

# SMURFIT-STONE



*Automated Packaging Systems*

## meta™ SYSTEMS

### Touch Screen Addendum



Serial No. 1656

**SMURFIT-STONE**  
*Automated Packaging Systems*

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The information in this document has been reviewed and is believed to be accurate.  
However, no responsibility is assumed for possible inaccuracies or omissions.  
Information and specifications are subject to change without notice.

## Overview

### *Company History*

Stone Container Corporation began producing automated packaging systems in 1964, out of Chicago, Illinois. With the 1998 merger of another corrugated industry leader - Jefferson Smurfit Corporation - Smurfit-Stone quickly established itself as North America's premier packaging company.

Smurfit-Stone specializes in corrugated products, mill products, displays, RFID products - and at our Orlando, Florida location - Automated Packaging Systems.

### *Automated Packaging Systems*

In 1979, Automated Packaging Systems moved to Orlando, Florida. This division designs and manufactures both standard and custom packaging equipment. This semi or fully automated equipment includes tray formers, case erectors, case packers and case sealers. In addition, we offer complete packaging solutions - such as our VPS and Meta systems.

### *Our Team*

The Automated Packaging Systems division of Smurfit-Stone has some impressive credentials. On both the Application and the Design sides of the packaging industry, our Mechanical and Electrical Engineers have over 200 years of combined experience. Our Fabrication, Assembly and Production teams are comprised of personnel that can bring even the most complex design to life - without compromising performance or efficiency.

### *Our Product*

All Smurfit-Stone systems are framed of heavy-duty, welded, tubular steel construction. We use the finest add-on features - including Allen Bradley controls, Bosch touch screens, Nordson adhesive systems and Lexan guard doors. Your system is designed and customized to meet your specific needs, to seamlessly fit into your existing flow, and to maximize productivity and output.

Smurfit-Stone Automated Packaging Systems has produced over 2,500 systems to date. The large majority of these are still in use today. We take our customer's needs seriously - and provide the support necessary to make certain that our designs have a long and productive life span.

### *Our Future*

The future of Automated Packaging Systems is ever changing, but always bright. Our focus remains on our customers. For us, simply building a machine is not enough.

We provide the complete package - reducing waste, labor and material costs - while maximizing manufacturing efficiency, enhancing retail attraction, and boosting our customer's sales.

In addition, Smurfit-Stone is continually pursuing new and innovative concepts and approaches that may make our employees more highly skilled, our performance more efficient, and our product of even higher quality.

For more information about your own custom equipment needs,  
contact Smurfit-Stone Automated Packaging Systems at  
800-338-6294.

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## Introduction

This manual is designed as an addendum to the Machine Manual for machine –

### **Meta 150 – Serial No. 1656**

The information contained herein is important for the smooth and efficient operation of the machine, and for the knowledge and safety of any personnel working on or around the machine. Please take the time to read this manual thoroughly.

### *Note*

This manual is designed to give the best possible overview of Touch Screen details for the Meta 150 – Serial No. 1656.

It is impossible to document all Touch Screen scenarios that may occur with any machine – based on specific customer desires, operational preferences, etc.

## Touch Screen



The primary interface between Operator and Machine.

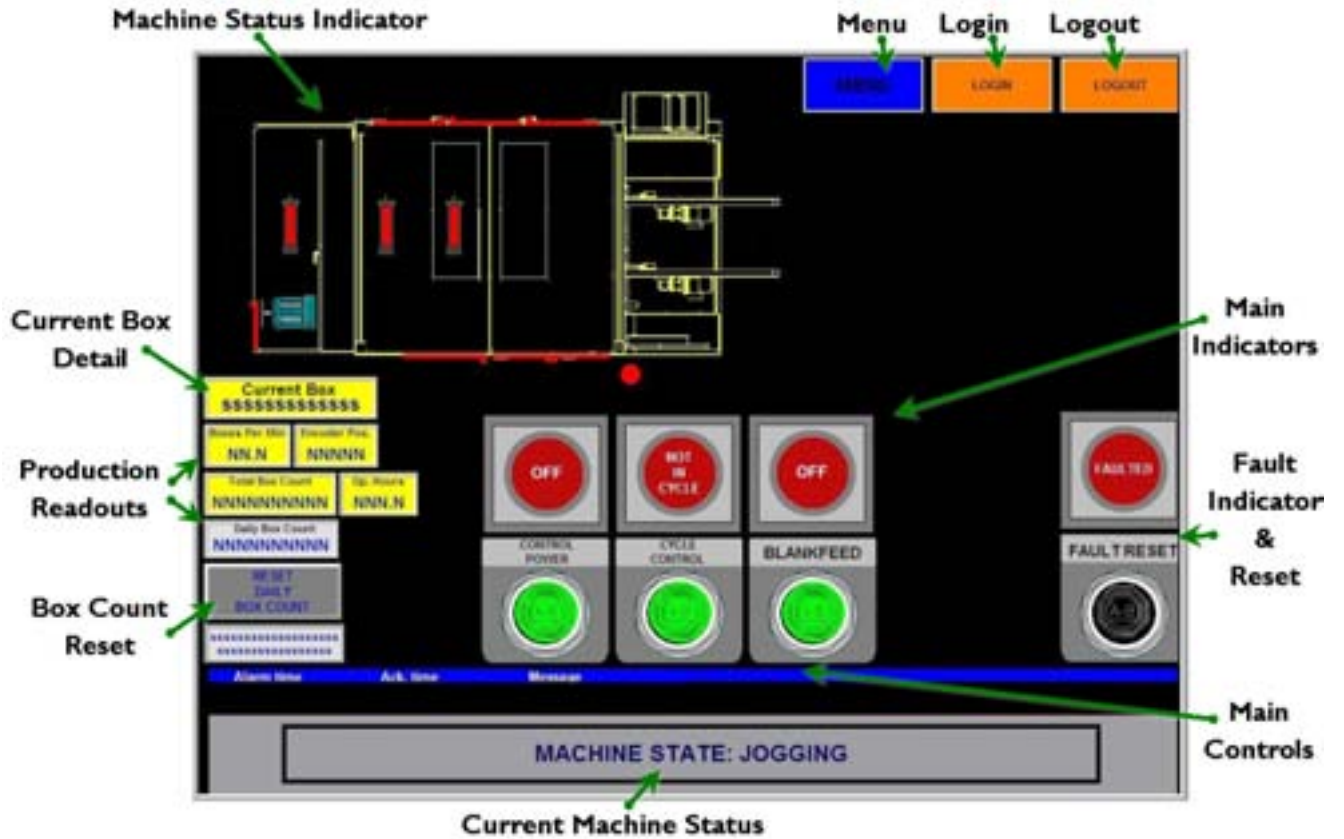


➔ The Touch Screen can be used to:

- Monitor the machine
- Detail existing conditions and set-ups
- Inform the Operator of warning and/or fault messages



# Auto Screen



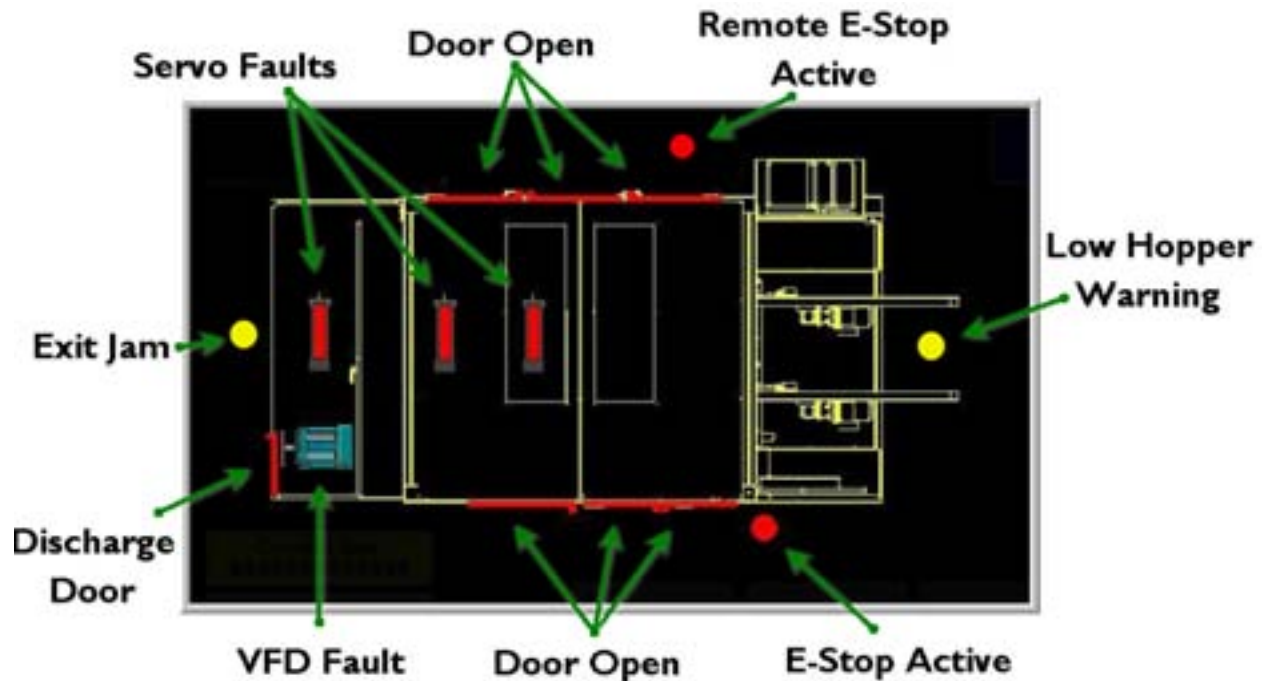
See the following page for more detail on each of these elements.

★ Clockwise from Top, Left:

- **Machine Status Indicator** – Showing a top view of the machine, this diagram will display faults and warnings when anything may be wrong with the system. Flashing faults and warnings are displayed in **RED**.
- **Menu** – Use these menus to set, reset or change different parameters of the machine. Also access quick links to all machine-related manuals.
- **Logout/Login** – To add an element of safety and security to the system – each Operator must login to use the machine.
- **Main Indicators** – These large circular displays indicate the current status of Control Power, Cycle, and Blankfeed Controls.
- **Fault Indicator & Reset** – When all faults and warnings have been addressed, select this button to clear the machine for production mode. The Fault Indicator displays whether the machine is in fault condition or not.
- **Main Controls** – On the Touch Screen, these ‘buttons’ work just like regular, manual push-buttons. Simply push / touch the button with a finger to turn On or OFF. Controls on the Main Screen are for Control Power, Cycle, and Blankfeed.
- **Current Machine Status** – This display area informs the Operator of the current, overall status or phase of the machine.
- **Box Count Reset** – Pressing this button will enable the Operator to reset the current or Daily Box Count.
- **Production Readouts** – These displays give the Operator current machine production information – such as Boxes per Minute, Encoder Position, Total Box Count, and Operating Hours.
- **Current Box Detail** – Informs the Operator of the current blank/box running on the machine.



## Auto Screen Breakdown

*Status Indicator*

★ Clockwise from Top, Left:

- **Servo Faults** – When displayed in RED, indicates a Fault with the Servo Motor in the area displayed.
- **Door Open** – When a glue-side access door is open, the open door will display in RED, and in an open position.
- **Remote E-Stop Active** – Displays when the remote or glue-side E-Stop is IN.
- **Low Hopper Warning** – Displays in yellow when the Blanks in the Infeed Hopper reach a LOW status.
- **E-Stop Active** – Displays when the operator-side E-Stop is IN.
- **Door Open** – When an operator-side access door is open, the open door will display in RED, and in an open position.
- **VFD Fault** – A small blue motor will appear if a Fault issue occurs with the VFD Motor.
- **Discharge Door** – (selected machines) When open, this door will display in RED, and in an open position.
- **Exit Jam** – Displays in yellow if there is a jam in the exit or discharge area of the machine.

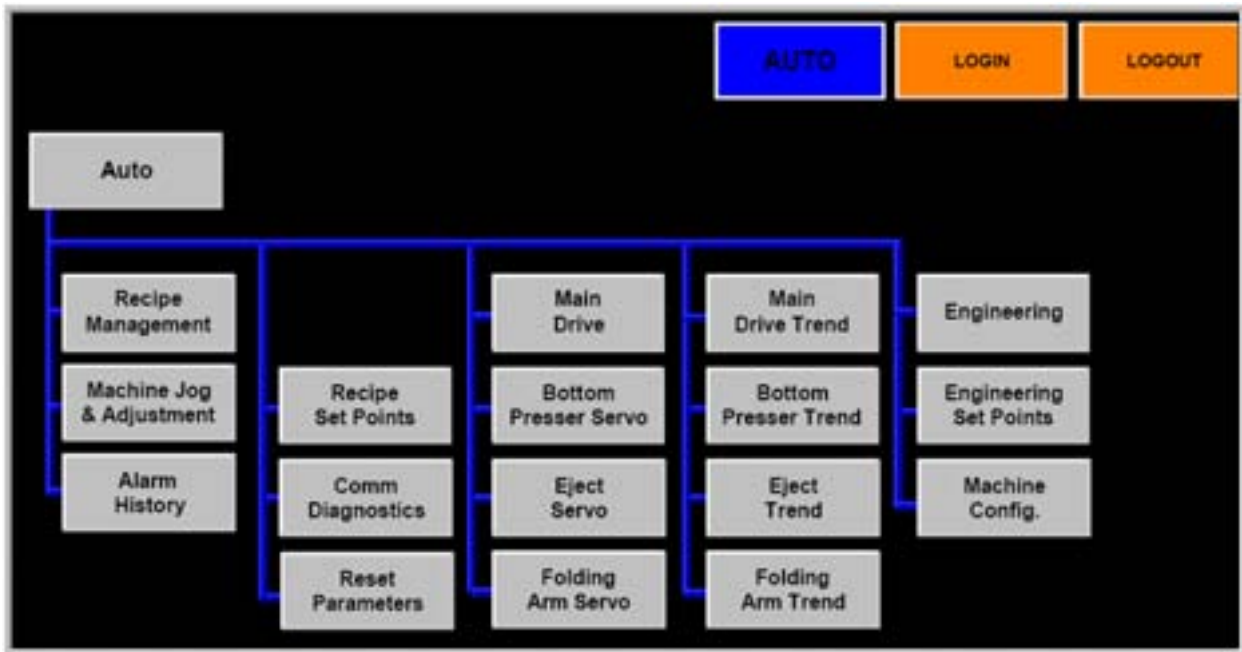
*Menu, Login, Logout*



NOTE: The Menu, Login, and Logout buttons remain displayed on a number of other screens.

**Menu**

- **Menu** – Pressing the Menu button opens the Menu Screen:



From the Menu Screen, all other Touch Screen sub-menus can be reached.

## Login

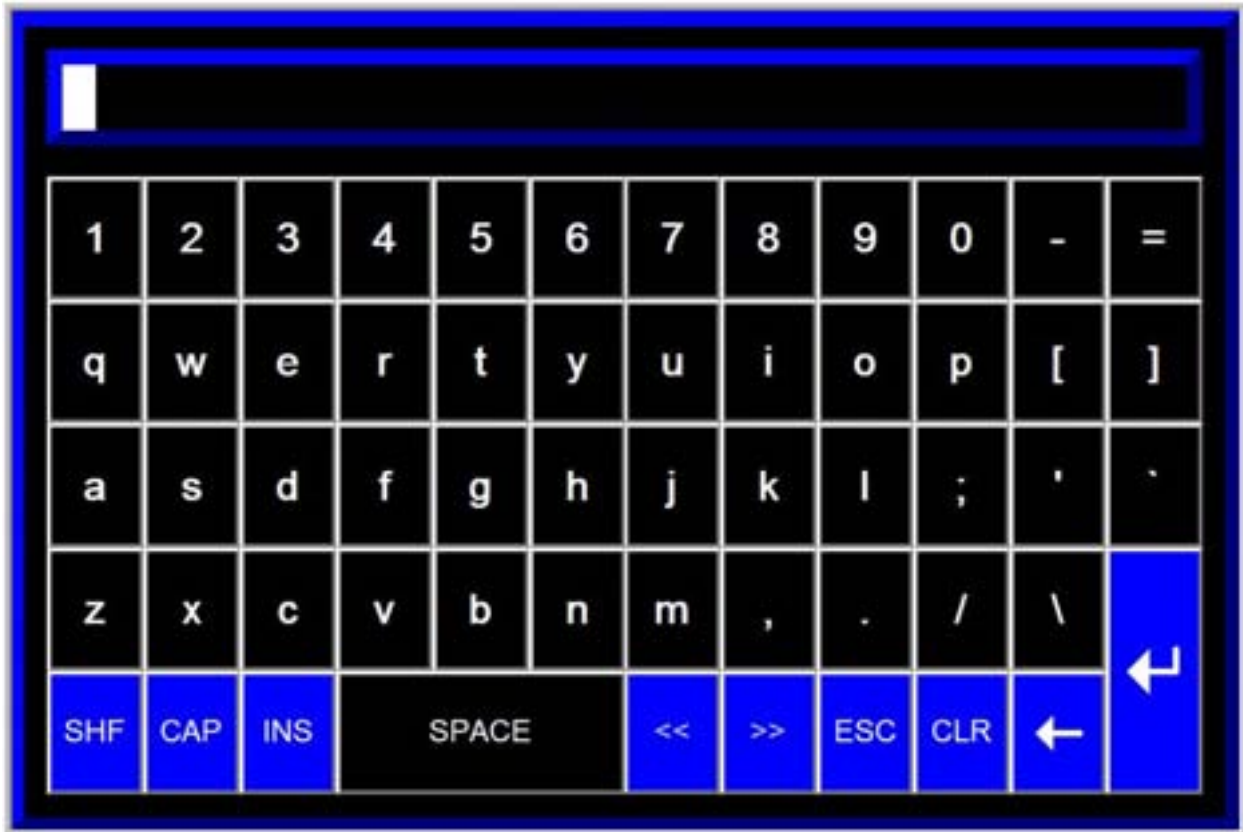
- **Login** – Pressing the Login button opens the Login Screen:



The image shows a login screen with a black background and a blue border. At the top center, the word "Login:" is displayed in white. Below this, there are two rows of input fields. The first row has a button labeled "User (F2)" on the left, a large empty text box in the center, and a button with a white left-pointing arrow on the right. The second row has a button labeled "Password (F3)" on the left, another large empty text box in the center, and a button labeled "ESC" on the right.

- ➔ User (F2) – Press this button to enter Username.
- ➔ Password (F3) – Press this button to enter Password.
- ➔ Enter (down-left arrow) – Press after entering Username and Password.
- ➔ Esc (Escape) – Returns user to previous screen.

- Pressing either the **User** or **Password** buttons opens the Keyboard Screen:



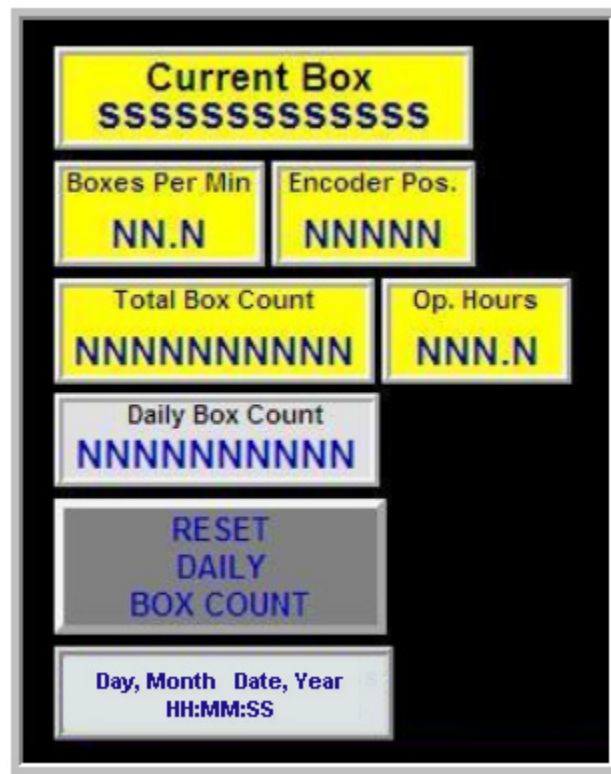
- Use the Keyboard Screen just like a normal Keypad.
- Press Enter (down-left arrow) when complete.

### Logout

- **Logout** – Pressing the Logout button at any time will log the current User out of the Touch Screen.

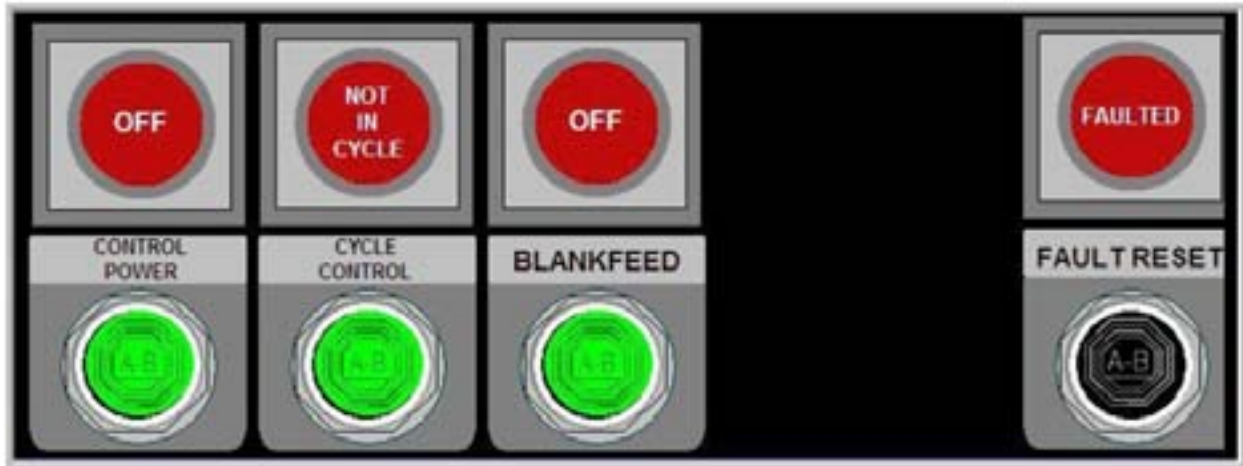


### Current Box & Production Readouts



- **Current Box** – Displays the box number of the current Blank being run on the machine.
- **Boxes Per Min** – Displays the rate of boxes being produced, per minute.
- **Encoder Pos.** – Displays the position (in degrees) of the VFD Motor Encoder.
- **Total Box Count** – Displays the lifetime total number of boxes that have been produced. Non resettable.
- **Op. Hours** – Displays the lifetime total operating hours of the machine. Non resettable.
- **Daily Box Count** – Displays the total number of boxes produced in a daily period. Note – resetting the Daily Box Count will reset this number. Can be used to measure days, shifts, operator production, etc.
- **Reset Daily Box Count** – Press this button to reset the Daily Box Count number to zero.
- **Clock** – Displays the current day of the week, month, date, year, and time (hours, minutes, seconds).

### Indicators & Controls



#### Indicators

- **Indicators (RED above)** – These displays indicate the current status of Control Power, Cycle, and Blankfeed controls, as well as the current fault condition of the machine.

When machine conditions are in ON and NON FAULT mode  
– the Indicators will display in **GREEN**.

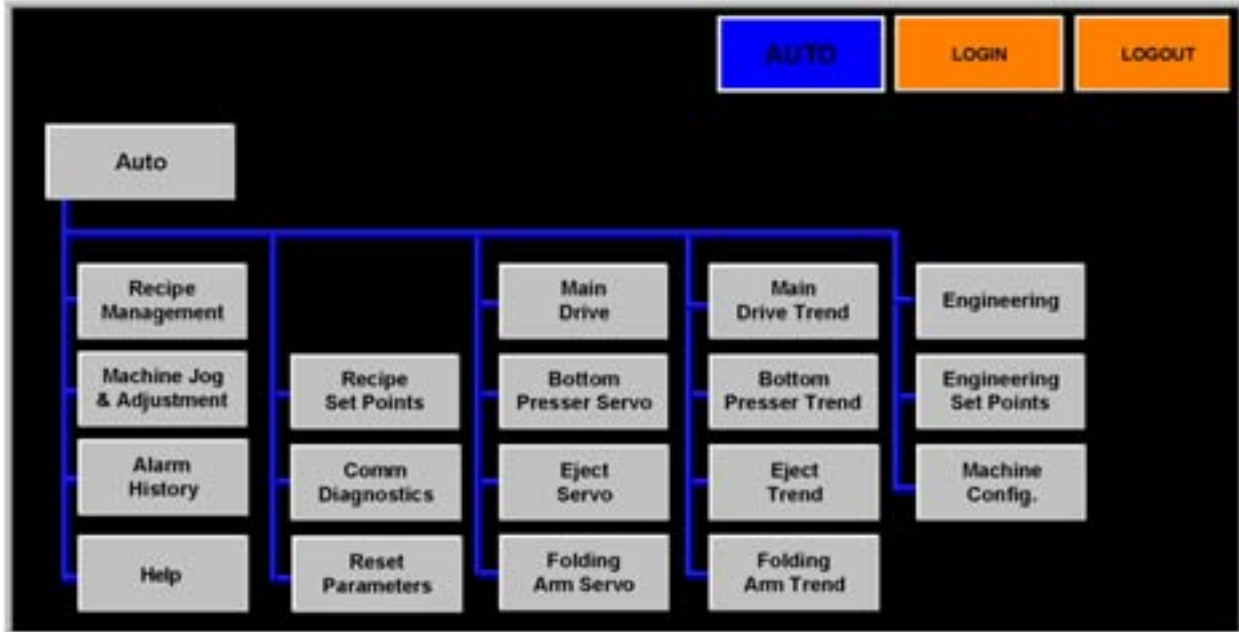
#### Controls

- **Control Power** – Pressing this button enables / disables machine operating power and air system pressure.
- **Cycle Control**– Pressing this button enables / disables mechanical activation of machine components.
- **Blankfeed** – Pressing this button enables / disables the feeding of Blanks and production of Boxes.
- **Fault Reset** – After all Fault conditions have been addressed, pressing this button resets the machine's Fault Status. Normal production may resume.

## Menu Screen

### Overview

- **Menu** – Pressing the Menu button opens the Menu Screen:



Most sub menus are intended for Authorized Personnel ONLY.

See the following page for more detail on each of these elements.

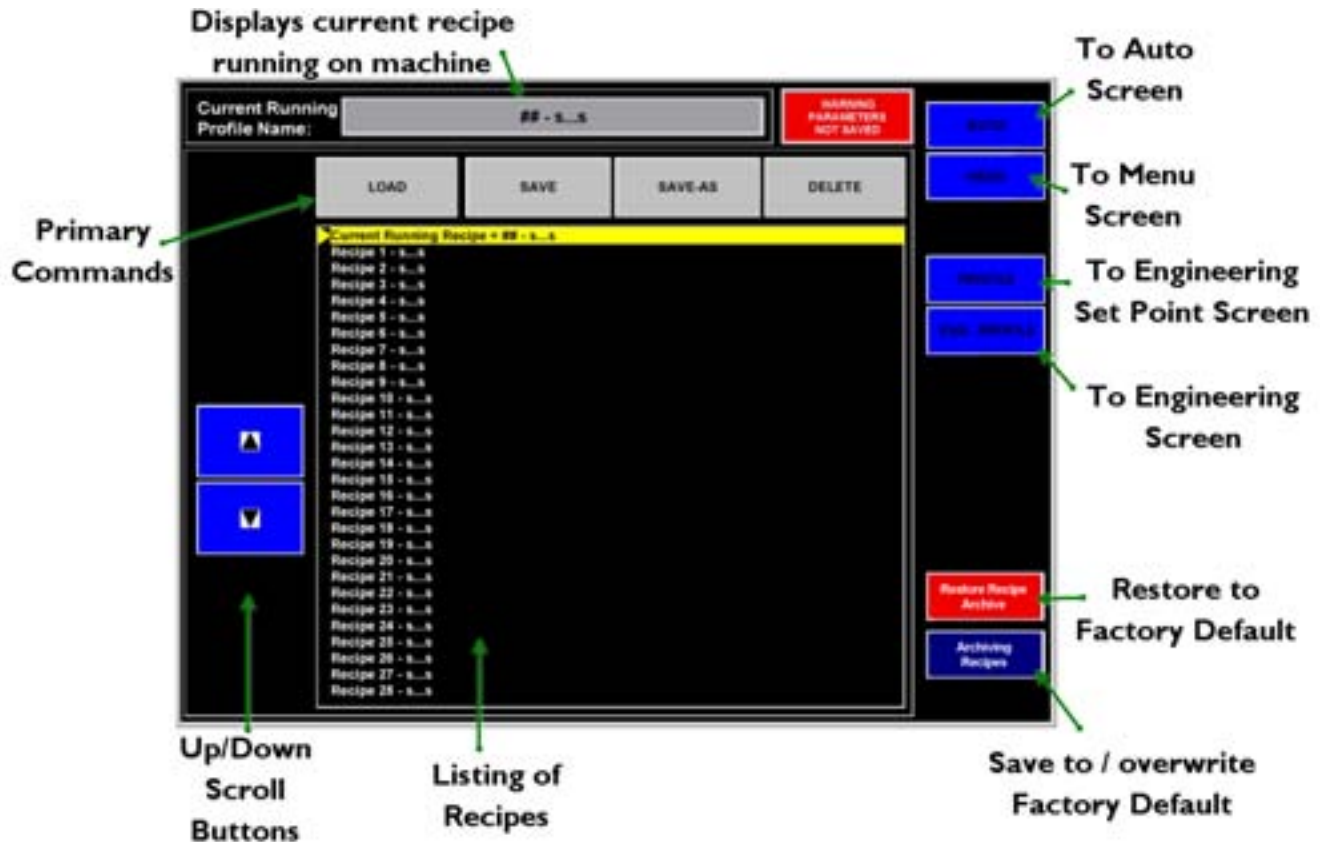


## Detail

- **Recipe Management** – allows loading and saving recipes.
- **Machine Jog & Adjustment** – allows jogging and calibration of all axis of motion.
- **Alarm History** – displays a database of the lifetime alarm history of the machine.
- **Help** – opens a sub-menu of available machine documentation. Items include the Machine Manual, Electrical & Mechanical Drawings, the Spare Parts List, and the Bill of Material.
- **Recipe Set Points** – allows modification of any recipe.
- **Comm Diagnostics** – displays a history of PC-based faults.
- **Reset Parameters** (select machines) – allows resetting of the operator-resettable fuses.
- **Main Drive** – displays parameters and allows maintenance of Main Drive motor.
- **Bottom Presser Servo** – displays parameters and allows maintenance of Bottom Presser Servo motor.
- **Eject Servo** – displays parameters and allows maintenance of Eject Servo motor.
- **Folding Arm Servo** – displays parameters and allows maintenance of Folding Arm Servo motor.
- **Main Drive Trend** – displays diagnostic graphs used to identify problem areas for axis of the Main Drive motor.
- **Bottom Presser Trend** – displays diagnostic graphs used to identify problem areas for axis of the Bottom Presser Servo motor.
- **Eject Trend** – displays diagnostic graphs used to identify problem areas for axis of the Eject Servo motor.
- **Folding Arm Trend** – displays diagnostic graphs used to identify problem areas for axis of the Folding Arm Servo motor.
- **Engineering, Engineering Set Points, Machine Config.** – allows modification and resetting of HMI (Touch Screen) communication settings.

## Recipe Management Screen

Recipes are a full set of parameters for the processing of Blanks / Boxes to specific needs. Among the common settings in recipes are Blank/Box type, production speed, motor timing, glue pattern, and glue timing.



The primary function of the Recipe Management screen is for loading the proper recipe to match the blank/box size being produced on the machine.

For detailed manipulation of recipes, go to the Engineering and/or Engineering Set Point Screens.

## Detail

★ Clockwise from Top, Left:

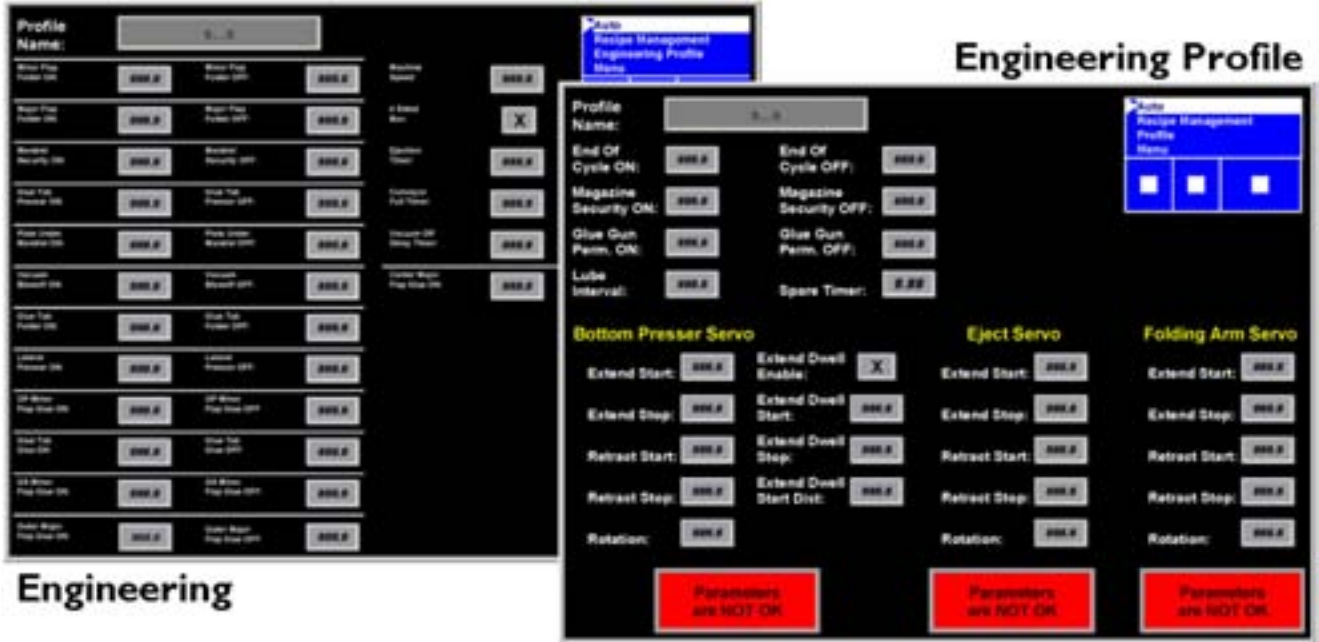
- **Display** – displays the current, active recipe loaded on the machine.
- **Auto, Menu** – pressing these buttons takes the user to the Auto or Menu screens.
- **Engineering, Engineering Profile** – pressing these buttons takes the user to the Engineering Set Point and Engineering Screens. For detailed recipe manipulation.
- **Restore Recipe Archive** – pressing this button will restore the highlighted recipe to Factory Default parameters.
- **Archiving Recipes** (select machines) – pressing this button will overwrite Factory Default parameters.
- **Listing of Recipes** – This display area lists all recipe profiles on the machine.
- **Scroll Buttons** – Use these buttons to move the highlight line in an Up/Down direction within the listing of recipes.
- **Primary Commands:**
  - **LOAD** – after scrolling to desired recipe, pressing this button will load that recipe to active status.
  - **SAVE** – if modifications have been made to recipe, pressing this button will save new parameters over the existing recipe name.
  - **SAVE AS** – if modifications have been made to recipe, pressing this button will save new parameters, and prompt user to enter a new recipe name.
  - **DELETE** – pressing this button will delete the highlighted recipe. For added security, the user will be prompted with a delete confirmation.



### Advanced Recipe Management

Recipes are a full set of parameters for the processing of Blanks / Boxes to specific needs. Among the common settings in recipes are Blank/Box type, production speed, motor timing, glue pattern, and glue timing.

For Authorized Personnel ONLY

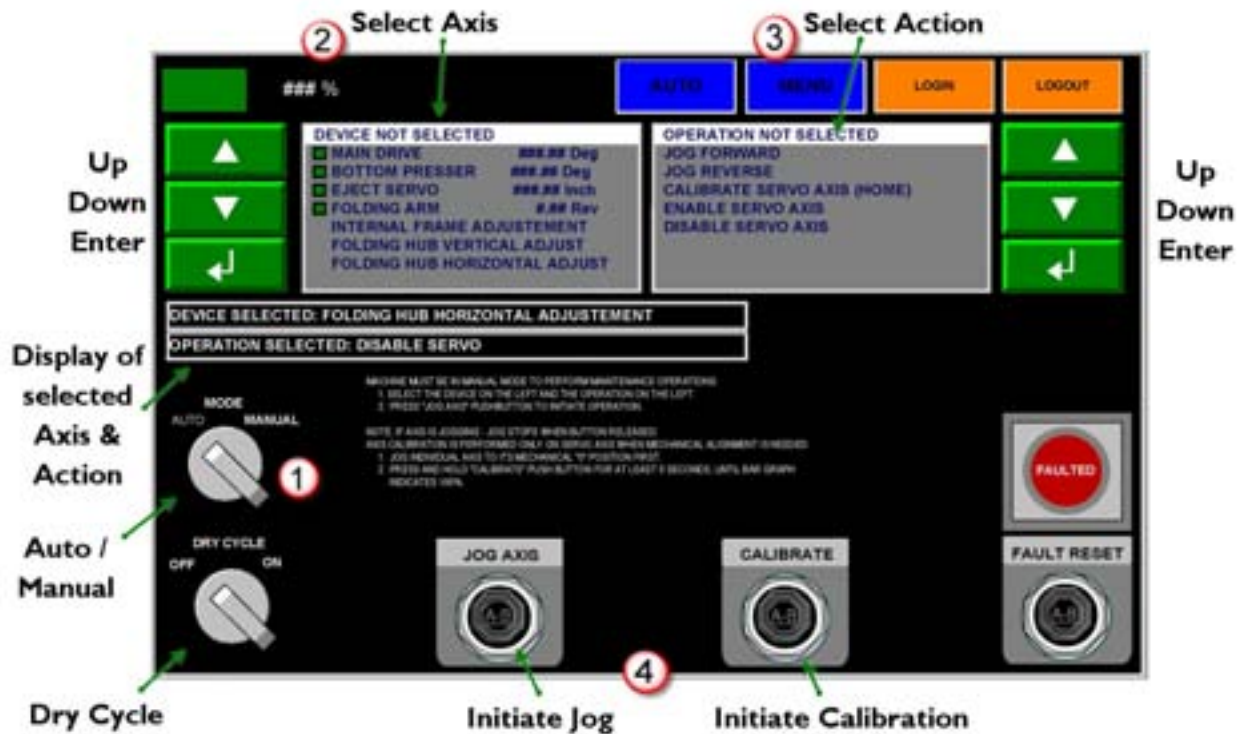


The Engineering and Engineering Profile Screens allow for advanced manipulation of machine recipes.

## Machine Jog & Adjustment Screen

The Machine Jog & Adjustment Screen allows for jogging and adjustment of the machine for purposes of troubleshooting, maintenance, and potential component homing.

For Authorized Personnel ONLY



★ To initiate Job / Calibration Action:

- ➔ 1. Place *Mode* selector in **Manual** position.
- ➔ 2. Use **Up/Down** arrow keys to select desired axis. Press **Enter** when complete.
- ➔ 3. Use **Up/Down** arrow keys to select desired action. Press **Enter** when complete.
- ➔ 4. Press either **Command** button to initiate *Jog* or *Calibration*.

★ Additional:

- Dry Cycle operation may be desired in certain situations. Machine **MUST** be in cycle to set in ON position.
- Display area will display the currently selected Axis & Action.
- Center of screen gives additional instructions on jogging and calibration.

## Alarm History Screen

Use the Alarm (Fault) History Screen to view recurring issues and to get more information about machine production.



Current alarm conditions also display on the bottom of the Auto Screen.

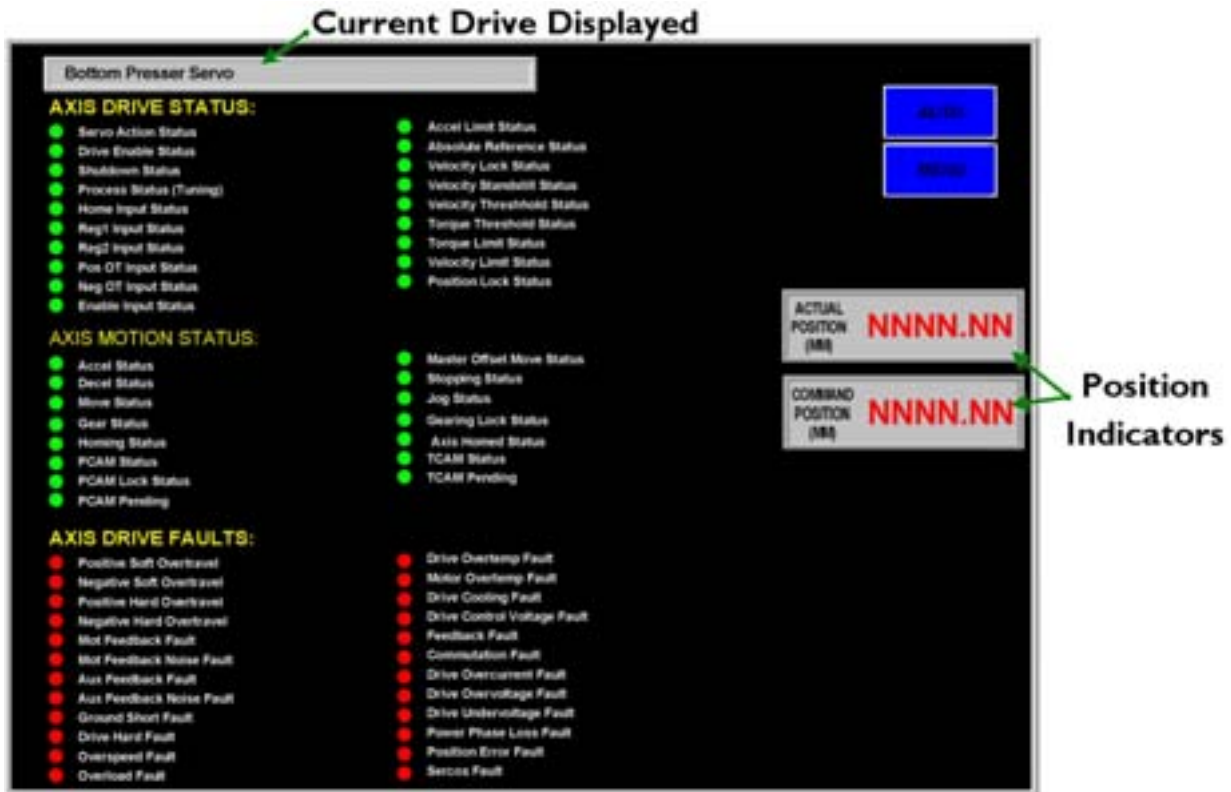
- **Ack Alarm** – pressing this button lets the Touch Screen/Machine know that the Operator has read the alarm message.
- **Silence Alarms** – for machines with an audible alarm, pressing this button will silence the alarm sound.
- **Clear History** – pressing this button will clear the entire Alarm History Screen. No prompt is given. Note – this does NOT eliminate any active fault condition.



## Drive Diagnostic Screen

Drive Diagnostic Screens display critical information for troubleshooting and maintenance issues with each of the machine's motors.

For Authorized Personnel ONLY



The internal status indicators (inputs and outputs) for EACH machine drive are displayed on these screens.

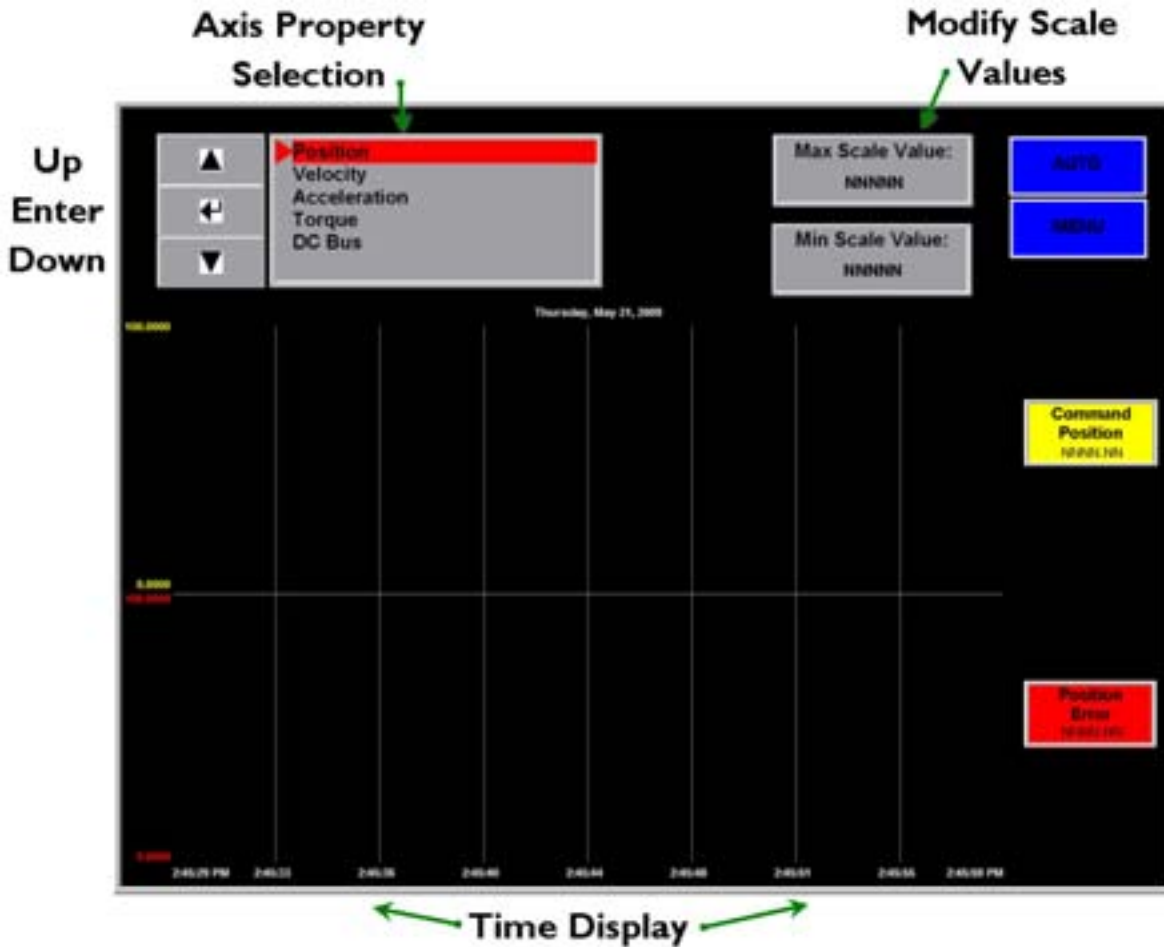
- **Display** – displays the current drive / motor being evaluated.
- **Position Indicators** – displays both the Actual and Command positions for the drive under evaluation.
- **Drive Status, Motion Status, Drive Faults** – this area of the screen will display the active status of all sub elements under these main parameters.



## Axis Trending Screen

Axis Trending Screens display critical information for troubleshooting and maintenance issues with each of the machine's motors.

For Authorized Personnel ONLY



Axis Trending Screens display trends in various properties, with respect to time.

- **Axis Property Selection** – use the Up/Down and Enter keys to select the desired property.
- **Modify Scale Values** – use these buttons to modify the values of the scale/graph's Y-axis.

For each property selected above, the values of the graph's X and Y displays will change.

## Machine Configuration Screen

The Machine Configuration Screen allows for settings to be modified on select elements.

For Authorized Personnel ONLY

The screenshot displays a black background with white text for settings and gray boxes for numerical indicators. In the top right corner, there are two blue buttons labeled 'HELP' and 'MENU'. The settings are arranged in a grid:

|   |  |   |   |
|---|--|---|---|
| <b>Main Motor Pully Diameter As Stamped On Pully</b><br>(Standard is 6.4 in)<br>NNN.N In. | <b>Gear Box Pully Diameter As Stamped On Pully</b><br>(Standard is 6.4 in.)<br>NNN.N In. | <b>VFD Maximum Frequency</b><br>(Standard is 75Hz)<br>NNN.N Hz                      | <b>Gear Box Name Plate Ratio</b><br>(Standard is 50.31)<br>NNN.NN                 |
|   | <b>Eject Servo 0 Setpoint Offset</b><br>(Standard is 0 in.)<br>NNN.N In.                 | <b>Bottom Presser Servo 0 Setpoint Offset</b><br>(Standard is -5 Deg)<br>NNN.N Deg. | <b>Folding Arm Servo 0 Setpoint Offset</b><br>(Standard is 180 Deg)<br>NNN.N Deg. |

- ➔ Press any of the gray numerical indicators to bring up a numerical keypad.
- ➔ Enter desired value.
- ➔ Press enter (down-left arrow) to save and return.

## Start-Up

Follow this procedure to begin production mode.

1. Load Blanks in the Blank Hopper.
2. Set the Main Power / Main Disconnect in the ON position.



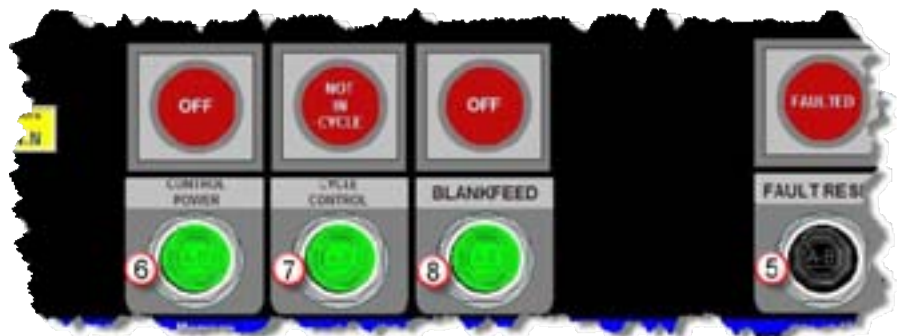
3. Set the manual Air Shutoff Valves in the ON position. Check to see that the Main Air Pressure regulator is set at 80psi.



4. Pull out all E-Stops, if necessary.

★ On Touch Screen – GO TO Auto Screen:

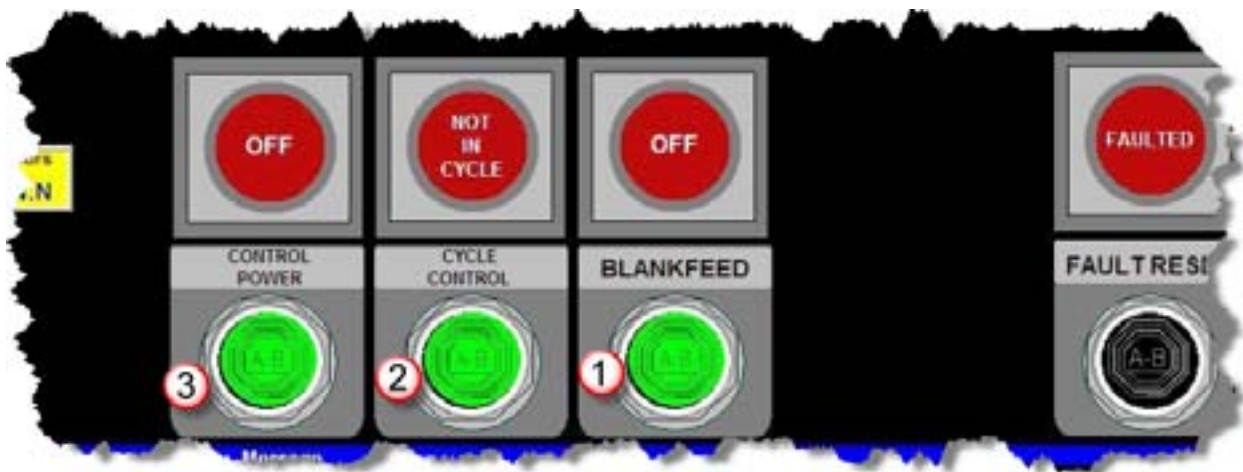
5. Press Control Power to ON.
6. Press Fault Reset, if necessary.
7. Press Cycle Control to ON.
8. Press Blankfeed to ON.



## Shut Down

Follow this procedure to end production mode.

1. Press Blankfeed to OFF to stop the cycling of blanks and trays.
2. Press Cycle Control to OFF to disable machine processes.
3. Press Control Power to OFF to disable operating power to the machine.



★ Or:

To immediately stop the machine, press any Emergency Stop (E-Stop) button. Once pressed, E-Stop buttons remain in - until pulled out.





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