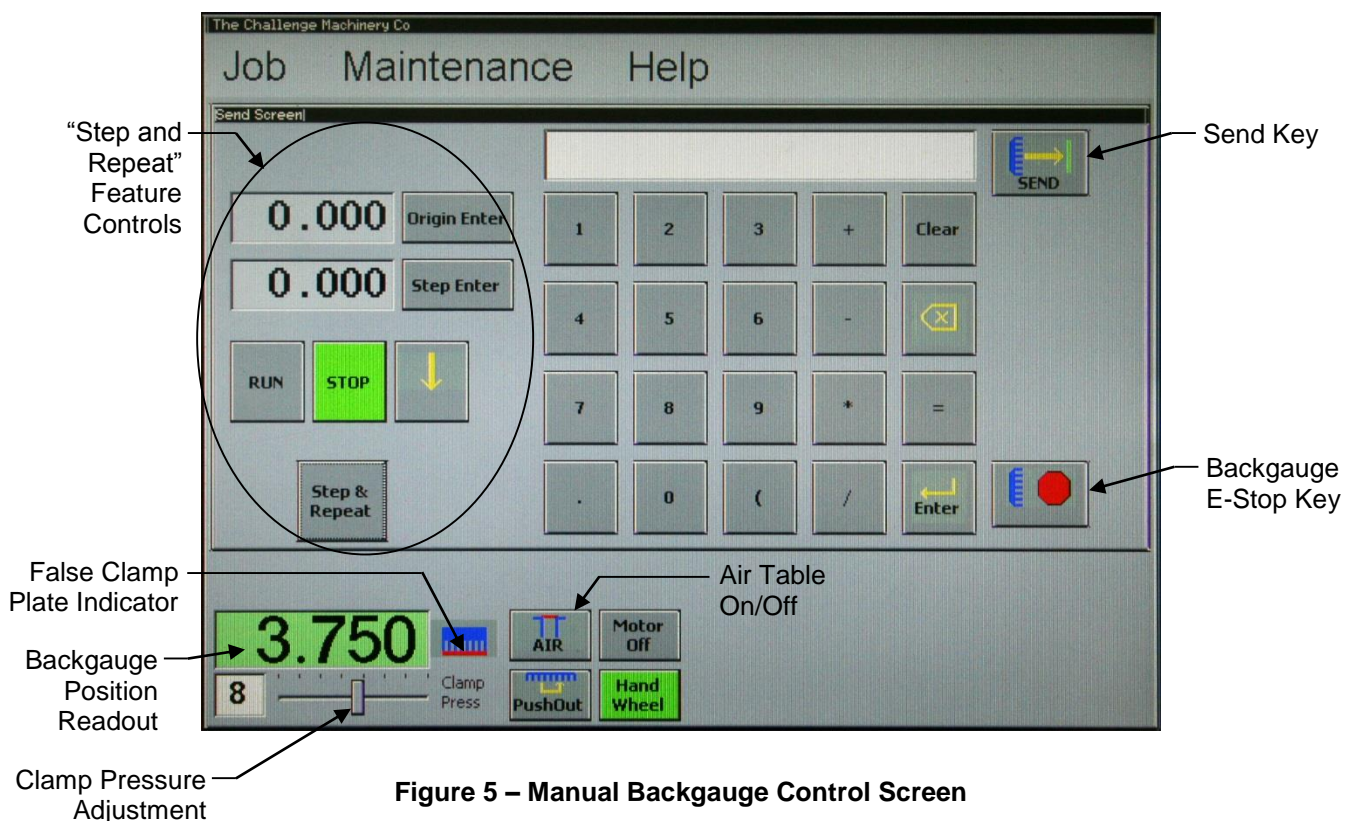


Figure 5 – Manual Backgauge Control Screen

4.1.1 Numeric Key Pad

These keys are used to enter in values that you would like to send the backgauge to. Math strings may be entered if desired to compute the values to enter. For example, to enter $2+3/8$ ", simply type $8*(2+3/8)$ and press Enter. The parentheses are necessary to get the right answer. If you don't use them, the computer will multiply $8*2$ first and then add $3/8$ giving the wrong value.

4.1.2 Send Key

Pressing this key will send the backgauge to the position corresponding to the keyed-in value. If the new position is further back from the current position, the backgauge will first perform a push-out –

meaning the backgauge will move forward a few inches in order to ensure that any remaining stock on the table will be accessible without having to reach under the clamp.

4.1.3 Backgauge E-Stop Key

This key is used to immediately stop motion of the backgauge.

4.1.4 Backgauge Position Readout

The backgauge position readout is in large bold letters near the lower left of the screen. This number indicates the exact distance between the front face of the backgauge and the cutting plane of the knife. A background color of yellow indicates that the backgauge has last moved backward, meaning there could be a slight dimensional error due to leadscrew backlash. A background color of green indicates that the backgauge has last moved forward, meaning any possibility of error due to leadscrew backlash has been removed.

Note: To select whether the backgauge readout is in inches, fractional inches, millimeters, or centimeters, go to Maintenance > Setup > Parameters > Measurement Units.

4.1.5 Clamp Pressure Adjustment

Below the Backgauge Position Readout is a slider control to adjust the clamp pressure. The maximum pressure setting is 15. For pressure sensitive stocks pick a smaller number as desired with 0 being the minimum. Please note that in Job mode this value is programmable for each step, allowing the user to control the clamp pressure for each cut individually.

4.1.6 False Clamp Plate Indicator

Next to the clamp pressure control is the false clamp plate indicator. The operator can quickly know if the false clamp plate is set to "on" or "off". The false clamp plate is an attachment that reduces the creasing of paper caused by the clamp. Using the false clamp plate, however, limits the smallest cut dimension. Some models have a built-in sensor that detects when the false clamp plate is installed. Some models detect when the false clamp plate is in its holder. Some models have an externally mounted switch that tells the computer whether the false clamp plate is installed or not. In all cases, the computer must know whether the false clamp plate is installed or not in order to properly allow or restrict certain backgauge positions accordingly.

4.1.7 Air Table On/Off

This key is used to turn the air blower on or off for machines that are equipped with an air table. This feature supplies air to the table to make it easier to slide stock to be cut into and out of the opening.

4.1.8 Push-Out

The Push-Out key is used to push stock out from under the clamp and knife area.

⚠ CAUTION Never place hands in the clamp and knife area.
Always use the Push-Out key and the paper jogging aid to position stock.

4.1.9 Motor Off

On some models the hydraulic motor stays running between cuts. This key allows the operator to turn off the motor when finished cutting without having to wait for the sleep timer.

4.1.10 Hand Wheel On/Off

This key is used to disable and enable the Backgauge Control Hand Wheel. This may be useful to prevent unwanted movement of the backgauge due to accidentally bumping the hand wheel. Red indicates the hand wheel is disabled, green indicates it is enabled.

4.1.11 Step and Repeat

If it is desired to make simple repetitions without using a programmed job, bring up the step and repeat controls by pressing the **Step & Repeat** key. Use the numeric keyboard to type in the value of the starting backgauge position (usually the stock size) and press **Origin Enter**. Then type in the value of the increment dimension and press **Step Enter**. Note: Math strings may be entered in this dialog box if desired to compute the values to enter. Press equals (=) if you want to see the answer without entering it. Press Enter when the correct number is shown. For a more complete discussion on entering Math strings see the section on Job Editing. Press **RUN** to begin. The backgauge will move to the origin position. After each cut the backgauge will move forward by the increment amount until the forward limit is reached. To advance one increment manually without making a cut, press the down arrow key. Press **STOP** to quit and return to manual backgauge control mode. Press the **Step & Repeat** key to hide the step and repeat controls.

4.2 Job Mode

Job Mode is used to program and run set sequences of cuts, or “jobs”. The on board system memory can hold 99 jobs of 99 steps each. The USB can hold many jobs of 99 steps each depending on the size of the USB memory. Enter Job Mode by pressing the Job pull-down menu (Figure 6) and selecting either New Job or Existing Job. Selecting Manual Mode will bring you back to the Manual Backgauge Control Mode screen.



Figure 6 – Job Pull-Down Menu

4.2.1 New Job

Select **New Job** from the Job pull-down menu (Figure 6) to begin a brand new job. The first screen to come up is the Job Name Screen (Figure 7). Every job must be named. If a job is not named it will be erased and lost. Job names can be from 1-18 characters long, upper or lower case with numbers mixed in.

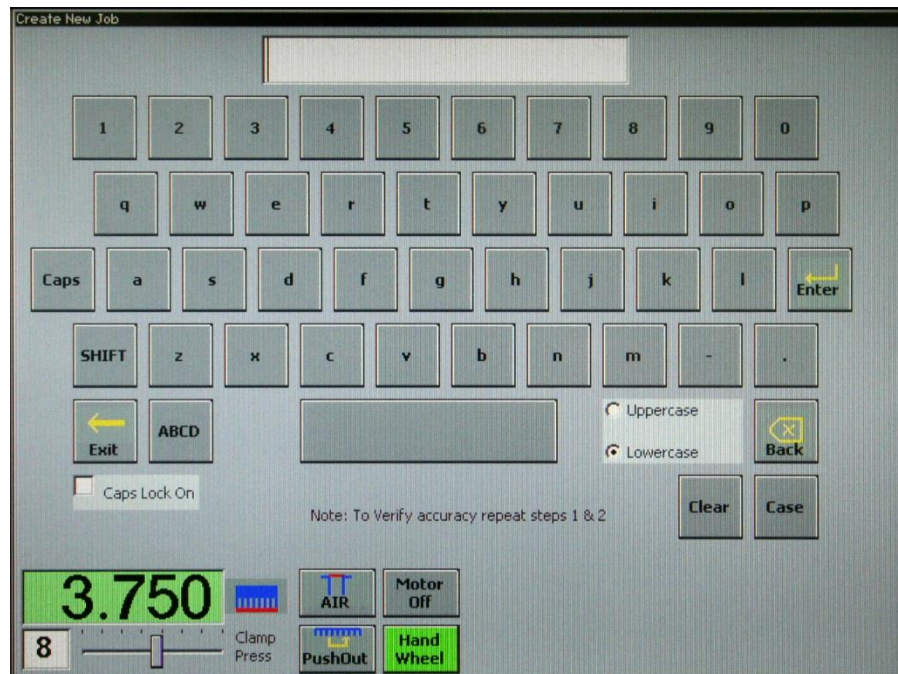


Figure 7 – Job Name Screen

Once a name has been keyed in, press Enter. Then you will immediately be taken to the Job Edit Screen (see Section 4.2.3 Job Edit Screen).

4.2.2 Existing Job

To open an existing job, select **Existing Job** from the Job pull-down menu (Figure 6). The Open/Save Job screen will appear (Figure 8).

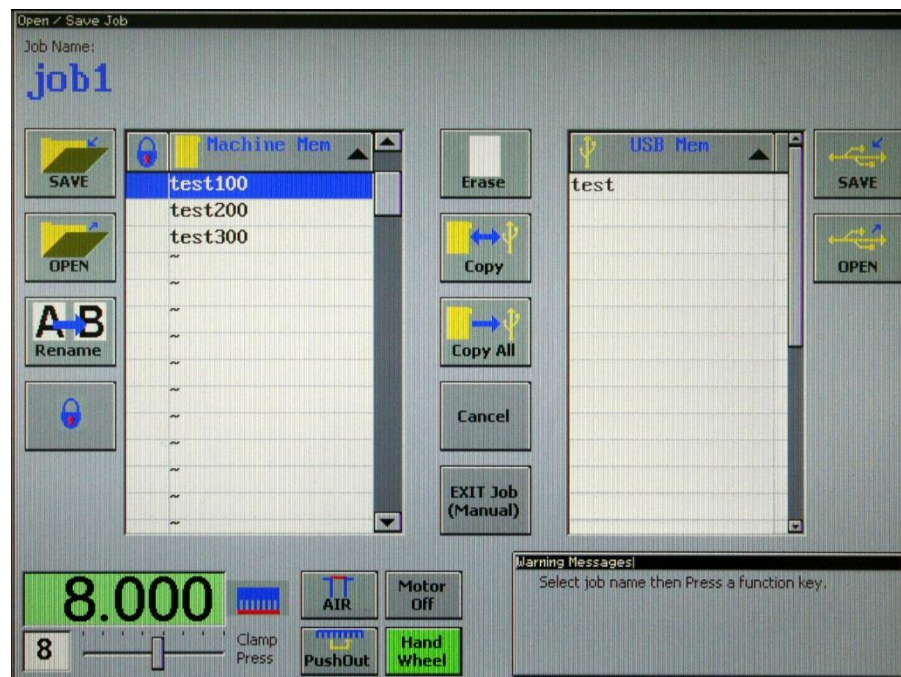


Figure 8 – Open/Save Job Screen

In this screen you can Save, Open, Rename, Lock, Erase, or Copy a job. If a USB flash drive is installed, jobs can be saved or opened from that as well. Please note there are separate keys for saving or opening a file from the USB flash drive. To open an existing job simply highlight the desired job and press the Open key that corresponds to where the job is saved (machine or USB). To save a previous job, simply press the appropriate Save key. To erase a job, highlight the desired job and press Erase, then follow the prompts. Copy and Rename both work in a similar way. If you copy a job and keep the same name, the computer will add a decimal digit in the 18th position to change the name. To lock a job in order to prevent it from being changed, highlight the job and press the lock key. The GUI Message box in the lower right corner provides prompts and instructions when performing the various tasks.

4.2.3 Job Edit Screen

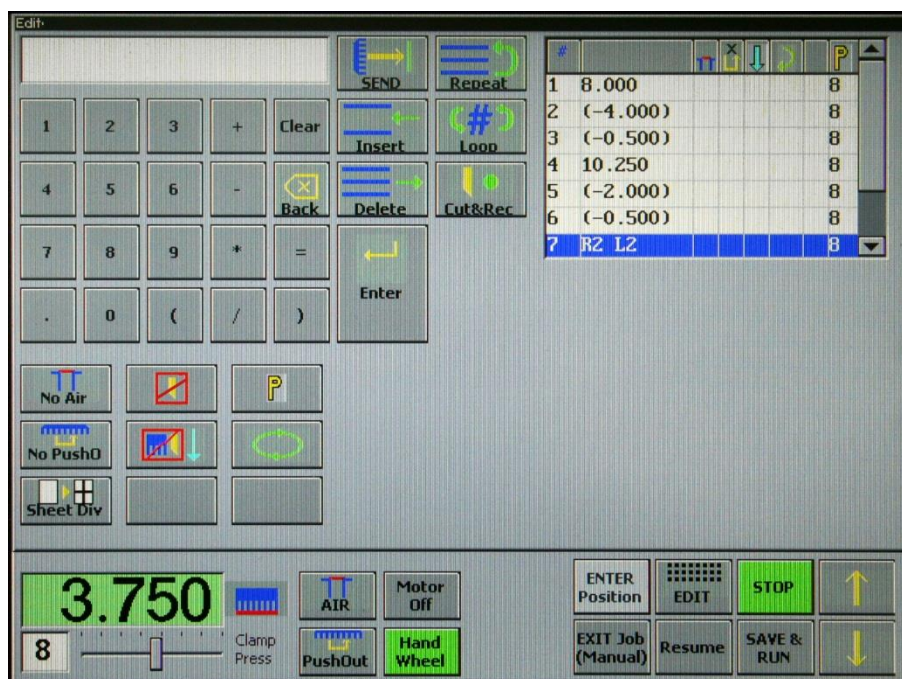


Figure 9 – Job Edit Screen

The Job Edit Screen is where backgauge positions and other machine settings are entered (or edited) for each step of a job. Jobs can hold up to 99 lines. Backgauge position values can be entered by one of several different ways:

- **Enter the current backgauge position.** Simply pressing Enter will input in the current position of the backgauge into the job.
- **Key values in directly.** On the left side of the screen there is a full numeric keypad. Key in the desired dimension and press Enter.
- **Key in math strings.** For example: If you had 8 labels each being 2 3/8", simply type $8*(2+3/8)$ and Enter. The parentheses are necessary to get the right answer. If you don't use them, the computer will multiply $8*2$ first and then add $3/8$ giving the wrong value.
- **Key in relative values.** To enter a value relative to the previous value, insert a left parenthesis "(" in the first position of the input box. For example, if you wanted to subtract 2.000 from the previous step value, you would type in (-2 and then Enter for that step. Then when running the job, the backgauge will move to 2 inches less than the previous step.

- **Repeat and Loop:** This feature is useful for repeating a step or sequence of steps 1 or more times. This can be useful for certain jobs that require the first few trim cuts to change periodically, such as when stock sizes or registration sizes change. To use this feature, make sure the line following the step or steps you would like to repeat is highlighted, then do the following:
 1. Press the Repeat key.
 2. Key in the number of previous *steps* you would like to be repeated (1 to 99).
 3. Press the Loop key.
 4. Key in the number of *times* you would like the step or steps to be repeated (in addition to the first time through. 1 to 99).
 5. Press Enter to put the line into the job.

So for example, let's say you wanted to cut a printed label 2.000 wide with a 0.25 inch trim in between each label a total of 4 times. You would start by entering the first cut position into line #1, say 10.500. Then you would enter (-2.000) for line #2 and then (-0.250) for line #3. Then you would press "Repeat" then "2" then "Loop" then "3" then "Enter". The line will look like this: R2 L3. Now when the job is run the backgauge will step through the first 3 positions once, then repeat steps #2 and #3 and additional 3 times for a total of 4 times. With this powerful feature it is possible to build up many cut sequences without taking up a large amount of memory space.

- **Cut and Record.** Sometimes actual cut positions are not known. It may be desirable to position the backgauge and simply cut the stock where desired and have the backgauge positions be entered automatically. To use this feature, press the Cut and Record key. It looks like a knife symbol with a green dot. The green dot changes to red to indicate the machine is in record mode. To move the backgauge, use the hand wheel or type in a value and press the Send key. Make a cut to record the current backgauge position. To stop recording, press **Cut and Record** again.
- **Sheet Division.** This is a helpful feature that allows you to key in parent sheet dimensions and final size dimensions, then the computer will calculate several layouts for you to choose from. Whichever layout you choose will have its backgauge positions entered into the current job. For instructions on how to use this feature, see Section .

Cut Option Keys. Below the list of program steps are the cut option keys. They are used to set various machine settings for each individual step of a programmed job. A description of each follows:



Air Table On/Off. For machines equipped with the Air Table Option, this key sets the air table to be on or off for each step. When the asterisk is present there will be no air while the backgauge is traveling to that position. This is desirable as many times piles of paper will drift away from the backgauge when traveling at high speeds forward. This can lead to inaccuracies. Use this feature to keep stock from gliding away from the backgauge coming forward.



No knife (available on Champion 370 models only). This key stops the knife from coming down for the specified cut position. Sometimes it is desired to break the stock or to clamp the air out of it but not cut it.



Pressure (P). This key is use to set the clamp pressure for each step. When a cut dimension is entered the computer will simply enter whatever the Clamp Pressure slider bar is currently set at. To change the pressure for the selected step, simply move the slider bar to the desired pressure value and press (P).



Push Out. This key sets the push out feature to be on or off for each step. When the asterisk is present there will be no push out prior to the backgauge traveling to that position.



Loading Zone. The loading zone option will not allow the clamp or knife to come down for this step. This can be useful for loading the stock and jogging it against the side and backgauge where no actual cut is desired. Simply press the cut buttons to advance the backgauge.



Turning Prompt. This key sets the turn prompt to OFF (blank), Clockwise(<), Counterclockwise(>) or 180 (>>) rotation. This is useful to remind the operator that the stock should be rotated when coming into this cut position.

Insert Key. Use the Insert Key to insert a step. Simply highlight the step below where you want the new cut position and Press Insert. A gap will be created in the sequence to place the new position. Key in the new position by one of the ways shown above and press Enter.

Delete Key. Use the Delete key to delete a step. Simply highlight the desired step and press Delete.

SAVE & RUN Key. When all values are entered satisfactorily the job can be saved by pressing this key. Any changes made to the job will be saved and the machine will immediately go in job run mode and the backgauge will move to the first programmed position.

4.2.4 Sheet Division

The Sheet Division feature allows you to key in parent sheet dimensions and final size dimensions, then the computer will calculate several layouts for you to choose from. Whichever layout you choose will have its backgauge positions entered into a job. To use this feature:

1. From the Job/Edit Screen, press the Sheet Division button. The Sheet Division screen like the one shown in Figure 10 will be shown.

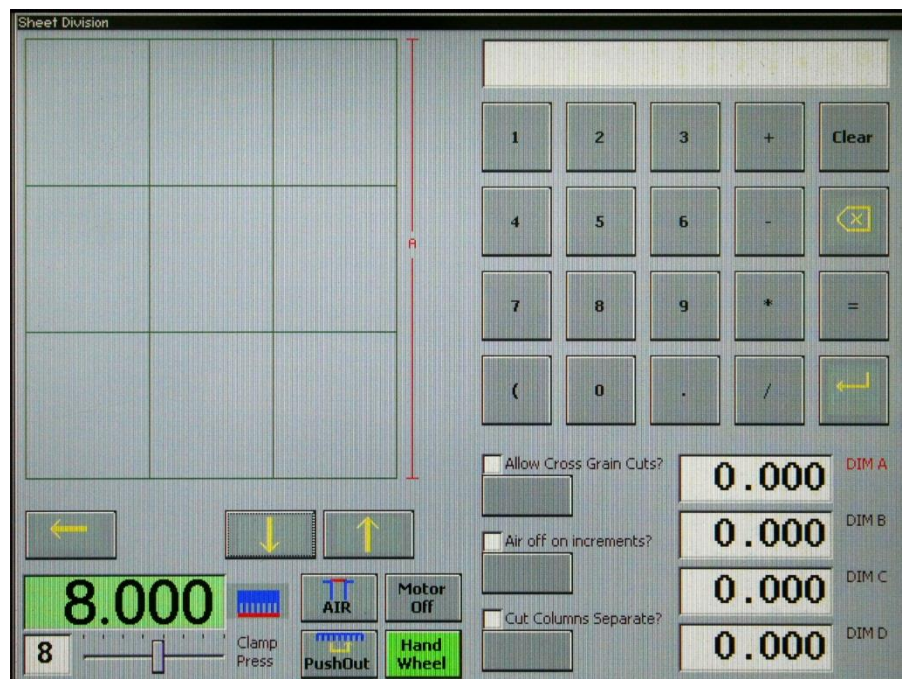


Figure 10 – Sheet Division Screen

2. Key in the overall parent sheet dimensions (Dim A & Dim B) and the final dimensions (Dim C & Dim D) by typing in the values and pressing enter each time. The dimension for which you are entering will be shown on the diagram and also the label will be highlighted in red. You can move up and down through dimensions A through D by pressing the up and down arrow keys.
3. On the same screen, turn on or off any of the following options:
 - ☐ **Allow Cross Grain Cuts?** Select this option if you want to allow the computer to arrange the cut piles such that some may be oriented 90° to other cut piles. This sometimes allows more pieces to be fit within the parent sheet size.
 - ☐ **Air off on increments?** Select this option if you would like the air table to shut off while the backgauge is moving forward between individual row or column cuts. Many times the air table is not needed or desirable during these movements.
 - ☐ **Cut Columns Separate?** Select this option if you will be cutting the columns of each row separately, rather than stacking the rows on top of each other for the column cuts.
4. When finished entering dimensions and selecting options, press the OK key. A screen like the one shown in Figure 11 will be shown next, showing several layout options. The total number of finished pieces, total number of cuts, and percent scrap are shown for each layout option. Move through the different layout options by pressing the up or down arrow keys. A graphical representation of the layout will be shown for whichever layout option is selected.

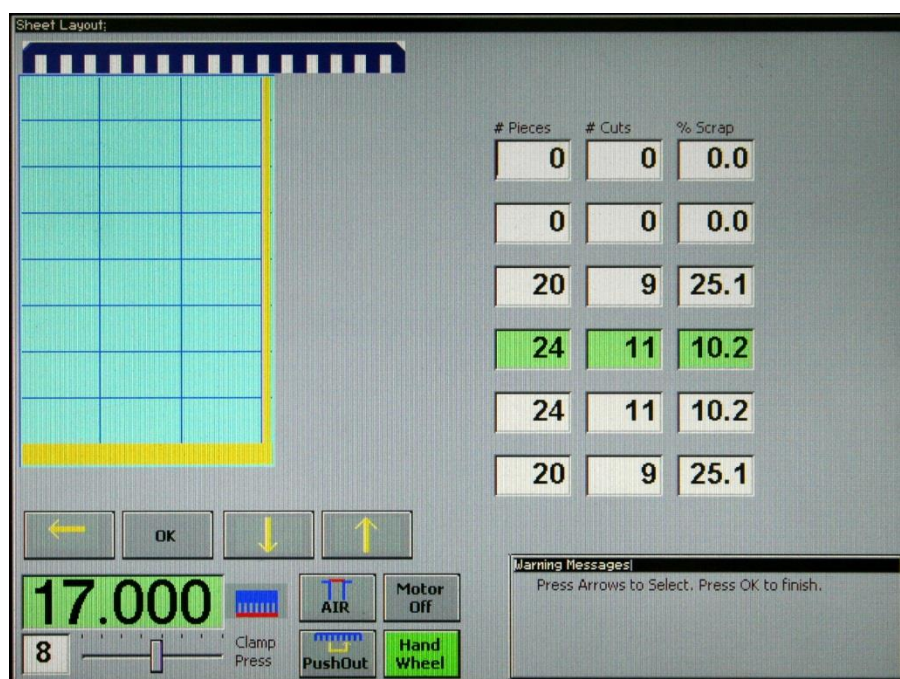


Figure 11 – Sheet Layout Screen

5. Once you've chosen the layout you would like to use, make sure it is highlighted then press the OK key. All of the necessary steps will automatically be entered into the job and the job will immediately begin to run. See Section 4.2.5 Running a Job for additional information. A graphical representation of the layout will also be shown at left (Figure 12). The graphics will indicate to the operator how to orient the paper for each step in the job.

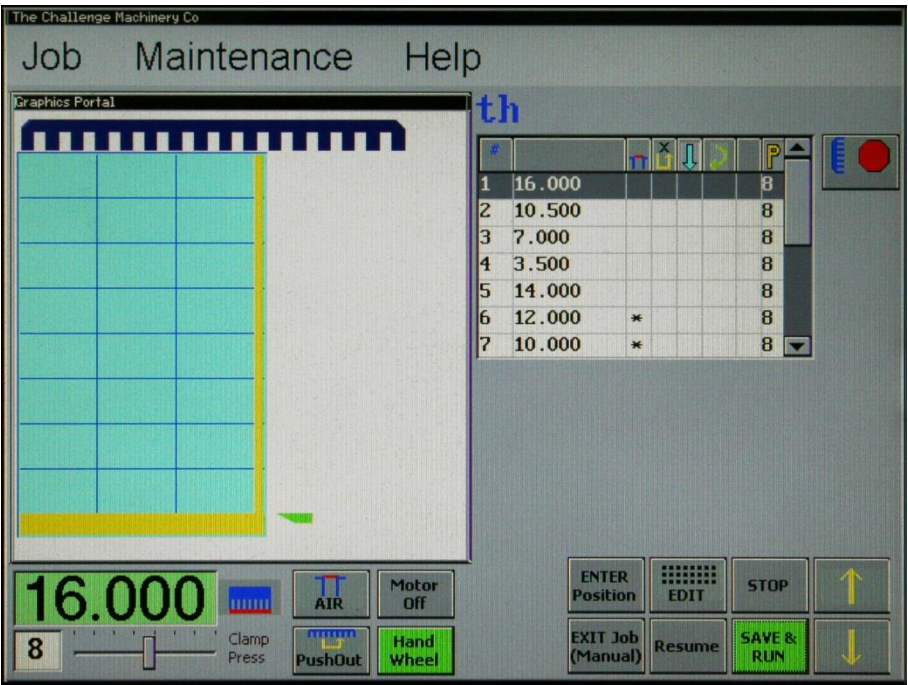


Figure 12 – Job Run Screen with Sheet Division

4.2.5 Running a Job

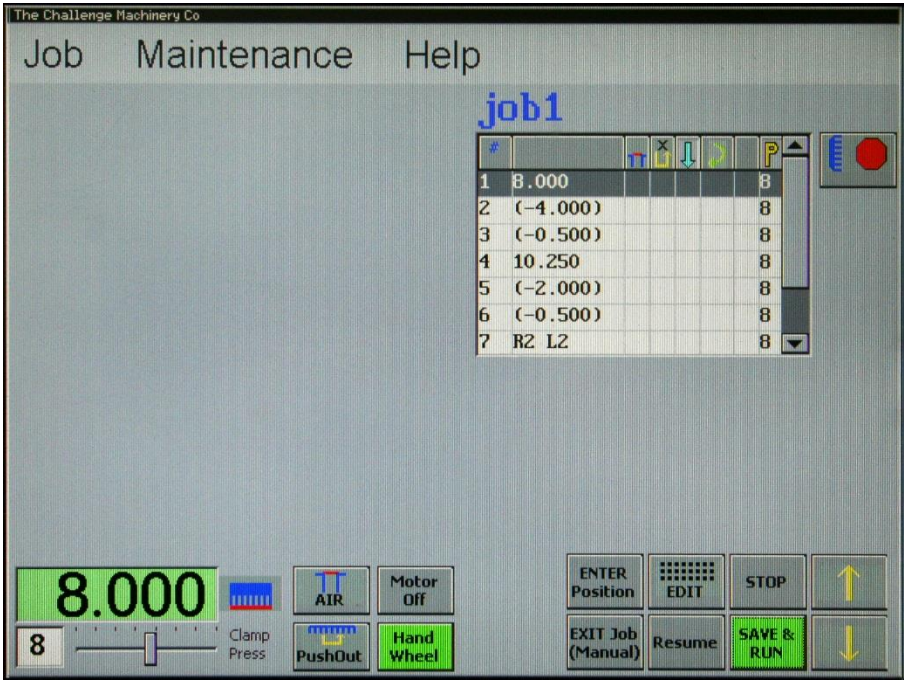
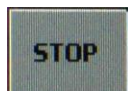


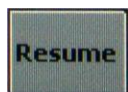
Figure 13 – Job Run Screen



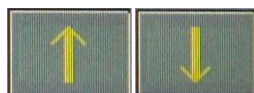
To run a job, make sure it is open then press **SAVE & RUN**. The backgauge will move to the *first* programmed position. From there, simply making a cut will advance the backgauge to the next programmed position.



The **Stop** key will stop the automatic running of the current job. In this mode, the backgauge will not move when the up and down keys are pressed.



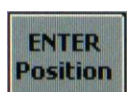
Resume starts a job at the *highlighted* backgauge position.



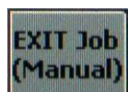
In run mode, the **Up** and **Down** arrow keys can be used to manually step up or down through the job (moving the backgauge) without making a cut.



To edit values in a job, press the **EDIT** key. This will bring up the job edit screen. If you make any changes, you must press **SAVE & RUN** to save them. Note: If you leave the job edit screen without pressing **SAVE & RUN**, all changes will be lost.



To replace the current step's job value with the current backgauge position, press the **ENTER Position** key. This is helpful if you are running a job and need to revise a single entry but do not want to edit the job and start the job over.



Pressing the **EXIT Job (Manual)** key will exit the current job and take you back to the manual backgauge control screen.

4.3 Maintenance Mode

The Maintenance area is used to set up or adjust many of the machine's features. Some are cosmetic in nature per operator preference and some are machine specific. There are four screens in the Maintenance area: Setup, Diagnostics, Knife Change, and Touch Screen.

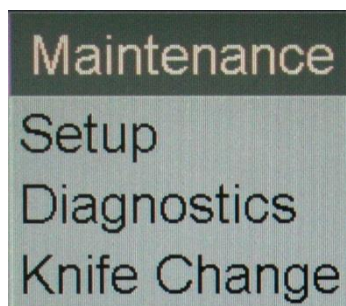


Figure 14 – Maintenance Pull-Down Menu

4.3.1 Setup

The Setup screen has seven tabs: Parameters, Cycle Counters, Service Info, Color Settings, Options & Updates, Hydraulic Settings, and Accuracy Adjust. When the setup screen is first opened, the Parameters tab is opened by default.

4.3.1.1 Parameters Tab

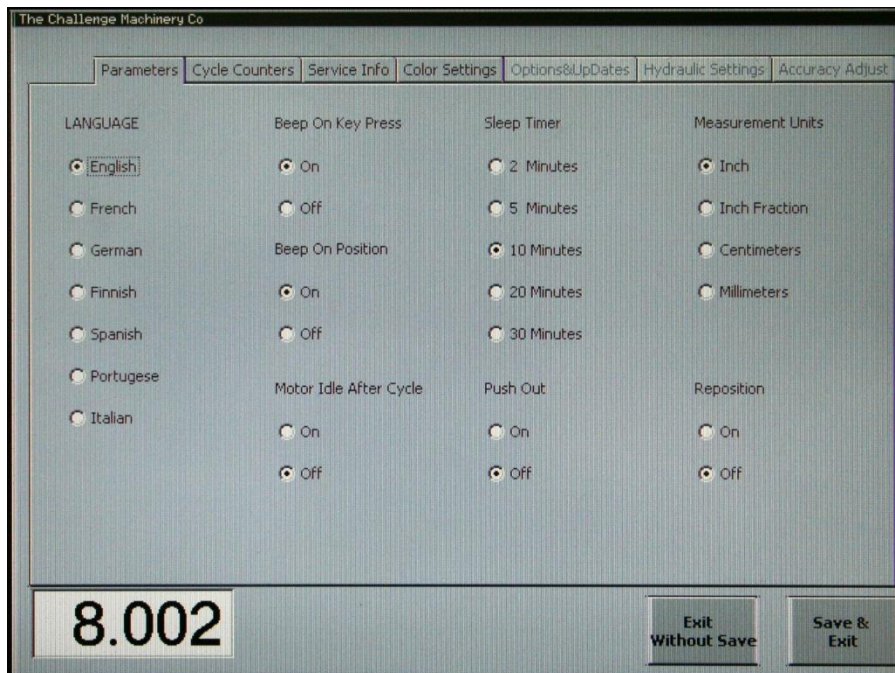


Figure 15 – Parameters Tab

The Parameters tab is used to control various functions of the machine:

Language – Sets the language to be shown on the display.

Beep On Key Press – Turns on or off the audible beep heard when pressing keys.

Beep On Position – Turns on or off the audible beep heard when the backgauge has moved into position.

Motor Idle After Cycle – When this is set to off, the hydraulic motor will shut off after every cut. This only applies in when the cutter is in manual mode.

Sleep Timer – Determines how long before the machine waits to go to sleep after non-use.

Push Out – Sets the default push out setting to on or off.

Measurement Units – Sets the default units to be displayed for the backgauge position.

Reposition – When this is set to on, the backgauge will automatically move to the correct position when it is moved or bump out of position.

4.3.1.2 Cycle Counters Tab

This tab is useful to set reminders for the operator to change the knife or to lubricate the machine. It also gives a total count of knife strokes for this machine.

4.3.1.3 Service Info Tab

This tab is a handy reference to get a phone number of your dealer in case service or additional supplies are needed. Simply touch the box you wish to change and a keyboard will appear. To access the three locked tabs a special code must be entered into the enable tabs code. This is necessary because there are settings in the three locked tabs that can adversely affect the machines operation if not set properly. Caution must be taken when using the three locked tabs.

4.3.1.4 Color Settings Tab

This tab is used to change the colors of the display per the operator's preferences. There are three areas that can be set: The color bar, background color, and dialog box colors. Use the slider bars to select the colors as desired. Press the dot next to the appropriate text to change to the next selection.

4.3.1.5 Options & Updates Tab

This tab is used to set certain factory settings and to perform software updates. This screen is not accessible unless the code **6125** is entered into the Enable Tabs Code input box on the Service Info tab. **Note: Settings on this screen must be set correctly, or else damage to machine could result! Use caution when editing!**

Machine Size/Model specifies which model of machine the TC controller is installed on. This is normally set at the factory and should only be set once.

Backgauge Motor Size sets the size of the backgauge motor (where applicable).

Cut Button Type sets which cut buttons are installed on the machine (where applicable).

Airbed Status sets whether or not an air table is installed on the machine (where applicable).

Press to Clear Programmed Jobs will wipe out all the machine memory for jobs and start over. All cut positions will be lost.

Press to Load Factory Default Parameters can be useful when it is necessary to return to factory settings. This screen is normally disabled and can only be accessed with a code.

Load Software and Program Flash. When a USB stick is installed that contains a valid TC software upgrade file located in a folder called \CMC\update\, the user will be prompted to upgrade the memory. The latest software for the TC and update instructions are available at www.challengemachinery.com/software. Only ONE software upgrade file can be in the folder to work properly. First load the file from USB to the TC on board memory by pressing "Load Software". A progress bar will show when it is complete. Next, load the onboard flash memory by pressing "Program Flash". **Do not interrupt power for any reason until this is complete.** Severe damage to the program will result and the board most likely will have to be returned to the factory to be repaired.

4.3.1.6 Hydraulic Settings tab

This tab is used to set various hydraulic settings specific to your machine. This screen is not accessible unless the code **6125** is entered into the Enable Tabs Code input box on the Service Info tab. **Note: Settings on this screen must be set correctly, or else damage to machine could result! Use caution when editing!** For instructions on how to make changes to the hydraulic settings for your machine, consult the instruction manual that was included with your machine. If you do not have a copy, or to download the latest version, visit: www.challengemachinery.com/support.

4.3.1.7 Accuracy Adjust Tab

This tab is used to properly calibrate the backgauge. This screen is not accessible unless the code **6125** is entered into the Enable Tabs Code input box on the Service Info tab. **Note: Settings on this screen must be set correctly, or else damage to machine could result! Use caution when editing!** To set the accuracy, follow the prompts on the screen. More information on how to do this can be found in the instruction manual that was included with your machine. If you do not have a copy, or to download the latest version, visit: www.challengemachinery.com/support.

4.3.2 Diagnostics

The Diagnostics screen (Figure 16) is used to aid the technician in troubleshooting problems in the machine. The input check boxes quickly tell which inputs are activated. This can be very useful when adjusting limit switches. The Outputs check boxes also tell which outputs are on. In addition, the **machine errors** dialog box reports which errors have occurred so the technician can see a brief history of the machine. There is also an Outputs key in the lower right of the display. That will bring up a dialog box to aid in troubleshooting the PWM outputs for the hydraulic valves. It may also be helpful to turn on and off various outputs. Simply press the checkbox by the corresponding output you wish to test to turn it on and off.

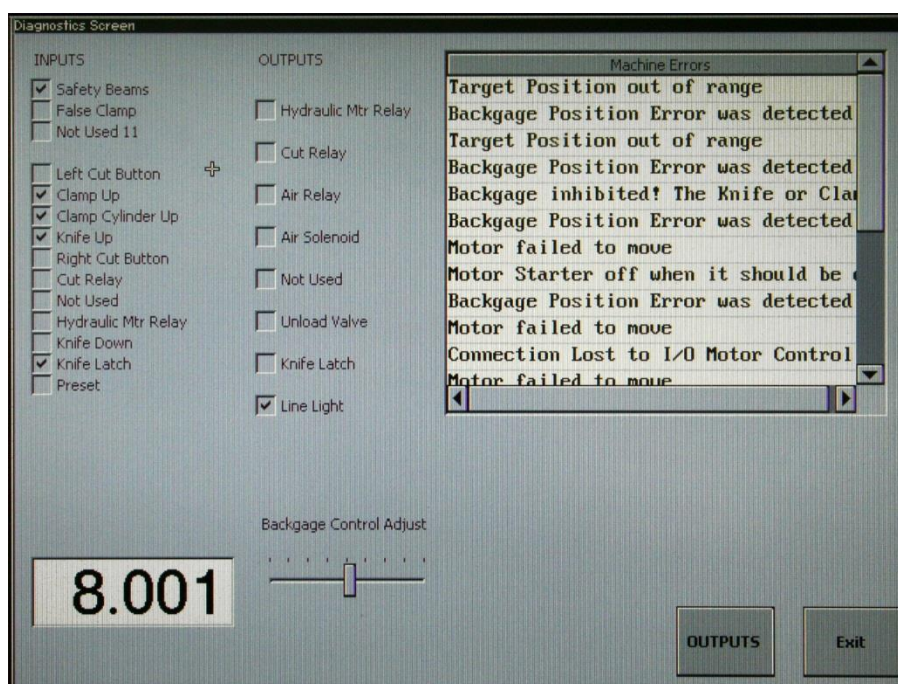


Figure 16 – Diagnostics Screen

4.3.2.1 Backgauge Control Adjust

The Backgauge Control Adjust slider bar (Figure 16) should be as close to center as possible in order to ensure that the backgauge will not move when the handwheel control is in the idle position. As you twist the handwheel knob from one side to the other you will see the slider bar move left and right. Each time you release the handwheel, the slider bar should return to the center. If it repeatedly stops off center to one side, adjust as follows:

1. First make sure the handwheel control is turned off (see Section 4.1.10 Hand Wheel On/Off)

2. Locate the coupling in the backgauge control assembly as shown in Figure 17. Some models have a cover that encloses the backgauge control assembly, although there will be a slot that provides access to coupling. It may be helpful, however, to remove the cover for better access.
3. Loosen the front coupling set screw (Figure 17) a few turns.

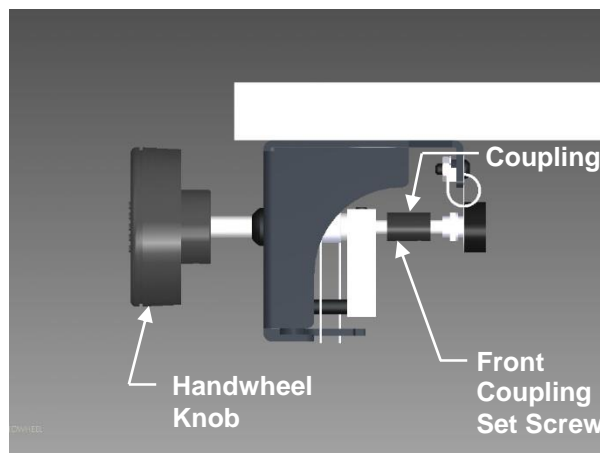


Figure 17 – Backgauge Control Assembly

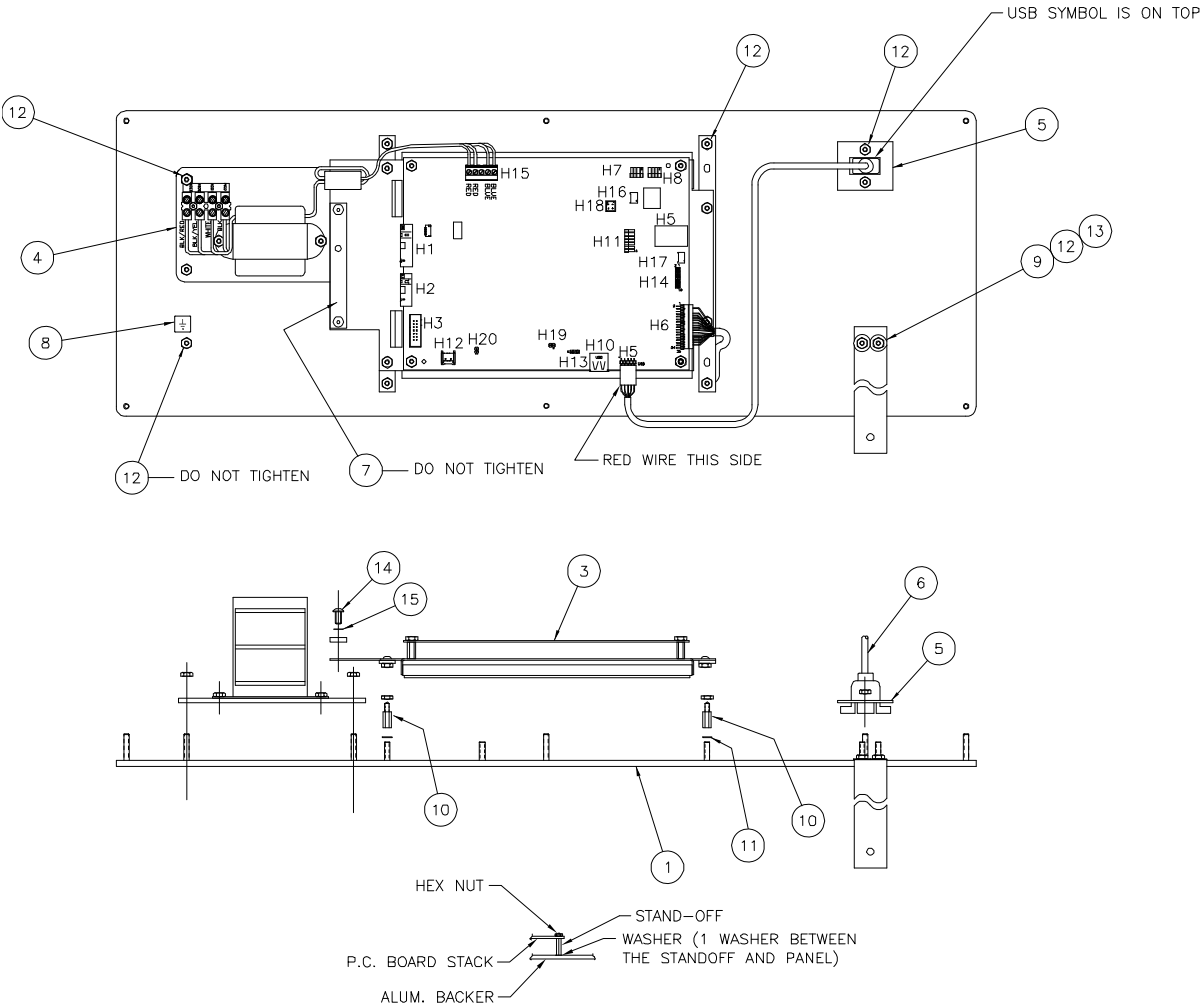
4. While holding the handwheel knob stationary, turn the coupling slightly in one direction or another until the slider bar becomes centered.
5. Tighten the setscrew and recheck as described above.
6. Once the handwheel is centered properly, replace the cover if one was removed.

4.3.3 Knife Change

This screen is used when replacing the knife in order to set the proper knife depth. In this screen the knife can operate normally or be set to Knife Change Mode. Knife Change Mode is used to send the knife and clamp to the “down” position without returning up. This is needed to set the depth of the knife. To send the knife and clamp down, simply hold the cut buttons until the knife and clamp come down and continue to hold the buttons until the motor shuts off (approximately 3 seconds). Now the knife blade can be adjusted as described in the instruction manual that was included with your machine. If you do not have a copy, or to download the latest version, visit: www.challengemachinery.com/support. Press the cut buttons again to raise the knife and clamp. Note: this mode is also useful to check hydraulic pressures as described in your model’s instruction manual.

5.0 Appendix A - Parts List

5.1 TC Control Panel Assembly – EE-3471 Rev. F



| NO. | PART NO. | DESCRIPTION OF ACCESSORIES | QTY |
|-----|--------------|----------------------------------|-----|
| 1 | 47700 | CONSOLE - CONTROL, TC | 1 |
| 2 | EE-3480 | FLASH DRIVE - PROGRAMMED | 1 |
| 3 | EE-3457 | DISPLAY ASSEMBLY - TOUCH CONTROL | 1 |
| 4 | EE-2920-2 | TRANSFORMER ASM. - CONSOLE POWER | 1 |
| 5 | E-3215 | BRACKET - USB PORT | 1 |
| 6 | E-3203-1 | CABLE - BULKHEAD TO USB | 1 |
| 7 | 43066 | STRAIN RELIEF - RIBBON CABLE | 1 |
| 8 | S-1781-42 | LABEL - GROUND SYMBOL | 1 |
| 9 | EE-3512 | COPPER STRAP - GROUNDING | 1 |
| 10 | E-1152-56 | SPACER - 1/2" LONG | 4 |
| 11 | H-7321-#6 | WASHER - #6 SAE. FLAT | 4 |
| 12 | H-6423-#6 | NUT - #6-32 HEX | 13 |
| 13 | H-7321-#10 | WASHER - #10 SAE. FLAT | 2 |
| 14 | H-6910-83203 | SCREW - #8-32 X 3/8 BUT HD CAP | 2 |
| 15 | H-7321-#8 | WASHER - #8 SAE. FLAT | 2 |

5.2 LCD/Touch Control Assembly – EE-3457 Rev. E

