

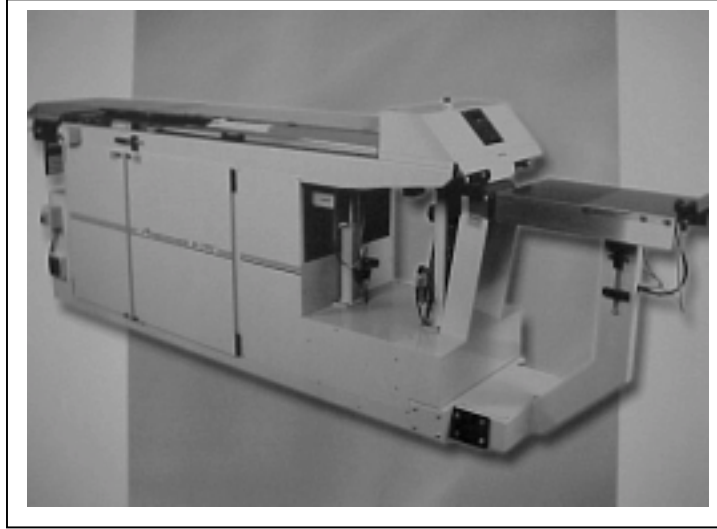
# ***The Amscomatic***

## **LS-200 Long Sleeve Folder**



*Amscomatic, Inc.*  
*Toll Free: 800-241- 1899*





# ***The Amscomatic***

## **LS-200 Long Sleeve Folder**



## Registration Numbers

Model#: LS-200

Machine#: \_\_\_\_\_

Serial #: \_\_\_\_\_

Schematic #: \_\_\_\_\_

Date Quality Inspected: \_\_\_\_\_

Quality Inspected By: \_\_\_\_\_

Date Installed: \_\_\_\_\_

Installed By: \_\_\_\_\_



## **Introduction**

Dear Valued Customer,

Thank you and Congratulations on the purchase of your new AI-100 Incline Conveyor.

We believe that the **LS-200 Long Sleeve Folder** has been engineered to fulfill our "State-Of-The-Art" claim. Our goal from the start has been to realistically expand our customers' production horizons by applying tomorrow's technology today. This remains a firm commitment of management.

Understanding the assembly, operation and maintenance of your **LS-200 Long Sleeve Folder** will ensure maximum production rates and a long productive life. The purpose of this manual is to help, guide, and inform your employees in the procedures required for operation and maintenance of your new conveyor.

For information or technical support, call the Equipment Service Department at Amscomatic, Inc. (800) 241-1899 or our weekend / holiday 24-hour service hotline number at (770) 634-0112.

Thank you again for your purchase and congratulations.

Steve Faletti  
Director of Technical Services

*NOTES*



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***NOTES***

# WARNING!

The product described in this publication may employ hazardous voltages or might create other conditions that could, through misuse, inattention, or lack of understanding, result in personal injury, or damage to the product or to other equipment. It is imperative, therefore, that personal involved in the installation, maintenance, or use of this product understand the operation of the product and the contents of this publication.

This document is based on information available at the time of its publication. The information contained here in purports to be accurate; however, it may not cover all details or variations in hardware, software, features or specifications, nor to provide for every possible contingency in connection with installation, operation and maintenance. Features may be described herein, which are not present in all variations of this product. Amscomatic, Incorporated assumes no obligations of notice to holders of this document with respect to changes subsequently made.

Amscomatic, Incorporated makes no representation of warranty, express or implied or statutory with respect to, and assumes no responsibility for the accuracy, or completeness, of the information contained herein. No warranties of merchantability or fitness for a particular purpose shall apply.

*NOTES*

# Chapter 1

## Safety Precautions

**Please read all information regarding safety precautions as presented in the Operators Manual.**

The fundamental requirement to insure safe and trouble-free operation of this equipment is a thorough understanding of the safety information contained in this manual. This manual includes important instructions to insure safe operation of this equipment.

Everyone who will operate this equipment as described therein, must observe this Operator's Manual, and especially the safety instructions

In addition to the safety instructions and regulations described in this manual, rules and regulations of the site location also must be carefully observed.

### **Obligations of the Equipment Operator**

**The Equipment Operator must guarantee that the only staff operators of the equipment are those:**

- Who are acquainted with the fundamental regulations according to workers protection and accident prevention, and who are completely knowledgeable in the operation of the equipment.
- Who must have fully read the Safety Chapter and the Warning Instructions of this manual, and understand the instructions as they relate to the operation of the equipment.

Equipment operators must be continually evaluated to assure that they fully understand the operation of the equipment.

### **Obligation of Personnel:**

- Observe the fundamental regulations of worker's protection and accident prevention.
- Every person that will be engaged in the operation of this equipment must comply with the following rules before operation of the equipment is to begin. Read the Safety Chapter and Warning Instructions of this Operator's Manual and confirm by signature that they understand the instructions as described in the manual.

### **Dangerous Situations During Operation of the Equipment**

The Amscomatic LS-200 Long Sleeve Folder has been designed in accordance with current safety standards. However, it is possible that dangerous conditions, which can cause serious injury or damage to the equipment or property, could occur.

This equipment must be used only for the defined purpose as described in the Operator's Manual, and must be maintained in perfect running in accordance with the described Safety Regulations. Conditions, which may compromise operator safety, must be identified and corrected immediately.

**Defined Purpose:**

**LS-200 Long Sleeve Folder**

This machine is designed to uniformly and reliably fold all types of long sleeve garments. It is a high speed unit that allow simple change over of product fold sizes and integrates with other most old and new Amscomatic folders

Any other use of the equipment, which does not meet the Defined Purpose, as described above will invalidate the warranty and release Amscomatic/M&R. In accordance with the Defined Purpose of this equipment, it is necessary to observe all instructions as outlined in the Operator's Manual and to perform the preventative maintenance procedures as described in the manual

**Guarantee and Liability:**

In principle, our general terms of sale and delivery are valid and these are at the operator's disposal. Guarantee and liability claims for persons or property damage are excluded if they originate for one or more of the following reasons:

- A non-defined use of the product.
- Improper installation of the equipment.
- Operation of the equipment with knowledge of defective safety devices.
- Non-Observance of instructions as described in the Operator's Manual for transportation, storage, installation, operation, maintenance, set-up and takedown of the equipment.
- Modification of the equipment.
- Failure to replace worn or defective parts of the equipment.
- Defective repairs made to the equipment by anyone other than authorized Amscomatic/M&R personnel.
- Dangerous conditions which are a result of the improper use of the equipment.

# Chapter 2

## Features and Specifications

### FEATURES

- E-100 Touch Button Key Pad Operation
- Programmable Logic Control (PLC)
- Belt Feed for easy product loading
- Adjusts to different size products
- Slide-and-lock fold width change
- Up to 30 Cycles per minute
- Safety Switches
- Built with heavy duty steel
- Integrates with all new and most existing Amscomatic Folders

### SPECIFICATIONS

- Length: 108" (274 cm).
- Height: 42" (107 cm).
- Width: 48" (122cm).
- Electrical: 110 V, 1 Ph, 60 Hz, 10 Amps.
- Air: 3 scfm
- Weight: 1200 lbs (545 Kg).

### OPTIONS & ACCESSORIES

- 220V, 1 phase, 5 amps, 50Hz

# Chapter 3

## Set Up & Installation

### *UNCRATING & INSTALLATION*

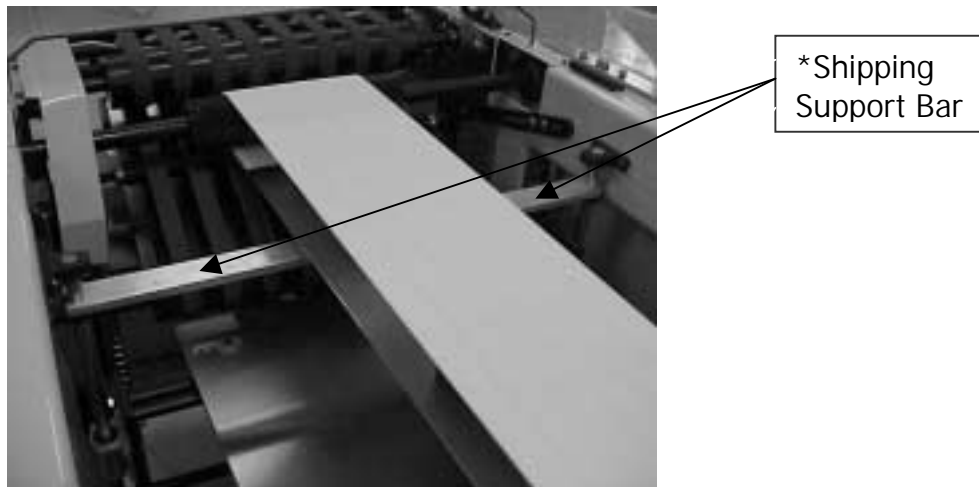
For purposes of crating and shipping, an aluminum bar is placed under the fold plate and must be removed prior to operation of the machine.

The following are in the crate:

- The Folding machine

Removing the machine from the crate:

- Uncrate the folder and place the frame directly on a level surface.
- Remove all packing materials and plastic straps.
- Check to see that the four flathead machine screws that attach the Teflon coated fold plate, located under the main product drive belt, are tight and recessed below the surface of the Teflon.
- Remove the fold plate shipping support bar\* located at the discharge end of the main product belt. The support bar is held in place on Thompson linear shafts by two split collars.
- In the main electrical control panel, at the discharge end of the machine, one will find the weights for the weight tray, wrapped in cardboard, and the bowing bars, wrapped in bubble wrap. Remove these items and unwrap them.
- Place the weights on top of the weight tray inside the main drive belt.
- Insert the bowing bars into the blocks underneath the infeed control panel. Face them downward and toward the discharge end of the machine.





***CONNECTING UTILITIES TO THE MACHINE.***

**Connecting electrical power to the machine.**

- Connect the machine to a dedicated 20 Amp 115-120/60Hz/1Ph.
- A Unibagger II and Incline Conveyor may share this circuit.
- If there are power problems with the machine, an extensive electrical checkout is provided in the technician's section of this manual.

**Connecting air to the machine.**

- Connect a clean, dry air supply to the machine
- The air specifications are 100 to 120 psi and 5 scfm.

***PNEUMATIC CHECKOUT AND ADJUSTMENTS.*** (Details on pages 17-19)

Before powering up the machine for the first time, it is advisable to check out the pneumatic system and check that the factory adjustments are still in place after shipping.

The following items will be covered in the next pages:

- Main air connection and main air filter-dryer-oiler-regulator.
- Oiler adjustment.
- Fold plate pressure adjustment
- Infeed belt pressure adjustment.
- Drape table adjustments
- Flow control adjustments

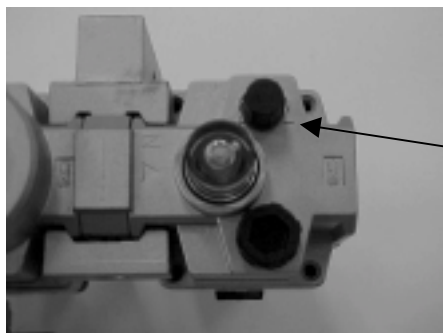
***PNEUMATIC COMPONENTS, ADJUSTMENTS & CHECKOUT***

***Main Connection***

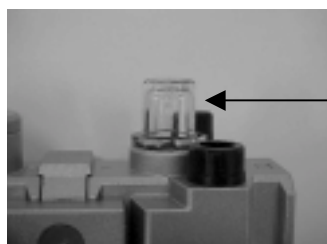
Connect a clean, dry air supply to the machine and adjust the Main Air to 80psi. The Filter-Dryer-Regulator assembly is pictured below.



Adjust regulator to 80 psi using the black knob below gauge.



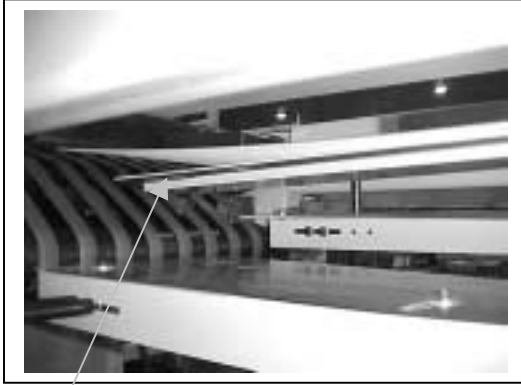
Use this knob to adjust pneumatic oil



View the rate of oil in drops per hour here.

**FOLD PLATE PRESSURE ADJUSTMENT**

The fold plate must be level and in contact with the white belt from the in feed rollers to the second fold. This is important to insure that the product is carried through the machine without bunching up or slowing down.



Above view shows 0 psi applied. Note the large gap opening.



The above view shows the Fold Plate correctly adjusted. This picture shows the end of the Fold Plate just before the Second Fold

The pressure from this air cylinder lifts the Fold Plate into its proper position.

**SETTING THE PRESSURE**

Set the pressure with this regulator to adjust the Fold Plate to the White Rough Top Belt

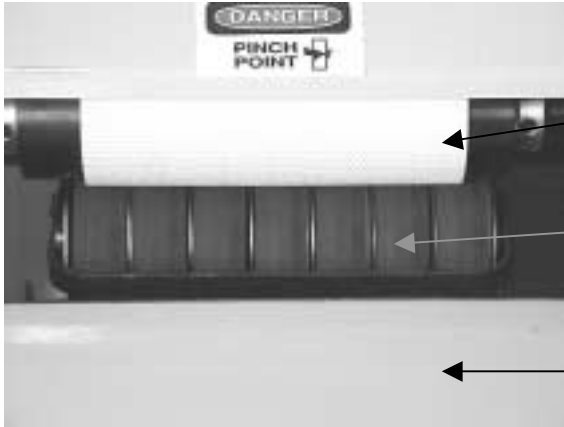
Raise the pressure on the left regulator until the fold plate meets the belt and they are together and in a straight line from roller to roller. It will take 70 to 80 psi to correctly adjust the fold plate



View of Double Regulator and Fold Plate Cylinder. The left regulator is connected to the Fold Plate Cylinder.

### ***INFEEB BELT PRESSURE ADJUSTMENT AT THE PINCH POINT***

When a product is inserted into the machine for folding, the Drape Table moves forward and inserts the product into the Infeed Pinch Point. This pinch Point has the White Belt on the top and seven or nine 1" belts on the bottom. This pressure adjustment keeps the 1" belts in contact with the white rough top belt with enough pressure to draw the product into the machine, AND also to allow some give in the lower belt assembly for thicker products to be folded.

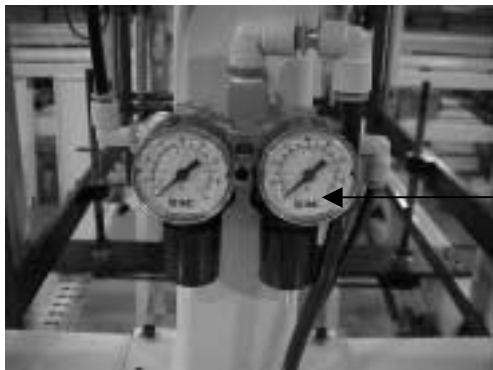


White Belt

1" Belts

Forward end of Drape  
Table or other infeed

View of In Feed showing the Pinch  
Point and the end of the Drape Table.



View of Double Regulator. The  
right regulator is connected to the  
Infeed Pressure Cylinder.

#### **SETTING THE PRESSURE**

Set pressure with this regulator to  
adjust the pressure between the 1"  
Infeed belts and the White Rough  
Top Belt

If there is pressure on the machine  
decrease the pressure until there is a  
space between the White Rough Top  
Belt and the lower 1" belts at the  
infeed pinch point. Increase the  
pressure until the pinch point closes  
and the lower belts touch the top  
belt.

### ***SETTING THE GAP AT THE PINCH POINT***

## **Amscomatic, Inc. Ls-200 Long Sleeve Folder**

The machine is designed so that there is some give at the pinch point to accommodate materials of various thicknesses.

### **1. PROCEDURE**

Decrease the air pressure on the right regulator until the 1" belts lower from the white belt. The gap should go no wider than 3/16". If this gap becomes wider than this, the plates between the 1" belts will move out of the slots at the end of the Teflon fold plate. If this occurs, the plates will move out of position and jam. This will prevent the 1" belts from being properly adjusted to the top belt. To prevent the 1" belts from moving too far there is a set collar on the Infeed Pinch Point Cylinder.

### **2. TO RE-SET THE SET COLLAR**

- Make sure the 1" belts and the top belts are together. Pressure is on.
- Loosen the setscrews on the set collar.
- Reduce the pressure on the Infeed Pinch Point Cylinder until there is about a 3/16" gap between the white belt and the 1" belts. Also check to see that the plates between the 1" belts are still in the slots on the ends of the fold plate.
- The set collar should be touching the top of the cylinder.
- Tighten the setscrews on the set collar.
- Increase the pressure as described above to bring the 1" belts in contact with the white belt.



Above view shows the correct gap between the 1" belts and the top



Above view shows the set collar that sets the gap shown at the left

### ***DRAPE TABLE ADJUSTMENTS***

The Drape Table brings the product to the pinch point. The table should travel far enough in so that the belts take the product into the machine, but not so far so that the table touches the belts. The following pictures show the drape table and its adjustments.

***Drape Table in "IN" position.***



***Drape Table in "IN" position. Note gaps.***

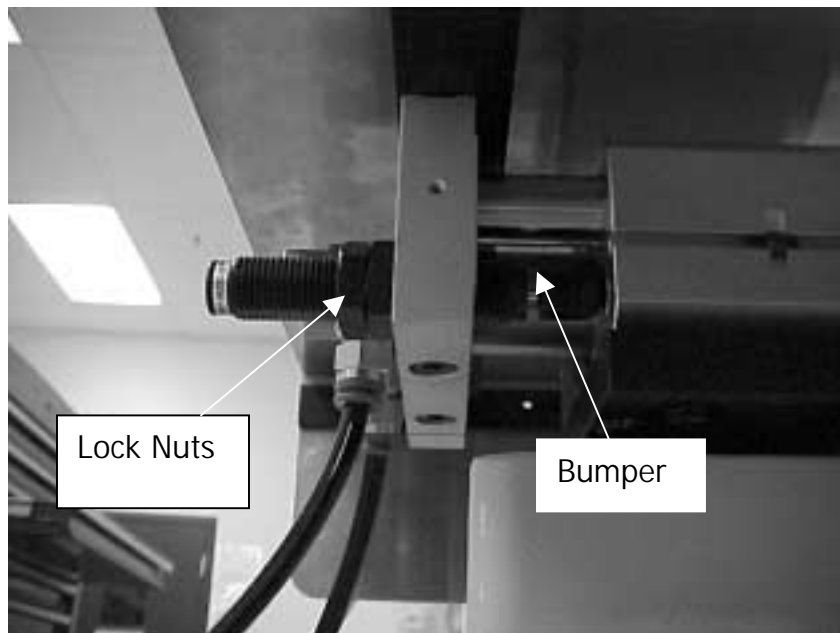


**Amscomatic, Inc. Ls-200 Long Sleeve Folder**

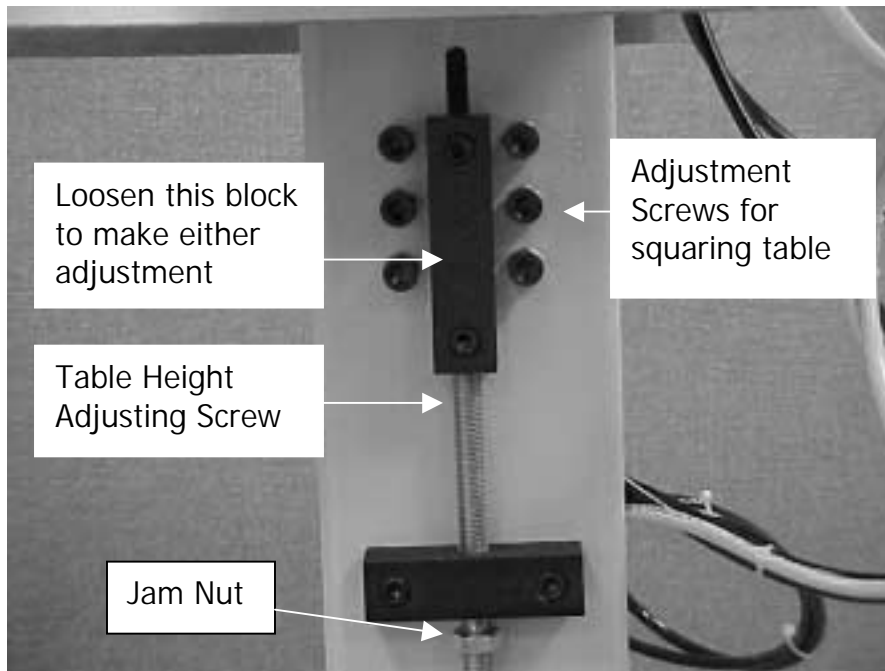
*Drape Table should be square with the Infeed Pinch Rollers*



*This bumper controls how far the drape table moves into the Pinch Point.*

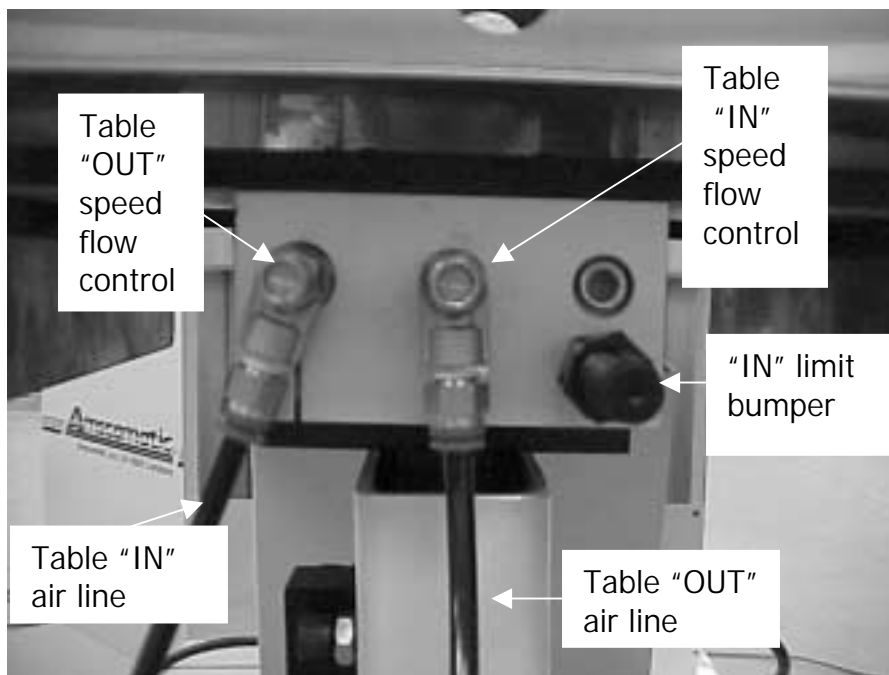


***Adjusting Screws for height and centering***



***Air Lines and Flow Controls***

Flow controls "meter out" to adjust speed.





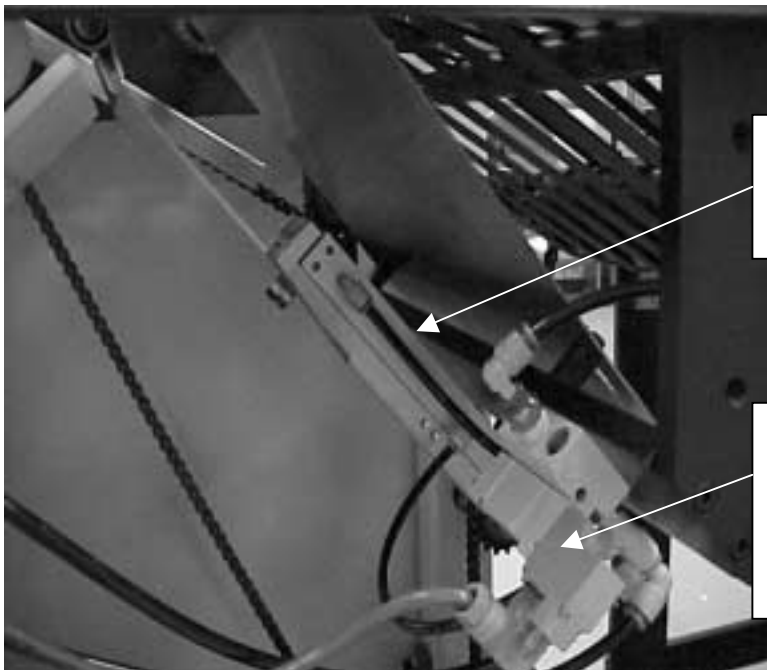
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Drape Table Air Pressure Regulator. Set at 50 psi.

***SECOND FOLD CYLINDERS***

**Second Fold**

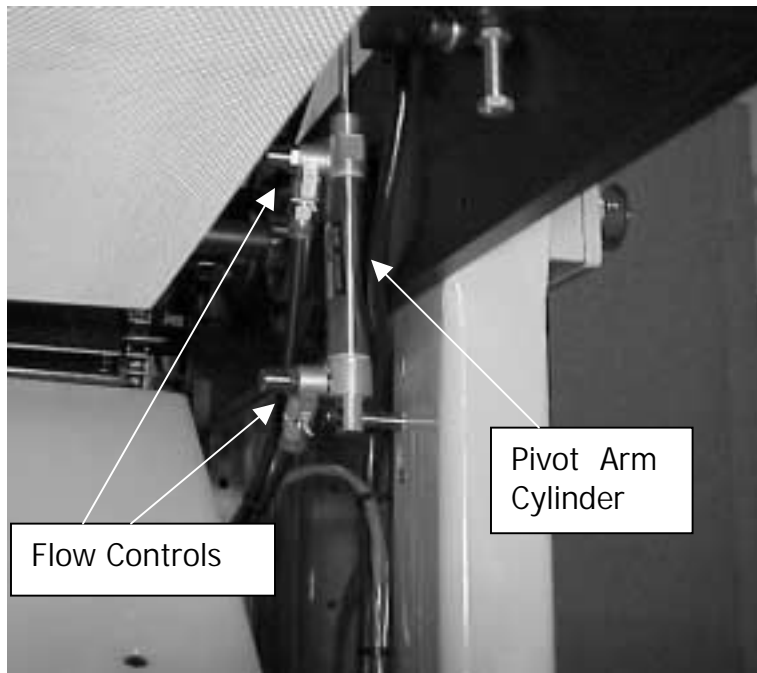


Second Fold  
Cylinder

Second Fold  
Solenoid. Feeds  
Second Fold &  
Pivot Cylinders

***Pivot Arm Cylinder***

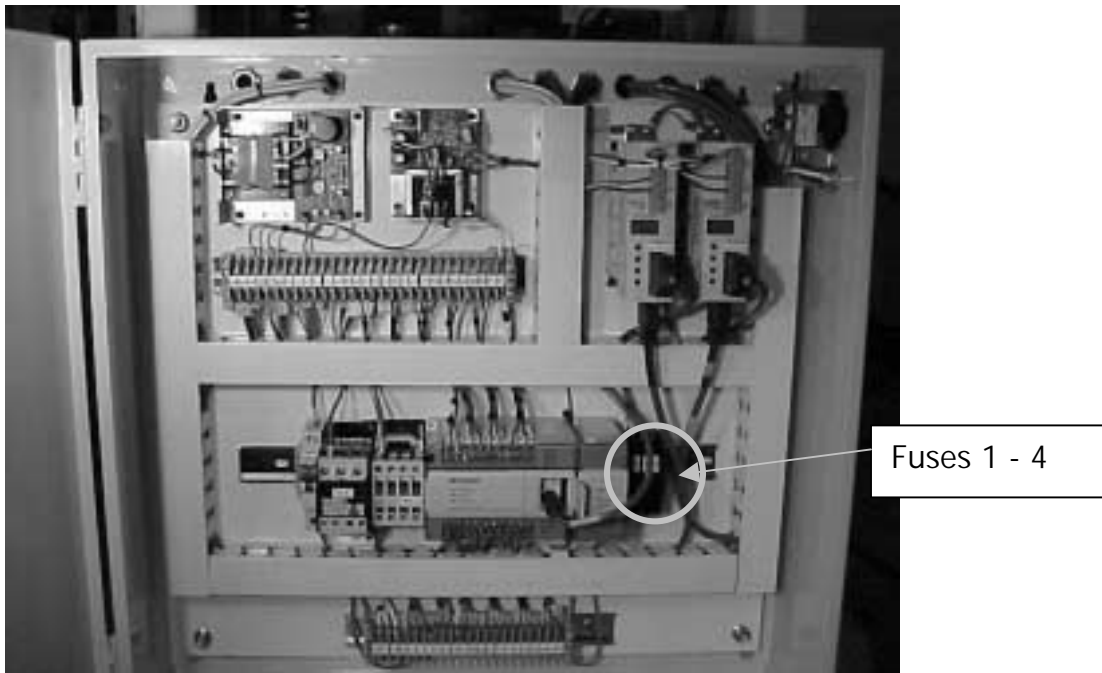
Set Flow Controls so that the piston extends slowly, and retracts quickly, but does not slam/bang. The top flow control controls the extend speed, the bottom controls the retract speed.



***ELECTRICAL CHECKOUT***

1. Open all fuse holders.
2. Power up Main Switch
3. Check voltage between TB 1 and N 120 VAC+/- 10%
4. Install Fuse 1.  
Check voltage between TB 8 and N 120 VAC+/- 10%  
Servos powered up. LED's lit.
5. Install Fuse 2  
Check voltage between TB 9 and N 120 VAC+/-10%  
DC Power Supplies are on.  
0V & 5VDC+ 5VDC+/-2%  
0V & 24VDC+ 24VDC+/-2%
6. Install Fuse 3  
Check voltage between TB 10 and N 120 VAC+/-10%  
PLC is powered up.
7. Install Fuse 4  
Check voltage between TB 11 and N 120 VAC+/-10%  
Power to expander for solenoid operation

View of Main Electrical Panel

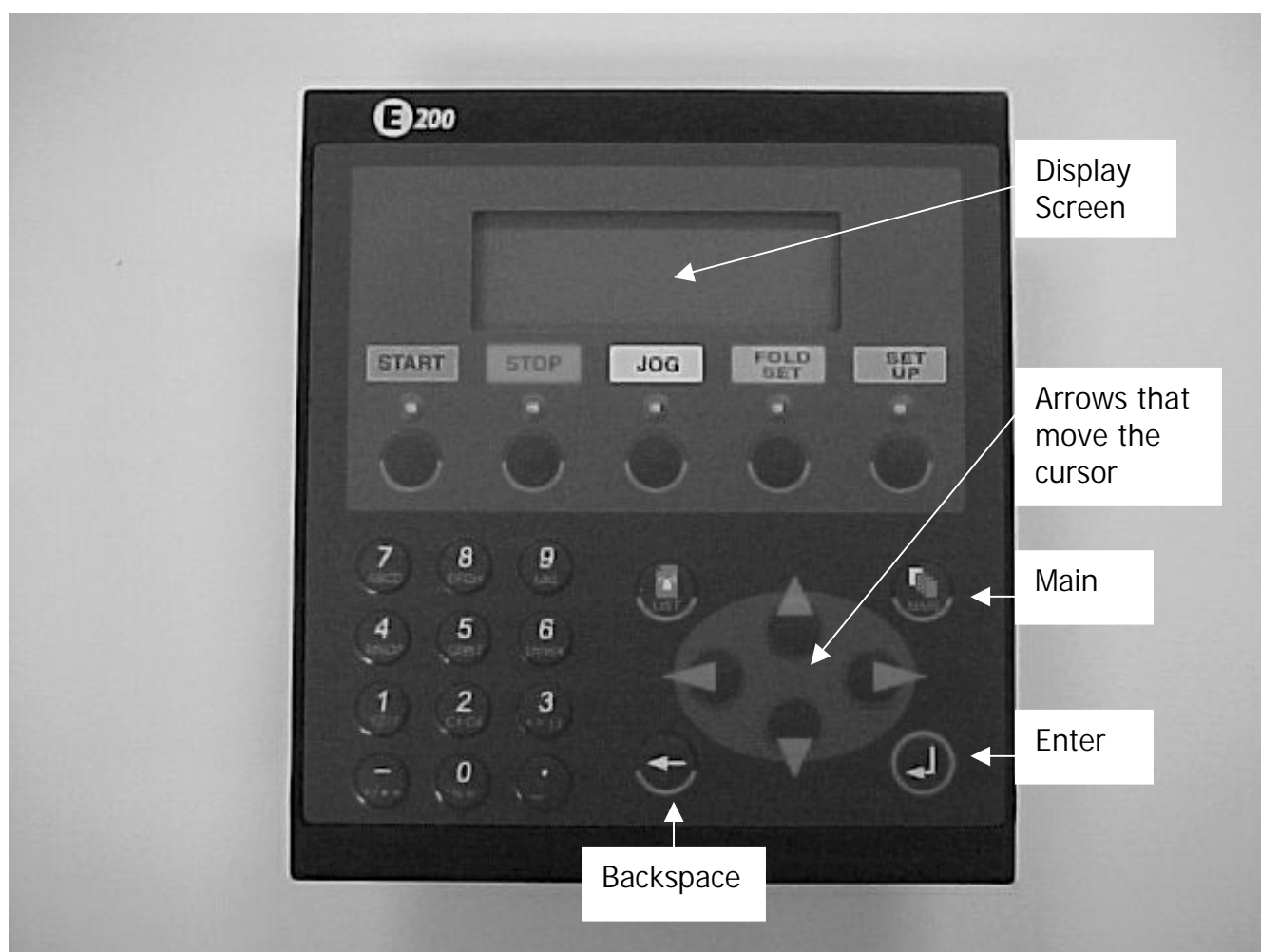


## Chapter 4

# Main Control Panel

**IMPORTANT!** Make sure Electrical and Pneumatic Checkouts are completed before continuing.

This picture shows the E-200 OIT (Hereafter called the **Touch Pad**) and the controls needed to operate the machine and change folding parameters.



***TURNING MACHINE ON AND CHECKING E-STOP FUNCTION***

1. Turn machine **ON** using the **Main Switch** located on the side of the main electrical panel that is located at the discharge end of the machine.
2. The **Touch Pad Screen** should read: Amscomatic K-795, 770-868-5400.
3. Press **START**. Machine should run.
4. Press **STOP**. Machine should stop running.
5. Press **JOG**. Machine should run as long as the **JOG** button is depressed.

***Checking the Push Button E-STOP Protection.***

1. Start machine.
2. Push **E-STOP** button on top of control panel.
3. Machine should stop
4. Reset the **E-STOP** button by twisting the knob clockwise.
5. The button should pop up.
6. Restart the machine and repeat this test on the E-STOP button on the discharge end of the machine.

***Checking Lexan Cover E-STOP Protection.***

1. Start machine.
2. Lift the large horizontal Lexan cover.
3. The machine should stop.
4. Restart the machine and repeat this test on the small Lexan cover over the discharge end of the machine.

***SAFETY DANGER!*** If any of these tests fail, have a technician repair the fault.

## ***HOMING THE FOLD AND TUCKER PLATES***

It is important that the Fold and Tucker Plate are homed so that the electronics "Know" the position that the plates are in and then be able to move them to the desired position. This procedure is done on the initial Set Up or if the plates are not adjusting properly.

### ***PROCEDURE***

1. Machine is turned **ON** and **NOT RUNNING**.
2. Press **Set Up** and then **STOP**.  
The Touch Pad Screen will read:  
FOLD HOME            NO  
TUCKER HOME        NO
3. Press **Enter** twice.  
If either or both are not homed, **YES** will be displayed until plates are home.  
When plates are home, **NO** will again be displayed.
4. To return to the Main Screen, press **Set Up** and then **Main**.

If there is any doubt that the plates are homed have a technician check to see that the Fold and Tucker Proximity sensors are made. There is an LED on the sensor that lights when made. Also LED numbers 6 (Fold) and 7 (Tucker) on the PLC will be lit.

If either or both of the plates are not homed, a technician will need to manually home the systems.

See Chapter 7 for manual homing procedure.

## ***ZEROING THE COUNTER ON THE MAIN SCREEN***

1. If Main screen is not displayed, push **Main**.
2. Using the **Arrows** Move the cursor to the **Count** line, and then move it under the **C** in **Count**.
3. Press the **Backspace** arrow.
4. Press **Enter** twice.

# CHAPTER 5

## Fold Sets

### ***FOLD SET PROCEDURE***

The K-795 Folding Machine can store up to seventy-five presets. The K-795 machine comes with 12 permanent fold settings. Settings 1-12 are pre-programmed with the 12 most common finished fold sizes used in the apparel packaging industry. We recommend that you view this list first to see if any of these permanent settings will accomplish the finished fold size you require.

### ***THIS TABLE SHOWS THE TWELVE PERMANENT FOLD SETS***

<b>Fold Set</b>	<b>Product</b>	<b>Finished Fold Width*</b>	<b>Fold Width</b>	<b>Fold %</b>	<b>Fold Dwell</b>	<b>Tucker Position</b>	<b>Fold Gain</b>	<b>Table Dwell</b>
1	Youth Tee Shirts	7 1/8 - 7 3/8	5	50%	200	1	180	9
2	Youth Tee Shirts	7 3/8 - 7 5/8	6	50%	200	1	180	9
3	Adult T-Shirts/Golf Shirts	8 3/8 - 8 5/8	7	50%	200	1	140	9
4	Adult T-Shirts/Golf Shirts	8 7/8 - 9 1/8	8	50%	200	1	140	9
5	Adult T-Shirts/Golf Shirts	9 7/8 - 10 1/8	9	50%	200	1.5	140	9
6	Adult T-Shirts/Golf Shirts	10 7/8 - 11 1/8	10	50%	200	1.5	140	9
7	Adult T-Shirts/Golf Shirts	11 7/8 - 12 1/8	11	50%	200	1.5	140	9
8	Long Sleeve Tee Shirts	9 7/8 - 10 1/8	8	50%	200	1.5	180	12
9	Sweats	9 3/8 - 9 5/8	7	50%	175	2.5	250	12
10	Sweats	10 1/8 - 10 3/8	8	50%	175	2.5	250	12
11	Heavy Sweats	11 1/8 - 11 3/8	9	50%	150	2.5	260	12
12	Heavy Sweats	13 3/8 - 13 5/8	10	50%	150	2.5	260	12

\*Unit: Inches.

Note: The actual finished fold size is dependent on several factors including: Thickness of garment fabric, size of garment, stitch count of fabric, finished fold configuration and any accessories on the garment (hoods, zippers etc...).

### ***CREATING YOUR OWN CUSTOM PRE SET***

If you need to program the E-200 controller to create a custom fold set for your product, use the following procedure. Each preset contains the following parameters that are necessary to fold a given product. In creating a custom setting, it is usually easier to begin with one of the settings in from the twelve permanent pre sets.

<u>Parameter</u>	<u>Min</u>	<u>Max</u>	<u>Example</u>	<u>Function</u>
Fold Width	5	12	9	Sets width of the fold.
Fold %	2%	75%	50%	Position of the second fold.
Fold Dwell	10	500	200	Time second fold plate is in the <b>UP</b> position.
Tucker Position	1	4	1.5	Sets the distance between fold plates.
Fold Gain	0	500	200	Fine tunes the Fold %
Table Dwell	1	50	13	Time Drape Table is in the <b>IN</b> position.

### ***Setting The Parameters (Values) Of A Fold Set:***

- Press **Set Up**
- Enter the **Fold Set Number** (13-75) of the setting you wish to use (or change).
- Press **Enter**
- Press **Set Up**
- The screen on the Touch Pad will display the current settings.
- NOTE: You may have to do this procedure a second time.
- Use the **Up** and **Down or Enter Keys** to move the cursor to the parameter you want to change.
- Use the number keypad to enter the new value.
- To save this or each new value, press **Enter**.
- Once all changes are made and entered, press **Main** to return to the main screen.
- To set the machine to these new settings, press **Fold Set, Fold Set Number, Enter**.

### ***Selecting A Fold Set***

- Press **Fold Set** key
- Enter **Fold Set Number** (1-75) for example #5
- Press **Enter**. Machine will automatically adjust itself for Fold Set 5.



## Chapter 6

# Recommended Spare Parts List.

The following is a list of recommended spare parts for the K-795-S Folder. To minimize down time, it is recommended that these parts be kept in stock. Ask your Amscomatic sale representative or customer service representative for pricing and discounts on a spare parts kit containing these items for your K-795-S.

Qty	Part Number	Description
-----	-------------	-------------

### ***ELECTRICAL***

1	MF-0009-C	Home Proximity Sensor (Fold and Tucker Plates)
1	PE-0018-A	Non –Reversing Motor Starter
2	PE-0018-A	Starter Overload
2	PE-0073	Length or Fold Eye
2	PE-0134	Fuse – 10 Amp Fuse
1	PE-0135	Fuse – 6 Amp Fuse
1	PE-0139-A	Fuse – 10 Amp MDL Slow Blow Fuse
1	PM-0139-B	Quadrature Ring Sensor

### ***BELTS***

6	APF-0013	Second Fold Belt – 45-1/2" (Top)
6	APF-0014	Second Fold Belt – 33-1/4" (Bot)
7	MF-0015	1" Infeed Belt – 57-3/4"
1	PM-0060	7" x 148-3/4" White Rough Top Belt
1	PM-0136	Timing Belt (Tucker) (PM-0136-A for Wide Machine)
1	PM-0137	Timing Belt (Fold)

### ***MECHANICAL***

4	PBR 0009	Bearing
6	PM-0039-A	Hinge

### ***PNEUMATIC***

1	PN-0001-A	Solenoid Valve (Table and Second Fold)
2	PN-0044	Flow Controls
1	PN-0072	Regulator (Drape Table)

# Chapter 7

## Technician's Reference Information

### *TERMINAL BLOCK NUMBERS AND REALTED CIRCUITS*

<u>Terminal –TB</u>	<u>Description</u>
<u>N</u>	Neutral. BLU from OPTO EYE. All other usual neutral connections.
<u>1</u>	Power from Main Switch to: Fuses 1, 2, 3 & 4. MSI L1 and L2 (With Card Feed) <ul style="list-style-type: none"><li>• <u>Fuse 1</u> Power to TB 8.</li><li>• <u>Fuse 2</u> Power to TB 9</li><li>• <u>Fuse 3</u> Power to TB 10</li><li>• <u>Fuse 4</u> Power to TB 11</li></ul>
<u>8</u>	Power from Fuse 1 to Servo Amplifiers.
<u>9</u>	Power from Fuse 2 to: 5VDC and 24VDC Rectifiers Card Feed electrical if machine equipped with a Card Feed.
<u>10</u>	Power from Fuse 3 to PLC.
<u>11</u>	Power from Fuse 4 to: Com 1 & 2 on PLC Expander. BRN from OPTO EYE.
<u>22</u>	Power from T1 of MS1 to OL1.
<u>23</u>	Power from OL1 to Main Motor.
<u>24</u>	Power from T2 of MS1 to OL2 (on Card Feed Machines).
<u>25</u>	Power from OL2 to Vacuum Motor (on Card Feed Machines).
<u>0V (DC-)</u>	Connections to: RED/WHT on Fold and Tucker Servo Controls. BRN from the Quadrature Sensor. BLU from Banner Eyes and Proximity Sensors. YEL or GRN from OPTO Eye. 0V and Com 1, 2, 3 & 4 on PLC.
<u>5 VDC+</u>	Connection to BLU from the Quadrature Sensor.
<u>24 VDC+</u>	Connections to: GRN/BLK, BLU/WHT & BLU from Fold and Tucker Servo Controls. BRN from Banner Eyes and Proximity Sensors. 24 VDC+ on PLC.
<u>X0</u>	BLK from Quadrature to X0 on PLC.
<u>X1</u>	WHT from Quadrature to X1 on PLC.

## **Amscomatic, Inc. Ls-200 Long Sleeve Folder**

<u>X2</u>	<u>BLK from Length Eye to X2 on PLC.</u> (On Split Belt Machines use WHT wire instead of BLK.)
<u>X4</u>	<u>BLK from OPTO to X4 on PLC.</u> BLK from Auto Sensor Eye if machine so equipped. If Table Micro Switch is used, it switches 0V to X4.
<u>X3</u>	<u>BLK from Second Fold Eye to X3 on PLC.</u>
<u>X6</u>	<u>BLK from Fold Plate Home Proximity Sensor to X6 on PLC.</u>
<u>X7</u>	<u>BLK from Tucker Plate Home Proximity Sensor to X7 on PLC.</u>
<u>Y0</u>	<u>ORG/BLK from Fold Servo Control to Y0 on PLC.</u>
<u>Y1</u>	<u>ORG/BLK from Tucker Servo Control to Y1 on PLC.</u>
<u>Y3</u>	<u>GRN from Fold Servo Control to Y3 on PLC.</u>
<u>Y4</u>	<u>RED/BLK from Fold Servo Control to Y4 on PLC.</u>
<u>Y6</u>	<u>GRN from Tucker Servo Control to Y6 on PLC.</u>
<u>Y7</u>	<u>RED/BLK from Tucker Servo Control to Y7 on PLC.</u>
<u>Y20</u>	<u>Power from Y0 on PLC Expander to MS1 control coil.</u>
<u>Y21</u>	<u>Power from Y1 on PLC Expander to Table Solenoid.</u>
<u>Y22</u>	<u>Power from Y2 on PLC Expander to Second Fold Solenoid.</u>
<u>Y24</u>	<u>Power from Y4 on PLC Expander to Belt Feed Blow Down.</u> (If machine has a Belt Feed In Feed.)

### ***PLC LED LEDGEND***

If LED is lighted, it shows that the input is present or output is on.

PLC In	Input Source	PLC OUT	Output	Expander Out	Output – 115 VAC
0	Quadrature	0	Fold Servo Control	0	MS 1 Coil
1	Quadrature	1	Tucker Servo Control	1	Table Solenoid
2	Length Eye	2		2	2 <sup>nd</sup> Fold Solenoid
3	2 <sup>nd</sup> Fold Eye	3	Fold Servo Control	3	
4	OPTO Eye*	4	Fold Servo Control	4	Belt Feed Blow-Dn
5	Belt Feed Eye	5		5	
6	Fold Home	6	Tucker Servo Control	6	
7	Tucker Home	7	Tucker Servo Control		
10		10			
11		11			
12					
13	E-STOP Allow				
14					
15					

\* If Table Micro Switch is used, it Switches 0V to X-4

***Complete Electrical Parts List***

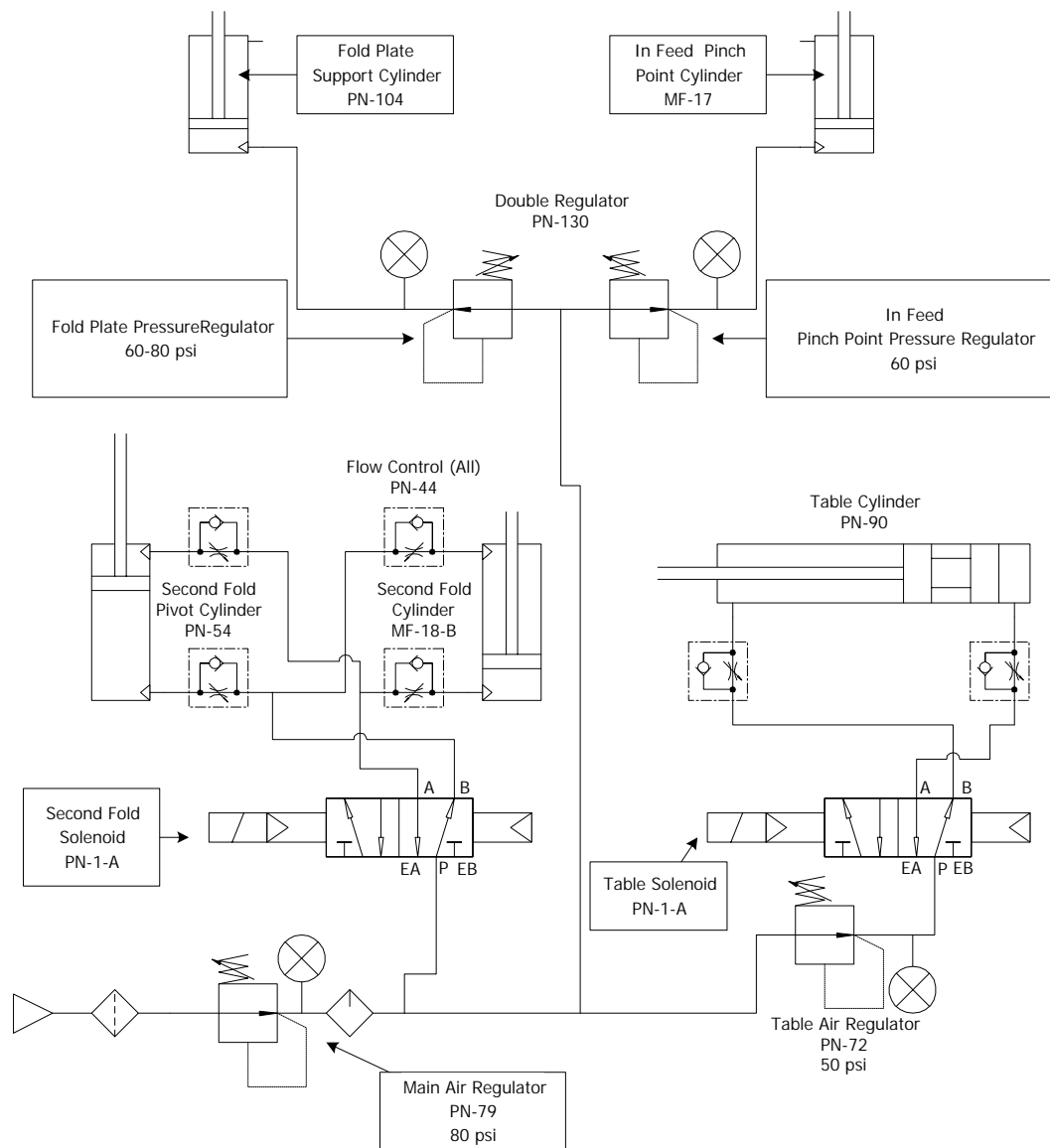
<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
A2921-AL	Aluminum Portable Cord Connector	1
MF-0009C	Home Proximity Sensor	2
PE-0018-A	Non-Reversing Motor Starter	1
PE-0018-A-3	Overload	1
PE-0018-A-5	Overload Base Adaptor	1
PE-0062	Split Belt Length Eye	1
PE-0073	Length/Fold Eye	2
PE-0079	OPTO Touch Button	1
PE-0079A	OPTO Cable	1
PE-0080	Emergency Stop Legend Plate	2
PE-0096	Red E-Stop, Twist Push-Pull	2
PE-0099	Enclosure for Twist Lock OPE	1
PE-0107	Rubber Grommets	6
PE-0120	20 Amp Breaker	1
PE-0130	DIN Mounted Fuse Holder	4
PE-0130A	Fuse Holder End Cap	1
PE-0134	Fuse - 10 Amp	2
PE-0135	Fuse - 6 Amp	1
PE-0139A	Fuse - 10 Amp Slow-Blow	1
PE-0181	Terminal Block End Keeper	4
PE-0182	Terminal Block - Ground	3
PE-0184	Terminal Block	54
PE-0187	Terminal Block End Cover	2
PE-0202	Terminal Block Jumper	9
PE-0203	Quick Disconnect	1
PE-0211A	Plug/Cord Assembly	1
PE-0700-D	Controller for K-795	1
PE-0700-E	Expander for K-795	1
PE-0745	E-200 Touch Pad - 100 Presets	1
PE-0750	Mitsubishi Servo Amplifier	2
PE-0751	International Power Supply - 24 VDC+	1
PE-0902	Quadrature Connector	1
PE-0904	Cable with Female Plug	5
PE-0920	SC001 Servo Control Fold Cable	1
PE-0921	SC002 Servo Control Tucker Cable	1
PE-0927	SE002 Servo Encoder Cable (Fold)	1
PE-0931	SM001 Servo Motor Cable (Fold)	1
PE-0932	SM002 Servo Motor Cable (Tucker)	1

***Amscomatic, Inc. Ls-200 Long Sleeve Folder***

***Complete Electrical Parts List - Continued***

PE-0933	SE001 Servo Encoder Cable (Tucker)	1
PE-0934	Cable – Fx on PLC to E2000IT	1
PEB-0012	Electrical Enclosure 24 x 24 x 6	1
PEB-0012A	Back Plate	1
PM-0125-B	Servo Motor	2
PM-0128	Power Supply - 5 VDC+	1
PM-0138	Quadrature Ring	1

**K-795 PNEUMATIC DIAGRAM**



## **MANUAL HOMING OF FOLD PLATES**

Machine is turned **OFF**.

If the machine is **ON**, the manual adjustment **CANNOT** be made.

### **FOLD PLATES**

1. This assembly is on the post under the **INFEED**.
2. There is a short timing belt connecting the servomotor to a ball screw assembly.
3. Manually move the belt so that the ball screw moves the block of the assembly so that it just touches proximity sensor.
4. Now when the machine is turned **ON** a red **LED** on the proximity sensor will be lit.
5. Also **LED 6** on the **PLC** will be lit indicating a signal from this sensor.

### **TUCKER PLATES**

1. This assembly is mounted on the lower frame in the center of the machine. To gain access to this assembly, open the center side door on the left side of the machine.
2. Standing at the control panel, in feed end of the machine, this side is on the left.
3. There is a servomotor mounted on a plate that drives a belt that rotates two ball screw assemblies that move the tucker plates up or down.
4. The connecting belt is on the bottom side of the plate.
5. Move the belt so that the frame of the tucker assembly just touches the proximity sensor.
6. Now when the machine is turned **ON** a red **LED** on the proximity sensor will be lit. Also **LED 7** on the **PLC** will be lit indicating a signal from this sensor.
7. The machine is now ready to enter a preset.

**SERVO AMPLIFIER SET UP PARAMETERS: FOLD & TUCKER**

Parameter Number	Symbol	Description	Servo 1 Settings Fold	Servo 2 Settings Tucker
P00	REG	Regenerative Brake	000	000
P01	ATU	Auto Tuning	004	002
P02	CMX	Electronic Gear	4	1
P03	CDV	Electronic Gear	1	1
P04	PST	Piston Command	0	0
P05	INP	In-Position Range	0	1
P06	IP1	Input Signal Select 1	010	010
P07	OP1	Command Pulse	011	011
P08		Spare	0	0
P09	TLL	Torque Limit Valve	100	100
P10		Spare	0	0
P11		Spare	0	0
P12	BLK	Parameter Write Disable	00d	00d
P13	SIO	Communication	000	000
P14	DMD	Statue Display Selection	000	000
P15	ERZ	Excessive Error Output	50	50
P16	OP1	Position/Speed Selection	001	001
P17	SC1	Speed Command 1	10	10
P18	SC2	Speed Command 2	100	100
P19	STC	Speed Acc/Dec Time k	200	0
P20	DIF	Input Signal Function Select	210	210
P21	DOF	Output Signal Function Select	010	010
P22		Spare	0	0
P23	GD2	Load Inertia/Motor Inertia	18	98
P24	NCH	Machine Resonance Sup.	5	5
P25	PG1	Position Control Gain 1	70	10
P26	PG2	Position Control Gain 2	40	9
P27	VG1	Speed Control Gain 1	42	10
P28	VG2	Speed Control Gain 2	216	238
P29	VIC	Speed Integral Compensation	70	124
P30	VDC	Speed Prop. Control Gain	980	980

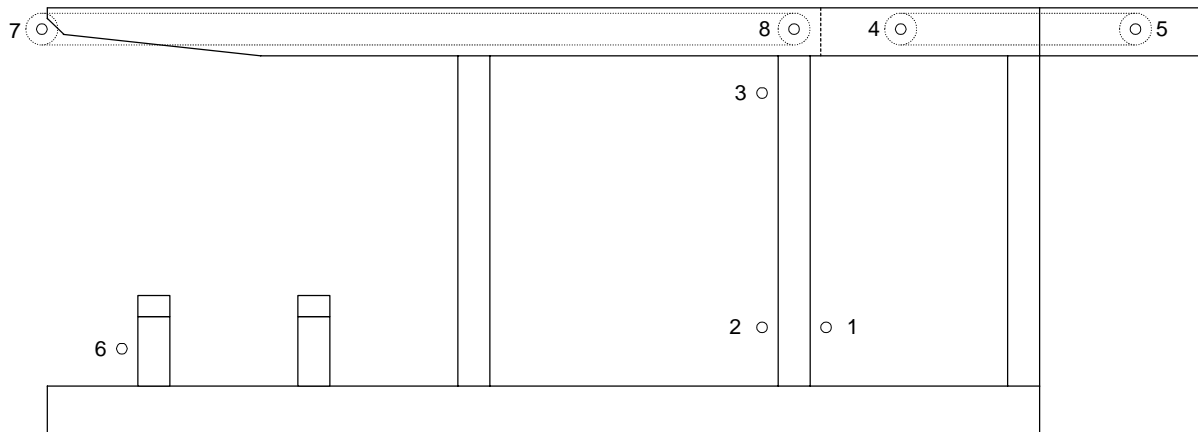


## K-795 FRAME REFERENCE

### PART NUMBERS FOR SHAFTS, BEARINGS, SPROCKETS & ROLLERS

Assembly	STANDARD				WIDE			
	Shaft	Bearing	Sprocket	Roller	Shaft	Bearing	Sprocket	Roller
1	APF-116A	PBR-21	40B32-1		APF-116A-WF	PBR-21	40B32-1	
2	APF-122	PBR-21	40B16-1		APF-122-WF	PBR-21	40B16-1	
3	APF-117	PBR-22	40B12-3/4	KN-499	APF-117-WF	PBR-22	40B12-1	KN-499-WF
4	MF-488	PBR-19	40B12-3/4	MF-495	MF-488-WF	PBR-19	40B12-3/4	MF-495-WF
5	MF-484	HN-3555		MF-496	MF-484-WF	HN-3555		MF-496-WF
6	MF-480	PBR-21	40B12-1	MF-493-9	MF-480-WF	PBR-21	40B12-1	MF-493-11
7	MF-486			MF-490-9*	MF-486-WF			MF-490-11*
8	MF-487	PBR-14	40B12-1	MF-491-9	MF-487-WF	PBR-14	40B12-1	MF-491-11

\*Insert Bearing PBR-11



# Chapter 8

## Troubleshooting

### TROUBLESHOOTING GUIDE

The K-795 is designed to be trouble free and easy to use, but occasionally problems occur. This guide will help in correcting these problems. If additional help is needed, please call Customer Service at 1-800-241-1899.

#### General Troubleshooting

Problem	Solution
Fold Plates do not respond. Tucker plates do not respond.	Power machine down for 2 minutes. Following homing procedure section.
Machine stops after jam; will not restart	<ul style="list-style-type: none"><li>• Check all e-stops, guards and switches.</li><li>• Power machine down for 1 minute.</li><li>• Reset Overload (OL1) in main panel.</li></ul>
Machine doesn't pull garment off infeed table	<ul style="list-style-type: none"><li>• Adjust Pinch Point Pressure, pg. 20.</li><li>• Check table stroke; adjust if necessary.</li><li>• Increase table dwell time.</li></ul>
Garment falls through second fold	<ul style="list-style-type: none"><li>• Increase fold dwell.</li><li>• Check length eye input.</li><li>• Check second folds eye, input.</li><li>• Check second fold cylinder.</li></ul>
Operator interface has COMM error	Check OIT cable for proper connection
Machine not responding to preset values	Repeat Set-up and Fold Set Steps
Fold plate jumps or doesn't move smoothly	Check pins that operate fold plates
Garment stalls in fold process	<ul style="list-style-type: none"><li>• Increase fold plate pressure</li><li>• Teflon or fold plate may be worn and needs replacing</li><li>• Main fold belt may be worn and needs replacing</li></ul>

## ***Amscomatic, Inc. K-795 Automatic Folding Machine***

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<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
<ul style="list-style-type: none"><li>• Feed table does not move forward when touch switch is tripped.</li></ul>	<ul style="list-style-type: none"><li>• Cylinder</li><li>• Switch</li><li>• Power or air</li><li>• Solenoid</li><li>• Flow valve</li></ul>	<ul style="list-style-type: none"><li>• Check each component for proper function.</li></ul>
<ul style="list-style-type: none"><li>• Feed table does not return.</li></ul>	<ul style="list-style-type: none"><li>• PLC</li><li>• Solenoid</li><li>• Flow valve</li></ul>	<ul style="list-style-type: none"><li>• Check each component for proper function.</li></ul>
<ul style="list-style-type: none"><li>• Feed table too slow on forward stroke effecting product.</li></ul>	<ul style="list-style-type: none"><li>• Low air pressure</li><li>• Flow valve adjustment</li></ul>	<ul style="list-style-type: none"><li>• Increase air pressure or adjust flow valve.</li></ul>
<ul style="list-style-type: none"><li>• Feed table bangs on forward strokes</li></ul>	<ul style="list-style-type: none"><li>• High air pressure</li><li>• Flow valve adjustment</li><li>• Forward cylinder stop</li></ul>	<ul style="list-style-type: none"><li>• Make adjustments as needed.</li></ul>

## Troubleshooting Folding

Problem	Possible Cause	Solution
<ul style="list-style-type: none"><li>Loose fold.</li></ul>	<ul style="list-style-type: none"><li>Tucker Plates</li></ul>	<ul style="list-style-type: none"><li>Adjust</li></ul>
<ul style="list-style-type: none"><li>Product stalls in horizontal fold section.</li></ul>	<ul style="list-style-type: none"><li>Tucker Plates</li><li>Folding plate support cylinder</li><li>Belt too slick</li><li>Garment characteristics (wide heavy print)</li></ul>	<ul style="list-style-type: none"><li>Adjust</li><li>Slightly increase air pressure to cylinder.</li><li>Replace belt</li><li>Adjust or Teflon coat tucker plates.</li></ul>
<ul style="list-style-type: none"><li>Generally loose fold.</li></ul>	<ul style="list-style-type: none"><li>Tucker plates too low.</li></ul>	<ul style="list-style-type: none"><li>Adjust</li></ul>
<ul style="list-style-type: none"><li>Parallelogram shaped fold.</li></ul>	<ul style="list-style-type: none"><li>Tucker plates too high.</li></ul>	<ul style="list-style-type: none"><li>Adjust</li></ul>
<ul style="list-style-type: none"><li>Second fold too long or too short.</li></ul>	<ul style="list-style-type: none"><li>Fold %</li><li>Fold Gain (Adjust if fold % = 50)</li></ul>	<ul style="list-style-type: none"><li>Adjust</li><li>Adjust</li></ul>
<ul style="list-style-type: none"><li>Second fold plate stuck in up position.</li></ul>	<ul style="list-style-type: none"><li>PLC</li><li>Second fold cylinder or solenoid.</li><li>Low air pressure</li></ul>	<ul style="list-style-type: none"><li>Call for service</li><li>Replace cylinder or solenoid.</li><li>Increase air pressure.</li></ul>
<ul style="list-style-type: none"><li>Garment dropping off onto floor on exit end.</li></ul>	<ul style="list-style-type: none"><li>Plate does not extend far enough into pinch point.</li><li>PLC</li><li>Second fold cylinder solenoid.</li><li>Low air pressure</li></ul>	<ul style="list-style-type: none"><li>Adjust second fold plate.</li><li>Check component</li><li>Check component</li><li>Increase air pressure to cylinder.</li></ul>

## **Troubleshooting Second Fold – When Not Working.**

The Operation of the Second Fold is as follows:

The Length Eye sees the product and sends a signal to the PLC.

The Second Fold eye sees the product and sends a signal to the PLC, which produces a voltage at the second fold solenoid, which fires the second fold cylinder.

Check the following when the product passes by the Length Eye.

1. The green light on the eye is on.
  - a. This indicates the eye is getting 24VDC. And should be on when the machine is powered up.
2. The yellow light on the eye is on when product is present.
  - b. This indicates that the eye is sending a signal to the PLC.
3. LED #2 is lit on the PLC.

Check the following when the product passes under the Second Fold eye.

3. The green light on the eye is on.
  - a. This indicates the eye is getting 24VDC. And should be on when the machine is powered up.
4. The yellow light on the eye is on when product is present.
  - a. This indicates that the eye is sending a signal to the PLC.
5. LED #3 is lit on the PLC.
6. LED #2 is lit on the Expander.
  - a. The Expander gets its 120VAC to fire the solenoids from fuse F-4.
  - b. Power to the solenoid goes through TB Y-22.
7. The LED in the wire connector on the second fold solenoid is lit.
8. The second fold cylinder raises the second fold plate.
9. The plate lowers after the shirt is folded.
  - a. The length of time the plate stays up is determined by the second fold dwell setting in the touch pad. If the setting is too short, the cylinder will not move.

Things to check if any of the above do not occur.

1. If #2 on the expander does not light and no power goes to the solenoid check to see if LED's 0 and 1 on the PLC are lit. Both of these LED's indicate a fast pulsing signal from the Quadrature Encoder to the PLC. If either of these signals are absent or are on constant (not pulsing) the second fold will not operate. The usual fault is that one would fail and its LED would be out.

If one of the LED's is out disconnect the wire that connects the Encoder to it at its TB (X0 or X1) and jump the working signal to it. Example: if X0 is out, disconnect the black wire labeled X0 from TB X0 and jump the signal from X1 to X0.

If both lights are lit try the above with both channels as one may be sending out a constant signal.

2. If no power gets to the solenoid with all else working, check power on TB 11 that feeds power to the Expander. Fuse F-4
3. If all the electrical is working check solenoid valve action.
  - a. Push the manual button on the valve. The cylinder should go up and down as the button is pushed and released. If the valve works manually and not electrically the coil in the valve is bad and the valve needs to be replaced.
  - b. Other things to check are:
    - i. Air supply to the valve
    - ii. Flow control valves on the cylinder. These meter out, not in. Example: To make the cylinder go up faster open the flow control valve at the top of the cylinder to let the air out faster.
    - iii. The lines to the cylinder from the valve are not reversed.

## **LIMITED WARRANTY**

Apparel Folding & Packaging equipment manufactured by Amscomatic, Inc. (an M&R Company) is warranted against defects in workmanship and materials provided that it is properly maintained and operated under normal use for a period of one year from the date of shipment.

Damage that occurs in transit must be recorded and submitted to the freight carrier for settlement.

Neither parts subject to normal wear and tear, nor expendable parts such as belts, motor brushes, filters, lamps and fuses are covered by this warranty, nor do we warrant failure of parts or components resulting from misuse or lack of normal maintenance. Amscomatic is not responsible for the removal or installation of a defective part or its replacement part, nor for any related or unrelated costs incurred with respect thereto. All labor, travel and sustenance charges for service technicians are the customers' responsibility. Any part determined to be defective in material or workmanship within the warranty period will be repaired or replaced if deemed necessary and at our discretion without charge when returned **FREIGHT PREPAID** to:

**AMSCOMATIC, INC.  
815 PROGRESS DR.  
WINDER, GEORGIA 30680-7813**

Customers must secure written authorization or authorization number from our Customer Service Department prior to making any return of defective parts.

A clean, moisture-free air supply must be installed onto pneumatically operated equipment. Failure to install a clean moisture-free air supply to this equipment may result in premature failure of pneumatic components, such as air cylinders, seals and valves. Any pneumatic component or assembly that is determined to have failed due to the customers' failure to provide a clean moisture-free air supply to the equipment will not be covered under this warranty.

### **Limitation of Remedies and Liability:**

The remedies provided herein are Buyer's sole and exclusive remedies. In no event shall Amscomatic, Inc (M&R) be liable for direct, indirect, special, incidental or consequential damages (including loss of profits) whether based on contract, tort or any other legal theory.

### **Limitation of Warranty:**

The foregoing warranty shall not apply to defects resulting from: Improper or inadequate maintenance by Buyer; Buyer supplied equipment or interfacing; Unauthorized modification nor misuse; Operation outside of the environmental specifications for the product; or improper site preparation and maintenance. Warranty is not applicable unless equipment is installed by an Amscomatic Service Technician or Amscomatic / M&R Certified Service Technician. This warranty applies to the original equipment purchaser only and is not transferable.

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Month / Year

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Daily	3 Months
Check Main Air Pressure for 80 psi.	Check chain & belt tension
Check main Air / Water trap and filter – drain and clean as necessary	Grease bearings with Zerk fittings. DO NOT over grease.
Check E-STOP Operation	
Weekly	
Clean all lint, dust and debris from chains, sprockets, belts and main motor cooling fan.	