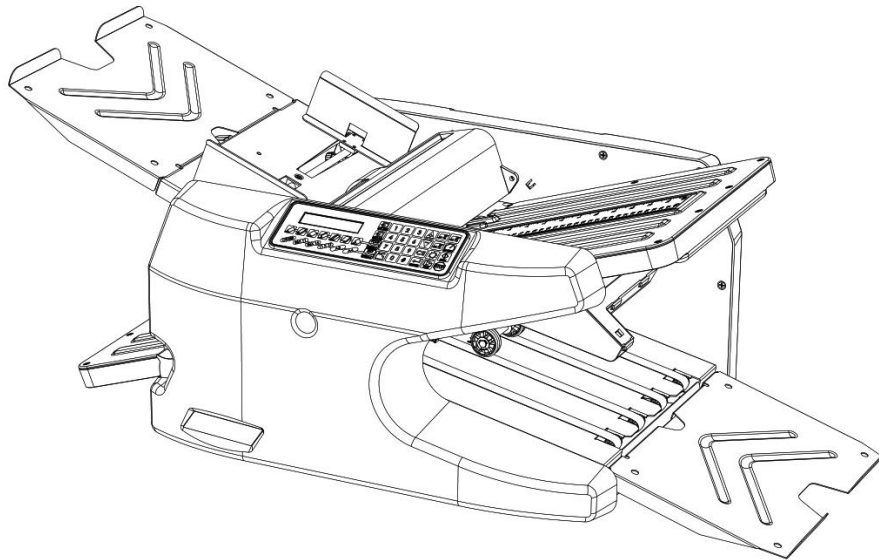


# Model 2051 Folder

## Installation & Operating Instructions



### Specifications

|                       |  |                                |   |
|-----------------------|--|--------------------------------|---|
| Folder Speed.....     | 3,000-15,000 SPH   | Paper Weight.....              | 18# Bond (67.72 gsm) min.                                     |
| Folder Capacity ..... | 500 Sheets of 20# Bond<br>(2.25" Stack Height)                               |                                | 90# Index (161.78 gsm) max.                                   |
| Paper Size.....       | 2.5" W X 5.2" L Min.<br>(Half Fold Only)                                     | Fold Length (both tables)..... | 2.3" (5.8cm) min.   |
|                       | 12" W X 18" L Max.   |                                | 14.75" (37.5 cm) max.   |
| Programmed Sizes..... | 8 1/2" X 11", 8 1/2" X 14"<br>11" X 17", A4, A3                              | Feed Method .....              | Top feed, friction  |
| Programmed Folds..... | Letter, Zee, Half, Double Parallel<br>Gate, Engineering, Church              | Multi-Sheet Bypass.....        | 4 Sheets of 20# Bond max.<br>(stapled sets ok)                |
| Memory Capacity ..... | 10 custom folds<br>Storage of speed, quantity<br>and Batch quantity optional | Electrical .....               | 115 VAC, 1.4 Amps, 50/60 Hz<br>220/230 VAC, .8 Amps, 50/60 Hz |
|                       |  | Dimensions (assembled) .....   | 43.2" W X 17.8" H X 22.2" D<br>110cm W X 452cm H X 564cm D    |
|                       |  | Shipping Weight.....           | 102 Pounds  |

### Introduction

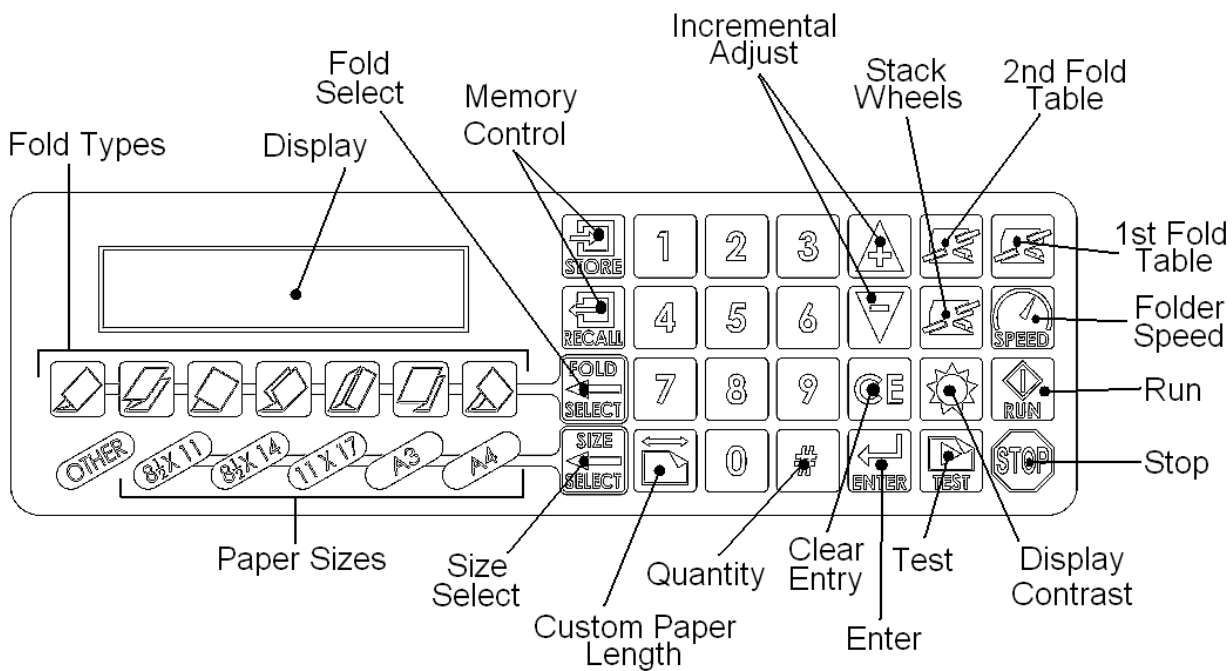
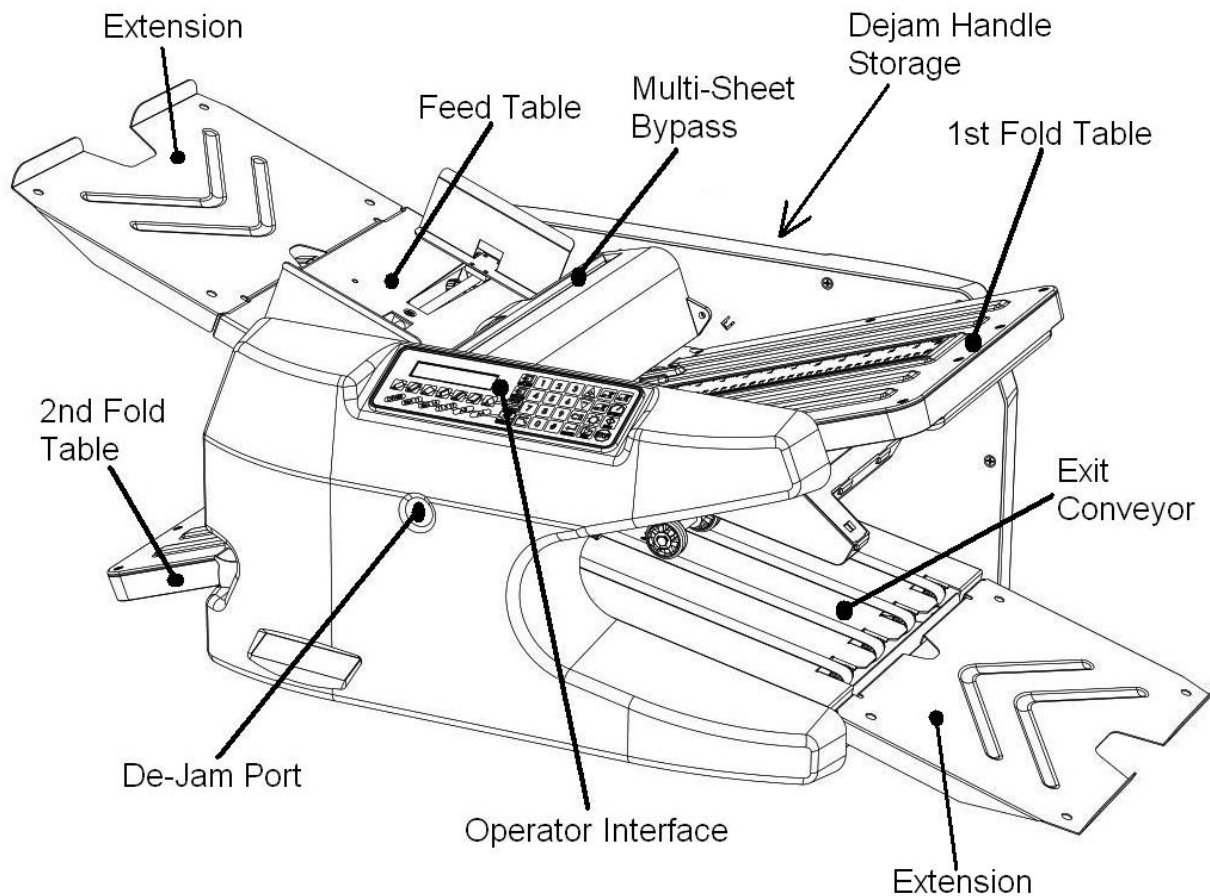
Thank you for selecting the **intimus®** Model 2051 AutoFolder. All components have been thoroughly inspected and performance tested to provide you with the best folder value in its class. Before each machine is packed for shipment, it must pass a critical performance test. This folder can execute Letter, Zee, Half, Double Parallel, Gate, Engineering, Church and custom folds within its paper size capacity. Please review this publication in its entirety before attempting to operate your folder. Thorough understanding of this information will help eliminate most operator-associated errors and ensure years of trouble-free performance.

**WARNING!** Never connect power to the machine until you are ready to set up and operate the folder. This machine contains moving parts. During setup, operation, and maintenance keep hands, hair, loose clothing, and jewelry away from all moving parts. Serious bodily injury could result.

**Notice:** This folder contains **NO USER SERVICEABLE COMPONENTS**. Service or disassembly should only be completed by a qualified technician, and with the power disconnected and locked out. The AC outlet for this machine must be near by, and access to the outlet must not be blocked.

**intimus®**  
A MARTIN YALE BRAND

(2051.11.02.09.15.00)



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## Getting Started

### 1.1 List of Components

Your shipping container comes complete with the following items;

- Qty 1 – 2051 Folder
- Qty 2 – Fold Table Assembly
- Qty 2 – Feed Table Extension
- Qty 1 – Power Cord
- Qty 1 – Dejam Handle
- Qty 1 – 9/64" Hex Key

The Fold Table Assemblies are shipped in their own box and included within the folder container. The Feed Table Extensions and the Dejam Handle are in their own box as well.

### 1.2 Setting Up Your New Folder

Place your folder on a sturdy, flat surface such as a table, desk, or bench. Inspect your folder for signs of damage. If damage is apparent, call the freight carrier immediately, then call Martin Yale for instructions.

### 1.3 Power Connection

The Power Cord for the folder is a standard computer power cord. Plug the female end of the power cord plug into the folder's power connection (Figure 1).

The power switch is located on the same surface as the power connection, nearest the front of the folder.

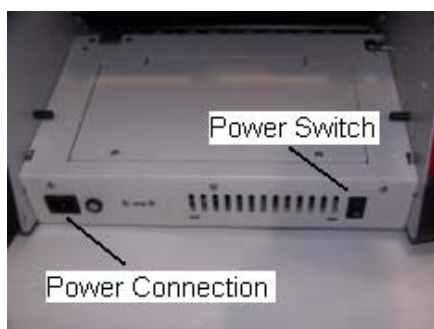


Figure 1

### 1.4 Fold Tables

Both fold tables are the same, and can be installed into either the first (upper, right) or second (lower, left) fold table positions. The

fold table is locked into position by 4 (four) pins located in the folder.

#### 1.4.1 First Fold Table Installation

To install the first fold table, refer to Figure 2.

Step 1: slide the front slot opening of the fold table onto the inner set of pins (closest to the folding rollers).

Step 2: lower the fold table onto the outer set of pins with a light amount of downward pressure as shown. There will be a slight snapping action as the fold table drops into the detent position.

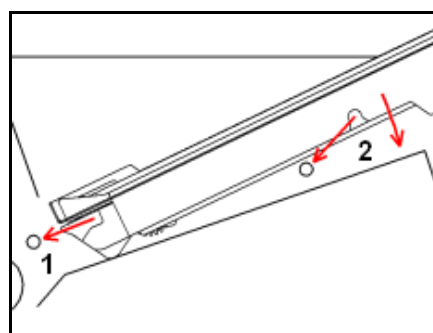


Figure 2

#### 1.4.2 Second Fold Table Installation

To install the second fold table, refer to Figure 3.

Step 1: slide the front slot opening of the fold table onto the inner set of pins (closest to the folding rollers) with a light to moderate amount of pressure.

Step 2: lower the fold table onto the outer set of pins with a light amount of downward pressure as shown. There will be a slight snapping action as the fold table drops into the detent position.

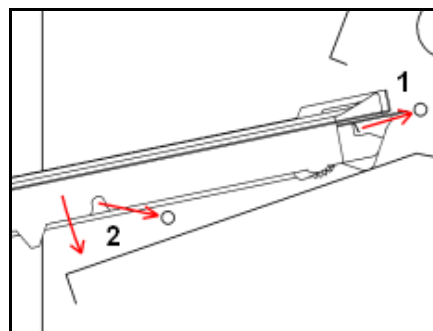


Figure 3

### 1.5 Feed Table Extension

Your folder comes with 2 Feed Table Extensions. One of the Extensions is used on the Exit Conveyor, and the other extension is used on the Feed Table. Both extensions are identical and can be used on either the Feed Table or the Exit Conveyor.

To install the Extension onto the Feed Table, align the locking tabs of the Extension with the slots in the Feed Table as shown in Figure 4.

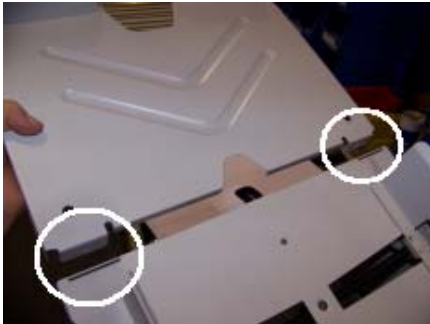


Figure 4

Squeeze the Feed Table and Extension together nearest the tabs and slots until the 2 pieces snap together.

To install the Extension onto the Exit Conveyor, align the tabs on the Extension with the slots provided in the Exit Conveyor as shown in Figure 5. No force is required to install the Extension onto the Exit Conveyor – gravity will hold the Extension in place.



Figure 5

## 2 Using Your Folder

After performing all of the steps in section 0 (Getting Started), you're ready to turn on the folder.

### 2.1 Power Up

With your left hand, reach under the second (left) fold table and turn on the power. When the power switch is turned on, the display will read as follows;




Figure 6

This message will display for a short time, then the display will read;



Figure 7

This is the software revision level.


 In the event that you must call Martin Yale Support for help, please have the software revision number available.

After a few seconds, the display will change again and read as follows;



Figure 8

At this time, both fold tables will begin to move to their respective home positions.

 Homing of the fold tables is required to insure a proper and accurate fold. This operation may take several seconds. Allow the folder to continue without interruption until the display indicates that it's ready.

Once the Fold Tables have been homed, the display will toggle between 2 different messages;



Figure 9

And...



Figure 10

You will see the “Custom Fold Set” message displayed when none of the “Fold Type” lights are illuminated. This is to tell you that the folder does not recognize the Fold Table positions as a standard fold type. This is typically referred to a “Manual Mode”.

### 2.2 Loading Paper

To load paper into the Feed Table, firmly push the Feed Table down as show in Figure 11, until it locks into the “load” position as shown in Figure 12.



Figure 11

**i** The Feed Table is capable of holding 500 sheets of 20# bond paper, or a stack of paper 2 1/8 inches high, up to the maximum rated weight of paper for this folder.

Load the paper into the Feed Table as shown in Figure 12, making sure that the paper is fully within the folder, and that the leading edge of the stack is resting against the face indicated.



Figure 12

Once the Feed Table has been loaded with paper, depress the Feed Table Release to unlocked the Feed Table, allowing it to return to the raised position (Figure 13).



Figure 13

### 2.3 Setting a Paper Size

To change paper sizes, depress the “SIZE SELECT” button located on the folder keypad.



Each time the “SIZE SELECT” button is depressed, the lights indicating the paper size will sequence through all of the paper sizes.

**i** You must specify the paper size that you intend to fold prior to running the folder.

### 2.4 Setting a Fold Type

To change the fold type, depress the “FOLD SELECT” button located on the folder keypad.



Each time the “FOLD SELECT” button is depressed, the lights indicating the fold type will sequence through all of the fold types.

**i** Once you have selected a fold type, the folder will wait for 8 seconds, for any additional settings that you may want to set, such as a quantity of folds to run. To bypass this time delay, depress the “ENTER” button. Additionally, pressing either the “Test” or “Run” buttons will bypass this time delay and then perform either “Test” or “Run”, whichever was pressed.

### 2.5 Setting the Paper Guides

Your 2051 folder comes factory set to 8½ X 11 paper. To adjust the paper guides, loosen the thumb knobs of the Paper Guides by rotating the knobs counter-clockwise (top to the left) approximately 1 full turn (Figure 14). Move the Paper Guides to the desired location, and then retighten the thumb knobs.



**⚠ Do not over tighten the thumb knobs.**

Tighten the thumb knobs just enough to hold the Paper Guides in place. Do not use any tools to tighten the thumb knobs as this will damage the knobs and the Paper Guides.

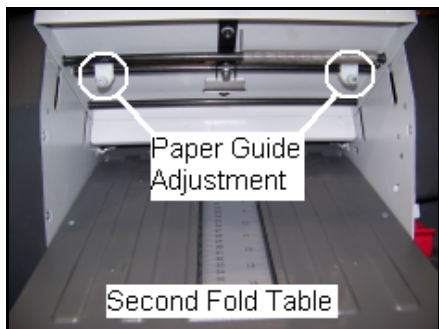


Figure 14

**💡** When setting the Paper Guides, it is easier to have the correct paper in the Feed Table between the guides as you adjust them. Also, it is easier to move the Paper Guides with your left hand from under the Feed Table, rather than from the top.

**i** It's important to note that for best folding results, the paper should be as close to centered on the Feed Table as possible.

**2.6 Running a Test Fold**

**TEST** The Test button provides the ability to check the folder settings by feeding a single piece of paper from the Feed Table. Pressing the Test button once will turn on the main motor, feed two sheets of paper, and then main motor will stop.

**i** Folders with older revisions of software will only feed a single sheet of paper when the Test button is depressed.

**i** Holding the Test button down will cause the folder to continuously feed paper. Once the Test button is released, the folder will stop normally.

**✓** If the location of the fold is incorrect, adjustment of the Fold Tables is required. See section 3.2 - Fold Table Adjustment.

**✓** If the fold is not square (skewed fold), adjustment to the paper guides is required. See section 2.7 - Fold Skew Adjustment for more information.

**2.7 Fold Skew Adjustment**

Skew adjust of the fold is done by changing the angle of the Paper Guides in the Feed Table.

There are 2 styles of Skew Adjustment on the 2051 folder.

**2.7.1 Old Style Skew Adjustment**

With the Feed Table depressed into the load position, push or pull the adjustment lever located in the Feed Table (Figure 15) until the desired amount of skew adjustment has been made.

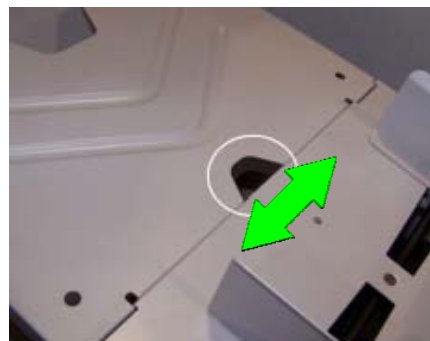


Figure 15

**2.7.2 New Style Skew Adjustment**

With the new style of Skew Adjustment, adjustments can be made at anytime, regardless of paper load in Feed Table, or if the folder is running.

To adjust, rotate the Skew Adjustment Knob located on the side of the Feed Table, closest to the front on the folder (Figure 16).



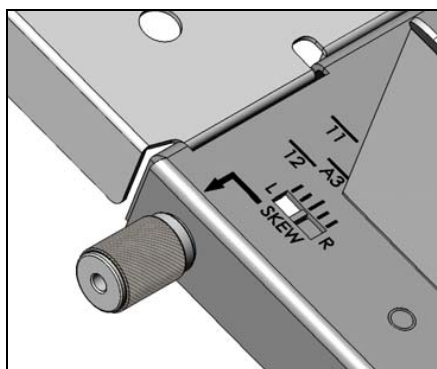



Figure 16


### 2.8 Ready to Fold



Pressing the Run button will initiate folding – the main motor will start and paper feeding will begin.

Feeding will continue until one of the following conditions is met; 1. the Stop button is depressed, 2. The Feed Table becomes empty of paper, 3. a folding error is encountered, 4. or the programmed quantity reaches 0 (zero).

 To program the quantity of sheets to be folded, see section 3.6 - Quantity and Batch Mode.


 Your folder is equipped with a “Limp” mode. In the event that either Fold Table Drive malfunctions (see error codes 105, 106, 107, or 108), you can still move the fold table manually and run the folder. For more information regarding “Limp” mode, see section 7 - Limp Mode.

### 2.9 Stopping the Folder




Pressing the Stop button once instructs the folder to perform a normal shut down, allowing all paper to clear the folder prior to the main motor stopping.

Depressing the Stop button twice in quick succession causes an immediate stop of the main motor. This is to be used in the event that there is a paper jam that the folder did not detect, or other condition where an instantaneous stop is necessary.

 **Double pressing of the Stop button is reserved for emergency stopping only, and should not be used for normal stopping when the folder is running.**

## 3 Adjusting and Counting

Pressing any of the following buttons will place you into the respective adjustment mode. If you do not press any other buttons for 8 seconds, the folder will revert to its previous mode.

 Pressing the Enter button will bypass the 8 second time delay and will instantly proceed.

### 3.1 Incremental Adjustment Buttons

The Incremental Adjustment Buttons are used for the fine adjustment of various items on your folder.

These buttons work for all of the functions that have the matching light-blue background color only. These buttons will auto-repeat if held down for more than one second.



This button will increase a number value by one count.




This button will decrease a number value by one count.

### 3.2 Fold Table Adjustment

To manually adjust a fold table, press the corresponding fold table adjustment button as shown below, and then press either the increase or decrease button (as described in section 3.1 - Incremental Adjustment Buttons).

Second Fold Table      First Fold Table



 In addition to the Incremental Adjustment buttons, the fold tables can be positioned to a

specific location by entering a value with the number buttons on the keypad. To do so, simply type in a value and press the enter button.

**⚠ The keypad is disabled when the folder is in Limp mode. Only the Incremental Adjustment buttons are functional when in Limp mode. Also when in Limp mode, the LCD displays shown below in Figure 17 and Figure 18 may be disabled. See section 7 - Limp Mode for more information.**



Figure 17



Figure 18

**☀** If you find it necessary to make an adjustment to either fold table when you have a standard fold type specified, changing the fold table by more than 1/4 of an inch will place the folder into “manual” mode, as indicated by the illumination of the “Other” LED. Moving the fold table back to within 1/4 of an inch will turn off the “Other” LED and the standard fold type LED will again be illuminated.

**✓** Your folder is equipped with a “Limp” mode. In the event that either Fold Table Drive malfunctions (see error codes 105, 106, 107, or 108), you can still move the fold table manually and run the folder. For more information regarding “Limp” mode, see section 7 - Limp Mode.

### 3.3 Stack Wheel Position



To manually adjust the position of the Stack Wheels, press the Stack Wheel button (shown on the left), and then press either the increase or decrease button (as described

in section 3.1 - Incremental Adjustment Buttons).

**i** The correct position of the Stack Wheels is automatically calculated based on the length of

the paper and the position of the fold tables. Manual adjustment of the Stack Wheels is not normally required when performing a standard, pre-programmed fold.

### 3.4 Folder Speed



To adjust the speed of your folder, press the Speed button (shown on the left), and then press either the increase or decrease button (as described in section 3.1 -

Incremental Adjustment Buttons).

Folder speed can be adjusted while the folder is running. For most all folding jobs, the folder can be run at full speed (100%).

### 3.5 Display Contrast



To adjust the display contrast of the LCD display, press the Display Contrast button (shown on the left), and then press either the increase or decrease button (as

described in section 3.1 - Incremental Adjustment Buttons).

### 3.6 Quantity and Batch Mode



The Quantity (#) is used to specify the total number of sheets to be folded, and to specify a Batch quantity.

#### 3.6.1 Quantity

To program a specific number of pages to be folded, press the Quantity (#) button once.

**i** Pressing the Quantity (#) button twice will skip the Quantity screen and place you directly into Batch Mode.

Using the numbers on the keypad, enter the quantity of sheets to fold, and press the enter key. After entering a quantity, you will automatically enter Batch Mode.



Figure 19

#### 3.6.2 Batch Mode

The Batch Mode function gives you the ability to fold and deliver a specified number of sheets as

a “batch”, and automatically places a gap between batches. A batch quantity of 0 (zero) will turn off Batch Mode, and all of the folded sheets will be delivered without a delay.

To enable Batch Mode, enter a Batch quantity value greater than 0 (zero). This quantity is the number of sheets that will be folded and delivered as a “batch”. When the entered quantity of sheets has been folded, the folder will suspend feeding until the Exit Conveyor has become clear of paper, then folding will resume.

This run/pause/run sequence will continue until the Stop button is depressed, the Feed Table becomes empty of paper, a folding error is encountered, or the programmed quantity reaches 0 (zero) (see section 3.6.1 - Quantity).

### 3.6.3 Stacking Problems

Occasionally, you may find that the folded paper is not stacking cleanly because of a particular type of fold or paper weight. A condition such as this can result in a paper jam because paper piles up between the Stack Wheels and the fold rollers, allowing paper to be drawn back into the spinning rollers.

To eliminate the possibility of this occurring, as an extension of the Batch Mode, folded sheets can be delivered one at a time with a slight delay between pages to insure that the folded sheets have become captured by the Stack Wheels.

Setting the Batch quantity to “1” instructs the folder to feed one sheet at a time, and to wait for the Exit Conveyor sensor to become clear, before feeding the next sheet. This insures that the Stack Wheels have a firm grasp of the previously folded sheet before the next sheet is fed into the folder.

## 4 Manual Mode

The folder is in “Manual Mode” if none of the Fold Type lights are illuminated. Manual Mode is entered if the position of either Fold Tables is manually change by a more than 1/4 of an inch from a Standard Fold position. Doing so will turn off all Standard Fold lights, indicating that the folder has been placed into “Manual Mode”. Also, the top line of the LCD Display will state “Custom Fold Set”.

Custom Fold Set  
Qty Done = 0

Figure 20

When in Manual Mode, the folder assumes that the operator knows what they want for a desired fold, and therefore, it is completely up to the operator to specify the paper length and set both Fold Table positions. The position of the Stack Wheels will still automatically adjust based on the paper size and Fold Table positions.

When in Manual Mode, it is still important to set the proper paper length as this helps to control feeding, and insures maximum operating efficiency.

## 5 Custom Folding Jobs

### 5.1 Custom Paper Lengths



Your folder has the necessary intelligence to calculate the proper settings for the Fold Tables and the Stack Wheels for all of the pre-programmed fold types for any given paper length. If a pre-programmed fold type is selected, and you enter a custom paper length, the fold tables and stack wheels will automatically be configured to produce that fold.

To specify a custom paper length, press the Paper Length button. Using the number buttons, enter a valid paper size value (see the folder specifications on the cover of this document for valid paper sizes), and press the Enter button to save this value.

### 5.2 Custom Fold Table Settings

When a custom Fold Table setting is entered, the folder enters a “manual” mode where you must specify everything manually. You may use the pre-programmed paper sizes, if you wish.

When the folder is in manual mode, the “Other” light will be illuminated, indicating that you are creating a fold “Other” than the standard, pre-program fold types.

### 5.3 Custom Fold Programs

The folder can store up to 10 different custom fold configurations. Custom programs store both Fold Table locations, Paper Length, Folder Speed, Quantity, and Batch Quantity.


The location of the Stack Wheels is calculated automatically when the program is recalled, and therefore, are not part of Custom Fold Programs.




This button will “store” the current folder configuration into a memory location.



This button will “recall” a previously stored folder configuration.

 See sections 8.2.3 - 8.2.5 for information regarding storing Folder Speed, Quantity, and Batch Quantity.

 Programs are maintained in memory even if the power is turned off or power is removed.

Once a program is stored into a memory location, it can not be deleted. Programs can only be overwritten with another program.

### 5.4 Storing a Program

To store a program, press the “Store” button, then press one of the number buttons (0-9) to specify a storage location.

Each number button is a separate program storage location.

### 5.5 Recalling a Program

To recall a stored program, press the “Recall” button, and press a number button where a program is stored. If there is a stored program in the number pressed, the folder will immediately begin to configure itself per the stored program. All of the standard Fold Table and Stack Wheel messages will be displayed. If there is no program stored in the number pressed, the following message will be displayed;

**Storage Location  
Empty**


**Figure 21**

Once a program is stored into a specific memory location, this message will not be displayed again.

## 6 Multi-Sheet Bypass

### 6.1 Introduction

Your folder can fold up to 4 sheets of 20# Bond paper through the multi-sheet Bypass. The 4 sheets may be stapled together. However, the location of the staple is restricted to the top edge of the pages. The staple can be located in either corner so long as it is along the top of the document.

 **When placing the multiple sheets into the Bypass slot, the stapled edge must enter the slot first! Failure to do so will cause wrinkling of the sheets.**

It is **not** necessary to empty the Feed Table when using the Multi-Sheet Bypass. Nor does the Feed Table need to be in any particular position.

There are 2 different software versions controlling the multi sheet bypass function.

### 6.2 Software Rev. 1.00 to 1.23

On all folders with a software revision of 1.23 and less, the Main Motor of the folder will start automatically.

When paper is introduced into the Multi-Sheet Bypass, the top line of the display will show the following message;

**Bypass Paper Detectd**

**Figure 22**

After a 5 second delay, the Main Motor will start running and the display will show the following;

**Bypass Paper Detectd  
Running Main Motor**

**Figure 23**

### 6.3 Software Rev. 1.24 and Greater

On folders with a software revision of 1.24 and greater, you must depress the “Run” button to start the folder. The folder will not automatically start.

### 6.4 Multi-Sheet Best Practices

For best results, insure that all of the pages are aligned with each other before placing them into the Bypass. For best possible results, place all of the sheets into the Multi-Sheet Bypass slot in the following manner;

1. With your left hand, palm facing down, hold the multi-sheet document at the bottom and allow the paper to hang with the top of the document below your hand.
2. Lower the top edge of the document into the Multi-Sheet Bypass slot located in the Top Cover, and allow the document to drop the last half inch or so.
3. **Without** grasping, support the document so that the document is not bent so when the folder starts running, the document will feed straight into the folder.
4. Before the folder begins to run, apply a small amount of downward pressure to help feed the document into the slot.

## 7 Limp Mode

Limp mode allows you to manually set the position of the fold tables and run the folder at a reduced speed.

Limp mode is entered automatically in the event that the folder encounters one of the following error codes; 105, 106, 107, or 108.

Positioning of the fold tables is done in the normal manner as described in section 3.2 - Fold Table Adjustment.

Since the LCD display for either fold table may be disabled when in Limp mode, use of the scales on the fold table is required when positioning. A fold chart is provided in the Appendix of this manual showing the positions of both paper stops in the Fold Tables to produce a particular fold for a given paper size..

## 8 Diagnostics and Setup

### 8.1 General

To enter any of the diagnostics options listed below, from the main diagnostics screen, press the corresponding diagnostics option number on the keypad. Figure 24 shows the Main diagnostics screen.




Figure 24

To exit any of the following diagnostics screens, press the “Stop” button.

To exit diagnostics altogether, from the Main diagnostics screen, press the “Stop” button.

### 8.2 Option 1 – Configure System

This option is used for basic setup of the folder. Using the “+” or “-“ button on the keypad, scroll through the list of parameters. When you reach the parameter that you which to change, press the “Enter” button once. This will put you into an edit mode. When in edit mode, the bottom line of the display will show arrows at the extreme right and left.

 If you have accidentally entered edit mode, to exit edit mode and abort changing the parameter, press the “Stop” button.

#### 8.2.1 Languages

To change the display language, once you are in edit mode, use the “+” and “-“ buttons to scroll through the list of languages. Once you have found the language you want, press the “Enter” button once to save this language and exit edit mode. The display will now read in the language selected.

#### 8.2.2 Units

There are only 2 units programmed into the folder – Inches and Centimeters. To change between units, once you are in edit mode, pressing the “+” will set units to “Inches”, and pressing the “-“ button will set units to “Centimeters”. Once you have selected the units, press the “Enter” button once to save and exit edit mode.



**8.2.3 Save Speed**

This parameter enables or disables saving of the folder speed setting (see section 3.4 - Folder Speed) as part of a custom fold program (see section 5.3 - Custom Fold Programs).

To change this parameter, once you are in edit mode, pressing the “+” will set this parameter to “Yes”, and pressing the “-“ button will set this parameter to “No”. Once you have set this parameter, press the “Enter” button once to save and exit edit mode.

With this parameter set to “Yes”, when a Custom Fold Program is stored, the current folder speed will also be stored. When the Custom Fold Program is recalled, the Folder Speed will be set to the previously stored Folder Speed.

If this parameter is set to “No”, Folder Speed will remain unchanged by Custom Fold Programs.

**8.2.4 Save Quantity**

This parameter enables or disables saving of a fold Quantity (see section 3.6.1 - Quantity) as part of a custom fold program (see section 5.3 - Custom Fold Programs).

To change this parameter, once you are in edit mode, pressing the “+” will set this parameter to “Yes”, and pressing the “-“ button will set this parameter to “No”. Once you have set this parameter, press the “Enter” button once to save and exit edit mode.

With this parameter set to “Yes”, when a Custom Fold Program is stored, the current fold Quantity value will also be stored. When the Custom Fold Program is recalled, the fold Quantity will be set to the previously stored value.

If this parameter is set to “No”, fold Quantity will remain unchanged by Custom Fold Programs.

**8.2.5 Save Batch**

**This parameter enables or disables saving of a Batch quantity (see section 10 - Figure 19**

Batch Mode) as part of a custom fold program (see section 5.3 - Custom Fold Programs).

To change this parameter, once you are in edit mode, pressing the “+” will set this parameter to

“Yes”, and pressing the “-“ button will set this parameter to “No”. Once you have set this parameter, press the “Enter” button once to save and exit edit mode.

With this parameter set to “Yes”, when a Custom Fold Program is stored, the current Batch quantity value will also be stored. When the Custom Fold Program is recalled, the Batch quantity will be set to the previously stored value.

If this parameter is set to “No”, Batch quantity will remain unchanged by Custom Fold Programs.

**8.3 Option 2 – Input Sensor Mode**

This option shows the current state of all sensor inputs.

The display will look similar to the example in Figure 25 below. The letters along the top of the display represent the input channel on the folders Main Controller. The numbers along the bottom of the display shows if the input is on or off for that specific input channel, with “1” being on and “0” being off.



Figure 25

A list of all input channels can be found in Table 1 - Input Channel List below.

**Table 1 - Input Channel List**

|   |                                    |
|---|------------------------------------|
| A | Feed Table Load Position Switch    |
| B | Paper Present In Feed Table Sensor |
| C | Paper Being Fed Sensor             |
| D | Paper In ByPass Sensor             |
| E | Top Cover Switch                   |
| F | Fold Table #1 Present Switch       |
| G | Home Sensor #1                     |
| H | Quad Sensor #1, Channel A          |
| J | Quad Sensor #1, Channel B          |
| K | Fold Table #2 Present Switch       |
| L | Home Sensor #2                     |
| M | Quad Sensor #2, Channel A          |
| N | Quad Sensor #2, Channel B          |
| O | Exit Conveyor Sensor               |
| P | RPM Sensor                         |
| Q | Spare                              |

**8.4 Option 3 – Keypad Input Mode**

This mode is for verifying the function of the keypad. The display will look like the example below in Figure 26. On the top line of the display, the letters represent the “row” position of the button, and the numbers represent the “column” position. When one of the buttons on the keypad is pressed, the corresponding “0” below the row and column values will a change to “1”.




**Figure 26**

For example, pressing button “5” will change the display to the example shown in Figure 27,

where “B” is the second row down on the keypad, and “3” is the third column from the left.




**Figure 27**

 Pressing the “Stop” button will briefly show a “1” in row “D” column “7”, then you will exit this diagnostics mode.

**8.5 Option 4 – Feed Mode**

This mode allows running of the folder, moving of the fold tables and firing of the feed clutch. While in the mode, the Multi-Sheet Bypass sensor is disabled and the Feed Table Load Position switch is disabled.

 **In this mode, all safety interlock switches (fold table present switches and top cover closed switch) are disabled. The main motor can be run and the fold table drives can be run. Do not place any loose items such as hair or hanging jewelry into or near the rubber rollers. Also keep hands and fingers clear of the rollers at all times. Entanglement and injury will occur.**

The buttons listed below are enabled and perform the following functions;

- Run – Toggles main motor on and off
- Speed – Allows changing of speed in normal manner
- Stop – If the Main Motor is running, this button will stop the Main Motor. If the Main Motor is not running, pressing the “Stop” button will exit this diagnostics mode.
- Test button – If Main Motor is not running, the “Test” button toggles the Feed Clutch solenoid on and off. If Main Motor is running, the Feed Clutch fires in one-shot manner, normal timing. Note: If Feed Clutch solenoid is on, pressing the “Run” button will turn off the Feed Clutch solenoid prior to the Main Motor starting.

The display will show the following information;





Figure 28

- CLT – Shows output signal for the Feed Clutch solenoid (1=on, 0=off)
- MOTOR – Shows the output signal for the Main Motor (1=on, 0=off)
- L – (Length) This is not a calibrated paper length measurement. This value shows how many counts are seen on the RPM sensor while the Paper Being Fed sensor is covered. Resets to zero when the Main Motor is on and the Clutch is fired. Counts on the raising and falling edge of RPM sensor signal.
- FT – State of Paper In Feed Table sensor
- PBF – State of Paper Being Fed sensor
- RPM – State of RPM sensor
- X – State of Exit Conveyor sensor

8.6 Option 5 – Output Mode

This mode allows the manual movement of both fold tables and the stack wheels.

8.6.1 Fold Tables Drives

This mode is intended to manually move the fold tables and operate the fold table drives.


To move one of the Fold Tables, press the corresponding Fold Table button, then press either the “+” or “-” button. Running of the Fold Table Drives can be done regardless if the fold tables are installed or not. The display will show the current encoder count and where it assumes the fold table to be in either inches or centimeters (depending on the current units set).



Figure 29



Figure 30

 Removal and reinstallation of the Fold Table will NOT force the Fold Table to return to its “home” position, which will cause the position on the display to be different than the pointer on the fold table.

8.6.2 Exercising the Drives

The Fold Table Drives can be “exercised” automatically while in this mode. Exercising of the drives consists of moving the Fold Table between 13” and 3” inches repeatedly.

Exercising of the Fold Table Drives is used to confirm the function and accuracy of the Fold Table Drives and the position encoders in the drives.

To exercise a specific Fold Table Drive, with the Fold Table installed, press and release the corresponding Fold Table button, and then press the “Run” button. The Fold Table will then go to Home. Once the Fold Table has been “Homed”, the Fold Table will go to 13”, stay in that position for a few seconds, then it will move to 3”, stay there for a few second, and then will move back to 13”.

Exercising of the Fold Table Drives will continue until the “Stop” button is pressed.

8.6.3 Stack Wheels

To move the Stack Wheels, press the Stack Wheel button, and then press either the “+” or “-” button. The display will show the analog sensor reading (A/D) from the Stack Wheels, and it will show the position of the Stack Wheels in either inches or centimeters (depending on the current units set).

8.7 Option 6 – Fold Counters

This mode will display an age reference of the folder. There are 2 different values displayed in this mode; Clutch Count and Age Count. These counters provided a means of tracking the age and the amount of use that the folder receives.

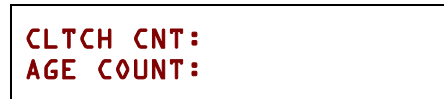



Figure 31

 In the event that a Tech Support call is required to Martin Yale, the Clutch Count and Age Count of the folder will be required.

### 8.7.1 CLTCH CNT (Clutch Count)

This value shows the number of times that the clutch has fired since it has last been serviced. In this case, “serviced” means either R&R or maintenance performed in the field by a qualified technician, such as a clutch replacement, or a fold table drive replacement. The Clutch Count is meant to be reset anytime work is performed on the folder.

To reset the Clutch Counter, depress and release the following buttons in sequence; “CE”, “0”, “STORE”.

### 8.7.2 Age Count

This value shows the number of clutch firings that have occurred since the machine has been built and first shipped from the factory. This value can not be reset in the field, and is not meant to be reset.

## 8.8 Option 7 – Output Limits Mode

This mode is used to fine tune the folder and teach the folder various required operating parameters. There are 5 different parameters that must be “taught” to the folder; Fold Table #1 Home, Fold Table #2 Home, Paper Diverter Engagement Distance, Stack Wheel Home, and Fold Position Center.

To teach the folder where the home positions are, you must have a sheet of paper folded with the fold tables at their minimum position (home position).

To fold a sheet of paper with the fold tables in their respective home positions, first perform the following steps;

1. Turn on the folder power and allow the folder to home both fold tables normally. Do not enter diagnostics and do not specify a fold type!
2. With the Feed Table loaded with a few sheets of paper, press the test button to fold one sheet.
3. Re-enter diagnostics by pressing and holding the “Stop” button for several seconds.

4. Press button “7” to enter Offset Limits Mode

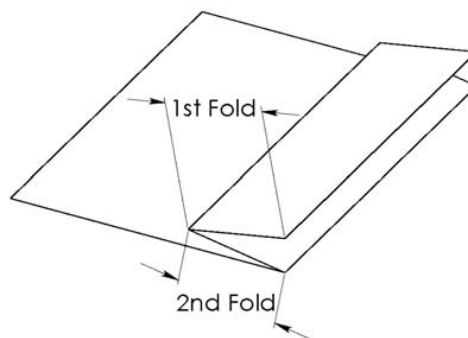



Figure 32

 **It is very important to make all Offset measurements using either dial or digital calipers. A line gage, pica stick, ruler, tape measure, etc., is not accurate enough. Typical Fold Table offset values are between 2.20 and 2.35 inches. If your measurement is outside of this range, contact Martin Yale Technical Support for assistance.**

### 8.8.1 Fold Table #1 Home

To set the home offset position for Fold Table #1, do the following;

1. Press the Fold Table #1 button. The display will look like the example below (Figure 33).

```
Fold Tbl 1 Home Pos.  
Len.=[X.XX]: . IN
```

Figure 33

2. Using a pair of digital calipers, measure the distance from the leading edge of the paper to the first crease (see Figure 32 – 1st Fold), and using the keypad, enter this distance into the folder, and press “Enter” when done.

### 8.8.2 Fold Table #2 Home

To set the home offset position for Fold Table #2, do the following;


1. Press the Fold Table #2 button. The display will look like the example below (Figure 34).

```
Fold Tbl 2 Home Pos.  
Len.=[X.XX]: . IN
```

Figure 34

- Using a pair of digital calipers, measure the distance between the first and second creases (see Figure 32 – 2nd Fold), and using the keypad, enter this distance into the folder, and press “Enter” when done.

### 8.8.3 Diverter Offset

 This is a continuation of Fold Table #2 Home. To change this value, you must follow the direction starting at section 8.8.2 - Fold Table #2 Home. The Diverter Offset value tells the folder how far Fold Table #2 must move inward to engage the Paper Diverter.

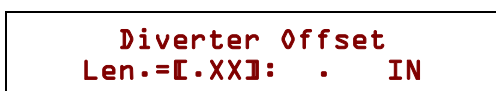



Figure 35

- The folder will then ask/show the distance that the fold table must be driven to engage the paper diverter. The default value for this setting is .37 inches. To change this value, use the keypad to enter a new value and press “Enter” to save.

 **The Diverter Offset value does not normally need to be changed for any reason, except when there are problems performing a Half fold, or the fold table is making a loud clicking noise when moving into Half fold. Improperly setting this value can cause damage to the fold table. This value should ONLY be changed as a last resort!**


### 8.8.4 Stack Wheel Home



Figure 36

To teach the home position for the Stack Wheels,

- Press the Stack Wheel button.
- Press and hold the “-“ button until you hear the Stack Wheel make a clicking noise. This is the home position.

 The A/D value should read greater than zero.

- Press the “enter” button.

- The display will now ask for the maximum travel distance. The default value is 10.5. There should not be any reason to change this value. Simply press “Enter” to accept this value.

### 8.8.5 Fold Position Center




Figure 37

This value is used to better balance fold table positions. Slight folding errors occur depending on how many layers of paper there are in the fold table. This also occurs depending on the weight of the paper being folded. The more layers there are, the shorter the fold length. Same goes for heavy paper, and conversely for fewer sheets and lighter paper.

You first must have a single sheet of 11 X 17 paper Half folded by the folder to set the Fold Position Center. To do this, perform the following steps, otherwise skip to step 7;

- Turn on the folder power and allow the folder to home both fold tables normally. Do not enter diagnostics.
- Press the Fold Select button and specify Half fold.
- Press the Size Select button and specify 11 X 17.
- With the Feed Table loaded with a few sheets of 11 X 17 paper, press the test button to fold two sheets.
- Reenter diagnostics by pressing and holding the “Stop” button for several seconds.
- Press button “7” to enter Offset Limits Mode
- Press the “Paper Length” button. This will display the current center position.

Using a pair of digital calipers, on the Half folded paper, measure the distance that the 2 edges of paper overhang. Enter this value using the keypad and press “Enter” to save.

 **It is very important to make this measurement using either dial or digital calipers. A line gage, pica stick, ruler, tape**

measure, etc., is not accurate enough. If your measurement is greater than .10 inches, contact Martin Yale Technical Support for assistance.

Exit diagnostics and Half fold another sheet of 11 X 17 paper to confirm the setting.



The factory settings for all offsets can be found on the underside of the Access Panel, located under the 2nd Fold Table. A Phillips screwdriver will be required to remove the Access Panel.

### 8.9 Option 8 – LED Test

This option will cycle the LED in a Race Track manner and will continue until the “Stop” button is pressed.

## 9 Error Codes

### 9.1 Error 100 – Bypass Sensor Failure

1. This error can be caused if paper is detected in the Multi-Sheet Bypass for longer than the allotted time. For more information regarding the use of the Multi-Sheet Bypass, please see section 6 - Multi-Sheet Bypass.
2. If no paper has been placed into the Multi-Sheet Bypass, then the controller assumed there was a sensor failure. Verify proper function of sensor through diagnostics #2, and see section 11 - Debugging.

### 9.2 Error 101 – Feed Error

Caused when the folder tries to feed a sheet of paper from the Feed Table, but was unable to. This is the most common error and is caused by one of the following;

1. The Paper Guides are adjusted too tight against the paper and are holding the paper back from feeding.
2. Coated stocks are very heavy and if the Feed Table is loaded to its maximum capacity, it's possible that the Feed Table is not able to lift the full stack. Reduce the number of sheets in the Feed Table.
3. Feeding of some coated stocks will cause a build up of static in the last few sheets of paper (less than 10) in the Feed Table, causing the paper to stick to the Feed Table

and not feed. Use of Martin Yale Anti-Static Spray on the Feed Table may remedy this problem.

4. The Feed Wheel is dirty. Clean the Feed Wheel with an approved Martin Yale brand roller cleaner.
5. The Retarder is adjusted too tight, not allowing the paper to pass under the Feed Wheel. Using the supplied 9/64” Hex key, adjust the Retarder down (clockwise = down = loosen) 1/4 of a turn. Repeat if necessary. With the Feed Table down (in the load position), turn the Feed Wheel by hand. There should be a small amount of drag on the Feed Wheel caused by contact with the Retarder. If not, raise the Retarder (counter-clockwise).



Retarder adjustments can be made with the folder running. In most cases, it is easier to adjust the retarder with the folder running.

6. If there are only a few sheets of paper remaining in the Feed Table (typically, less than 20 sheets), the Paper Lift Spring may not be applying enough force against the Feed Wheel. Bending the Paper Lift Spring up a small amount (less than 1/4 of an inch) usually remedies this problem.
7. The Feed Table isn't rising up as it should. This can be caused by the Feed Table Lift Spring being out of adjustment, a lack of lubrication on the moving parts, or a mechanical problem caused by shipping damage. Field service is required.
8. The clutch didn't fire like it should have. Field service is required.
9. This error can also be caused by a Paper Present sensor failure because the controller still thinks there is paper in Feed Table when none exists. Verify proper function of sensor through diagnostics #2, and see section 11 - Debugging.

### 9.3 Error 102 – Exit Sensor Failure (on)

This error occurs when the sensor is seeing paper all of the time. There are two possible causes for this error to occur;

1. Possible paper jam at exit conveyor and the sensor is covered. Clear paper jam at Exit Conveyor.
2. May be caused if the Exit Sensor has failed and the sensor acts as if it's always sensing paper when none exists. Verify proper function of the sensor through diagnostics #2 and see section 11 - Debugging.

#### 9.4 Error 103 – Exit Sensor Failure (off)

This error occurs when the sensor did not detect paper in the exit conveyor when it should have. There are two possible causes for this error to occur;

1. A paper jam in either fold table can cause this error. Clear the paper jam from the Fold Table(s).
2. The sensor has failed and can not sense paper in the Exit Conveyor. Verify proper function of the sensor through diagnostics #2 and see section 11 - Debugging.

#### 9.5 Error 104 – Motor Controller Failure

Caused when power is turned on and the Main Motor starts running when it should not. The Main Motor drive circuitry has failed and the Main Controller PCB requires replacement. Service required.

#### 9.6 Error 105 – Fold Table #1 Drive Encoder Fault

The position encoder on the #1 drive is not functioning correctly. Replacement of the drive is required. Verify proper function of the sensor through diagnostics #5.

#### 9.7 Error 106 – Fold Table #1 Drive Wires Reversed

The motor wires on the fold table #1 drive have been reversed. In rare occasions, this error can be caused by an encoder fault. Verify proper function of the position encoder through diagnostics #5.

#### 9.8 Error 107 – Fold Table #2 Drive Encoder Fault

The position encoder on the #2 drive is not functioning correctly. Replacement of the drive is required. Verify proper function of the position encoder through diagnostics #5.

#### 9.9 Error 108 – Fold Table #2 Drive Wires Reversed

The motor wires on the fold table #2 drive have been reversed. In rare occasions, this error can be caused by an encoder fault. Verify proper function of the position encoder through diagnostics #5.

#### 9.10 Error 109 – Clutch Error

This error occurs when the clutch is engaging the Feed Wheel when it should not. In most cases, an adjustment to the clutch will remedy this problem. Service is required.

#### 9.11 Error 110 – RPM Sensor Failure

1. Caused by a serious paper jam, where the rollers can not rotate freely. Using the Dejam Handle, insure that the Rollers are free to rotate.
2. Can be caused by a serious failure of one or more mechanical components. Using the Dejam Handle, insure that the Rollers are free to rotate.
3. Can be caused if the RPM Sensor has failed. Verify proper function of the RPM sensor through diagnostics #2 and see section 11 - Debugging.
4. If the folder does not start running and the rollers are free, the Main Motor drive circuitry has failed and the Main Controller PCB requires replacement.
5. If the Main Controller PCB has been recently replaced, make sure the red 24 volt jumper wire has been installed correctly on the Main Controller PCB.

#### 9.12 Error 111 – Feed Error

The Retarder is adjusted too loose, and is not holding the lower sheets of the paper back.

Using the supplied 9/64" Hex key, adjust the Retarder up (counter-clockwise = up = tighten) 1/4 of a turn. Repeat if necessary. With the Feed Table down (in the load position), turn the Feed Wheel by hand. There should be a small amount of drag on the Feed Wheel caused by contact with the Retarder.



You **WILL** experience this error while feeding coated or glossy paper if the folder was



originally adjusted for non-glossy, plain paper such as bond, offset, index, etc.

## 10 Trouble Shooting

### 10.1 Folder will not start when the “Run” button is pressed.

1. If the display reads “No paper in Feed Table”, but there is paper in the Feed Table, replacement of the Feed Table Paper Present sensor may be required. Verify proper function of sensor through diagnostics #2, and see section 11 - Debugging.
2. If the display reads "Feed Table In Load Position", replacement or adjustment of the Feed Table Switch may be required. Refer to section 11 - Debugging prior to replacing or adjusting switch.

### 10.2 Folder will not start when paper is inserted into the multi-Sheet Bypass.

If the display does NOT read “Paper Detected In Bypass” when paper is inserted into the bypass slot, replacement of the Bypass Sensor may be required. Refer to section 11 - Debugging prior to replacing or adjusting switch.

### 10.3 The LCD Display is blank

1. Insure that the folder is plugged into a functional receptacle.
2. Insure that the power switch is in the “On” position.
3. Insure that the display contrast is adjusted correctly. Perform the following steps;
  - a. While holding the display contrast button down, turn on the folder
  - b. Continue to hold the display contrast button for 10 seconds.
  - c. Release the display contrast button.
  - d. Depress and hold the “+” incremental adjustment button. If the display and the Main Controller PCB are functioning correctly, the display will become visible within a few seconds. See section 10 - Display Contrast.

4. Insure that the main fuse (located next to the power inlet) is not blown.
5. Insure that both LED’s on the Main Controller PCB are on. If not, check both fuses on Main Controller PCB.
6. LCD Display may be defective. Service required.
7. Main Controller PCB may be defective. Service Required.

### 10.4 There is a loud clicking noise...

#### 10.4.1 ...Only when the Fold Table is trying to Home.

1. If the Fold Table is all the way inward (closest to the Rollers), the Home sensor has failed. Service is required.
2. If the Fold Table is NOT all the way inward, there is a blockage in the Fold Table. Turn off the power and clear the Fold Table blockage.

#### 10.4.2 ...Anytime the Fold Table is trying to move.

1. If the Fold Table is at the maximum or minimum position, it’s possible that the Fold Tables have become lost. Perform the following steps.
  - a. Turn the folder power off.
  - b. After 3 seconds, turn the power back on and wait for the Fold Tables to home.
  - c. Press either the First or Second Fold Table button.
  - d. Using the number pad, enter a value of 6.00 inches (or 15cm if units are set to Metric).
  - e. If the Fold Table does not stop within .2 inches (or 5mm if units are set to Metric) of the value specified above, then the Fold Table Drive is faulty. Service Required.
2. If the Fold Table is not at either the minimum or maximum position, there is a blockage in the Fold Table. Turn off the power and clear the Fold Table Blockage.

### 10.5 The Fold Table pointer does not match the LCD display.



The pointers are for reference only and are not normally used except in the event of a Fold Table Drive encoder failure. In the event of an encoder failure, the pointers can be used to manually set the fold tables to continue folding. However, if the difference is greater than .1 inches, continue with next step below.

1. Insure that the mechanical components in the Fold Table are not slipping. See section 11.2.1 - Fold Table for more information.
2. Insure that the output gear on the Fold Table Drive is secure.
3. Insure that the Fold Table Offsets are correct before proceeding. See section 8.8 - Option 7 – Output Limits Mode for more information.
4. Insure that the Fold Table Drive encoders are functioning correctly.
  - a. Enter diagnostics 5, and follow the instructions in section 8.6.2 - Exercising the Drives.
  - b. If the Fold Table does not stop at the same position (3" and 13") each time, then there is a defect with the Fold Table Drive. Service Required.

### 10.6 The location of the fold is not correct.

1. Insure that the actual paper length matches the folder setting.
2. Manually adjust the Fold Table positions to produce the desired fold.
3. To further diagnose this problem, follow the steps in section 10.5.

### 10.7 The Stack Wheels are not moving when they should be.

#### 10.7.1 There is a clicking noise.

1. If the Stack Wheels are at their minimum position (closest to the rollers) and still trying to move inward, the Stack Wheel limits are not set. Refer to section 8.8.4 - Stack Wheel Home.
2. If the Stack Wheels are at their maximum position and still trying to move outward, the

Stack Wheel limits are not set. Refer to section 8.8.4 - Stack Wheel Home.3

3. If the Stack Wheels are not at their minimum or maximum position, the Stack Wheels have become jammed. Service and removal of the Stack Wheels Top Cover is required.

#### 10.7.2 There is no sound coming from the Stack Wheels.

1. If the Stack Wheels can be moved by hand with little effort, refer to section 11.2.2 - Stack Wheels.

### 10.8 Paper is piling up between the Stack Wheels and the rollers.

1. Stack Wheel position has been manually changed. Reselecting the Paper Size or the Fold Type will automatically recalculate the correct Stack Wheel position. See section 10 - Stack Wheel Position for more information.
2. The paper size being folded does not match the paper size specified in the folder. Select correct paper length, or specify custom paper length
3. The Stack Wheel limits are incorrectly set. Refer to section 8.8.4 - Stack Wheel Home.

### 10.9 One line of the LCD display is blank, and the other is all black.


1. The CPU on the Main Controller PCB is not programmed. Service Required.
2. The CPU on the Main Controller PCB is not functioning. Service Required. Replace Main Controller PCB.

### 10.10 The folder is having feeding problems...

#### 10.10.1 ...It's feeding intermittently.

1. The Feed Wheel may be dirty. Clean the Feed Wheel with Martin Yale brand Roller Cleaner,
2. The Feed Table Spring maybe incorrectly tensioned.
  - a. With the Feed Table empty of paper, depress the Feed Table down into the load position.



- b. Press the Feed Table Release and observe the travel of the Feed Table as it rises.
    - c. If at anytime the Feed Table stops moving, before it makes it to the top of its travel, then service is required.
  3. The Paper Guides may be too tight against the paper. The Paper Guides should make contact with the paper, but should not squeeze the side of the paper.
  4. The Retarder may not be adjusted correctly. Using the 9/64" hex key supplied with your folder, insert the hex key into the adjustment hole in the Top Cover, and turn clockwise 1/4 of a turn.
-  Retarder adjustment can be made while the folder is running.
5. The Feed Clutch may not be functioning correctly. Service required.

#### 10.10.2 ...It's feeding more than one sheet at a time.

The Retarder is out of adjustment. Using the 9/64" hex key supplied with your folder, insert the hex key into the adjustment hole in the Top Cover, and turn counter-clockwise 1/4 of a turn.

#### 10.11 The fold is not square...

##### 10.11.1 The folds are all off in the same direction.

1. The Paper Guides are not centered on the Feed Table. Readjust Paper Guides.
2. The Feed Table Skew Adjustment is incorrect. Adjust Skew of Feed Table.
3. The paper is not perfectly square.
  - a. Adjustment of the Feed Table Skew may correct this problem.
  - b. Trim paper before loading into Feed Table for folding.


##### 10.11.2 ...The folds are off in both directions.

The Paper Guides are not tight enough to the paper. Tighten Paper Guides.

## 11 Debugging

### 11.1 Electrical

Most electrical problems encountered will require you to enter diagnostics mode #2 – Input Sensor Mode. This is the best way to determine if a sensor or switch is functioning correctly.

 For information regarding diagnostics, see section 8.3, Option 2 – Input Sensor Mode.

#### 11.1.1 Sensors

Check all electrical connections between the Main Controller and the sensor, to include wires. This can be done using a "known good" sensor and/or wire assembly by connecting either item to the main controller, one at a time until the problem is found.

#### 11.1.2 Switches

Check all electrical connections between the Main Controller and the switch, to include wires. This can be done using a "known good" switch and/or wire assembly by connecting either item to the main controller, one at a time until the problem is found.

#### 11.1.3 Motors

Check all electrical connection between the Main Controller and the motor. Sometimes crimp terminals can become loose and wires will fall out of them, or they become disconnected.

### 11.2 Mechanical

#### 11.2.1 Fold Table

To insure that the mechanical components in the Fold Table are not slipping, perform the following step;

1. With the Fold Table removed from the folder, restrain the pointer with your finger.
2. Rotate the gear on the bottom of the Fold Table.
3. There should not be any play in the gear.

If there is play between the gear and the pointer, service is required.

### 11.2.2 Stack Wheels



**The following steps should only be performed by a qualified service technician.**

1. Remove the Top Cover from the Stack Wheels.
2. Inspect the drive belt integrity. Replace if broken or damaged.
3. Confirm drive belt tensioner is in-place and that there is adequate belt tension.
4. If the drive belt is loose, check the belt tensioner to insure that the tensioner stays in-place when the belt is re-tensioned (tensioner is pressed down into plastic). If the tensioner does not stay locked into the plastic, replace the Stack Wheel Assembly.
5. Insure that the pulley on the motor is secure to the motor shaft by trying to rotate the gear by hand.
6. Using the instructions in section 3.3 - Stack Wheel Position, Manually move the Stack Wheels. If the motor is not moving, refer to section 11.1.3 - Motors.
7. If the motor is functioning correctly, but the display is not changing and showing the correct position of the Stack Wheels, refer to section 11.1.1 - Sensors.
8. If the motor is functioning correctly, and the display is changing, but the position is incorrect, resetting of the position sensor is required;
  - a. Per section 3.3 - Stack Wheel Position, manually move the Stack Wheels to the minimum position.
  - b. By hand, rotate the pulley on the position sensor clockwise (as viewed from the operator position) until it will not rotate any further. This is the absolute minimum position of the sensor. Skipping past the teeth on the pulley will be required when rotating.
  - c. Once the position sensor is at the minimum position, skipping pulley teeth, rotate (by hand) the pulley on the position sensor back (counter

clockwise) at least 7 teeth, but no more than 20.

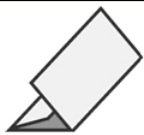

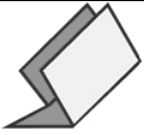


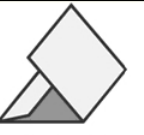
- d. Replace the Top Cover and follow the steps in section 8.8.4 - Stack Wheel Home, to re-teach the Stack Wheels.

## 12 Appendix

### 12.1 Fold Chart

The paper stop locations shown in Table 2 are close approximations only. They are to be used in the event that your folder is in "Limp" mode (see section 7 - Limp Mode). Using the scales on the Fold Tables, set the position of the paper stops to the numbers below for a specific fold type at a given paper size. In almost all cases, you will have to deviate slightly from the numbers below to obtain a perfect fold.

Table 2

| Paper Size |  |  |  |  |  |  | Fold Table |
|------------|---|---|---|---|---|---|------------|
|            | Letter  | Z   | Dbl Para  | Gate  | Eng   | Church  |            |
| 8 1/2 X 11 | 7.33  | 3.67  | 5.50  | 8.25  | 2.75  | 8.64  | 1          |
|            | 3.67  | 3.67  | 2.75  | 5.50  | 2.75  | 4.32  | 2          |
| 8 1/2 X 14 | 9.33  | 4.67  | 7.00  | 10.50   | 3.50  | 11.00   | 1          |
|            | 4.67  | 4.67  | 3.50  | 7.00  | 3.50  | 5.50  | 2          |
| 11 X 17    | 11.33   | 5.67  | 8.50  | 12.75   | 4.25  | 13.36   | 1          |
|            | 5.67  | 5.67  | 4.25  | 8.50  | 4.25  | 6.68  | 2          |
| A4         | 7.79  | 3.90  | 5.85  | 8.77  | 2.92  | 9.18  | 1          |
|            | 3.90  | 3.90  | 2.92  | 5.85  | 2.92  | 4.59  | 2          |
| A3         | 11.03   | 5.50  | 8.27  | 12.41   | 4.14  | 13.00   | 1          |
|            | 5.50  | 5.50  | 4.14  | 8.27  | 4.14  | 4.59  | 2          |

Note: All dimensions are in inches

12.2 Exploded View Drawing

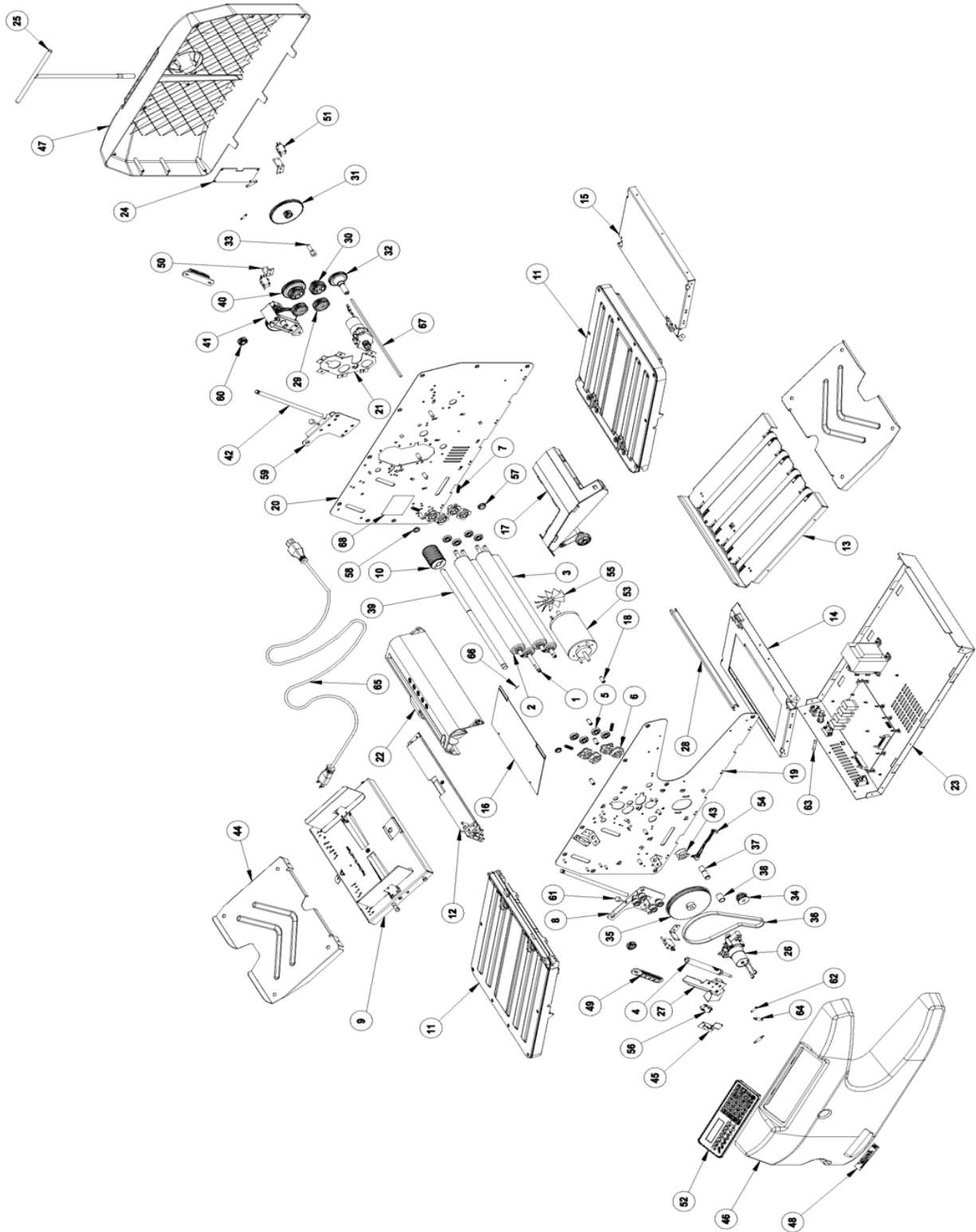


Figure 38 - 2051 Exploded View Drawing

## 12.3 Part List

Table 3

| Item | Part No.    | Description          | Qty | Item | Part No.    | Description             | Qty |
|------|-------------|----------------------|-----|------|-------------|-------------------------|-----|
| 1    | W-A2051016  | Second Roller Grind  | 1   | 35   | M-O2051162  | Htd 3mm 120t Pulley     | 1   |
| 2    | W-A2051013  | First Roller Grind   | 2   | 36   | M-S023055   | Htd 3mm 186t 9mm W      | 1   |
| 3    | W-A2051007  | Forth Roller Grind   | 1   | 37   | W-O2051159  | B/O Idler Stud          | 1   |
| 4    | M-S048015   | Damper .24rodX3"st   | 1   | 38   | M-S013081   | 1/2 X 5/8 X 3/4 Bushing | 1   |
| 5    | M-S020016   | Bng .375idx.875od    | 8   | 39   | W-O2051080  | B/O Feed Shaft          | 1   |
| 6    | M-O2051006  | Bearing Carrier      | 8   | 40   | M-O2051067  | Second Roller Drv Gear  | 1   |
| 7    | M-S031035   | Comp.spring Blue     | 4   | 41   | W-A2051081* | Feed Wheel Clutch       | 1   |
| 8    | W-A2051043  | Fd Tbl Guide Assy-F  | 1   | 42   | W-O2051086  | B/O Guide Shft          | 2   |
| 9    | W-A2051041* | Feed Table Assy      | 1   | 43   | W-A2051119  | Optical Encoder Assy    | 1   |
| 10   | W-A2051003  | Feed Wheel Assy      | 1   | 44   | W-F2051056  | P/C Feed Table Ext      | 2   |
| 11   | W-A2051022* | Fold Table Assy      | 2   | 45   | W-F2051106  | P/C Load Sens Brkt      | 1   |
| 12   | W-A2051042* | Fd Tbl Bridge Assy   | 1   | 46   | M-O2051102  | Front Cover             | 1   |
| 13   | W-A2051071* | Exit Conveyor Assy   | 1   | 47   | M-O2051103  | Rear Cover              | 1   |
| 14   | W-A2051105* | Motor Cover Assy     | 1   | 48   | M-O2051114  | 2051 Product Label      | 1   |
| 15   | W-A2051109  | Support Frame Assy   | 1   | 49   | M-O2051139  | Anti -twist Gearrack    | 2   |
| 16   | W-F2051104  | P/C Access Panel     | 1   | 50   | W-O970034   | Switch Bracket          | 3   |
| 17   | W-A2051087* | Conv Stack Wheels    | 1   | 51   | M-S030040   | Interlock Switch        | 3   |
| 18   | W-O2051066  | Fold Tbl Lock Lug    | 8   | 52   | W-A2051135* | Operator Interface      | 1   |
| 19   | W-A2051002* | Rivet Front Frame    | 1   | 53   | M-S021076   | Main Motor              | 1   |
| 20   | W-A2051079  | Rivet Back Frame     | 1   | 54   | W-A2051204  | Mtr Speed Sensor        | 1   |
| 21   | W-F2051060  | Roller Plate         | 1   | 55   | M-S037094   | 10 Bld 4" Fan Left H    | 1   |
| 22   | W-A2051099  | Top Cover Assy       | 1   | 56   | M-S033070   | Conv Switch 1601        | 1   |
| 23   | W-A2051070* | Base Plate Assy      | 1   | 57   | M-S014031   | 5/8 Iglide Clip Brg     | 1   |
| 24   | W-O2051224  | P/C T-handle Cover   | 1   | 58   | M-S014030   | 1/2 Iglide Clip Brg     | 2   |
| 25   | M-S012016   | 8mm T-handle         | 1   | 59   | W-A2051051  | Fd Tbl Guide Assy-R     | 1   |
| 26   | W-A2051019  | Fold Table Drive     | 2   | 60   | M-O2051208  | Synchro Gear            | 2   |
| 27   | W-A2051040  | Feed Table Lock Assy | 1   | 61   | M-S030046   | Bumper Zb 3250          | 2   |
| 28   | W-N2051068  | Punch Diverter       | 1   | 62   | M-S031029   | Spring Le-018b-z-m      | 2   |
| 29   | M-O003033   | Gear 24T V 3/8 ID    | 2   | 63   | M-S63601106 | Fuse 5amp 110v          | 1   |
| 30   | M-O2051065  | 4th Roller Drv Gear  | 1   | 64   | M-S031105   | E-spr.24x1.25x.031      | 3   |
| 31   | M-O2051064  | Exit Conv Idlr Gear  | 1   | 65   | M-S045273   | Power Cord              | 1   |
| 32   | M-O2051063  | Exit Conv Drv Gear   | 1   | 66   | M-S018070   | 3/32x1 Dowel Pin        | 1   |
| 33   | W-O2051062  | B/o Conv Idler Stud  | 1   | 67   | W-O2051073  | B/O Drive Shaft         | 1   |
| 34   | M-S022144   | Htd 3mm 25t Pulley   | 1   | 68   | M-S015288   | Blank Serial Label      | 1   |

12.4 110 Volt Wiring Layout

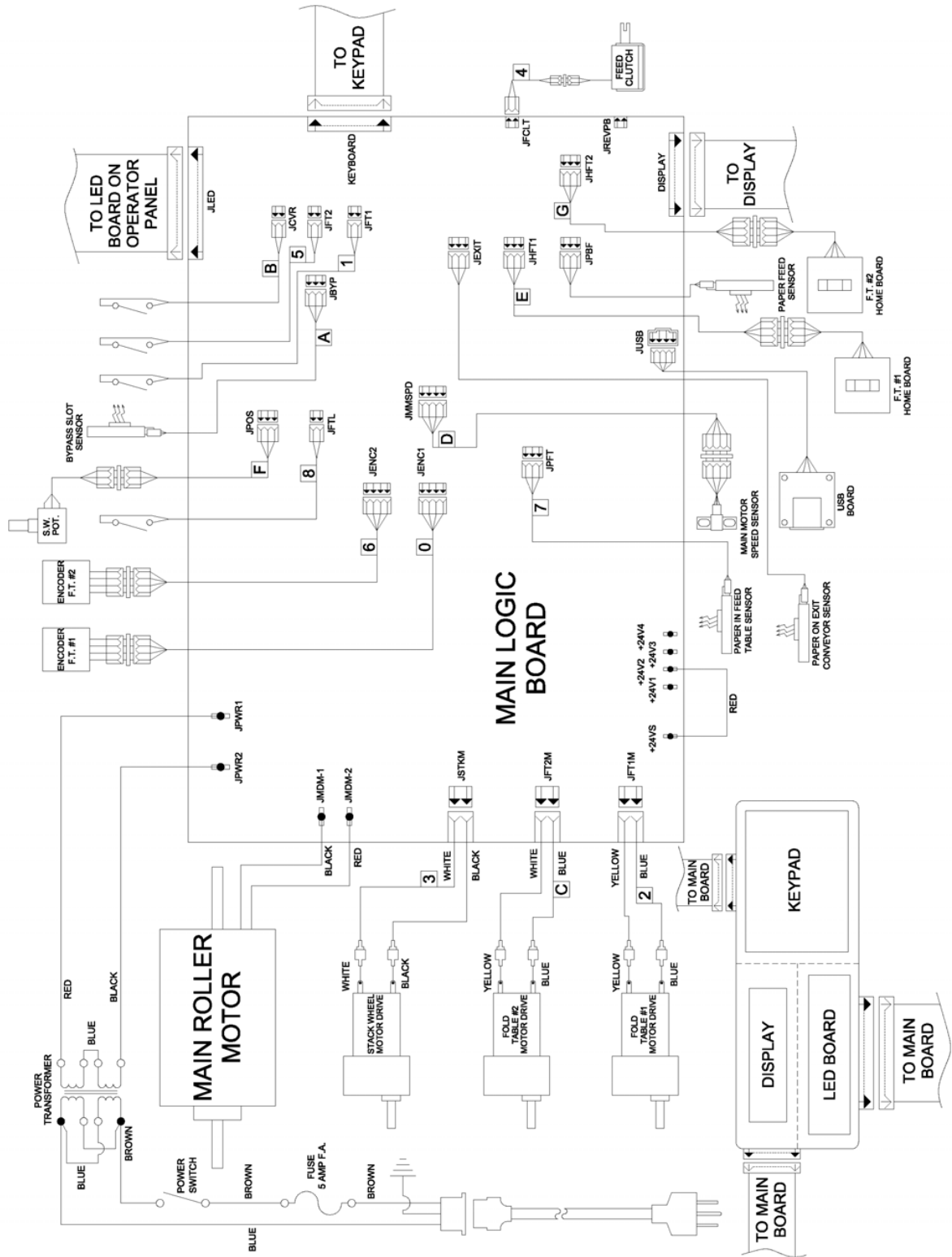


Figure 39

12.5 220/230 Volt Wiring Layout

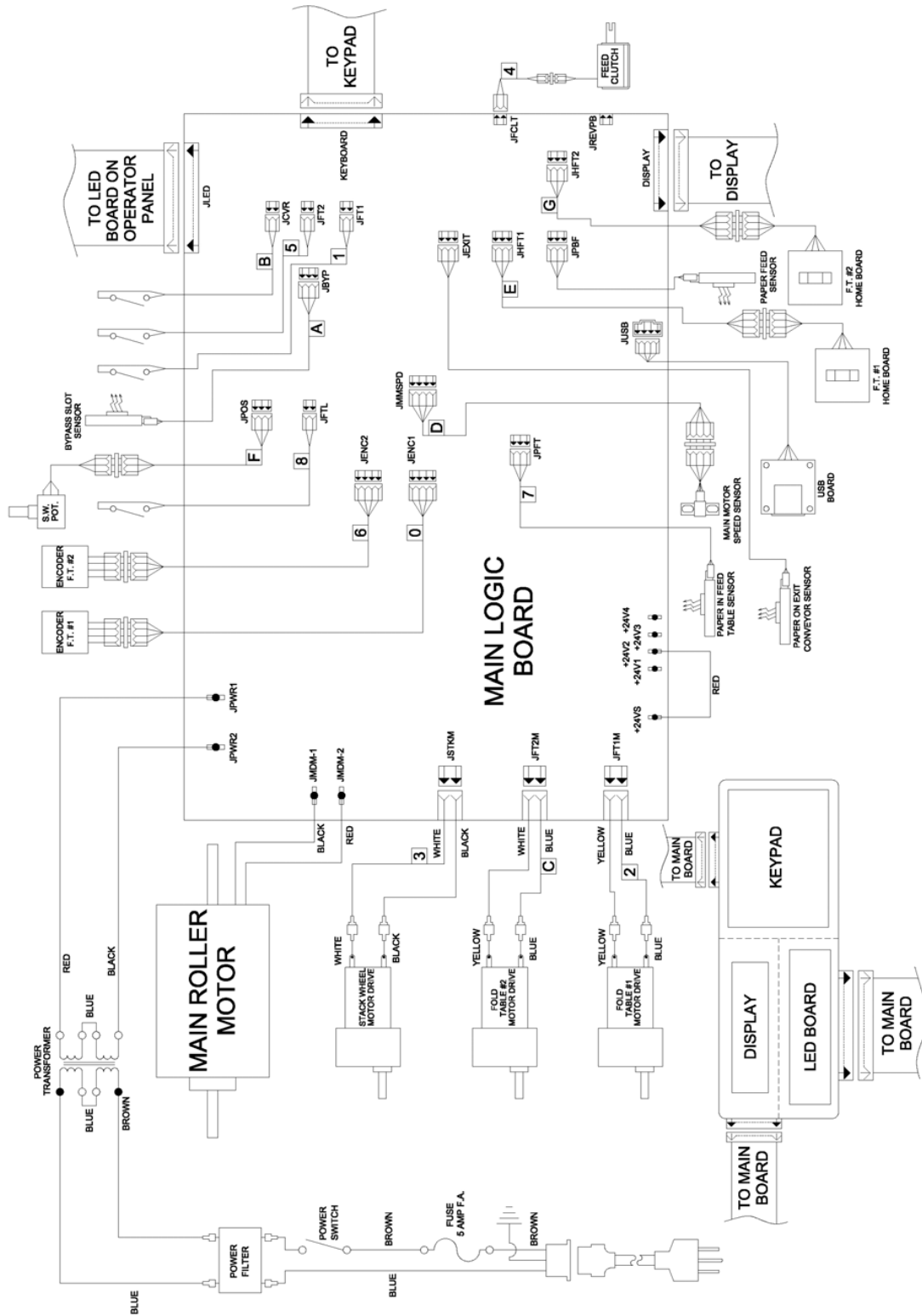


Figure 40



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