OPERATION MANUAL

DJS SERVO CUP COUNTING SYSTEM

with INTEGRATED DJS PACKAGER

WO# 4277

PLC PROGRAM: P0000476.RSS

OPERATOR INTERFACE PROGRAM: P0000476.PBA

NETWORK PROGRAM: P0000476.DNT

ELECTRIC CIRCUIT - SERVO CUP COUNTER: C0000476

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1. INTRODUCTION

The purpose of this manual is to describe the operation of a DJS servo operated cup counter with an integrated DJS packager. An A-B Micro-Logix 1500 programmable controller and A-B Panelview 600 operator interface panel control all the functions, using a Device Net network. Included are instructions on the mechanical and electrical adjustments, along with sequence, diagnostic and spare parts descriptions.

2. SEQUENCE OF OPERATIONS

The following sequence describes the normal operation sequence for the system, explaining the functions of each area. Refer to the electric circuits and the program operation.

SERVO CUP COUNTER w/ PACKAGER CYCLE SEQUENCE

CUPS PASS THRU COUNT EYE

Cups pass through the count eye and upper gate, collecting on the lower gate. When the count is reached the top gate closes and a new stack will collect there while the counted stack settles on the bottom gate.

CUPS ARE LOADED ONTO SCC INFEED

The bottom gate then opens and drops the stack on the product shelf against the cup stop. The product shelf then loads the counted stack on the infeed conveyor feeding the counter.

(If the cup stack gets to high on the lower gate and settles in the stack height detect eye, the tower closes the top gate, and runs a clean out function to clear out damaged or bad cups. The top gate closes and the stack separator comes in to separate the stack. The lower gate opens and drops the bad stack on the product shelf, which then shifts the bad stack to the reject chute.)

CUPS ENTER INFEED BELT SECTION

Stacks of cups are transferred onto the infeed belt by the cup delivery system from the cup making equipment. The infeed belt carries and nests the cups solidly onto the counting belt.

CUPS ENTER STRIPPER/GRIPPER/COUNTING AREA

Nested cups are transferred through the stripper/gripper area past the counting eyes until the desired stack count is reached.

CUPS TRANSFERRED TO PACKAGER

When the desired count is reached, the gripper & stripper solenoids actuate, with the grippers holding back the upstream flow of cups, the stripper then advances to strip the counted stack onto the overhead loader. The stacks are then conveyed into the packager with the loader. Once the stack exits the loader the packager cycle begins.

Note: Stacks are rejected to the left or right if the packager is not ready or if an incorrect count is detected by the verification eye.

PACKAGER JAWS OPEN

After the stack is positioned in the packager, the packager jaws open and drop the previous bag away from the jaws.

FILM ADVANCES

Then the packager film advances to feed the film and the product below the jaws.

PACKAGER JAWS CLOSE AND SEAL THE BAG

When the film has advanced, the packager jaws will close to make the seal. The sealing process and the packager cycle are complete when the seal bar backs away from the back-up rubber.

FINISHED PACKAGE IS DISCHARGED

The finished package is dropped from the jaws onto the discharge conveyor.

DISCHARGE CONVEYOR ADVANCES TO TUCKER

The discharge conveyor indexes to the tucker and the tucker tucks the film tail inside the bottom of the cup stack.

STACKS ARE TIPPED ONTO THE SHRINK WRAP CONVEYOR

The discharge conveyor then drops the tucked stack into the tipper, tipping the stack mouth first on the shrink wrap conveyor. The containment cylinder retracts allowing the standing cup stack to leave the tipping area to the shrink wrap conveyor.

3. SAFETY AND LOCK OUT/TAG OUT PROCEDURES

1. General

DO NOT ATTEMPT TO TEND, OPERATE, OR SERVICE YOUR DJS MACHINE UNTIL YOU HAVE OBSERVED THE SAFETY SIGNS ON THE MACHINE, READ AND UNDERSTOOD THE SAFETY SECTION OF INSTRUCTION MANUAL, AND HAVE BEEN PROPERLY SAFETY TRAINED FOR IT.

THINK SAFETY: NEVER ALLOW ANYONE TO TEND, OPERATE, OR SERVICE THE MACHINE UNLESS THEY HAVE BEEN PROPERLY SAFETY TRAINED FOR IT.

VIOLATING THESE RULES, OR OPERATING THIS MACHINE IN AN UNSAFE MANNER, COULD RESULT IN SERIOUS OR FATAL INJURY TO YOURSELF OR OTHERS.

2. Customer Responsibility

It is your responsibility to see that the safety rules set forth in this manual and the signs on the machine are always followed. In the event of conflict between these rules and any other directives, contact DJS Systems, Inc.

Do not bypass or otherwise tamper with safety devices.

3. DJS Puts Safety First

DJS equipment is designed with consideration given to generally accepted safety standards. However, the proper and safe functioning of it also depends upon operation, maintenance, and service performed in accordance to this manual's safety instructions. Read and follow the safety instructions in this manual.

For your protection, and the protection of others, follow the safety rules outlined in this manual. Form safe working habits by studying the rules and abiding by them. Keep this manual handy and reread it from time to time to refresh your understanding of the rules.

Do not take chances; the odds are stacked against you!

4. Operating Zone

Establish an operating zone around each machine. A brightly painted guardrail or floor-warning stripe should define the zone. Only the operator should be within the operating zone when machine control circuits are energized or the machine is running. No tools or other equipment should be kept within the operating zone.

5. Basic Safety Precautions

- Stop the machine before performing adjustments, clearing jams, or cleaning it. Stopping machine via an E-Stop, or guard switch causes the air to vent out of all valves and actuators through an automatic air dump valve. Pneumatically operated devices will fall to the 'down' position , falling slowly by their own weight. All power will be dropped to any electrical devices that cause motion including motors and solenoids.

- Do not operate the machine with any guards removed. These guards have been placed on the machine to provide for the operator's safety. Removal of these guards could constitute a hazard to the persons operating the equipment. If guards are removed for service work, be certain that they are properly replaced! (Also see Operating Safety.)

- Before service work of any kind is done on the machine, the main electrical power disconnect switch and the main air supply dump valve should be turned off and padlocked in the proper lock out tag out manner. (Also see Maintenance Safety.)

- Before any cleaning is done on the machine, the electrical disconnect should be placed in the off position, and all enclosures closed and sealed. Be certain that the cleaning solution to be used does not affect cabinet seals, wire coverings, or air hoses. (Also see Cleaning Safety.)

    - Wear safety goggles, heat resistant gloves, and other protective clothing to prevent injury from any hot system components. Temperatures of sealing components are VERY HOT, up to 500 degrees F. Severe burns can result from skin contact with hot system components. Use extreme care when servicing the sealing equipment.

6. Safety inspection

Good maintenance, mechanical, pneumatic, and electrical, is a major safety advantage. Good performing equipment requires the least operator attention, hence the least exposure to potential hazards.

- Remove containers, tools and foreign objects that could fall and cause injury to personnel or damage the machine.
- Inspect machine for loose or broken parts. Alert maintenance personnel immediately if loose or broken parts are discovered.
- Make certain the machine is in good operating condition.
- Make sure all indicating lights are in working order.
- Make sure each E-Stop and safety guard switches function correctly. Do not bypass or otherwise tamper with safety devices.
- Replace any damaged or missing safety signs.

7. Operating Safety

BEFORE STARTING MACHINE:

- Do not operate the machine until you have read and understand its operating procedures and are thoroughly familiar with the machine and its controls.
- Perform the thorough safety inspection, outlined above.
- Know the E-Stop locations and procedure for the machine.
- Do not start the machine until all non-assigned personnel in the area have been warned by the operator and have moved outside the operating zone. Be sure all personnel are clear of machine.

DURING OPERATION:

- Always wear safety glasses and safety hats.
- Never enter the operating zone of an operating machine with loose clothing or unrestrained hair.
- Never place fingers, hands, or any part of your body into or near moving parts of the machine.
- Keep the machine and surrounding area clear of material (including spills) and obstacles that could cause a person to slip, stumble or fall towards an operating machine.
- Never sit or stand on anything that might cause you to fall against or into the machine.
- Never place any part of your body into the light beam of a photoelectric cell or into any moving mechanism of the machine.
- Never operate a machine while a safety device or guard is removed, bypassed, or disconnected.
- Never remove "WARNINGS" or name plates that are displayed on the machine.
- Never operate a faulty, damaged, or improperly adjusted machine.
- Never manually operate limit switches, sensors, or valves with power on.
- Never engage in "HORSEPLAY" around the machine at any time, operating or not.
- Never run a machine above its specified speed.
- Always stop machine and remove broken containers to prevent pieces of material from flying out of the machine.
- Never leave the machine unattended while in operation.

AFTER SHUT DOWN:

Make certain both air and electrical power is turned off. Air and electrical power must be off when machine is not in use.

8. Maintenance Safety

- Do not service the machine unless you are properly trained, authorized, and familiar with the tasks to be performed.
- Obtain DJS Systems Inc. approval before altering or modifying the machine. DJS will accept no responsibility for loss, damage, inconvenience, or accident that may occur regarding modifications that are not approved by DJS.
- Use genuine DJS Systems Inc. repair parts and change parts to repair or modify the machine. DJS will accept no responsibility for loss, damage, inconvenience, or accident that may occur regarding parts that are not approved by DJS
- Follow your company's lock out / tag out procedures before performing any maintenance unless air and electrical power are required to perform a specific service. Perform such services only if you are properly trained and authorized.
- Disconnect and properly lock out electrical power source (or follow your company's lock out / tag put procedures) before opening electrical enclosures.
- This equipment utilizes dangerous voltages. Perform electrical servicing only if you are properly trained, authorized, and familiar with the tasks to be performed.
- Replace fuses only when electrical power is off. Use only specified fuse size.
- Do not by-pass or otherwise tamper with safety devices.
- All air pressure must be exhausted to atmosphere before performing maintenance or loosening connections on a pneumatic system.
- Never operate controls, limit switches, sensors, valves, or disconnects while other persons are servicing the machine.
- Use the proper tool for the service task.
- Making mechanical adjustments on the machine in motion can result in severe injury. DJS recommends that mechanical adjustments be made only when machine is properly stopped.
- Do not alter or modify the machine without approval of DJS Systems Inc.

9. Safety Feature List

- E-Stop, operator panel: Palm button.
- E-Stop, machine locations: Palm button.
- All door guards: Keyed safety switches.
- Automatic pressure dump valve (in addition to manual disconnect-pressure dump valve). Electric operation is de-energized for all machine stop conditions to dump pressure from all pneumatic devices
- Manual air disconnect-pressure dump valve with lock-out-tag-out features. Manual operation of air disconnect valve will dump pressure from all devices including vacuum transducers and all actuators.
- Electrical panel disconnect with lock-out-tag-out features
- Label on each guard removable with tools: DANGER DO NOT OPERATE WITHOUT GUARDS IN PLACE.
- Label on electrical enclosures: DANGER ELECTRICAL HAZARD TURN OFF BEFORE SERVICING.

10. Lock Out / Tag Out

DJS Systems equips all of our equipment with lock out / tag out switches. They are located on the main electrical enclosure. To lock out a DJS machine, first turn the switch to the off position. Once in the off position pull out the black plastic piece and insert a lock or tag into the hole in the center. Never take the lock or tag out of the switch while maintenance or service is still being preformed.

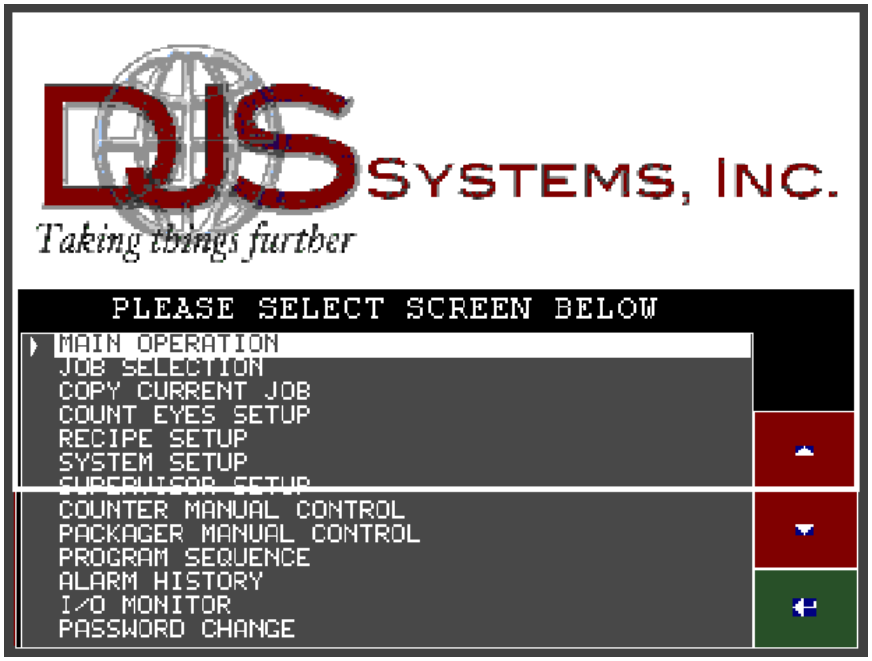
4. HMI MAIN SCREEN LIST & DESCRIPTIONS

All of the motor parameters, timing, and count adjustments are made from the HMI control panel. The following descriptions provide information on these settings.

Note: The set-up in the HMI has low and high limits that cannot be exceeded. The operation of the system should be thoroughly reviewed to know the effect before making any changes to these parameters.

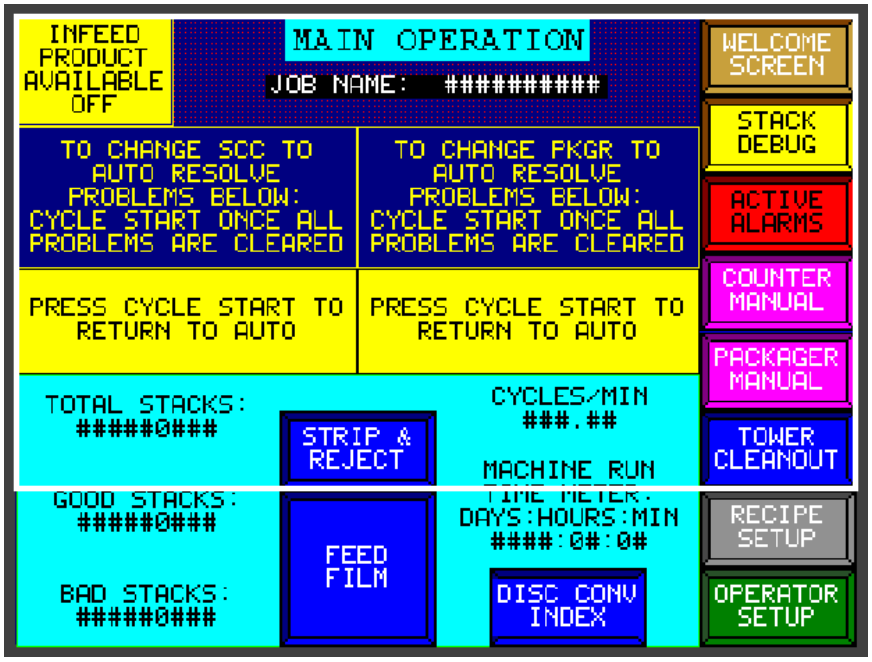
SCREEN (GO TO) PANEL BUTTONS or SCROLL ACCESS TO SCREENS

WELCOME SCREEN



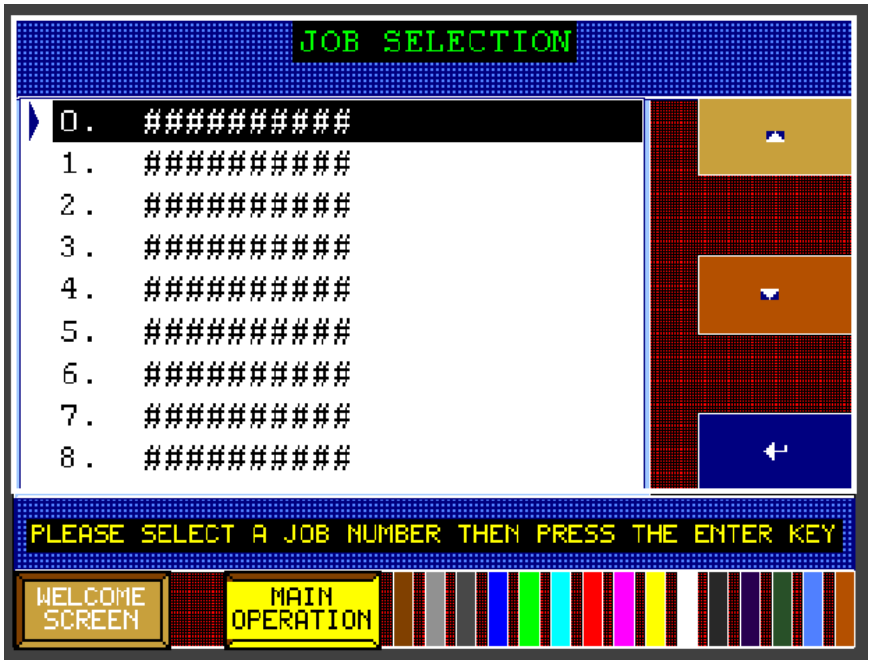
Pushing the WELCOME goto button switches the screen display to the WELCOME screen. This screen lists and allows access to all the main screens. Scroll with the up and down arrow until indicator points to desired screen, then press the enter button. The screen will go to the selected screen. Some screens are password protected.

MAIN OPERATION



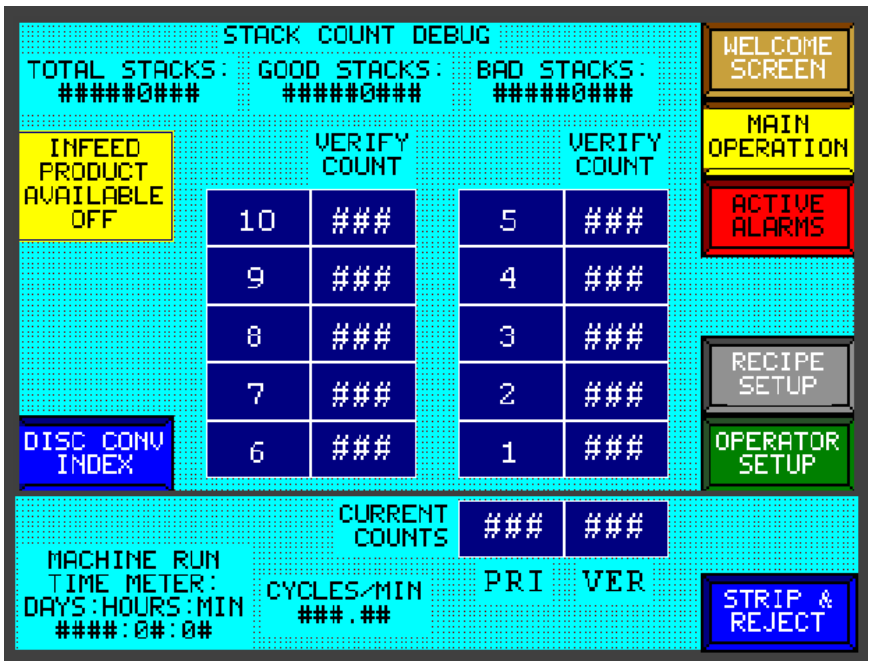
Pushing the MAIN OPERATION goto button switches the screen display to the MAIN OPERATION screen. This screen can also be accessed through the WELCOME screen. On this screen you will be able to see machine status messages, view and reset the stack count and view cycle rate and machine run time status. The film can also be manually fed from this screen. All of the main operator screens can be accessed from this screen

JOB SELECTION



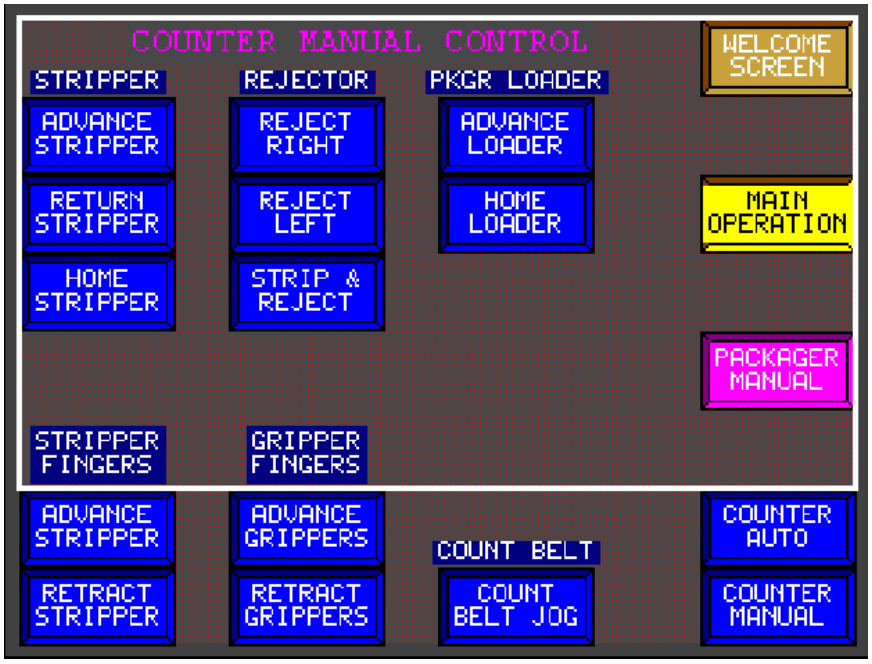
The JOB SELECTION screen is accessed only through the WELCOME screen. This is where stored recipes are selected and downloaded. This screen is password protected.

STACK COUNT DEBUG



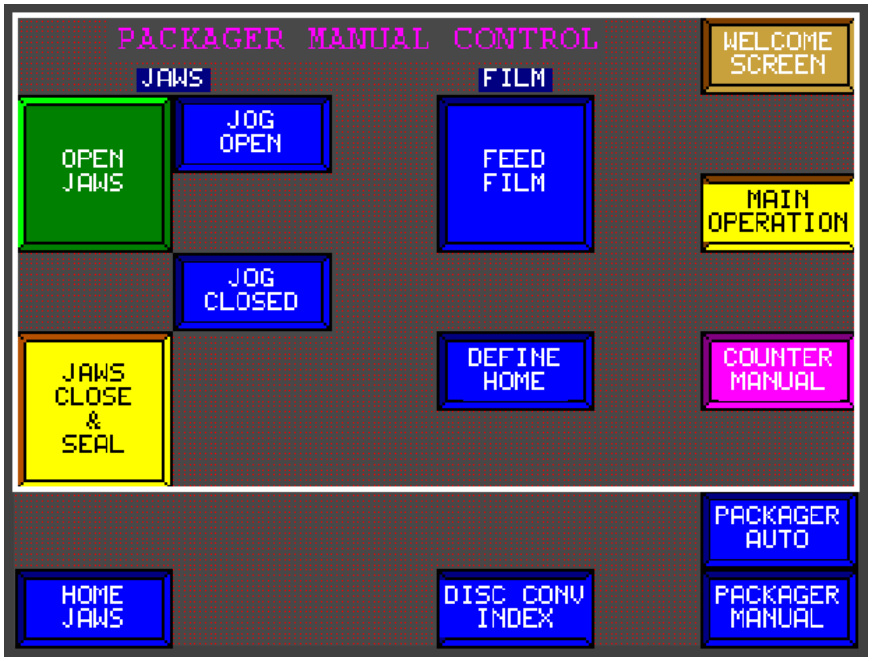
Pushing the STACK DEBUG goto button switches the screen display to the STACK COUNT DEBUG screen. On this screen you will be able to view the current counts, counts of the last 10 stacks, good, bad & total stack counts; current cycle rate and machine run time status.

COUNTER MANUAL CONTROL



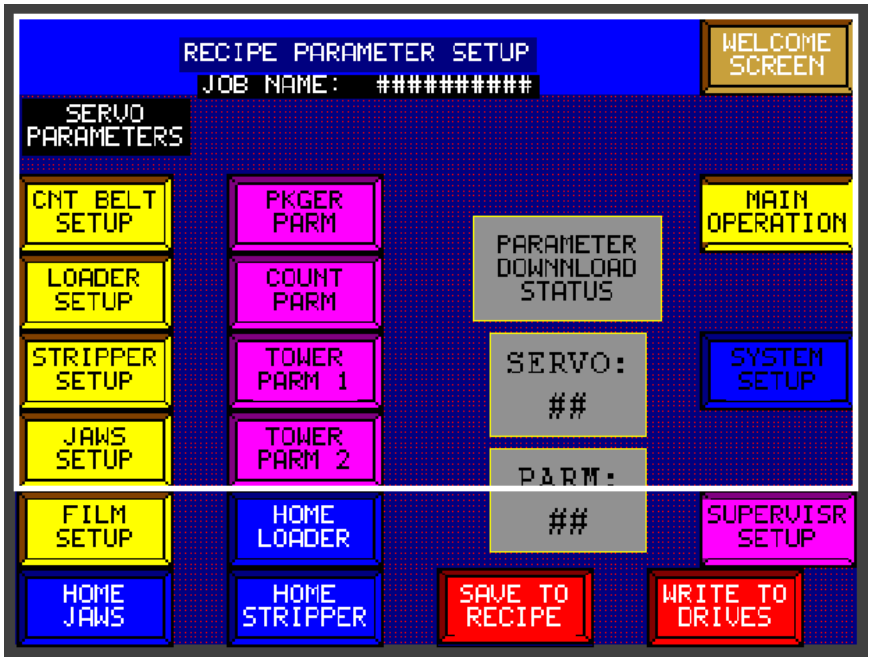
Pushing the COUNTER MANUAL goto button switches the screen display to the COUNTER MANUAL CONTROL screen. This screen will allow you to cycle through some of the machine functions MANUALLY, as long as the servo cup counter is in the MANUAL MODE. This screen is password protected.

PACKAGER MANUAL CONTROL



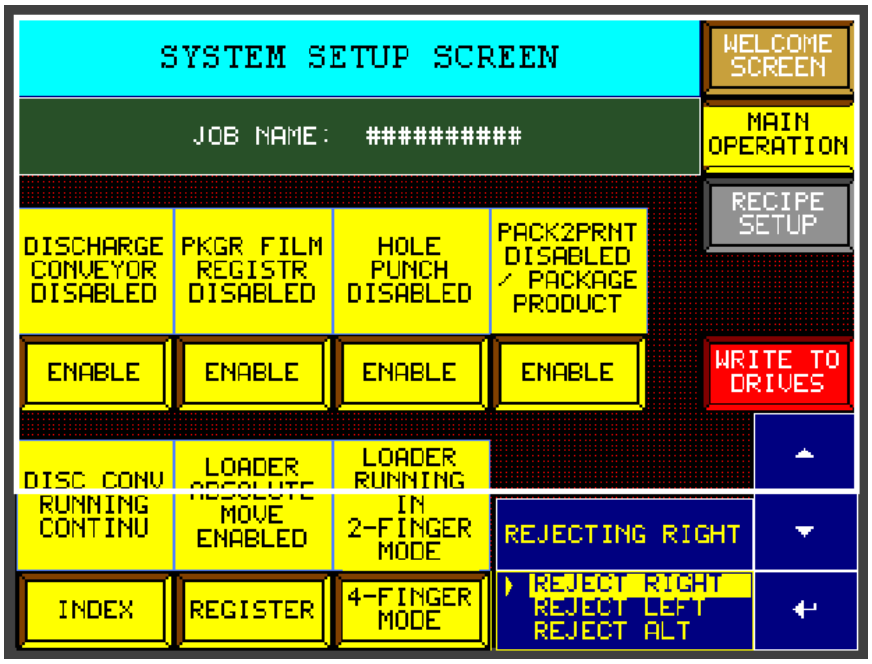
Pushing the PACKAGER MANUAL goto button switches the screen display to the PACKAGER MANUAL CONTROL screen. This screen will allow you to cycle through some of the machine functions MANUALLY, as long as the packager is in the MANUAL MODE. This screen is password protected.

RECIPE SETUP



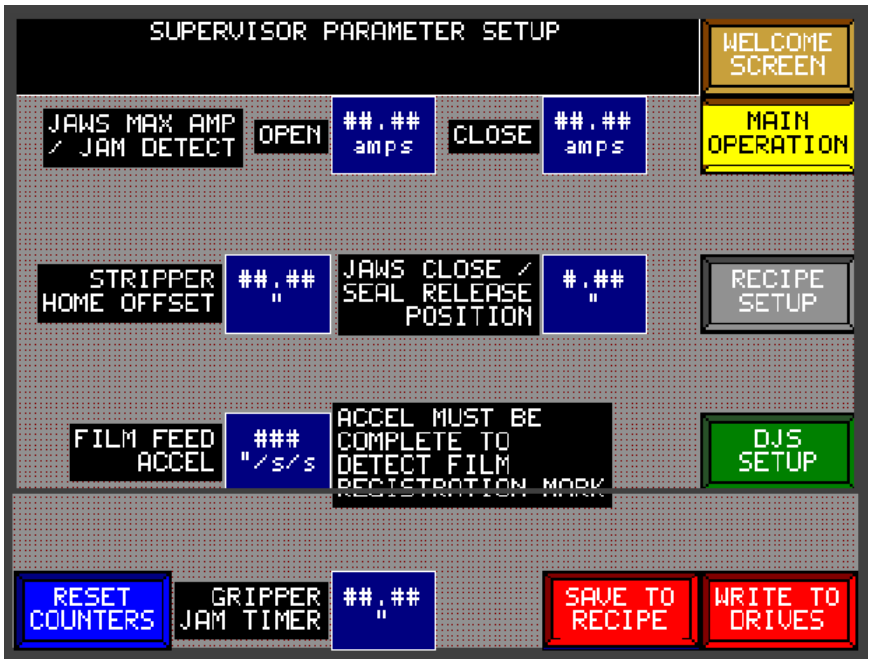
Pushing the RECIPE SETUP goto button switches the display to the RECIPE SETUP screen. This screen can also be accessed through the WELCOME screen. This screen allows access to all of the various servo axis, timer and counter setup screens for the current recipe. This screen is password protected.

SYSTEM SETUP



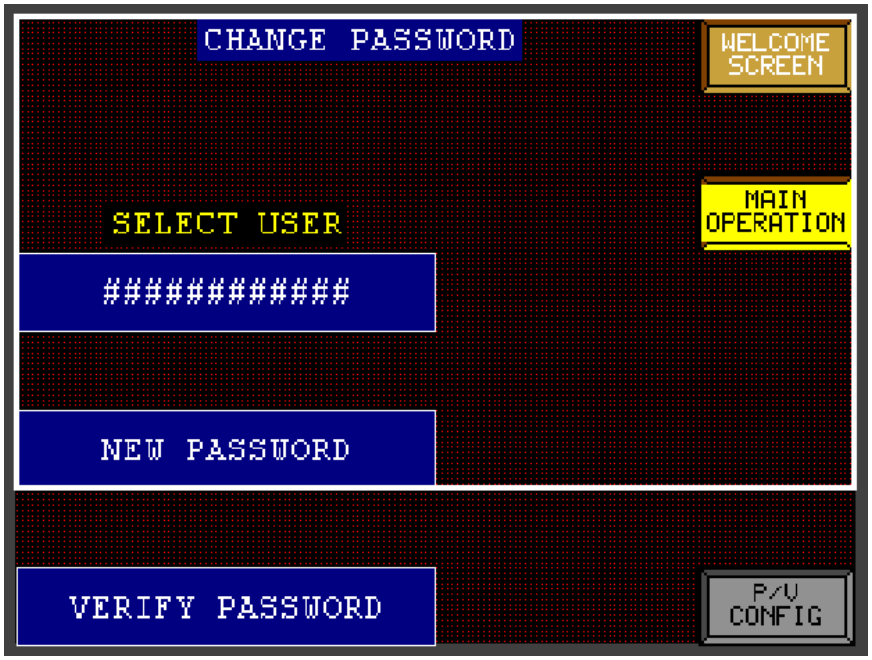
Pushing the SYSTEM SETUP goto button switches the screen display to the SYSTEM SETUP screen. This screen can also be accessed through the WELCOME screen. On this screen you will be allowed to enable & disable functions of the system and set the divert count to each bin. Also, the JOB NAME is accessed and modified from this screen. This screen is password protected.

SUPERVISOR SETUP



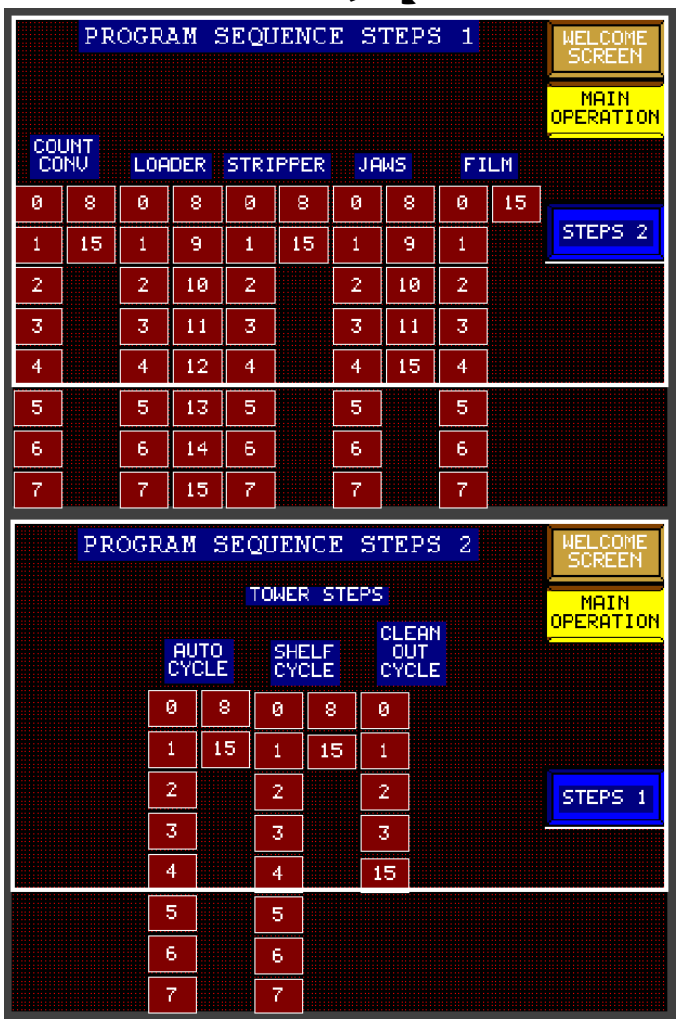
Pushing the SUPERVISOR SETUP goto button switches the display to the SUPERVISOR SETUP screen. This screen can also be accessed through the WELCOME screen. On this screen you will be allowed to adjust initial parameters that are not necessarily recipe specific. This screen is password protected.

CHANGE PASSWORD



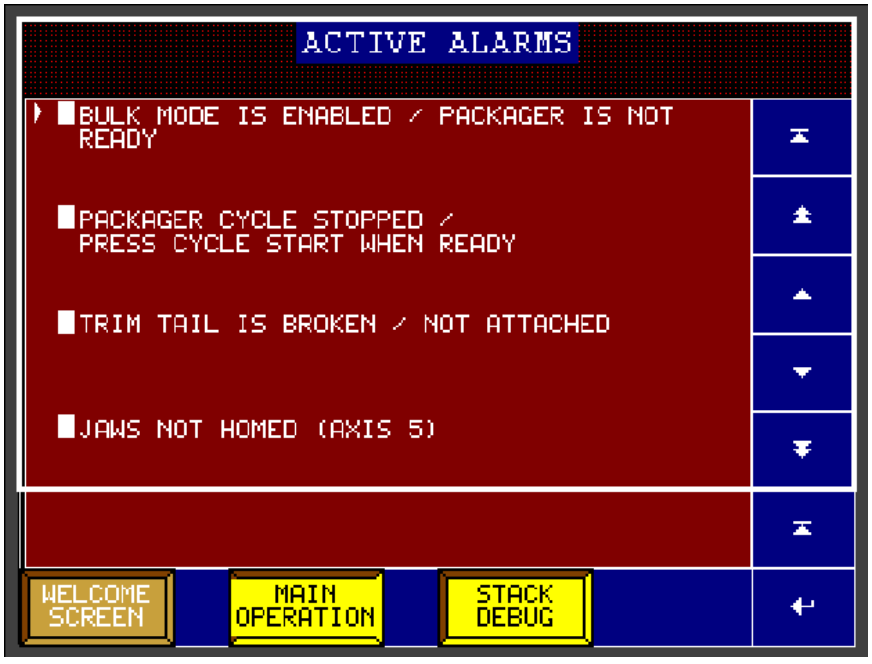
The CHANGE PASSWORD screen is accessed only through the WELCOME screen. This screen allows access by the Supervisor to change passwords. This screen is password protected.

PROGRAM SEQUENCE



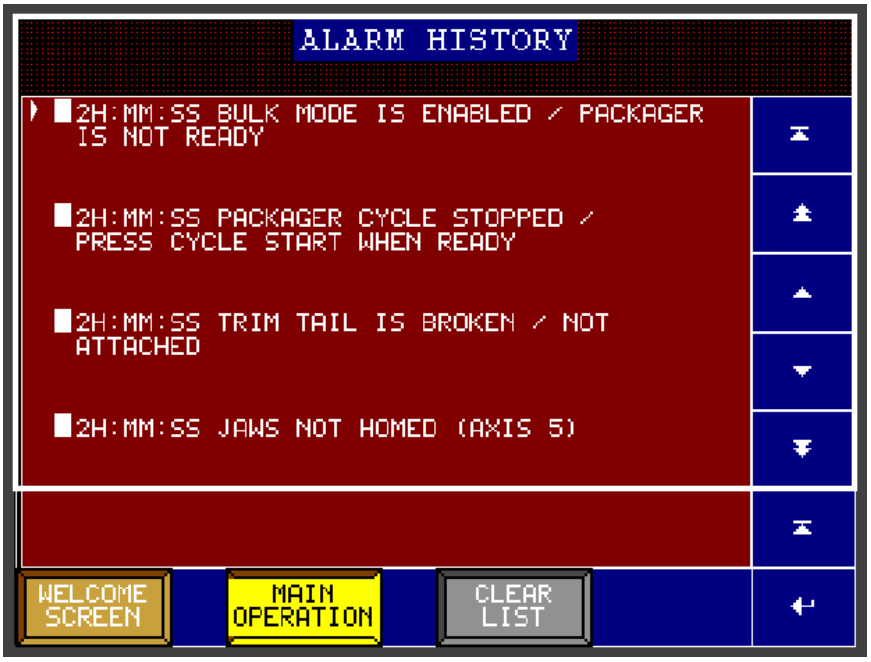
This screen can only be accessed through the WELCOME screen. This screen is used to monitor the steps of the program for each of the main components of the system.

ACTIVE ALARMS



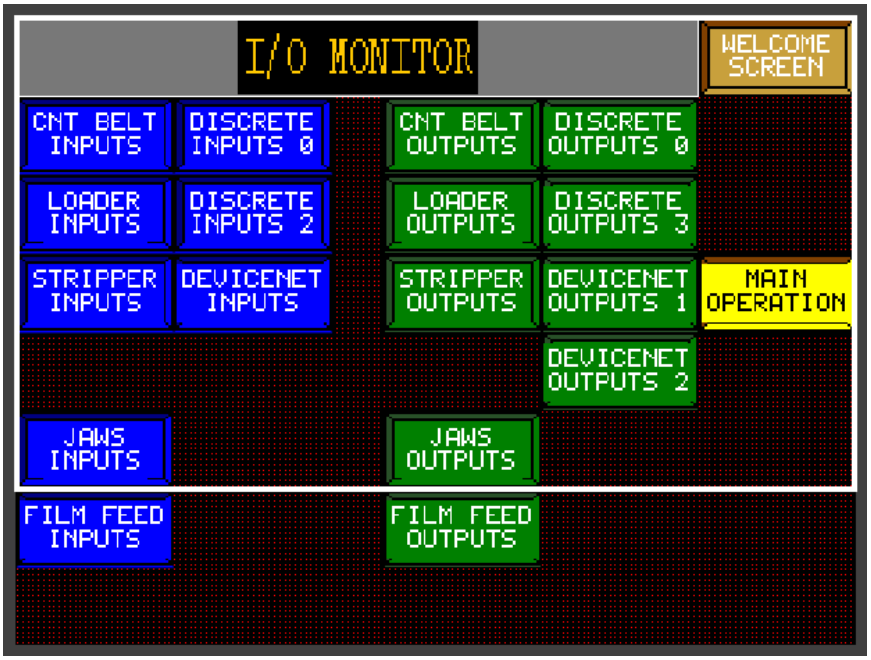
Pushing the ACTIVE ALARMS goto button switches the screen display to the ACTIVE ALARMS screen. This screen can also be accessed through the WELCOME screen. This screen shows all of the current alarms.

ALARM HISTORY



The ALARM HISTORY screen is accessed only through the WELCOME screen. This screen shows the last 100 alarms, with the most recent listed first.

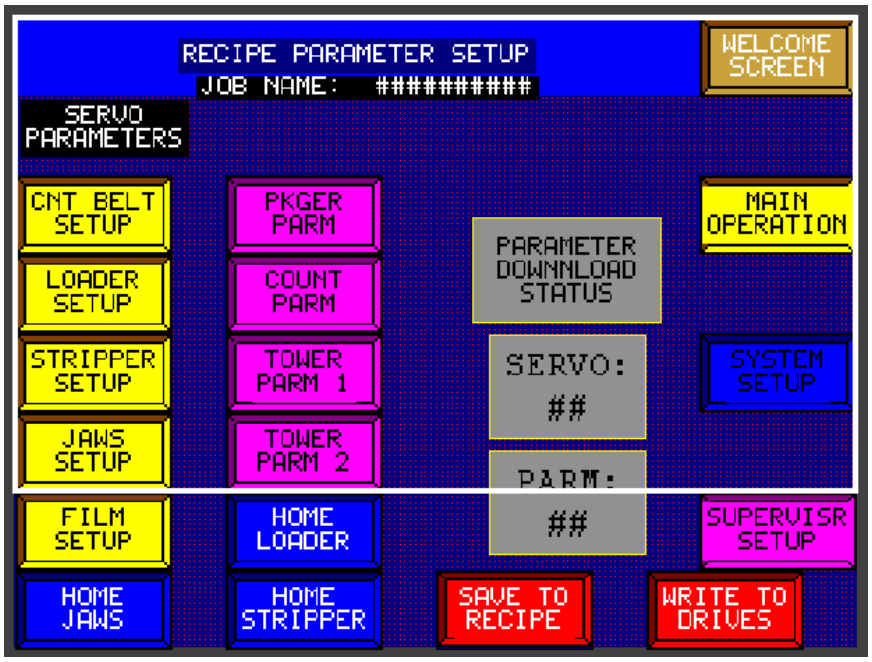
I/O MONITOR



The I/O MONITOR screen is accessed only through the WELCOME screen. This screen allows access to all of the various servo axis and discrete inputs and outputs.

5. HMI PARAMETER SETUP SCREENS

RECIPE SETUP



COUNT BELT SETUP

This screen change PB brings up the screen where the counting belt servo motor parameters are stored. The changes that are made will not take effect after the "Enter" button is pressed. They do take effect as soon as they are saved to the drives when the "Write to drives" button is pressed.

LOADER SETUP

This screen change PB brings up the screen where the overhead loader servo motor parameters are stored. The changes that are made will not take effect after the "Enter" button is pressed. They do take effect as soon as they are saved to the drives when the "Write to drives" button is pressed.

STRIPPER SETUP

This screen change PB brings up the screen where the stripper servo motor parameters are stored. The changes that are made will not take effect after the "Enter" button is pressed. They do take effect as soon as they are saved to the drives when the "Write to drives" button is pressed.

JAWS SETUP

This screen change PB brings up the screen where the packager jaws servo motor parameters are stored. The changes that are made will not take effect after the "Enter" button is pressed. They do take effect as soon as they are saved to the drives when the "Write to drives" button is pressed.

FILM SETUP

This screen change PB brings up the screen where the packager film feed servo motor parameters are stored. The changes that are made will not take effect after the "Enter" button is pressed. They do take effect as soon as they are saved to the drives when the "Write to drives" button is pressed.

PACKAGER PARAMETERS

This screen change PB brings up the screen that lists all of the accessible cup counter or packager timer values that can be changed. The changes that are made take effect immediately after the "Enter" button is pressed. However, they are not saved to the recipe until the "Save to recipe" button is pressed.

COUNT PARAMETERS

This screen change PB brings up the screen that lists the values that are required when you are changing count functions in the servo cup counter or packager. The changes that are made take effect immediately after the "Enter" button is pressed. However, they are not saved to the recipe until the "Save to recipe" button is pressed.

HOME LOADER

This PB causes the loader to do a find home move.

HOME STRIPPER

This PB causes the stripper to do a find home move.

JAWS FIND HOME

This PB causes the jaws to do a find home move, then move to the seal release / jaws closed position.

TOWER PARAMETERS 1&2

This screen change PB brings up the screen that lists all of the accessible tower timer values that can be changed. The changes that are made take effect immediately after the "Enter" button is pressed. However, they are not saved to the recipe until the "Save to recipe" button is pressed.

MISC CONTROL BUTTONS

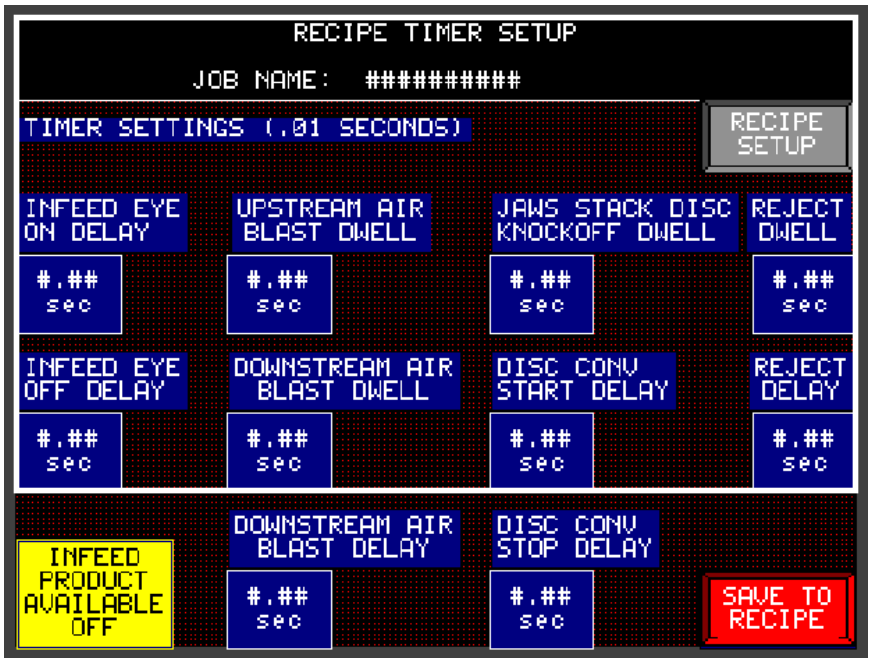
SAVE TO RECIPE

This PB is used to save the timer and count parameters to the current recipe. Timer and counter parameter changes take effect immediately when the change is made, however the changes are not stored to the recipe until this PB is depressed.

WRITE TO DRIVES

This PB is used to download all of the current servo drive parameters to the servo drives. When changes to the parameters are made, these changes do not take effect until this PB is depressed. When the download occurs, each drive will have all of the setup parameters downloaded in sequence.

SCC TIMER SETUP PARAMETERS



INFEED EYE
ON DELAY
#. ## SEC

This timer sets the time the upstream eye must be blocked before counting will start.

INFEED EYE
OFF DELAY
#. ## SEC

This timer sets the time the upstream eye must not be blocked before counting will stop. The counter will complete the current count before stopping.

UPSTREAM AIR BLAST
DWELL
#. ## SEC

(If used)
This sets the amount of time after the stack has been separated that the air blast will be energized.

DOWNSTREAM AIR
BLAST DWELL
#. ## SEC

(If used)
This sets the amount of time after the stack begins the transfer into the packager, that the downstream air blast will be energized.

JAWS STACK
DISCHARGE KNOCKOFF
DWELL
#. ## SEC

Sets the amount of time the stack knockoff below the packager jaws is actuated.

DOWNSTREAM AIR BLAST DELAY

#. ## SEC

This sets the amount of time after the stack begins the transfer into the packager, before the downstream air blast will be energized.

REJECT DELAY

#. ## SEC

This timer sets the time that the rejecter waits to reject after cups have been stripped.

REJECT DWELL

#. ## SEC

This timer sets how long the rejecter dwells before returning to the home position.

DISCHARGE CONVEYOR STOP DELAY

#.## SEC

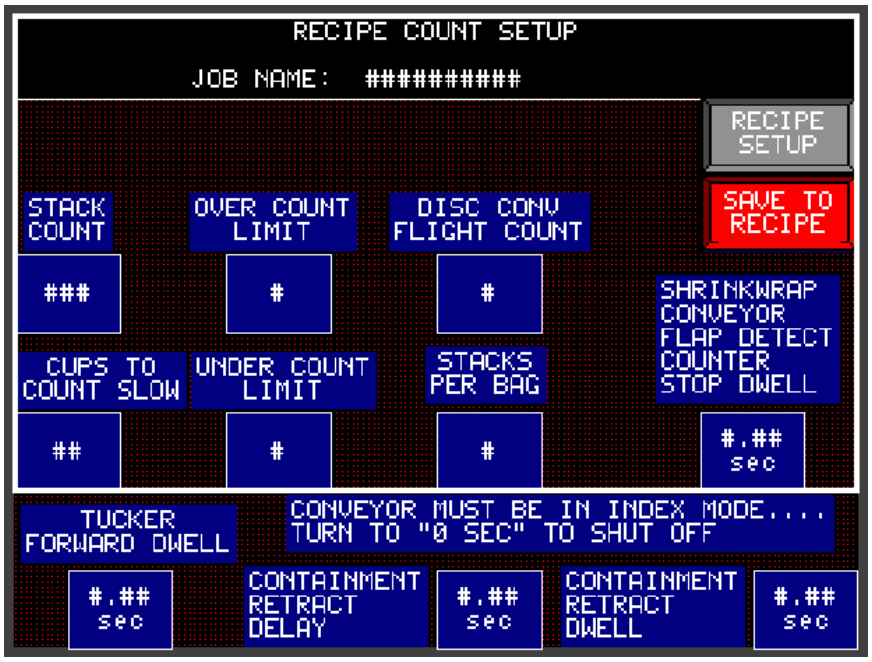
This timer sets how long conveyor will run after it stops detecting product.

DISCHARGE CONVEYOR START DELAY

#.###SEC

This timer sets how long the conveyor will wait to run after product is detected.

SCC COUNT SETUP PARAMETERS



STACK COUNT

###

This sets the number of cups per stack.

CUPS TO COUNT SLOW

##

This sets the number of cups left to be counted when the counting belt speed switches to the base speed. It needs to be set high enough so that the servomotor has switched to the base speed before the preset count is reached. However, setting this number too high will cause the motor to run at base speed too long, and that will slow the system down.

OVER COUNT LIMIT

#

Set this value to determine how many cups over the desired cup count will be allowed. Enter "0" when no over counts will be allowed. Set it at "1" to tolerance the count and allow for an occasional stack with one more cups. Setting this value for any number more than the desired count does not change the desired stack count preset. It only determines what will be accepted as good.

UNDER COUNT LIMIT

#

Set this value to determine how many cups under the desired cup count will be allowed. Enter "0" when no undercounts will be allowed. Set it at "1" to tolerance the count and allow for an occasional stack with one less cup. Setting this value for any number more than the desired count does not change the desired stack count preset. It only determines what will be accepted as good.

STACKS PER BAG

#

Sets the number of cup stacks in a bag (1-4).

TUCKER FORWARD
DWELL
#.## SEC

Sets the amount of dwell time the tucker cylinder is fired forward after the discharge conveyor indexes. The discharge conveyor has to be running in index mode for this operation to be active.

CONTAINMENT
RETRACT DWELL
#.## SEC

Sets the amount of time the tipper containment cylinder holds its retracted position. This timer will automatically reset when the index conveyor starts to index.

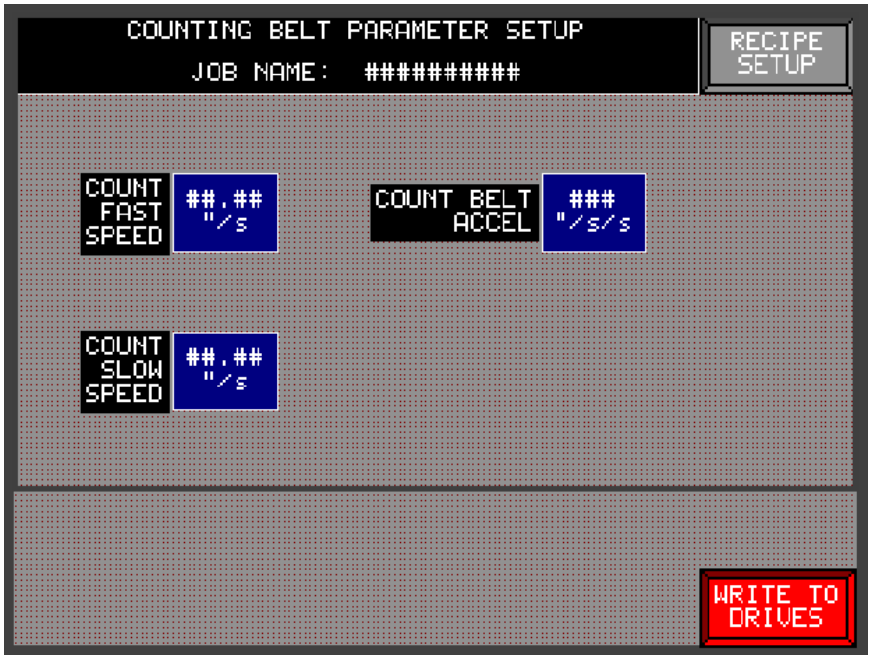
CONTAINMENT
RETRACT DELAY
#.## SEC

Sets the amount of time the tipper containment cylinder waits before retracting. The index conveyor, index complete starts this timer.

SHRINK WRAP
CONVEYOR FLAP
DETECT COUNT
STOP DWELL
#.## SEC

Sets the amount of time the counter stops running after the conveyor splice flap is detected. This is set so the discharge conveyor will not set a tucked stack of cups on the conveyor belt splice as it goes by.

COUNTING BELT SERVO PARAMETERS



COUNT FAST SPEED "/SEC

##.##

Sets the speed the counting belt runs when counting at high speed, before the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

COUNT SLOW SPEED "/SEC

##.##

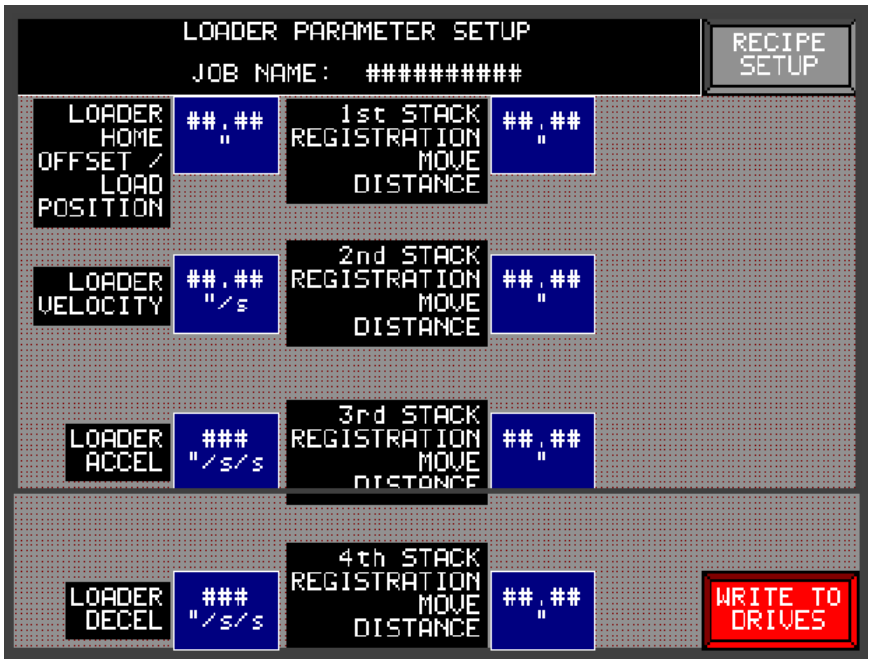
Sets the speed the counting belt decelerates to when the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

COUNT BELT ACCEL

"/SEC/SEC

Sets the acceleration race of the counting belt.

OVERHEAD LOADER SERVO PARAMETERS



LOADER
VELOCITY
###.## "/$
Sets the push speed of the loader servo motor.

LOADER
ACCEL
"/$/$
Sets the push acceleration rate of the loader servo motor.

LOADER
DECEL
"/$/$
Sets the push deceleration rate of the loader servo motor.

LOADER HOME
OFFSET / LOAD
POSITION
##.## "
Sets the home offset position of the overhead loader after the loader actuates the home position proximity switch. This is a negative number and must be entered as such from the keypad.

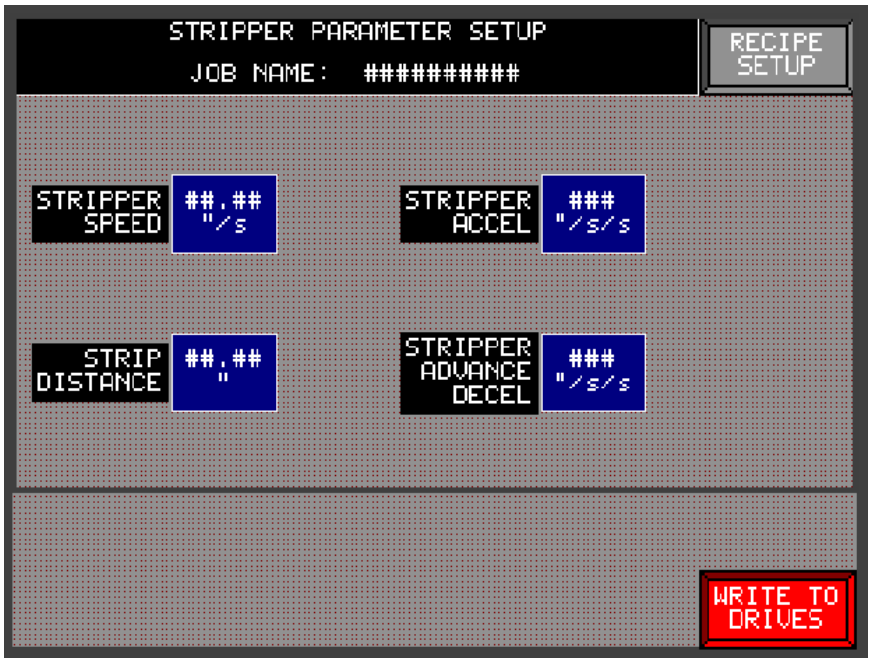
1st STACK
REGISTRATION
MOVE DISTANCE
##.## "
Sets the distance that the loader will push the first stack after making contact with the prox switch.

2nd STACK
REGISTRATION
MOVE DISTANCE
##.## "
Sets the distance that the loader will push the second stack after making contact with the prox switch.

3rd STACK
REGISTRATION
MOVE DISTANCE
##.## "
Sets the distance that the loader will push the third stack after making contact with the prox switch.

4th STACK
REGISTRATION
MOVE DISTANCE
##.## "
Sets the distance that the loader will push the fourth stack after making contact with the prox switch.

STRIPPER SERVO PARAMETERS



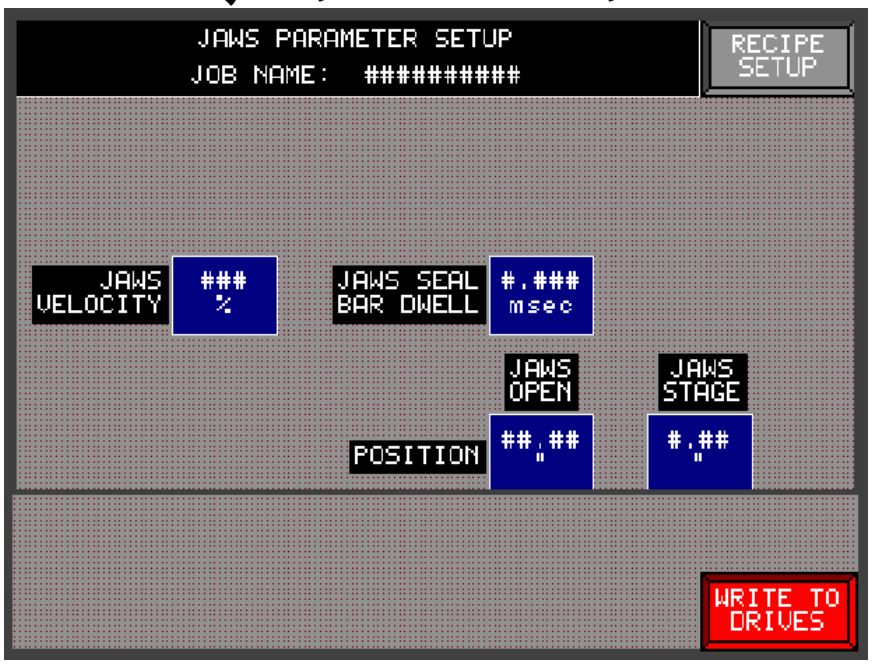
STRIPPER SPEED
"/SEC
###
Sets the normal operating speed of the stripper mechanism as it is separating the stacks of cups.

STRIP DISTANCE
##.##"
Sets the distance the stripper mechanism moves when separating the stacks of cups.

STRIPPER ADVANCE DECEL
"/S/S
Sets the deceleration rate of the stripper as it strips the cups.

STRIPPER ACCEL
"/S/S
Sets the acceleration rate of the stripper.

JAWS PARAMETERS



JAWS VELOCITY
###%

Sets the velocity, acceleration & deceleration in percentage of maximum for the motions of the packager jaws servo motor. This should be set to provide a smooth motion of the jaws, without hammering, while attaining required speed.

JAWS SEAL BAR DWELL
#.## msec

Sets the time that the seal bar dwells against the film and the back up rubber during the sealing process. This should be set in conjunction with the seal bar temperatures to make a proper seal. For maximum speed, set to a minimum dwell to get a good seal without overheating the package.

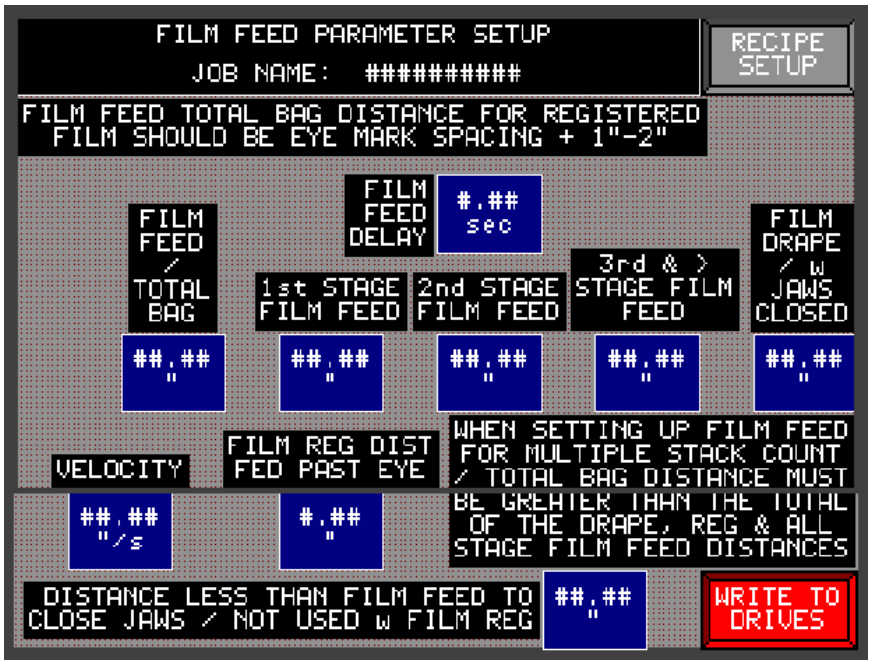
JAWS OPEN POSITION
#.##"

Sets the jaws open position in inches (approx). This should be set to open far enough so that the product clears the jaw as the film feeds. For maximum cycle rate, open the jaws to the minimum required.

JAWS STAGE POSITION
#.##"

Sets the jaws stage position in inches (approx) from the home (seal) position. This is used and is applicable only when running 2 or more stacks in a bag. This is the jaws close position, without sealing the package, for loading the next stack of product. This must be set to a position that allows the stacks to load, without restriction, and should be adjusted in conjunction with the film feed stage distance.

FILM FEED PARAMETERS



FILM FEED / TOTAL BAG DISTANCE

##.##"

Sets the complete bag film feed distance for the packager. This should be set to the proper vertical bag size for the product. When running registered film, set this distance to about 1" longer than the registration mark repeat distance on the printed film.

FILM FEED DELAY

#.## SEC

Sets the amount of time the film will delay feeding after the jaws begin to open.

FILM FEED SPEED

##.## "/SEC

Sets the speed of the packager film feed servo motor. This should be set to feed the film smoothly, fast enough to allow the packager to run at desired speeds, but not so fast as to cause issues with product handling or with the trim breaking. The speed may require a lower setting when running registered film, depending on the density and width of the registration mark.

1st STAGE / FILM FEED DISTANCE

#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 1st stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

2nd STAGE / FILM FEED DISTANCE

#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 2nd stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

3rd-5th STAGE / FILM FEED DISTANCE

#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 3rd-5th stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

FILM DRAPE /w JAWS CLOSED DISTANCE

#.##"

Sets the drape film feed distance for the packager. This film feed comes with the jaws closed, after the packager seal is made, and is used to create slack in the loading area of the packager (between the film roll & the jaws).

FILM REGISTRATION DISTANCE FED PAST EYE

##.##"

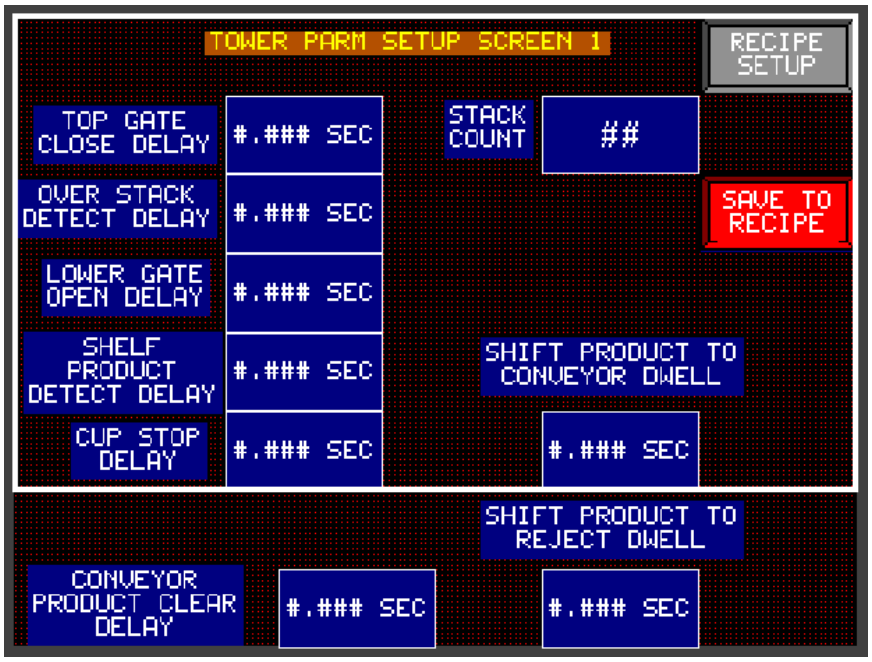
Sets the distance the film will continue to feed after the film registration mark has passed through the film registration eye. This can be used to feed the film to the proper seal cut location on the package.

DISTANCE LESS THAN FILM FEED TO CLOSE JAWS / NOT USED w/ FILM REGISTRATION

##.##"

Sets the distance less than the total film feed distance to close the jaws. This will allow the jaws to start to close before the film is fully fed, to increase cycle rates. This does not work with registered film.

TOWER PARAMETERS 1



TOP GATE CLOSE DELAY

#. ### SEC

This sets the amount of time before the top gate closes after the last cup in the stack is counted. This delay allows the last cup in the stack to get below the top gate before it closes.

OVER STACK DETECT DELAY

#.### SEC

Sets the amount of time the stack height photo eye can be blocked before the tower does a cleanout function.

LOWER GATE OPEN DELAY

#. ### SEC

This sets the amount of time after the last cup is counted, and allowed to nest on the counted stack, before the bottom gate assembly opens to let the stack slide to the diverting shelf.

SHELF PRODUCT DETECT DELAY

#.### SEC

Sets the amount of time the shelf product detect eye is blocked before the stack is pushed out to the ened feed conveyor or reject chute.

CUP STOP DELAY

#.### SEC

This sets the amount of time delay before the air blast starts after the stack has blocked the product detect eye on the infeed conveyor.

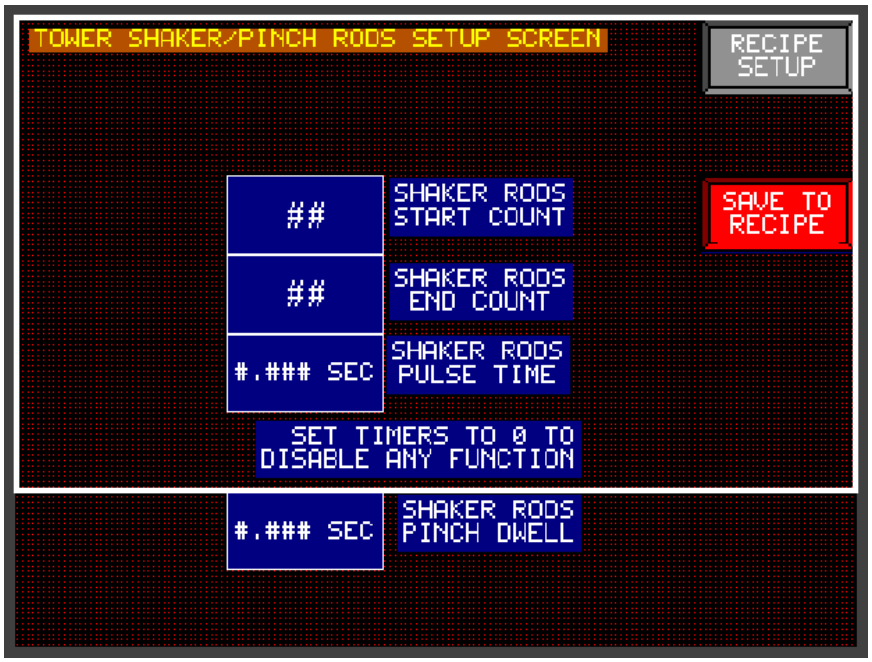
CONVEYOR PRODUCT
CLEAR DELAY
#.### SEC
Sets the amount of delay time before the infeed conveyor is clear

STACK COUNT
##
This sets the amount of cups counted in each stack.

SHIFT PRODUCT
TO CONVEYOR
DWELL
#.### SEC
Sets the amount of time the product shelf shifts to the infeed conveyor.

SHIFT PRODUCT
TO REJECT
DWELL
#.### SEC
Sets the amount of time the product shelf shifts to the reset chute.

TOWER PARAMETERS 2



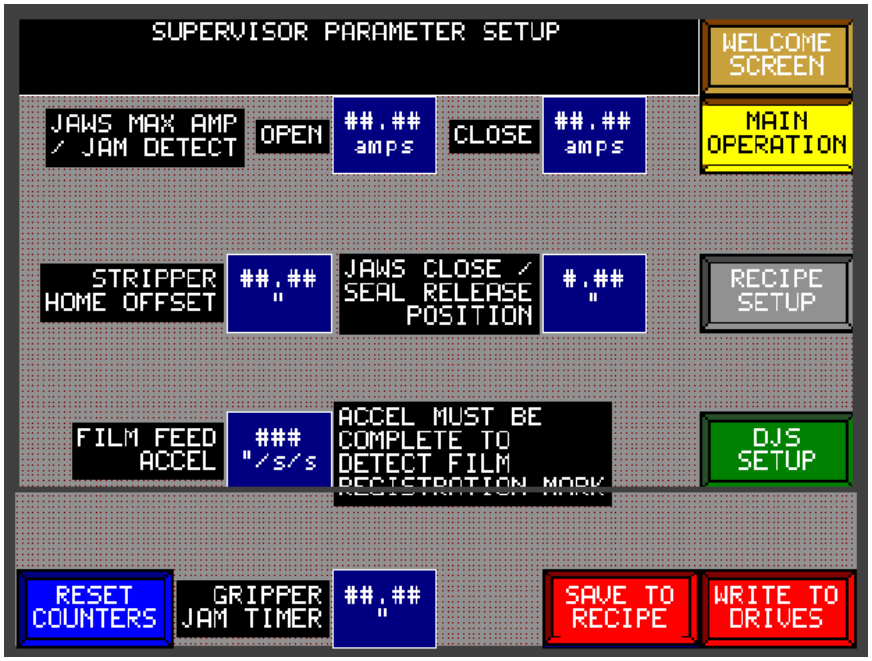
SHAKER RODS
START COUNT
##
When the stack count reaches this count the shaker rods start.

SHAKER RODS
END COUNT
##
When the stack count reaches this number away from the stack count set point - the shaker rods stop.

SHAKER RODS
PULSE TIME
#.### SEC
Sets the time the shaker rods move in and out.

SHAKER RODS
PINCH DWELL
#.### SEC
Sets the length of time the shaker rods fire in at the beginning of the stack count.

SUPERVISOR PARAMETERS



The SUPERVISOR SETUP screen is accessed only through the WELCOME screen. These parameters do not change as recipes change. This screen is password protected.

Note: The set-up in the HMI has low and high limits that cannot be exceeded. The operation of the system should be thoroughly reviewed to know the effect before making the any changes to these parameters.

JAWS OPEN MAX AMPERAGE / JAM DETECT

##.## amps

Sets the maximum amperage that the jaws servo motor can see when the jaws are opening. This limits the torque to the jaws for protection of the jaws mechanism. The amperage is limited to this set point when the jaws open, after the jaws closed prox is no longer actuated, when higher amperage is allowed for gripping and sealing. When the jaws servo motor exceeds this set point when opening, the move is aborted and the jaws return to the jaws close / seal release position and a jam condition message is displayed. Set to as low an amperage as possible, without creating nuisance jam condition faults. The jaws closed prox should be adjusted to actuate when the heater jaw and the solid jaw start to make contact, when closing.

JAWS CLOSE MAX AMPERAGE / JAM DETECT

##.## amps

Sets the maximum amperage that the jaws servo motor can see when the jaws are closing. This limits the torque to the jaws for protection of the jaws mechanism. The amperage is limited to this set point when the jaws close, until the jaws closed prox is actuated, when higher amperage is allowed for gripping and sealing. When the jaws servo motor exceeds this set point when closing, the move is aborted and the jaws return to the open position and a jam condition message is displayed. Set to as low an amperage as possible, without creating nuisance jam condition faults. The jaws closed prox should be adjusted to actuate when the heater jaw and the solid jaw start to make contact, when closing.

STRIPPER HOME OFFSET

##.##"

Sets the starting position for the stripper fingers in relation to the gripper fingers. As a general rule of thumb the stripper fingers should line up with the gripper fingers when the stripper mechanism is fully retracted. This relationship could change depending on the rim spacing and the characteristics of a particular cup. The main concern is to position the strippers where they strip the stack away the smoothest. This distance is referenced from the home position prox during a homing cycle. During a home cycle, the stripper will move forward (toward the rejecter) to locate the home prox switch. Once the prox switch is found the stripper will move back (toward the counting eyes) to the encoder marker. After the stripper reaches the encoder marker, the stripper will continue to reverse the distance set by the "HOME OFFSET".

JAWS CLOSE / SEAL RELEASE POSITION

#.##"

Sets the jaws close / seal release position in inches (approx) from the home (seal) position. This should be set to allow the seal bars to back away from the film, but not allow the seal bar frame to make contact with the jaw frame. There should be about a 1/32" gap between these frame members, when in this position. If this parameter is set to high, the jaws will open too far and will not grip the finished package with enough force to hold the weight of the product in the jaws. If this is set to low, there will be too much gap and the seal bar frame will slap against the jaw frame when the jaws open.

FILM FEED ACCEL

"/s/s

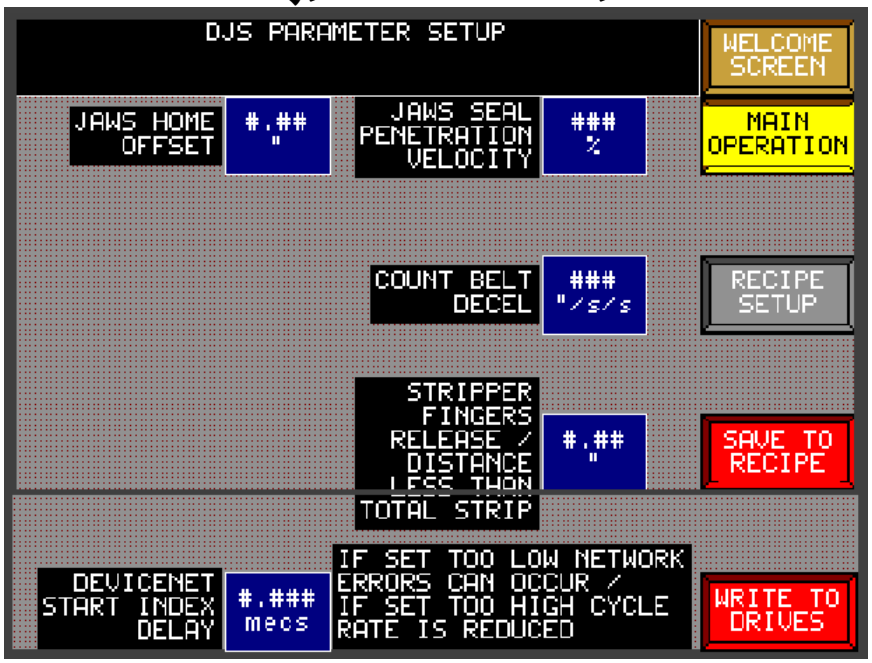
Sets the acceleration rate of the packager film feed servomotor. When running registered film the acceleration must be set high enough to reach preset speed before the film registration mark can be detected.

GRIPPER JAM TIMER

##.## "

Sets the amount of time that a stack can be jammed before the system stops.

DJS PARAMETERS



The DJS SETUP screen is accessed only through the WELCOME screen. These parameters do not change as recipes change. This screen is password protected.

Note: The set-up in the HMI has low and high limits that cannot be exceeded. The operation of the system should be thoroughly reviewed to know the effect before making the any changes to these parameters.

JAWS HOME OFFSET

##.##”

Sets the home (seal) position for the packager jaws. As a general rule of thumb, this is set so that when the jaws close to the seal position, the linkage is straight. This distance is referenced from the home position prox during a homing cycle. During a home cycle, the jaws will move open to locate the home prox. Once the prox switch is found the jaws will close to the seal position, dwell, then move to the jaws close / seal release position.

JAWS SEAL PENETRATION VELOCITY

%

Sets the speed while going from the “jaws close” position to the “jaws seal” position.

COUNT BELT DECEL

“/MS/S

###

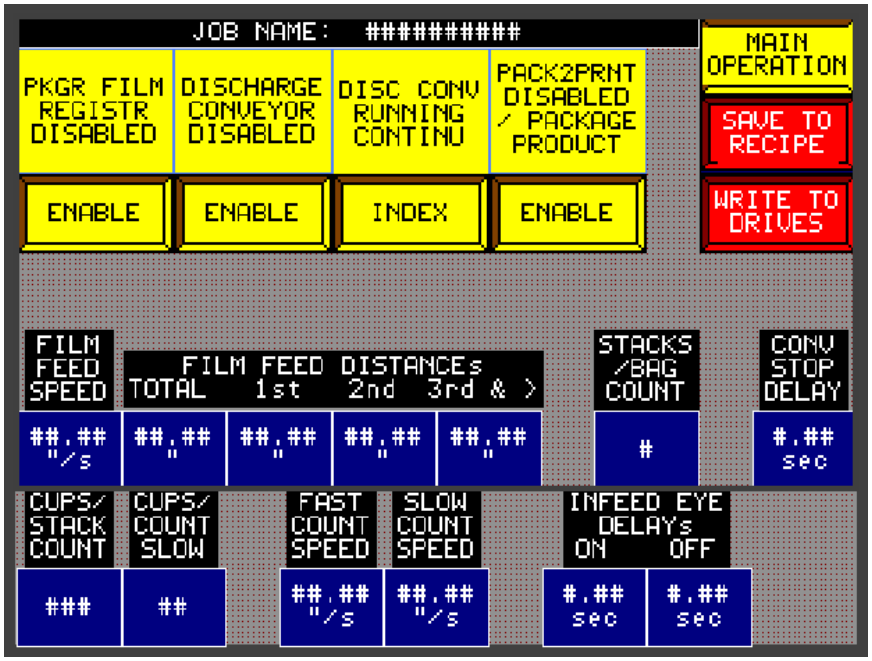
Sets the deceleration limit for the counting belt servomotor. This deceleration is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

STRIPPER FINGERS RELEASE / DISTANCE LESS THAN TOTAL STRIP

#.## “

Sets the distance less than the total strip distance when the stripper fingers are signaled to open to release the stack of cups.

OPERATOR PARAMETERS



PKGR FILM REGISTRATION ENABLE / DISABLE

This toggle PB is used to turn the film registration input on and off. This only affects the input, the eye will remain powered.

DISCHARGE CONVEYOR ENABLE / DISABLE

This toggle PB is used to turn the discharge conveyor on and off.

PACK2PRINT DISABLE / PACKAGE PRODUCT

This toggle PB causes the packager to reject all stacks.

FILM FEED SPEED ##.## "/SEC

Sets the speed of the packager film feed servo motor. This should be set to feed the film smoothly, fast enough to allow the packager to run at desired speeds, but not so fast as to cause issues with product handling or with the trim breaking. The speed may require a lower setting when running registered film, depending on the density and width of the registration mark.

FILM FEED / TOTAL BAG DISTANCE ##.##"

Sets the complete bag film feed distance for the packager. This should be set to the proper vertical bag size for the product. When running registered film, set this distance to about 1" longer than the registration mark repeat distance on the printed film.

1st STAGE /
FILM FEED
DISTANCE
#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 1st stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

2nd STAGE /
FILM FEED
DISTANCE
#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 2nd stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

3rd-5th STAGE /
FILM FEED
DISTANCE
#.##"

Sets the staging film feed distance for the packager. This film feed is used when running the 3rd-5th stack in a multiple stack package. Adjust to feed the film so that the previous loaded stack is far enough below the packager jaws to allow the jaws to close to the stage position, without restricting the loading of the next stack of product.

STACKS PER BAG
#

Sets the number of cup stacks in a bag (1-4).

DISCHARGE CONVEYOR
STOP DELAY
#.## SEC

This timer sets how long conveyor will run after it stops detecting product.

STACK
COUNT
###

This sets the number of cups per stack.

CUPS TO
COUNT SLOW
##

This sets the number of cups left to be counted when the counting belt speed switches to the base speed. It needs to be set high enough so that the servomotor has switched to the base speed before the preset count is reached. However, setting this number too high will cause the motor to run at base speed too long, and that will slow the system down.

COUNT FAST
SPEED
"/SEC
##.##

Sets the speed the counting belt runs when counting at high speed, before the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

COUNT SLOW
SPEED
"/SEC
##.##

Sets the speed the counting belt decelerates to when the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

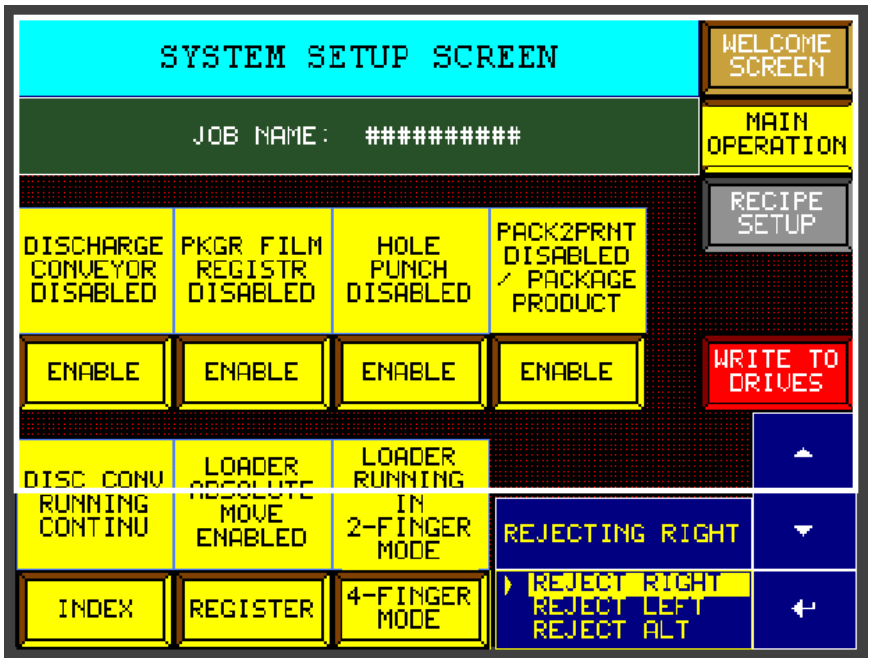
INFEED EYE
ON DELAY
#. ## SEC

This timer sets the time the upstream eye must be blocked before counting will start.

INFEED EYE
OFF DELAY
#. ## SEC

This timer sets the time the upstream eye must not be blocked before counting will stop. The counter will complete the current count before stopping.

SYSTEM SETUP PARAMETERS



DISCHARGE CONVEYOR ENABLE / DISABLE

This toggle PB is used to turn the discharge conveyor on and off.

PKGR FILM REGISTRATION ENABLE / DISABLE

This toggle PB is used to turn the film registration input on and off. This only affects the input, the eye will remain powered.

HOLE PUNCH ENABLE / DISABLE

(If used)

This toggle PB is used to turn the hole punch on and off.

PACK2PRINT DISABLE / PACKAGE PRODUCT

This toggle PB causes the packager to reject all stacks.

LOADER ABSOLUTE MOVE ENABLE / DISABLE

This toggle PB is used to toggle between running the loader in absolute mode and registration mode. When in absolute mode the loader will run the loader paddle a certain distance. When in registration mode the loader will move a certain distance after contact is made with the prox switch.

LOADER RUNNING IN 2 OR 4-FINGER MODE

This toggle PB switches between two and four finger loader, and must correspond to the type of loader that is being used.

SPEED CONTROLS

PACKAGER

JAWS VELOCITY 0-100% (JAWS PARAMETERS SCREEN)

Sets the velocity, acceleration & deceleration in percentage of maximum for the mot ions of the packager jaws servo motor. This should be set to provide a smooth motion of the jaws, without hammering, while attaining required speed.

JAWS SEALBAR DWELL (JAWS PARAMETERS SCREEN)

Sets the time that the seal bar dwells against the film and the back up rubber during the sealing process. This should be set in conjunction with the seal bar temperatures to make a proper seal. For maximum speed, set to a minimum dwell to get a good seal without overheating the package.

FILM FEED VELOCITY (FILM FEED PARAMETERS SCREEN)

Sets the speed of the packager film feed servo motor. This should be set to feed the film smoothly, fast enough to allow the packager to run at desired speeds, but not so fast as to cause issues with product handling or with the trim breaking. The speed may require a lower setting when running registered film, depending on the density and width of the registration mark.

FILM FEED ACCEL (SUPERVISOR PARAMETERS SCREEN)

Sets the acceleration rate of the packager film feed servomotor. When running Registered film the acceleration must be set high enough to reach preset speed before the film registration mark can be detected.

LOADER

LOADER VELOCITY (OVERHEAD LOADER PARAMETERS SCREEN)

Sets the push speed of the loader servo motor.

LOADER ACCEL (OVERHEAD LOADER PARAMETERS SCREEN)

Sets the push acceleration rate of the loader servo motor.

LOADER DECEL (OVERHEAD LOADER PARAMETERS SCREEN)

Sets the push deceleration rate of the loader servo motor.

CUP COUNTER

COUNT FAST SPEED (COUNTING BELT PARAMETERS SCREEN)

Sets the speed the counting belt runs when counting at high speed, before the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

COUNT SLOW SPEED (COUNTING BELT PARAMETERS SCREEN)

Sets the speed the counting belt decelerates to when the "CUPS TO COUNT SLOW" parameter is reached. This speed is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

STRIPPER SPEED (STRIPPER PARAMETERS SCREEN)

Sets the normal operating speed of the stripper mechanism as it is separating the stacks of cups.

CUPS TO COUNT SLOW (SCC COUNT SETUP PARAMETERS SCREEN)

This sets the number of cups left to be counted when the counting belt speed switches to the base speed. It needs to be set high enough so that the servomotor has switched to the base speed before the preset count is reached. However, setting this number too high will cause the motor to run at base speed too long, and that will slow the system down.

CUP COUNTER (Cont'd)

COUNT BELT ACCEL (COUNTING BELT PARAMETERS SCREEN)

Sets the acceleration limit for the counting belt servomotor. This acceleration is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

COUNT BELT DECEL (COUNTING BELT PARAMETERS SCREEN)

Sets the deceleration limit for the counting belt servomotor. This deceleration is also used for the transfer belt when the transfer belt is synchronizing with the counting belt.

STRIPPER ACCEL (STRIPPER PARAMETERS SCREEN)

Sets the acceleration limit of the stripper mechanism when separating stacks of cups.

6. SETUP PARAMETERS WORKSHEET

The following can be copied to record setup info for documenting each recipe.

Work Order : **Date :**

Serial Number : **Job Type :**

Product Recipe : **Program :**

Rate :

Count Belt Parameters	**Value**		**Film Feed Parameters**	**Value**
Count Fast Speed			Film Feed Total Bag Distance	
Count Slow Speed			Film Feed Velocity	
Count Belt Accel			1st Stage / Film Feed Distance	
			2nd Stage / Film Feed Distance	
Overhead Loader Parameters			3rd-5th Stage / Film Feed Distance	
Loader Home Offset / Load Position			Film Drape w/ Jaws Closed	
Loader Velocity			Film Registration Distance Fed Past Eye	
Loader Accel			Distance Less Than Film Feed to Close Jaws	
Laoder Decel			Film Feed Delay	
1st Stack Registration Distance				
2nd Stack Registration Distance			**SCC Count Setup Parameters**	
3rd Stack Registration Distance			Stack Count	
4th Stack Registration Distance			Cup to Count Slow	
			Over Count Limit	
Stripper Parameters			Under Count Limit	
Stripper Speed			Stacks per Bag	
Strip Distance			Tucker Forward Dwell	
Stripper Advance Decel			Discharge Conveyor Flight Count	
Stripper Accel				
			SCC Timer Setup Parameters	
Jaws Parameters			Infeed Eye On Delay	
Jaws Velocity			Infeed Eye Off Delay	
Jaws Seal Bar Dwell			Upstream Air Blast Dwell	
Jaws Open Position			Downstream Air Blast Delay	
Jaws Stage Position			Downstream Air Blast Dwell	
			Jaws Stack Discharge Knockoff Dwell	
Tower Parameters 2			Discharge Conveyor Start Delay	
Shaker Rods Start Count			Discharge Conveyor Stop Delay	
Shaker Rods End Count			Reject Delay	
Shaker Rods Pulse Time			Reject Dwell	
Shaker Rods Pinch Dwell				
			Tower Parameters 1	
Loader Style			Top Gate Close Delay	
2 Finger			Over Stack Detect Delay	
4 Finger			Lower Gate Open Delay	
			Shelf Product Detect Delay	
Cup Travel Into Counter			Cup Stop Delay	
Mouth First			Conveyor Product Clear Delay	
Bottom First			Stack Count	
			Shift Product to Conveyor Dwell	
Watlow Heater Setup			Shift Product to Reject Dwell	
Vertical Heater				
Horizontal Heater				

The following are the parameters upon shipment.

Work Order : 4277 **Date : 3-03-09**

Serial Number : **Job Type :**

Product Recipe : 9ozX8 **Program :**

Rate : 42 Stacks per Minute

Count Belt Parameters	**Value**		**Film Feed Parameters**	**Value**
Count Fast Speed	6.90		Film Feed Total Bag Distance	6
Count Slow Speed	1.50		Film Feed Velocity	17
Count Belt Accel	150		1st Stage / Film Feed Distance	4.50
			2nd Stage / Film Feed Distance	0
Overhead Loader Parameters			3rd-5th Stage / Film Feed Distance	0
Loader Home Offset / Load Position	47		Film Drape w/ Jaws Closed	.20
Loader Velocity	27		Film Registration Distance Fed Past Eye	.25
Loader Accel	150		Distance Less Than Film Feed to Close Jaws	0
Laoder Decel	200		Film Feed Delay	.20
1st Stack Registration Distance	24.50			
2nd Stack Registration Distance	24		**SCC Count Setup Parameters**	
3rd Stack Registration Distance	10		Stack Count	8
4th Stack Registration Distance	10		Cup to Count Slow	5
			Over Count Limit	1
Stripper Parameters			Under Count Limit	0
Stripper Speed	35		Stacks per Bag	1
Strip Distance	7		Tucker Forward Dwell	.45
Stripper Advance Decel	250			
Stripper Accel	150		**SCC Timer Setup Parameters**	
			Infeed Eye On Delay	.10
Jaws Parameters			Infeed Eye Off Delay	.10
Jaws Velocity	85		Upstream Air Blast Dwell	0
Jaws Seal Bar Dwell	.150		Downstream Air Blast Delay	0
Jaws Open Position	5		Downstream Air Blast Dwell	0
Jaws Stage Position	1		Jaws Stack Discharge Knockoff Dwell	0
			Discharge Conveyor Start Delay	0
Tower Parameters 2			Discharge Conveyor Stop Delay	0
Shaker Rods Start Count	0		Reject Delay	.20
Shaker Rods End Count	0		Reject Dwell	.50
Shaker Rods Pulse Time	0			
Shaker Rods Pinch Dwell	0		**Tower Parameters 1**	
			Top Gate Close Delay	.500
Loader Style			Over Stack Detect Delay	.500
2 Finger			Lower Gate Open Delay	.500
4 Finger	X		Shelf Product Detect Delay	.250
			Cup Stop Delay	.100
Cup Travel Into Counter			Conveyor Product Clear Delay	.050
Mouth First			Stack Count	50
Bottom First	X		Shift Product to Conveyor Dwell	.50
			Shift Product to Reject Dwell	.50
Watlow Heater Setup				
Vertical Heater	230			
Horizontal Heater	450			

Work Order : 4277 **Date : 3-03-09**

Serial Number : **Job Type :**

Product Recipe : 9ozX16 **Program :**

Rate :

Count Belt Parameters	**Value**		**Film Feed Parameters**	**Value**
Count Fast Speed	7.00		Film Feed Total Bag Distance	6
Count Slow Speed	1.00		Film Feed Velocity	17
Count Belt Accel	150		1st Stage / Film Feed Distance	4.50
			2nd Stage / Film Feed Distance	0
Overhead Loader Parameters			3rd-5th Stage / Film Feed Distance	0
Loader Home Offset / Load Position	47.00		Film Drape w/ Jaws Closed	.10
Loader Velocity	27.00		Film Registration Distance Fed Past Eye	.25
Loader Accel	200		Distance Less Than Film Feed to Close Jaws	0
Laoder Decel	200		Film Feed Delay	.50
1st Stack Registration Distance	24			
2nd Stack Registration Distance	23		**SCC Count Setup Parameters**	
3rd Stack Registration Distance	23		Stack Count	16
4th Stack Registration Distance	23		Cup to Count Slow	6
			Over Count Limit	1
Stripper Parameters			Under Count Limit	0
Stripper Speed	35		Stacks per Bag	1
Strip Distance	7		Tucker Forward Dwell	.50
Stripper Advance Decel	250			
Stripper Accel	150		**SCC Timer Setup Parameters**	
			Infeed Eye On Delay	.10
Jaws Parameters			Infeed Eye Off Delay	.10
Jaws Velocity	65		Upstream Air Blast Dwell	0
Jaws Seal Bar Dwell	.250		Downstream Air Blast Delay	0
Jaws Open Position	5		Downstream Air Blast Dwell	0
Jaws Stage Position	1		Jaws Stack Discharge Knockoff Dwell	0
			Discharge Conveyor Start Delay	0
Tower Parameters 2			Discharge Conveyor Stop Delay	0
Shaker Rods Start Count	0		Reject Delay	.15
Shaker Rods End Count	0		Reject Dwell	.50
Shaker Rods Pulse Time	0			
Shaker Rods Pinch Dwell	0		**Tower Parameters 1**	
			Top Gate Close Delay	.500
Loader Style			Over Stack Detect Delay	.500
2 Finger			Lower Gate Open Delay	.250
4 Finger	X		Shelf Product Detect Delay	.100
			Cup Stop Delay	0
Cup Travel Into Counter			Conveyor Product Clear Delay	.050
Mouth First			Stack Count	50
Bottom First	X		Shift Product to Conveyor Dwell	1
			Shift Product to Reject Dwell	1
Watlow Heater Setup				
Vertical Heater	230			
Horizontal Heater	450			

Work Order : 4277 **Date : 3-03-09**

Serial Number : **Job Type :**

Product Recipe : 90zx14 **Program :**

Rate :

Count Belt Parameters	**Value**		**Film Feed Parameters**	**Value**
Count Fast Speed	7		Film Feed Total Bag Distance	5.50
Count Slow Speed	1		Film Feed Velocity	15
Count Belt Accel	150		1st Stage / Film Feed Distance	4.50
			2nd Stage / Film Feed Distance	0
Overhead Loader Parameters			3rd-5th Stage / Film Feed Distance	0
Loader Home Offset / Load Position	47		Film Drape w/ Jaws Closed	.10
Loader Velocity	27		Film Registration Distance Fed Past Eye	.25
Loader Accel	150		Distance Less Than Film Feed to Close Jaws	0
Laoder Decel	200		Film Feed Delay	.20
1st Stack Registration Distance	24			
2nd Stack Registration Distance	24		**SCC Count Setup Parameters**	
3rd Stack Registration Distance	24		Stack Count	14
4th Stack Registration Distance	24		Cup to Count Slow	7
			Over Count Limit	1
Stripper Parameters			Under Count Limit	0
Stripper Speed	35		Stacks per Bag	1
Strip Distance	5.50		Tucker Forward Dwell	.45
Stripper Advance Decel	250			
Stripper Accel	150		**SCC Timer Setup Parameters**	
			Infeed Eye On Delay	.10
Jaws Parameters			Infeed Eye Off Delay	.10
Jaws Velocity	65		Upstream Air Blast Dwell	0
Jaws Seal Bar Dwell	.150		Downstream Air Blast Delay	0
Jaws Open Position	5		Downstream Air Blast Dwell	0
Jaws Stage Position	1		Jaws Stack Discharge Knockoff Dwell	0
			Discharge Conveyor Start Delay	0
Tower Parameters 2			Discharge Conveyor Stop Delay	0
Shaker Rods Start Count	0		Reject Delay	.25
Shaker Rods End Count	0		Reject Dwell	.50
Shaker Rods Pulse Time	0			
Shaker Rods Pinch Dwell	0		**Tower Parameters 1**	
			Top Gate Close Delay	.500
Loader Style			Over Stack Detect Delay	.500
2 Finger			Lower Gate Open Delay	.500
4 Finger	X		Shelf Product Detect Delay	.250
			Cup Stop Delay	.100
Cup Travel Into Counter			Conveyor Product Clear Delay	.050
Mouth First			Stack Count	50
Bottom First	X		Shift Product to Conveyor Dwell	1
			Shift Product to Reject Dwell	1
Watlow Heater Setup				
Vertical Heater	230			
Horizontal Heater	450			

Work Order : 4277 **Date : 3-03-09**

Serial Number : **Job Type :**

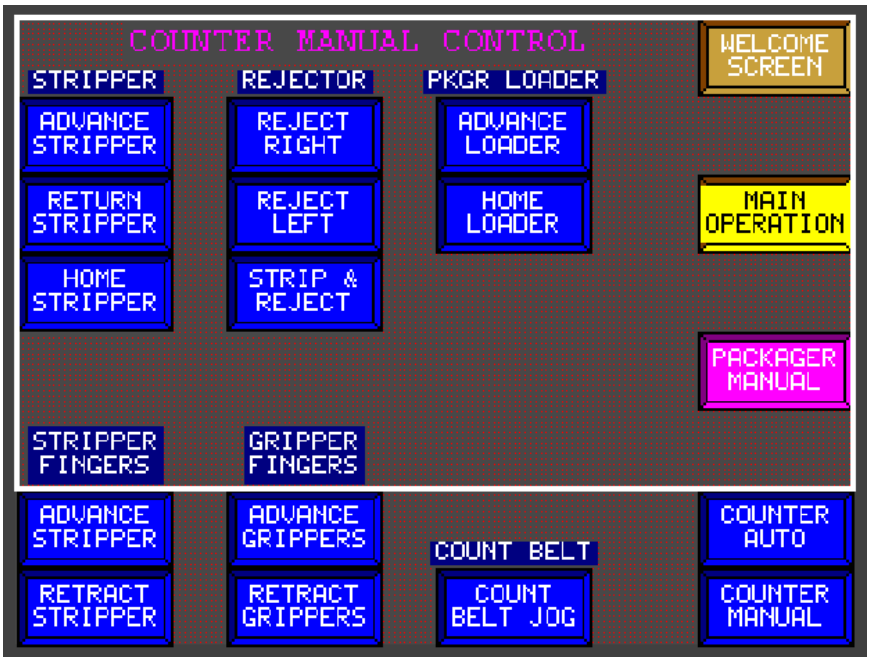
Product Recipe : 90zx12 **Program :**

Rate :

Count Belt Parameters	**Value**		**Film Feed Parameters**	**Value**
Count Fast Speed	8		Film Feed Total Bag Distance	5.50
Count Slow Speed	1		Film Feed Velocity	17
Count Belt Accel	1.50		1st Stage / Film Feed Distance	4.50
			2nd Stage / Film Feed Distance	0
Overhead Loader Parameters			3rd-5th Stage / Film Feed Distance	0
Loader Home Offset / Load Position	47		Film Drape w/ Jaws Closed	.10
Loader Velocity	27		Film Registration Distance Fed Past Eye	.25
Loader Accel	150		Distance Less Than Film Feed to Close Jaws	0
Laoder Decel	200		Film Feed Delay	.20
1st Stack Registration Distance	24			
2nd Stack Registration Distance	24		**SCC Count Setup Parameters**	
3rd Stack Registration Distance	10		Stack Count	12
4th Stack Registration Distance	10		Cup to Count Slow	6
			Over Count Limit	1
Stripper Parameters			Under Count Limit	0
Stripper Speed	35		Stacks per Bag	12
Strip Distance	5.50		Tucker Forward Dwell	.45
Stripper Advance Decel	250			
Stripper Accel	150		**SCC Timer Setup Parameters**	
			Infeed Eye On Delay	.10
Jaws Parameters			Infeed Eye Off Delay	.10
Jaws Velocity	85		Upstream Air Blast Dwell	0
Jaws Seal Bar Dwell	.150		Downstream Air Blast Delay	0
Jaws Open Position	5		Downstream Air Blast Dwell	0
Jaws Stage Position	1		Jaws Stack Discharge Knockoff Dwell	0
			Discharge Conveyor Start Delay	0
Tower Parameters 2			Discharge Conveyor Stop Delay	0
Shaker Rods Start Count	0		Reject Delay	.15
Shaker Rods End Count	0		Reject Dwell	.30
Shaker Rods Pulse Time	0			
Shaker Rods Pinch Dwell	0		**Tower Parameters 1**	
			Top Gate Close Delay	.500
Loader Style			Over Stack Detect Delay	.500
2 Finger			Lower Gate Open Delay	.500
4 Finger	X		Shelf Product Detect Delay	.250
			Cup Stop Delay	.100
Cup Travel Into Counter			Conveyor Product Clear Delay	.050
Mouth First			Stack Count	50
Bottom First	X		Shift Product to Conveyor Dwell	.500
			Shift Product to Reject Dwell	.500
Watlow Heater Setup				
Vertical Heater	230			
Horizontal Heater	450			

7. HMI OPERATOR CONTROL SCREENS

COUNTER MANUAL CONTROL SCREEN



The servo cup counter must be in manual mode for the following PBs to operate.

ADVANCE STRIPPER

This PB will cause the stripper to advance to the forward position.

RETURN STRIPPER

This PB will cause the stripper to return to the strip position.

STRIPPER FIND HOME

This PB will cause the stripper belt actuator to do a find home move.

REJECT RIGHT

This PB will cause the rejecter wheel to make an index to reject stacks to the right side.

REJECT LEFT

This PB will cause the rejecter wheel to make an index to reject stacks to the left side.

STRIP & REJECT

This PB will cause the stripper to strip a stack of cups and reject them.

ADVANCE
LOADER
This PB will cause the loader to advance to the forward push position.

HOME
LOADER
This PB will cause the loader to return to the home position.

ADVANCE
STRIPPERS
This PB will cause the stripper fingers to advance, to grip the cups.

RETRACT
STRIPPERS
This PB will cause the stripper fingers to retract, releasing the cups.

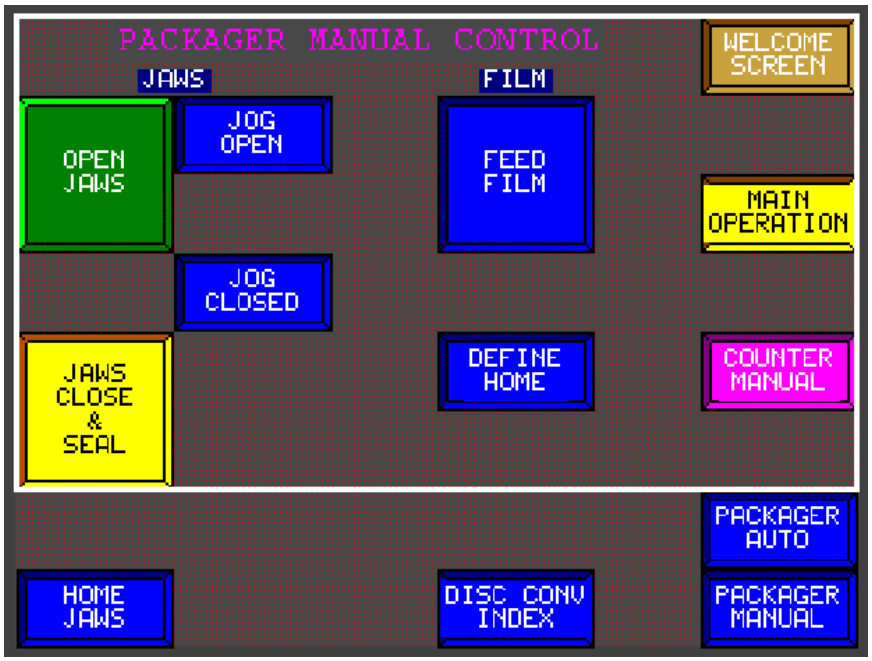
ADVANCE
GRIPPERS
This PB will cause the gripper fingers to advance, to grip the cups.

RETRACT
GRIPPERS
This PB will cause the gripper fingers to retract, releasing the cups.

COUNTER
MANUAL
This toggle PB sets the servo cup counter to manual mode and will allow the servo cup counter manual PB functions to operate.

COUNTER
AUTO
This toggle PB sets the servo cup counter auto mode. Auto mode is also set with the System Reset PB.

PACKAGER MANUAL CONTROL SCREEN



The packager must be in manual mode for the following PBs to operate.

OPEN
JAWS
This PB causes the jaws to move to the open position, and the film to feed.

JAWS CLOSE
& SEAL
This PB causes the jaws to move to the seal position, dwell, then move to the seal release / jaws close position.

JAWS FIND
HOME
This PB causes the jaws to do a find home move, then move to the seal release / jaws closed position.

JAWS
JOG OPEN
This PB causes the jaws to jog in the open direction.

JAWS
JOG CLOSED
This PB causes the jaws to jog in the closed direction.

FEED
FILM
This PB causes the film to feed as long as the jaws are in the jaws open position.

DISCHARGE CONVEYOR
INDEX
This PB causes the discharge conveyor to index.

FILM
DEFINE HOME

This PB sets the film position to zero.

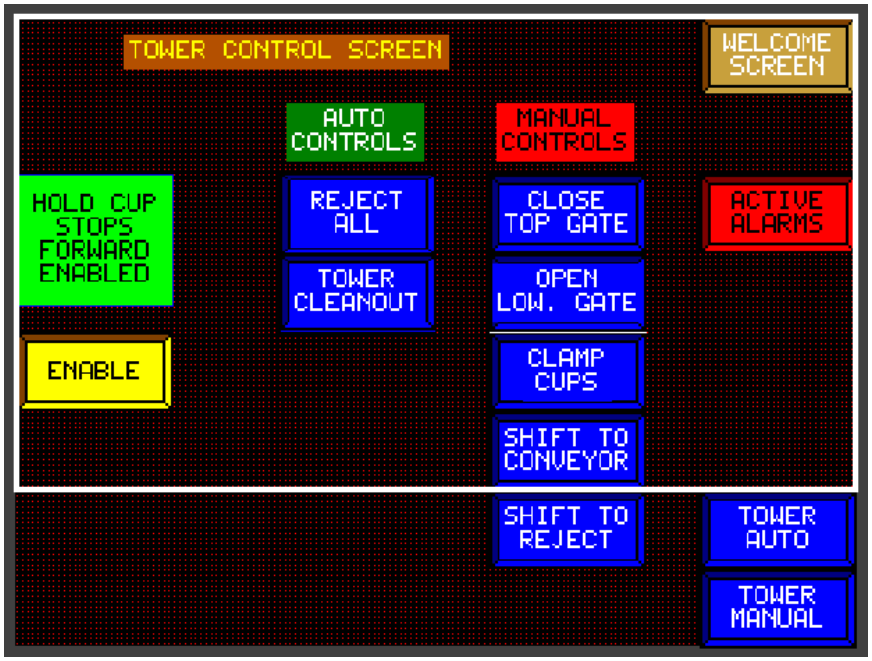
PACKAGER
MANUAL

This toggle PB sets the packager in manual mode and will allow the packager manual PB functions to operate.

PACKAGER
AUTO

This toggle PB sets the packager to auto mode. Auto mode is also set with the System Reset PB.

TOWER MANUAL CONTROL SCREEN



HOLD CUP STOPS FORWARD ENABLE ENABLE / DISABLE

This will hold the cup stop forward when enabled.

REJECT ALL

This will reject all cups coming in the tower.

TOWER CLEANOUT

This will perform a clean out function when pushed.

CLOSE TOP GATE

This PB allows the operator to manually close the top gate in the counting tower. The gate will open when the PB is released.

OPEN LOWER GATE

This PB allows the operator to manually open the bottom gate. The gate will close when the PB is released.

CLAMP CUPS

This PB allows the operator to manually actuate the cup clamp rods in the tower. The clamps will close when the button is pressed and open when the button is released.

SHIFT TO CONVEYOR

Shifts the product shelf to the reject chute when pushed.

SHIFT TO REJECT

Shifts the product shelf to the reject chute when pushed.

TOWER MANUAL

This toggle PB sets the servo cup counter to manual mode and will allow the servo cup counter manual PB functions to operate.

TOWER AUTO

This toggle PB sets the servo cup counter auto mode. Auto mode is also set with the System Reset PB.

8. ELECTRICAL CONTROLS

PACKAGER CONTROLS

TEMPERATURE CONTROLS

HORIZONTAL HEATER CONTROL - Provides temperature control to the horizontal seal bar heater. These controls use a type "J" thermocouple for feedback. To avoid film build up, set to as low a temperature as possible, while still maintaining a quality seal. This need to be set in conjunction with the jaws seal bar dwell time. See following page for initial setup parameters.

VERTICAL HEATER CONTROL - Provides temperature control to the vertical seal bar heater. These controls use a type "J" thermocouple for feedback. To avoid film build up, set to as low a temperature as possible, while still maintaining a quality seal. This need to be set in conjunction with the jaws seal bar dwell time. See following page for initial setup parameters.

SERVO CUP COUNTER & PACKAGER CONTROLS

POTENTIOMETERS ADJUSTMENTS

FILM UNWIND ROLLERS SPEED CONTROL - Sets the speed for the packager film unwind rollers.

PBS

SYSTEM RESET - Resets the system to make it ready to operate.

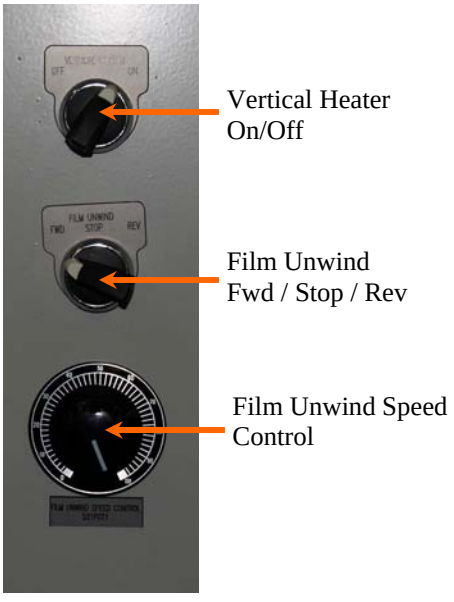
SYSTEM CYCLE ENABLE (lighted green PB) – Sets the system to Auto Mode as long as the servo drives are homed and the jaws are in the closed position. Refer to Active Alarms screen for alarms and the Main Operation screen for messages showing reasons for not going into auto mode. Also re-starts the cycling of the system after a packager stop.

PACKAGER CYCLE HOLD (lighted amber PB) – When pushed, provides a controlled cycle stop of the packager. Once actuated, the amber light will flash until the previous cycle is complete and all of the servo motors have completed their moves. Once the amber light goes to a solid condition the guard doors can be opened, without stopping the servo motors or dumping the air mid cycle.

JAWS OPEN - Causes the jaws to move to the open position, and the film to feed.

JAWS CLOSE - Causes the jaws to move to the seal position, dwell, then move to the seal release / jaws close position.

PACKAGER CYCLE HOLD (Lighted Yellow PB) – When pushed, provides a controlled cycle stop of the servo counter. Once actuated, the yellow light will flash until the previous cycle is complete and all of the servo motors have completed their moves. Once the yellow light goes to a solid condition the guard doors can be opened, without stopping the servo motors or dumping the air mid cycle.



9. HEATER CONTROLS SETUP PARAMETER

Watlow SD31 Controller Set-up Parameters

*To access the setup parameters, press and hold both up and down arrow keys for 3 seconds
* Press the up or down arrow keys to move through the parameters, then press the set key to view the setting

*Press the set key and up or down arrow key to change parameter values

*Press the infinity key to return to the temperature display

Parameter	Setting	Parameter	Explanation
Initial Display	SEt	SEt	initial display
Sensor Type	tc	SEn	thermocouple
Thermocouple Linearization	J	L in	type J
Temperature Units	F	C-F	Fahrenheit
Temperature Decimal Places	0	S.dEC	none
InfoSense	no	IS.En	not used
Set Point Low Limit	32	SP.Lo	min temperature setting
Set Point High Limit	500	SP.hi	max temperature setting
Input Filter	both	Ftr.E	control & display
Filter Value	5.0	FLtr	0 to 60 sec
Output 1 Function	hEAt	Ot 1	heat control
Control Method 1	Urtb	Ctr 1	variable time base
Power Limit 1	100.0	PL 1	0 to 100 %
Output Power Scale Low 1	0.0	PSL 1	0 to 100%
Output Power Scale High 1	100.0	PSh 1	0 to 100%
Output Non Linear Function 1	OFF	nLF 1	not used
AC Frequency	60	ACLF	AC frequency
Units of Measure	US	Unit	units of measure
Input Error Latching	nLat	1.Err	not latching
Input Error Failure Mode	OFF	FAIL	off
Active Displays	Pro	dSP	process temperature
Ramping Mode	OFF	rP	not used
Lockout Mode	3	LOC	change temperature only

Watlow SD31 Controller Tuning

*To access the Autotune go to the setup menu and set the lockout mode to '0' (see previous)

*Press and hold the infinity key for 3 seconds to access the menu containing the Autotune feature

*Press the up or down arrow key until the Autotune feature 'Auto' is shown

*Press the set key and up or down arrow key to change Auto Tune to 'On"

*Press the infinity key to return to the temperature display

*The Autotune feature will start, with the display flashing 'Tune'

* The Autotune is complete when the display stops flashing

* The set temperature and the process temperature should not vary by more than a 2 or 3 degrees after the controller is properly tuned

*For a more accurate Autotune, start the procedure when the heater is cold

*The PID parameters can be changed manually if the Autotune does not give a stable temp and can be accessed by pressing the infinity key from the same menu

*When tuning is complete go to the setup menu and set the lockout back to '3'

*Press the infinity key to return to the temperature display

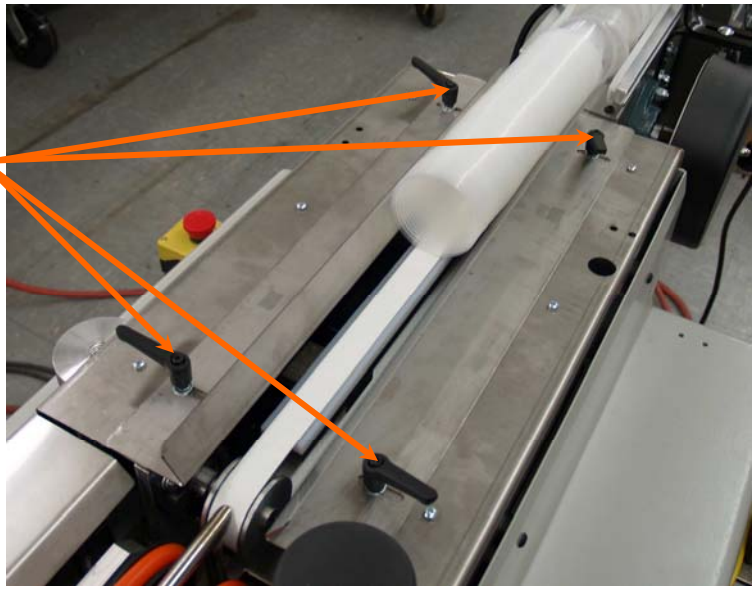
Parameter	Setting	Display	Explanation
Heat Control Method	Pid	ht M	set to PID control
Proportional Band Heat	25	Pb.ht	record setting
Reset Heat	0.80	rE.ht	record setting
Rate Heat	0.00	rA.ht	record setting

10. MECHANICAL ADJUSTMENTS

DJS SERVO COUNTER

INFEED CONVEYOR SIDE GUIDES - Adjust the width to contain the cups and guide them through the infeed conveyor area without restricting the flow of cups.

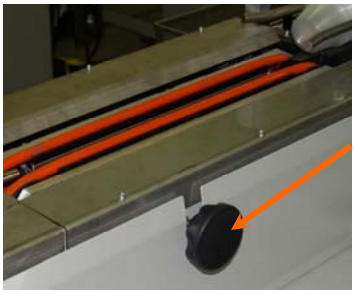
Infeed Conveyor Side Guide Adjustment knobs



COUNTING BELT CONVEYOR - The counting belt adjusts in two directions – Horizontally and Vertically.

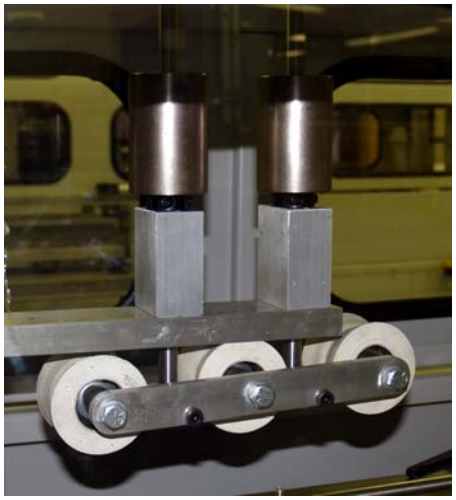
- Adjust the conveyor in and out (horizontally) using the knob located on the side of the counting belt area. This adjustment is used to adequately contain (cradle) the cups as they move through the counting belt area.
- Adjust the conveyor up and down (vertically) using the knob located on the top side of the counting belt area. This adjustment is done AFTER the conveyor has been adjusted horizontally, it is required to raise or lower the flow of cups as they enter the stripper/gripper area. The flow of cups needs to have a slight waterfall onto the counting platform.

Counting Belt Conveyor Height Adjustment Knob



Counting Belt Conveyor Width Adjustment Knob

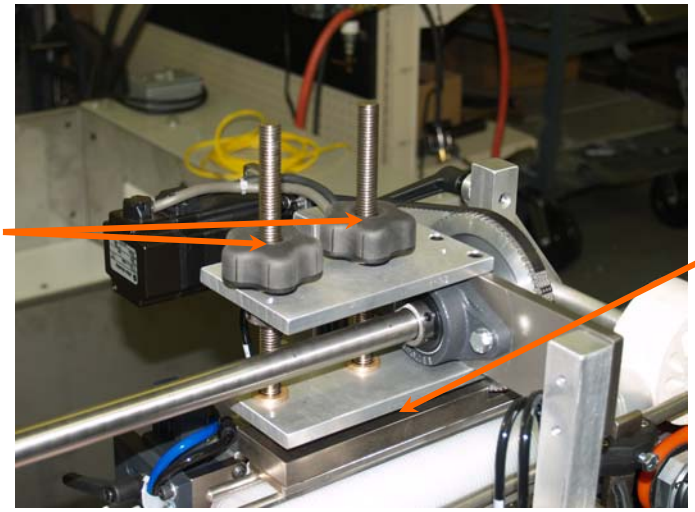
HOLD DOWN ROLLER - The hold down roller should provide adequate pressure to consistently drive the cups through the counting area without deforming the cups.



CUP HOLDDOWN TOP GUIDE - The cup hold down needs to provide enough pressure to consistently guide the cups through the counting area without allowing the cup rims to change angle as they pass through the counting eyes. The purpose of the cup hold down is to help keep the rim perpendicular to the counting platform and hold the rims down onto the counting platform.

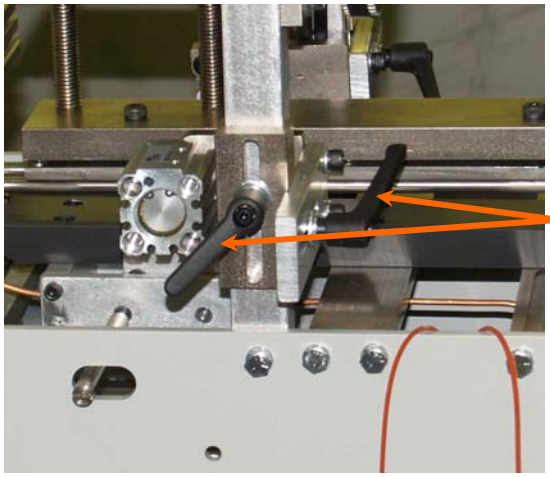
Note: Excessive top guide pressure may cause undo wear on components.

Cup Hold Down Top Guide Adjustment Knobs



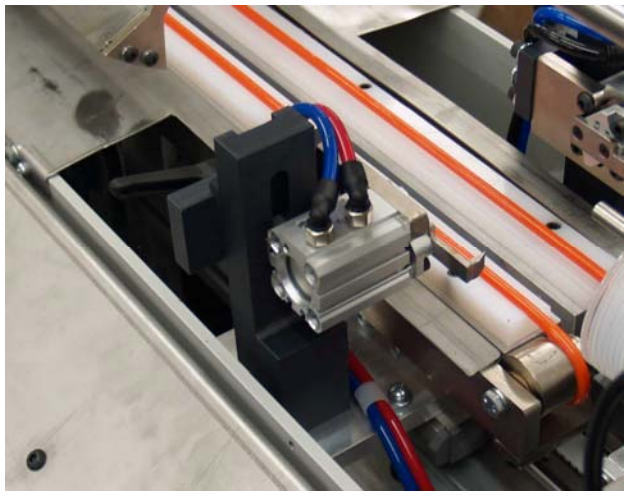
Cup Hold Down Top Guide

GRIPPER FINGERS - The adjustment is to position the gripper fingers relative to the rim of the cups. It is made with the cup hold down sitting on top of the stack of cups. The gripper fingers need to provide a maximum clearance between it and the cup rim when the gripper solenoid is not actuated. The gripper fingers should be adjusted vertically so that it will contact the stack as close to the centerline of the cup as possible.



Gripper Height and Width Adjustment Knobs

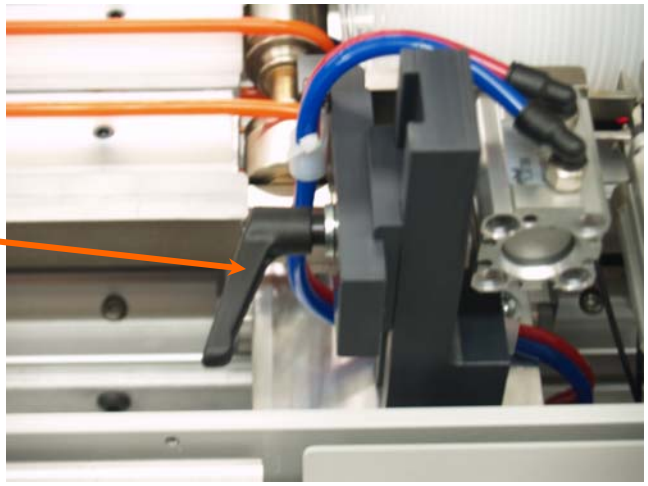
STRIPPER CAR - The position of the stripper car is set after the gripper finger and the stripper finger position have been established. This adjustment is made through the HMI panel by adjusting the "Stripper Home Offset". Set the home position so that the stripper fingers are on the same plane, with respect to the travel of the cups, as the gripper fingers.



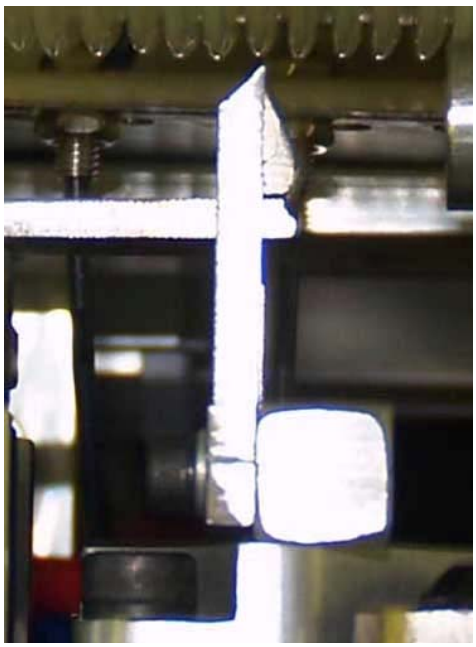
STRIPPER FINGER HEIGHT - The height of the stripper finger is relative to the position of the gripper finger around the center of the cup. Loosen the mounting on the vertical stripper bar and raise or lower the stripper finger until the proper height is set, making sure that the gripper finger and the stripper finger are not in contact with each other throughout the full range of stroke during actuation. Lock firmly in that position.

STRIPPER FINGER WIDTH - The stripper finger widths should be adjusted with a solid stack of cups in the counting area. The counting area side guides are to be set to restrict the stack side movement at this time. Manually extend the stripper finger and adjust the whole mechanism inward until the tip of the fingers contact the sidewall of the cup, between the rims. Check to see that this is the full extension of the solenoid and then lock in place. Allow the fingers to retract and make sure there is a maximum of clearance between the fingertip and the rims of the cups.

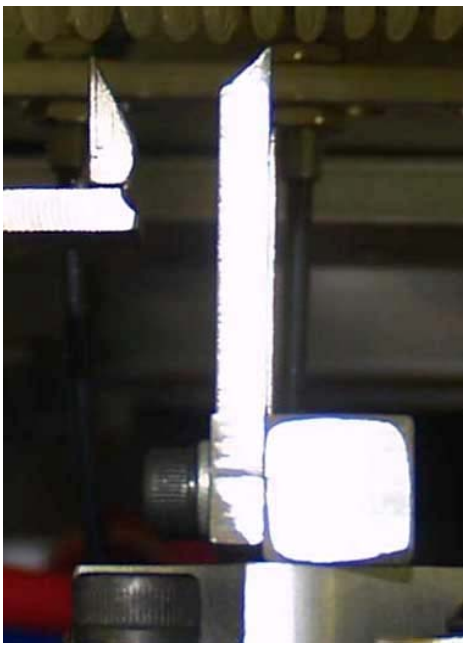
Stripper Height and Width Adjustment Knobs



STRIPPER/GRIPPER ALIGNMENT - The strippers and grippers must be aligned so that they enter between the same two cup rims. They also need to be aligned so that both sets of strippers and grippers enter between the same two cup rims from side to side. The stripper starting position is adjusted with the stripper home offset (see supervisor setup screen.)

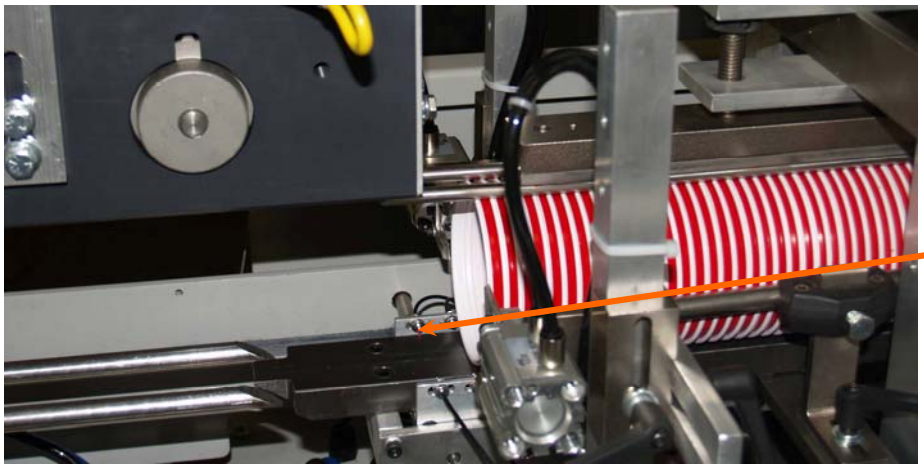


CORECT ALIGNMENT

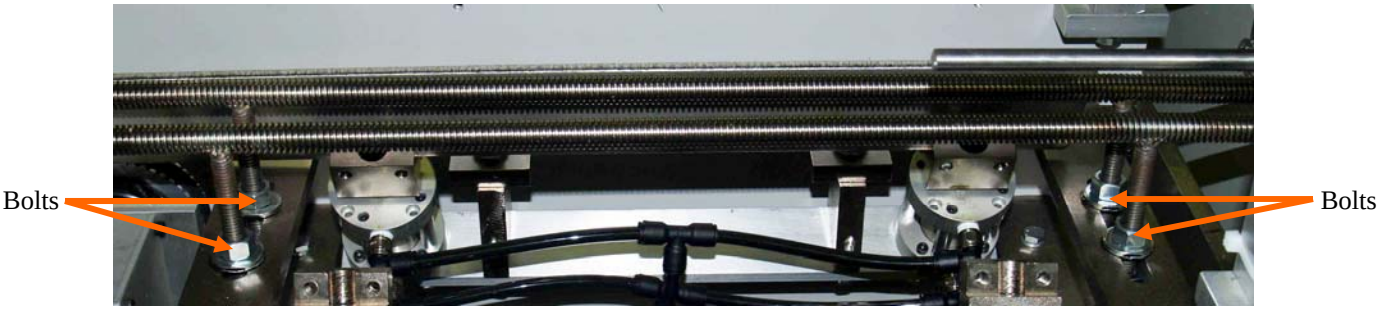


INCORECT ALIGNMENT

COUNTING EYES - The counting fiber for the primary counting eye should be located approximately 1 to 2 rims downstream from the gripper contact point. This adjustment is best done when the cups are moving and is made to move the grippers into position that will allow them to actuate into the gap between the cup rims rather than on top of the cup rims. Turning the counting eye adjustment shaft makes this adjustment. Turning adjustment shaft **CCW** moves the counting eyes downstream, and turning them **CW** moves them upstream.

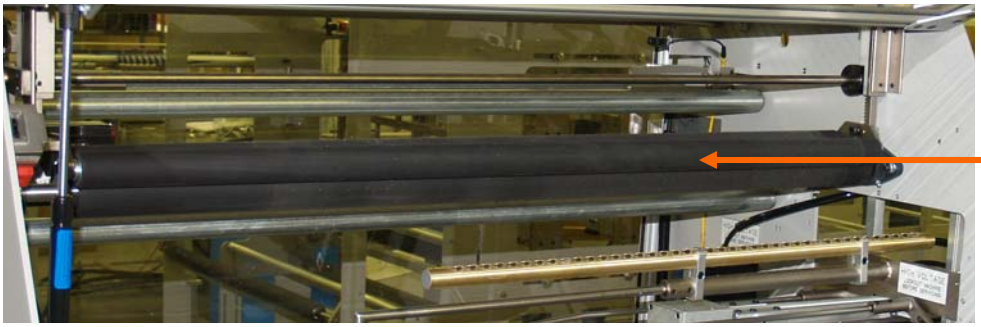


TRANSFER RAILS - The transfer rails can be adjusted vertically and in and out by loosening the bolts, moving the rails to the desired position, and re-tightening the bolts.

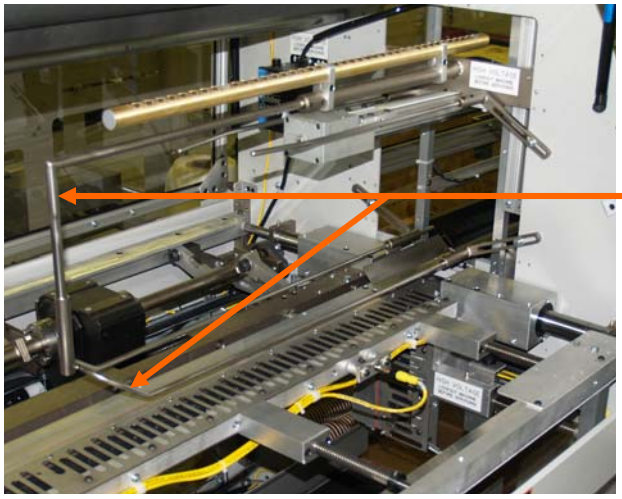


DJS PACKAGER

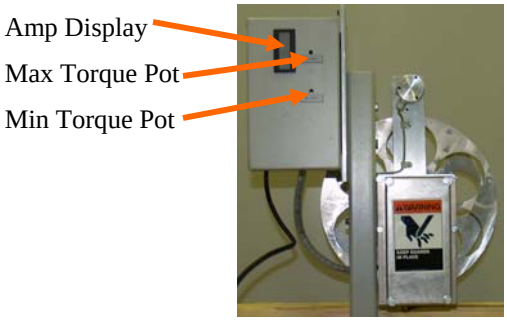
FILM HOLD DOWN ROLLERS - The hold down rollers should be adjusted to provide adequate pressure to consistently feed the film without slippage. Too much pressure will cause excessive wear on the rollers or bearings.



FILM GUIDE AND SPREADERS – Adjust the film guide bar to allow for the proper length of bag for the product, while having enough trim for consistent take up without breaking. Adjust the width of the film spreaders to allow a minimum clearance to load the product into the film and as high as possible, so as to not put excessive stress on the seals, when the jaws open.



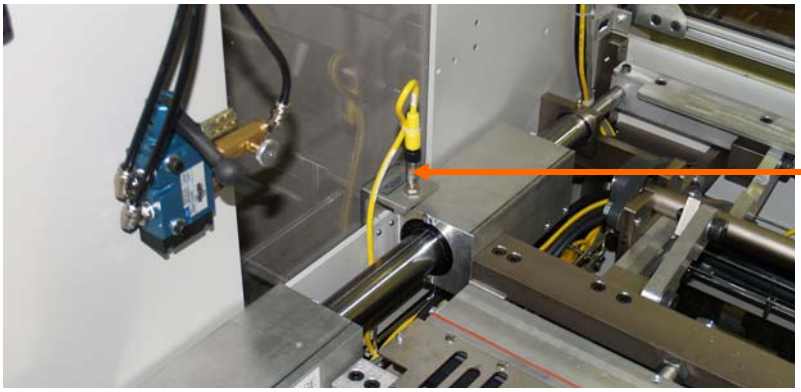
TRIM WIND-UP – Adjust the trim wind up to allow for enough tension, so that the trim is taken up quickly enough to keep up with the speed of the packager film feed, without excessive tension. If the trim does not wind up quickly enough, keeping tension on the film, the trim tail will get cut off in the vertical jaws. Too much tension will tend to break the trim web. Adjust the tension of the magnetic particle clutch with the min & max torque trim pots on the power supply. The min trim pot is adjusted to set the tension when the spool is empty. The max trim pot is adjusted to set the tension when the spool is full. The min setting is adjusted with the potentiometer follower arm down with the spool empty & the max setting is adjusted with the follower arm raised. The max setting should be approximately 2 times the min setting. Use the display showing amperage as an indication of torque. Changing the min setting can affect the max setting & vice versa.



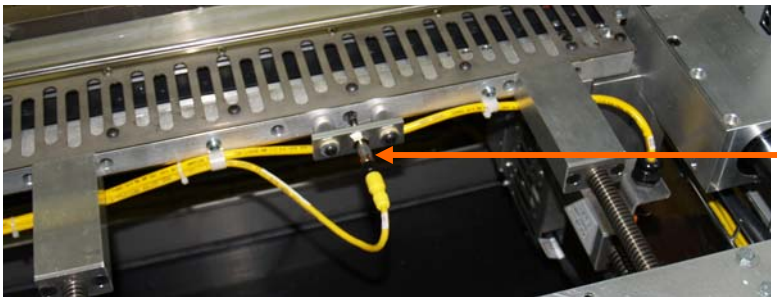
JAWS GRIPPING ALIGNMENT – Make sure that the heater jaw gripper rubber makes contact evenly with the solid jaw to achieve proper gripping of the film while sealing and for holding of the weight of the finished package.

SEAL BAR ALIGNMENT – Adjust the solid jaw with the threaded rods so that the seal bars make consistent even contact with the Teflon surface of the rubber back-up. This should be adjusted to have consistent sealing pressure along the contact points of the entire vertical and horizontal sealing edges. A good way to make a test is by closing the jaws on a piece of paper to see the crease that is created with the blade contact. Make sure that this crease is consistent along the entire length of the vertical and horizontal jaw.

JAWS CLOSE PROX SWITCH – Adjust so that when the jaws are in the proper jaws closed / seal release position, (see jaws servo parameters) this switch is just barely actuated. This will give the most sensitive response with the jaws closed or jaws open jam condition. This should be adjusted in conjunction with the jaws open or jaws closed current limit (see supervisor servo parameters), which triggers these jam conditions, only when this switch is not actuated. This switch must remain actuated once the jaws are closed, through the entire sealing process.

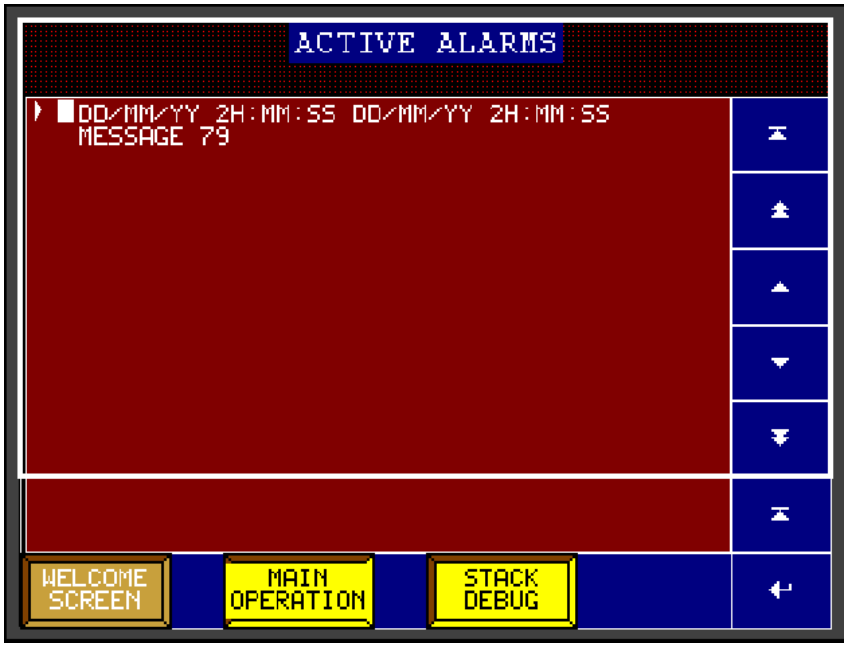


SEALBAR MOTION DETECT PROX SWITCH – Adjust so that when the jaws are in the open position, this switch is just barely actuated. This will give the most sensitive response. If the sealbars start to move before the jaws get closed, the jaws close sealbar prox jam is actuated. In other words, if the sealbar motion detect prox goes off before the jaws closed prox is actuated, this jam condition will occur.



11. SYSTEM TROUBLESHOOTING

HMI DIAGNOSTIC ALARMS



ALARM DESCRIPTIONS (SERVO CUP COUNTER)

CUP COUNTER GUARD DOOR OPEN or NOT RESET

This message indicates that a guard door is open and the system is not ready to operate. Close all guard doors and press the system reset PB to reset safety interlocks.

CUP COUNTER NOT IN AUTO / PRESS CYCLE START or SEE MESSAGE/s ON MAIN OPERATION SCREEN

This message indicates that the cup counter is not in auto mode. Press the cup counter system reset to go to auto mode. Check for messages on the Main Operation screen for reasons for not going into auto mode.

CUP COUNTER CYCLE STOPPED PRESS CYCLE START WHEN READY

This message indicates that the cup counter cycle is not enabled. Press the cycle start to enable.

CUP COUNTER CYCLING AT A FASTER RATE THAN PACKAGER

This message indicates that the Servo Counter in overrunning the packager. Either the Servo Counter cycle rate must be decreased or the packager cycle rate must be increased by changing parameters. The Servo Counter will continue to reject stacks.

E-STOP PRESSED or NOT RESET

This message indicates that an E-Stop PB has been actuated and the system is not ready to operate.

GRIPPER JAM or CUPS NOT COUNTING

This message indicates that there could be a jam in the counting area of the Servo Counter. This message appears after a time delay and no cups were detected by the Primary count eye, with the Counting Belt moving. The Servo Counter is not ready to operate.

COUNTING BELT DRIVE FAULT (AXIS 1)

A fault has occurred with the counting belt servo drive. The Servo Counter is not ready to operate. An error code will be displayed on the drive inside the main enclosure, reference the drive manual for a listing of the possible error codes.

COUNTING BELT DRIVE NOT ENABLED (AXIS 1)

The counting belt servo drive is not enabled. Press the system reset PB to enable.

STRIPPER DRIVE FAULT (AXIS 3)

A fault has occurred with the stripper servo drive. The Servo Counter is not ready to operate. An error code will be displayed on the drive inside the main enclosure, reference the drive manual for a listing of the possible error codes.

STRIPPER DRIVE NOT ENABLED (AXIS 3)

The stripper servo drive is not enabled. Press the system reset PB to enable.

STRIPPER DRIVE NOT HOMED (AXIS 3)

The stripper servo drive is not homed. Press the system reset PB to home.

PACKAGER LOADER DRIVE FAULT (AXIS 2)

A fault has occurred with the packager loader servo drive. The Servo Counter is not ready to operate. An error code will be displayed on the drive inside the main enclosure, reference the drive manual for a listing of the possible error codes.

PACKAGER LOADER DRIVE NOT ENABLED (AXIS 2)

The packager loader servo drive is not enabled. Press the system reset PB to enable.

PACKAGER LOADER DRIVE NOT HOMED (AXIS 2)

The packager loader servo drive is not homed. Press the system reset PB to home.

CUP COUNTER / STRIPPER SEQUENCE CYCLING AT A FASTER RATE THAN OVERHEAD LOADER

This message indicates that the Servo Counter is overrunning the overhead loader. Either the Servo Counter cycle rate must be decreased or the overhead loader cycle rate must be increased by changing parameters. The Servo Counter will continue to reject stacks.

ALARM DESCRIPTIONS (PACKAGER)

PACKAGER NOT READY / PRESS CYCLE START or SEE MESSAGE/s ON MAIN OPERATION SCREEN

This message indicates that the packager is not in auto mode. Press the packager cycle start to go to auto mode. Check for messages on the Main Operation screen for reasons for not going into auto mode.

BULK MODE IS ENABLED / PACKAGERS NOT READY

This message indicates that the system is in bulk mode and will reject all stacks.

TRIM TAIL IS BROKEN / NOT ATTACHED

This message indicates that the trim tail is broken with the spool. Tie the trim tail & press the system reset PB to restart

EXTERNAL SAFETY STOP ACTIVE or NOT RESET

This message indicates that an E-Stop PB has been actuated and the system is not ready to operate. Pull all E-Stop PB operators out and press the system reset PB to reset safety interlocks.

PACKAGER CYCLE STOPPED PRESS CYCLE START WHEN READY

This message indicates that the packager cycle is not enabled. Press the packager cycle start to enable.

E-STOP PRESSED or NOT RESET

This message indicates that an E-Stop PB has been actuated and the system is not ready to operate. Pull all E-Stop PB operators out and press the system reset PB to reset safety interlocks.

PACKAGER GUARD DOOR OPEN or NOT RESET

This message indicates that a guard door is open and the system is not ready to operate. Close all guard doors and press the system reset PB to reset safety interlocks.

JAWS DRIVE FAULT (AXIS 5)

A fault has occurred with the jaws servo drive. An error code will be displayed on the drive inside the main enclosure, reference the drive manual for a listing of the possible error codes. Press the system reset PB to reset drive.

JAWS DRIVE NOT ENABLED (AXIS 5)

The jaws servo drive is not enabled. Press the system reset PB to enable.

JAWS DRIVE AT NEGATIVE (CLOSE) END LIMITS (AXIS 5)

The jaws servo motor is at the soft closed end limit set up in the program. Jog the machine open and / or press the system reset PB to home.

JAWS DRIVE AT POSITIVE (OPEN) END LIMITS (AXIS 5)

The jaws servo motor is at the soft open end limit set up in the program. Jog the machine closed and / or press the system reset PB to home.

JAWS NOT HOMED (AXIS 5)

The jaws servo motor has lost the home reference position. Press the system reset PB to home.

JAWS CLOSE AMPERAGE JAM CONDITION

The jaws servo motor has reached the set amperage limit while closing. The jaws have stopped and moved to the open position. Check for possible product caught between the jaws and / or check the parameter in the Jaws Setup screen.

JAWS OPEN AMPERAGE JAM CONDITION

JAWS CLOSE PROX JAM CONDITION

DISCHARGE CONVEYOR FLIGHT NOT DETECTED or CONVEYOR NOT RUNNING

FILM FEED DRIVE FAULT (AXIS 6)

A fault has occurred with the film feed servo drive. An error code will be displayed on the drive inside the main enclosure, reference the drive manual for a listing of the possible error codes. Press the system reset PB to reset drive.

FILM FEED DRIVE NOT ENABLED (AXIS 6)

The film feed servo drive is not enabled. Press the system reset PB to enable.

FILM FEED NOT HOMED (AXIS 6)

The film feed servo motor is no longer homed. Press the system reset PB to set the film feed home position.

FILM REGISTRATION MARK NOT DETECTED

The packager film has fed and the registration eye was not actuated, therefore the jaws have locked open, with the packager no longer in Auto Mode. Check the film path to make sure the registration marks on the film are lined up with the eye and the sensitivity adjustment is set correctly. The "Film Registration" must be enabled for this error to occur.

SERVO CUP COUNTER TROUBLESHOOTING

Consistent over counts being obtained:

The counting eyes are not sending count signals to the PLC properly.

* Check sensitivity of the eye for proper transition response as the rims enter and leave the beam.
* Check the PLC input LED indicators to see that it is functioning properly.

Consistent one over and then one under counts obtained:

The counting eyes are not located in the correct position relative to the gripper position. Because of this the grippers are not contacting the cups directly between the cup rims.

* The eye beam should be located one to two rims downstream from the gripping point of contact. Adjust the eye either ahead or back until the grippers grab in between the rims and not on the rims.

Cups will not pass smoothly through the counting eyes:

The cups are moving through the counting eyes in an uneven fashion because of belt slippage or inadequate hold down pressures.

* Check the side guide and top hold down guide pressures to make sure they are not restricting the flow.
* Check the hold down roller pressure on to of the belts to insure proper pressure. Too much pressure will stall the servo motor and too little pressure will allow the cups to slip on the counting belt.
* Check the tension of the counting belt and other mechanisms that drive it. Check clamp collars on the drive shafts.

Stacks are not being stripped and gripped cleanly:

The cups are being mishandled when the stack separation takes place.

* Extend the stripper finger to see if the fingers are engaging between the rims properly before the stripping takes place. Adjust positions if necessary.
* Extend the gripper finger to make sure the cups are being retained properly.

Stacks are not being pushed onto the transfer belt by servo stripper properly:

The stacks are being mishandled when separating and placing the stack onto the transfer belt.

* Check the speed of the stripper carriage as it moves forward. Adjust the speed so that the transition is as smooth as possible.
* Check that the stripper fingers are not "grabbing" the cup as the stripper carriage reverses its direction. If this is the case readjust the stripper fingers.

VB PACKAGER TROUBLESHOOTING CHART

Problem	Possible Cause	Action
	FILM FEED	
Film does not feed correct distance causing tight or split package	Distance set too short in recipe in HMI	Adjust film feed parameter in HMI recipe
	Wrong recipe loaded from HMI	Load correct recipe from Job Selection Menu in HMI
	Film hold down rollers not seated properly on film feed drive roller	Adjust tension on hold down roller using handles on front of packager, then lock in place
	Film roll not resting properly on film cradle rollers or film roll edge guides set too tight on edges of film roll	Position film roll correctly on rollers, adjust guides loosely on edges of film roll
	Film is incorrectly threaded in machine	Check threading diagram on machine and rethread as necessary
	Film unwind motor not turned on, speed set too slow, film unwind motor direction set wrong	Turn film unwind motor switch on, adjust speed to lower dancer during cycle, switch motor direction
Film does not feed at all	Film hold down roller not seated properly on film feed drive roller	Adjust tension on hold down roller using handles on front of packager, then lock in place
	Film unwind drive belt not on pulleys	Connect drive belt and tension accordingly
	Film unwind drive not enabled or fuse blown	Check electrical connections and fuses on drive
	System not reset or guard door opened	Check alarm messages, Close doors and/or reset packager
	SEAL ASSEMBLY	
Seal assembly does not open when product enters film	Packager not in Auto	Check for alarms, reset packager
	Packager cycle not initiated	Check for proper product detection on infeed or product loaded sensor
	Jam or binding in seal assembly causing 'Jaws Open Jam' condition	Check for blockage, misalignment, correct and reset the system
	Jaws open current limit setting too low in HMI recipe	Adjust current setting only if absolutely necessary
Seal assembly does not close after opening	Film did not feed	Refer to film feed troubleshooting items
	Jam or binding in seal assembly causing 'Jaws Close Jam' condition	Clear jam and reset machine, close seal assembly with push button
	Jaws close current limit setting too low in HMI recipe	Adjust current setting only if absolutely necessary
	Film registration mark not detected	Align mark with sensor, reset, close jaws, reset

SEALING PROBLEMS

Top or bottom seal on package not completely sealed or open	Film feed distance too short	Refer to film feeding trouble-shooting section
	Seal is not adequately cooled, dwell too long, temperature too high	Adjust dwell in HMI recipe, reduce temperature
	Seal bar damaged, bent, or dirty	Replace or clean seal bar
	Not enough drape in film feed	Increase drape distance in recipe
	Teflon tape on backup rubber dirty, worn, missing	Clean or replace Teflon tape
Film sticking to Teflon tape on backup jaw	Teflon tape on backup rubber dirty, worn, missing	Clean or replace Teflon tape
	Print on film is transferring to Teflon tape	Adjust registration offset in recipe or film eye position mechanically, check film supplier for film ink issues
Package does not seal properly	Heaters not up to temperature or temp set too low	Allow adequate warm up time until temperature stabilizes on controller
	Heater(s) not working	Look for errors on Watlow controller, check connections, replace heater if necessary
	Seal assembly (jaws) not closing to seal position	Check values in recipe in HMI and set to documented values
	Backup rubber and tape missing or not in backup jaw correctly	replace rubber and/or tape if necessary
	Grippers not properly contacting film	Check/replace gripper rubber, adjust gripper tension springs if necessary
Vertical seal open or not sealed properly	If trim wind unit is used, trim may be broken	Retie trim to trim spool, check & adjust tension
	If trimless seal, end of film may not be far enough forward in seal area	Adjust film roll and threading positions to move film into vertical seal area, adjust film guide & film spreaders

12. RECOMMENDED MAINTINANCE

LUBRICATION

Linear Bearings	Monthly	Light weight grease
Linkage Needle Bearings	Quarterly	Medium weight bearing grease
Bearing Units	Quarterly	Medium weight bearing grease

BELTS

Periodically inspect conveyor belts and drive belts for wear and proper tension. Adjust and / or replace as necessary.

SEALING

Periodically inspect seal bar blades for film build up and / or damage. Clean blades, while warm, with soft cloth only. Do not use any hard objects (including plastics) that can scrape or damage coating. Replace once the Teflon coating is worn, as film build up will increase once the coating is damaged.

Periodically check the seal bar temperatures and run with as low a temperature as possible, while still maintaining a proper seal. The higher the temperature the more the film will tend to build up.

Examine the Teflon tape & back up rubber to insure that they are properly in place and not damaged or worn.

Examine the gripper rubber to insure that it is not damaged or worn.

Check the jaw alignment, as the jaw plate grippers should line up evenly with the back up jaw, as the jaws close and make contact. This will allow the jaws to grip the film firmly above and below the seal bar for proper sealing. The seal bar should also come against the back up rubber evenly and in the center of the back up rubber for proper cut off.

MISC

Check to make sure that all hardware is tight and in place and that all wiring and tubing is routed in a way to clear any moving mechanisms.

13. SPARE PARTS LIST

DESCRIPTION	PART NUMBER	SYS QTY
F0010477 JAW COMMON PARTS 42X8 TL		
BEARINGS		
1/2" BEARING w/ SEAL	XLEC08UU	10
MISC. COMPONENTS		
SPRING	S-42	2
JONES COMPRESSION SPRING	SPRING,.50X.100X6.00	5
MISC. ELECTRICAL COMPONENTS		
AB 8mm INDUCTIVE PROX w/ MICRO CABLE	872CD3NP8D4	3
41.5" HEATER 240V	F0000151-6	1
8" HEATER	F0000151-4	1
F0010476 JAW ASSY RH 42X8 TL		
SEALING COMPONENTS		
SEAL BAR MT 8" TRIMLESS VERT RH	F0003474	1
SEALBAR MOUNT 42" LH TRIMLESS	F0005727	1
SEALBAR 8" RH TRIMLESS	F0003729	1
F0014013 SHARPENED PASS THRU SEAL		
SEALING COMPONENTS		
SEALBAR PASS THRU SEAL - 42" RH TL (SHARPENED)	F0012935	1
SILCONE RUBBER BACK UP PASS THRU	F0009573	50"
F0010482 40" DRIVE LINKAGE COMMON PARTS		
BEARINGS		
NB BEARING	TW24UU	8
BEARING	FL-12	4
NEEDLE BEARING	BH1010	12
IPTCI BEARING	UCFL205-16	2
MOTORS		
AB SERVO MOTOR	MPLA310PHK22AA	1
F0010489 40" FILM FEED COMMON PARTS		
BEARINGS		
IPTCI 2 BOLT FLANGE BEARING	UCFL204-12	2
KILLIAN BEARING	F300	4
BRONZE FLANGE BEARING	6338K419	1
BELTS		
TIMING BELT	200XL037	1
MISC. COMPONENTS		
BIMBA CYLINDER	SR-091.25-DPY	1
MOTORS		
AB SERVO MOTOR	MPLA310PHK22AA	1

DESCRIPTION	PART NUMBER	SYS QTY
F0010491 40" FILM UNWIND COMMON PARTS		
BEARINGS		
NB TOP BALL BEARING	TW8UU	4
BELTS		
TIMING BELT	375-5M-15	1
MISC. COMPONENTS		
SPRING	S-42	1
MISC. ELECTRICAL COMPONENTS		
AB 8mm INDUCTIVE PROX w/ MICRO CABLE	872CD3NP8D4	1
MOTORS		
BODINE GEAR MOTOR	6152	1
F0008198 ADJUSTABLE FILM REG. EYE		
MISC ELECTRICAL ITEMS		
BANNER SENSOR	D12SP6FPQ	1
BANNER FIBER OPTICS BLOCK	PIRS1X166UM.4	1
5m CABLE	889PS4AB5	1
F0007901 SERVO COUNTER INFEED		
BEARINGS		
BEARING	SALF20210	2
BELTS		
DRIVE BELT	225L050	1
MISC. ELECTRICAL COMPONENTS		
BANNER SENSOR	D12SP6FPQ	1
PLASTIC FIBER OPTICS CABLE	43PTNJS56FS	1
MOTORS		
BODINE MOTOR	6135	1
F0007904 COUNTING BELT CONVEYOR		
BEARINGS		
KILLIAN BEARING	F-1000-4	2
IPTICI BEARING	UCFL201-8	4
BELTS		
TIMING BELT	200XL037	1
MOTORS & MOTOR CABLES		
AB SERVO MOTOR	MPLA310PHK22AA	1
AB SERVO MOTOR CABLE	2090XXNPMP16S03	1

DESCRIPTION	PART NUMBER	SYS QTY
F0007911 COUNTING EYE		
BEARINGS		
NYLON FLANGE BEARING	6294K86	4
MISC. COMPONENTS		
SPUR GEAR	S2412	3
MISC. ELEC. COMPONENTS		
BANNER SENSOR	D12SP6FPQ	2
PLASTIC FIBER OPTICS CABLE	43PTNJS56FS	2
F0010453 TRANSFER/REJECT COMPONENTS		
MISC. COMPONENTS		
BIMBA FLAT 1 CYLINDER	FOD-091.25-B	4
F0013255 STRIP & GRIP		
MISC. ELEC. COMPONENTS		
AB 8 MM INDUCTIVE PROX w/ MICRO CABLE	872CD3NP8D4	1
AB DC MICRO 4 PIN CORD SET 10m	889DF4AC10	1
MOTORS & MOTOR CABLES		
AB SERVO MOTOR	MPLA310PHK22AA	1
AB SERVO MOTOR CABLE	2090XXNPMP16S03	1
F0012986 OVERHEAD LOADER		
BELTS		
GEAR BELT	800-5M-15	1
MOTORS		
AB SERVO MOTOR	MPLA310PHK22AA	1
F0013943 SIDE DISCHARGE CONVEYOR		
BEARINGS		
IPTCI FLANGE BEARING	SBLF 205 16 G	1
MOTORS		
ORIENTAL AC INDUCTION GEARMOTOR	BHI62ST-18RH	1
MISC. ELECTRICAL COMPONENTS		
AB EYE RETROFLECTIVE	42KLU2LBF4	1
PLASTIC FIBER OPTICS CABLE	43PTNJS56FS	1
F0013865 STACK LENGTH EYE COMPONENTS		
MISC. COMPONENTS		
PHD NON-ROTATING CYLINDER	CTS2U20X1/2-BB	2
MISC. ELECTRICAL COMPONENTS		
AB EYE RETROFLECTIVE 5M	42KLU2LBF4	1

DESCRIPTION	PART NUMBER	SYS QTY
F0013777 TRANSFER AREA - SINGLE LANE		
BEARINGS		
IPTCI 2 BOLT FLANGE BEARING	UCFL204-12	2
MISC. COMPONENTS		
BIMBA FLAT CYLINDER	FO-171.25-B	2
BIMBA CYLINDER - 2" STROKE	042-D	4
MISC. ELECTRICAL COMPONENTS		
SELF CONTAINED PHOTO EYE	PZ-V33P	1
F0013779 TOWER GATE - CHUTE ASSEMBLY		
MISC. COMPONENTS		
BIMBA 1" STROKE CYLINDER	091-DPY	4
BIMBA CYLINDER - DOUBLE ACTING	061.5-DXDE	2
MISC. ELECTRICAL COMPONENTS		
AB MINISIGHT EMTTER	42KLE1EZBF4	1
AB MINISIGHT RECIEVER	42KLRLBF4	1