Vantra™ Series

Intermittent Motion Cartoner

Serial Number: M217012

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Standard Documentation Package

- **OEM (Original Equipment Manufacturer) Documentation**
- **Operator Manual (2 Copies)**
  - Safety
  - Operator Controls
  - Startup/Shutdown
- **Service Manual (2 Copies)**
  - Safety
  - Operator Controls
  - Startup/Shutdown
  - Changeover
  - Components
  - Maintenance
  - Recipe Screens
  - Troubleshooting
- **Job Aids (2 Copies)**
  - Changeover Adjustment Number Settings Chart
  - Changeover Quick Reference Guide
  - Troubleshooting Quick Reference Guide
- **Documentation USB Flash Drive**
  - Electrical Programs & Drawings (dwg or dxf, and pdf)
  - Operator Manual (pdf)
  - Service Manual (pdf)
  - Quick Reference Guide Job Aids (pdf)
  - Changeover Adjustment Number Settings Chart (Excel)
  - Bill of Materials (Excel)
  - Assembly Drawings (pdf)
  - Reassembly Photos (pdf)

Section 1

Safety

General Safety
Safety Precautions
Safety Map
Locking Out the Machine
Safety Circuits
Light Column

General Safety

Guidelines

- The basic safety rules serve as a guide for proper operation of Douglas packaging equipment. Some of the safety concerns in this section apply to specific machine components that may not be present on your machine. All personnel who work with this machine should learn this information.
- The buyer must follow all procedures and precautions. If personnel must deviate or change from the original specifications, he/she should establish appropriate procedures for the continued safe operation of the machine.
- We design and manufacture packaging equipment with due consideration and care for generally accepted safety standards. Proper and safe operation of this equipment depends on using sound and prudent operating, maintenance, and servicing procedures under properly trained supervision.
- Always use proper lifting techniques while operating, loading, maintaining, or troubleshooting the machine.
- Be aware of overhead objects while working in or around the machine to prevent head bumps.
- Be aware of dwell conditions; the machine will start automatically when the condition is satisfied.

Safety Symbols

This unsafe practice will result in severe injury or death.

The use of the word Danger always signifies an immediate hazard with a high likelihood of severe personal injury or death if all personnel do not follow instructions and safety precautions.

This unsafe practice could result in severe injury or death.

The use of the word Warning signifies the presence of hazards or unsafe practices that could result in severe personal injury or death if all personnel do not follow instructions and safety precautions.

This unsafe practice could result in minor injury or property damage.

The use of the word Caution signifies possible hazards or unsafe practices that could result in minor injury or damage to property or product if all personnel do not follow instructions and safety precautions.

Operating Zone

Personnel should establish an operating zone around all machines with a painted guard rail or warning stripe.

- Only the operator(s) and other authorized personnel should work within the operating zone during machine operation.
- Do not keep tools or other equipment within the operating zone.
- Do not be inside the machine while the machine is in operation or attempt to operate the machine while anyone is inside the machine. Always use proper lockout/tagout procedures when personnel enter the machine to prevent startup.

Installation

Only trained and authorized personnel should install electric and pneumatic power sources. Installations must comply with all applicable codes and standards, including those established by OSHA (Occupational Safety and Health Administration, 200 Constitution Ave. NW, Washington DC 20210).

Safety Inspection

Before Starting the Machine

- Install and operate all guards and safety devices.
- Clear all personnel away from the machine.
- Remove any materials, tools, or foreign objects away from the machine.
- Ensure the machine is in operating condition.
- Verify that all indicator lights, horns, pressure gauges, and other safety devices and indicators function correctly.
- Verify that the incoming voltages are correct, as specified in the wiring diagrams.

After Shutdown

- Turn off all pneumatic and electrical power.

General Operating Safety

Before Starting the Machine

- Do not operate this machine until you read and understand the operating instructions. You should thoroughly familiarize yourself with the machine and its controls.
- Never operate a machine with a safety device or guard removed, damaged, or disconnected.
- Always wear safety glasses, hats, shoes, ear protection, or any other required safety equipment.
- Do not start the machine until warning all personnel in the area. We recommend that other personnel move outside the operating zone.
- Never remove warnings displayed on the machine. Replace any torn or old labels.
- Do not wear loose clothing, neckties, or necklaces near an operating machine. Restrain long hair. Do not wear gloves, watches, rings, bracelets, or other jewelry near an operating machine.
- Remove any foreign objects or tools from the operating zone before starting.
- Keep the operating zone free of obstacles that could cause you to fall against the machine.
- Ensure a clean work surface, including proper guarding of platform areas and ladders.
- Keep hands clear of all pinch points.

General Operating Safety (continued)

While the Machine is in Operation

- Never sit or stand on anything that could cause you to fall against the machine.
- Horseplay around a machine at any time is dangerous and prohibited.
- Never operate the machine above specified speeds, pressures, or temperatures.
- Never manually operate any sensors with the power on.
- Keep alert and observe indicator lights and warnings that appear on the machine.
- Never leave the machine unattended while in operation.
- Avoid placing fingers, hands, or any part of your body into the machine or near moving parts when control circuits are energized.
- Do not enter a confined space without first checking for toxic fumes and providing standby personnel on the site. Follow your facility's confined space procedures.
- Do not reach around any guards.
- Be aware of rotating parts on the machine. Do not operate the machine with the protective covers removed.

Stopping the Machine

- Never use a guard door as a means of locking out a machine. Follow appropriate lockout/tagout procedures.
- Energy sources are not always removed from the machine actuators when an emergency stop button is pressed. Never use an emergency stop button as a means of locking out a machine. Follow appropriate lockout/tagout procedures.
- Always wait for the machine to come to a complete stop before opening a guard door.
- Turn pneumatic and electrical power off when the machine is not in use. Lock out the power source for maximum protection.
- Know the emergency stop procedure and locations of the machine's E-Stop buttons.

⚠CAUTION

Repeated use of the emergency stop could result in damage to the machine. E-Stop buttons are not intended for routine cycle stops or maintenance. They should only be used for emergencies: life, limb, or major machine damage.

Do not use emergency stops, guard doors, or safety switches to routinely stop the machine as machine and product damage may result. Use the Cycle Stop buttons to bring the machine to a controlled stop.

General Operating Safety (continued)

General Maintenance Safety

- Do not operate faulty or damaged equipment. Always perform proper service and maintenance procedures.
- Do not service a machine without thorough qualifications. Ensure familiarity with the necessary service tasks.
- Never operate any controls while other people perform maintenance on the machine. Whenever personnel enter the machine's guard package to perform maintenance, a complete machine lockout and tagout must be performed.
- When personnel are performing routine operational tasks, such as clearing jams or making minor adjustments, and a guard door could be closed behind them, personnel must use the lockable Machine Entry switch located on the HMI control panels to prevent machine motion from being reactivated while they are still inside the machine.
- Do not bypass a safety circuit.
- Always use the proper tool for the necessary service.
- Never open covers that house electrical components when the power is on.
- Only perform maintenance on a machine in motion when properly trained and required to do so.
- Relieve all pneumatic pressure before performing maintenance or loosening connections on any pressurized system.
- Turn off all pneumatic and electrical power unless required for specific servicing. Lock out the power source for maximum protection.
- Turn off and lock out the power when replacing fuses.
- A malfunctioning gearbox or motor may become hot, causing severe burns. Always allow time to cool before performing maintenance on a gearbox or motor.

Electrical Safety

Before Starting the Machine

- Clear all personnel away from the machine before applying power to any equipment.
- Never operate a machine with a safety device or guard removed, damaged, or disconnected.
- Close all covers on the junction panels.
- Ground and overload protect all electrical equipment.
- Confine all electrical connections within a sealed junction box.

Operating the Machine

- Do not bypass a safety device.
- Never open covers that house electrical components when the power is on.
- Always assume that the power is on; treat all conditions as live. This practice assures a cautious approach that may prevent an accident or injury.
- To remove the load from the circuit or equipment, open the disconnect or breaker and lock in the open position. Lock out the power source for maximum protection.

Stopping the Machine

- Turn electrical power off when the machine is not in use. Lock out the power source for maximum protection.

Electrical Safety (continued)

Electrical Maintenance

- Only trained and authorized electricians should perform electrical/electronic maintenance and service.
- Turn off all electrical power unless required for specific servicing. Lock out the power source for maximum protection.
- Turn off and lock out the power when replacing fuses.
- Use the proper test equipment to ensure an open circuit. Check the test equipment at regular intervals.
- Allow several minutes for power to dissipate from any disconnected energy sources before handling associated wires.
- Give the capacitors time to discharge.
- You may need to troubleshoot on live equipment. Under special circumstances, take the following precautions:
    - Clear all tools and personnel away from the area.
    - Take extra safety measures in damp areas.
    - Be alert and avoid any outside distractions.
- Open control panel doors only when checking out the electrical equipment or wiring. After closing the panel door, ensure the disconnect handle mechanism functions properly.

Pneumatic Safety

Operating the Machine

- Never operate a pneumatic system unless covers, safety devices, and indicators are operating and in place.
- Never operate a pneumatic system above the specified pressure.
- Never loosen any pneumatic connection when the system is under pressure.
- A pneumatic system retains the pressure to complete its intended motion even after the power is off. Take care to avoid injury.

Pneumatic Maintenance

- Relieve all pneumatic pressure before performing maintenance or loosening connections on any pressurized system.
- Turn off all pneumatic and electrical power unless required for specific servicing. Lock out the power source for maximum protection.

Cleaning Safety

Frame and component finishes shall not be warranted if the equipment is installed in a wet environment or exposed to harsh cleaners or high-pressure wash downs.

- Do not use toxic or flammable solvents to clean a machine.
- Always clean up spills around the machine as soon as possible.
- Always clean up lubricant that has leaked onto the floor as soon as possible to prevent slipping.
- Keep the operating zone free of obstacles that could cause you to fall against the machine.
- Never clean a machine in operation.
- On equipment that includes wireways, close and latch all covers before starting the cleaning cycle.
- Never wash down or subject equipment to conditions causing moisture condensation on non-washdown components. Serious equipment damage could result. Under no circumstances should water, or any other liquid, be directed at any part of the machine.

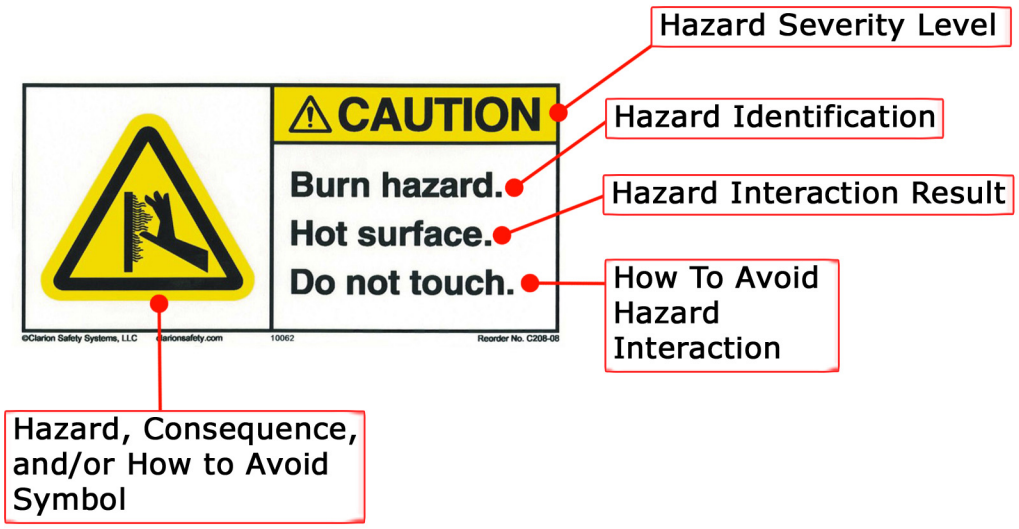
Electrical Hazards

- Lock out pneumatic and electrical devices prior to cleaning a machine.
- For a cleaning cycle controlled from a remote or automated control center, establish fail-safe procedures to avoid automatic startup while servicing equipment.
- Keep electrical panel covers closed and powered off when cleaning a machine. Lock out the power source for maximum protection.

Safety Precautions

Safety Labeling

Color-coded labels are present on the machine to warn the operator of different levels of machine hazards. The diagram below illustrates industry standard safety labeling. Always pay attention to all safety labeling used on the machine. The following pages address the safety stickers that may or may not be present on your machine. Contact your replacement parts representative for replacement stickers.



Danger Safety Precautions

DANGER Red means **Danger** and indicates immediate hazards that will result in severe personal injury or death.

The **Danger - Electrical and Pneumatic Power Sources Present** sticker may be found on electrical cabinets that contain a main disconnect handle.

The **Danger - Hazardous Voltage** sticker is used for multiple and/or remote sources of power and may be found on electrical cabinets that do not contain a main disconnect handle.

The **Danger - Machine Starts Automatically Keep Away** sticker may be found on any guard door that can be opened without a tool.

The **Danger - Moving Parts Can Cause Serious Personal Injury** sticker may be found on any guard door where personnel can enter the machine and have the guard door close completely behind them. This sticker may not be present on machines that do not have the Machine Entry No/Allowed selector switch on an HMI control panel.

Warning Safety Precautions

Orange means **Warning** and indicates hazards that could result in severe personal injury or death.

The **Warning - Crush Hazard** sticker may be found near openings between the guarding and product entry and exit points.

The **Warning - Pinch Point** sticker may be found at entry and exit points.

The **Warning - Read and Understand the Operator's Manual** sticker may be found on the HMI control panels.

Caution Safety Precautions

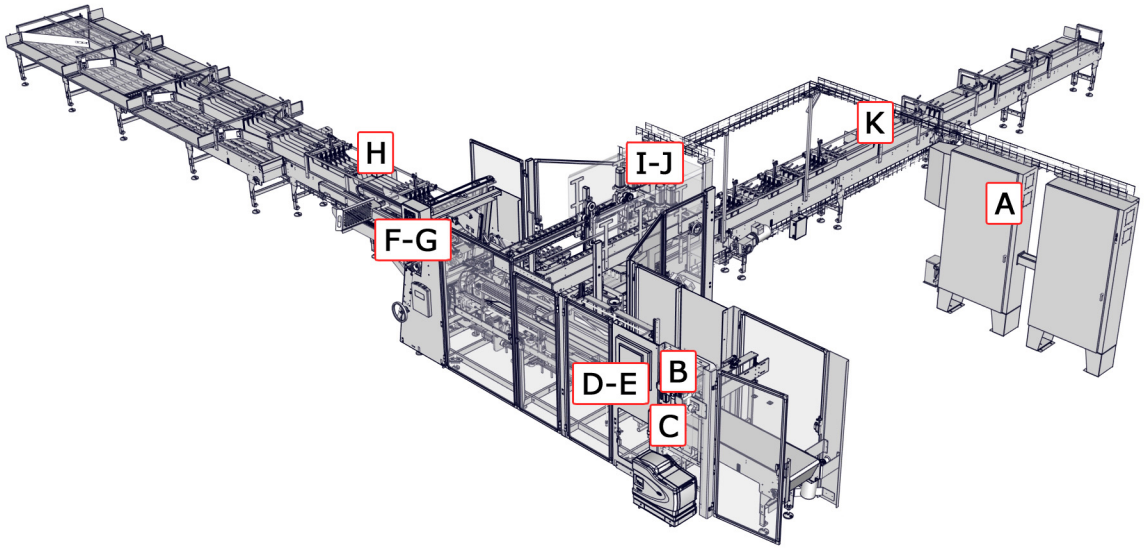
Yellow means **Caution** and indicates hazards that could result in minor personal injury, product, or property damage.

Electrical Safety Precautions

The **Lightning Bolt** sticker indicates an enclosure that contains electrical parts. High voltage may also be present.

The **Lightning Bolt with Danger** sticker means **Danger** and indicates an arc flash and shock hazard and may be found on all electrical cabinets.

Safety Map

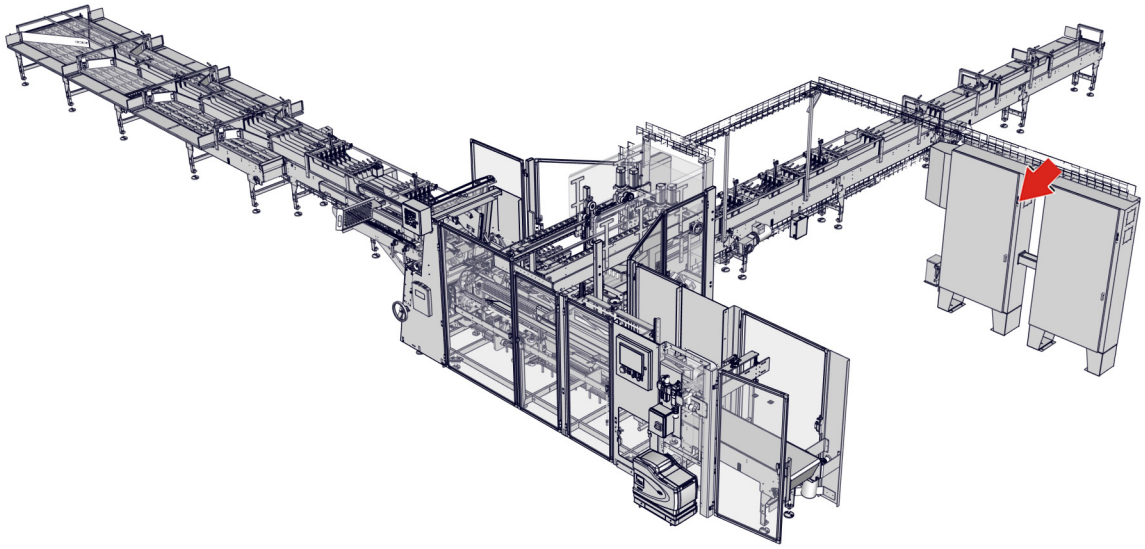


Location	Description	Location	Description
A	Main Disconnect	G	E-Stop Button
B	Air Disconnect	H	E-Stop Button
C	Glue Disconnect	I	Machine Entry Selector Switch
D	Machine Entry Selector Switch	J	E-Stop Button
E	E-Stop Button	K	E-Stop Button
F	Machine Entry Selector Switch		

Locking Out the Machine

NOTICE Please refer to your facility's safety literature for specific lockout/tagout procedures.

Main Disconnect



The main disconnect lockout device contains a switch designed to lock out electrical energy going to the machine, except for the glue system, when the switch is turned off. To lock out electrical energy to the machine, pull the handle down to the off position.

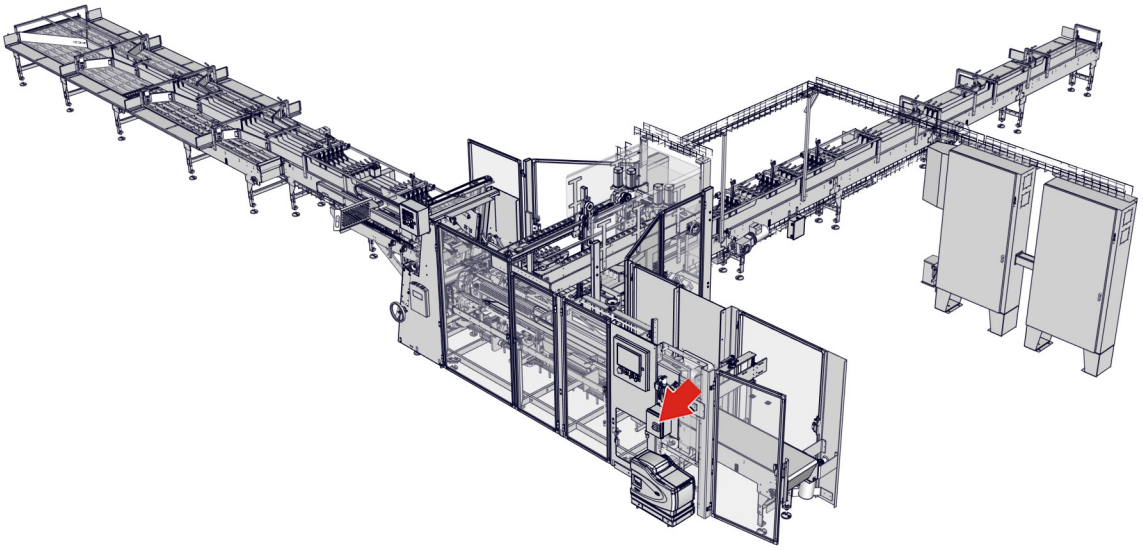
A locking device can be placed on the main disconnect handle when machine lockout is necessary. This prevents the machine from accidentally powering up.

Main Disconnect (continued)

Serious injury or death can occur when the main disconnect is turned off because power at the top of the main disconnect is live (hot). It will remain live until the main power source is turned off.

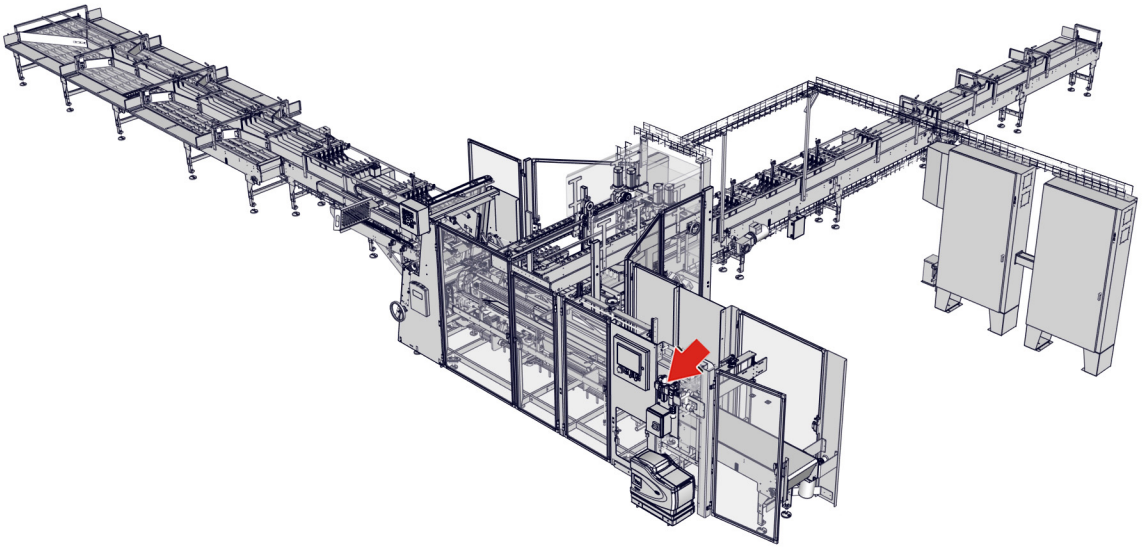
Always perform the lockout/tagout procedure required by your facility before entering the guard package or performing any maintenance.

Glue Disconnect



The glue disconnect controls electrical energy going to the glue system and is located near the glue tank. To lock out electrical energy, rotate the disconnect switch to the off position. The handle may be secured with a locking device.

Air Disconnect



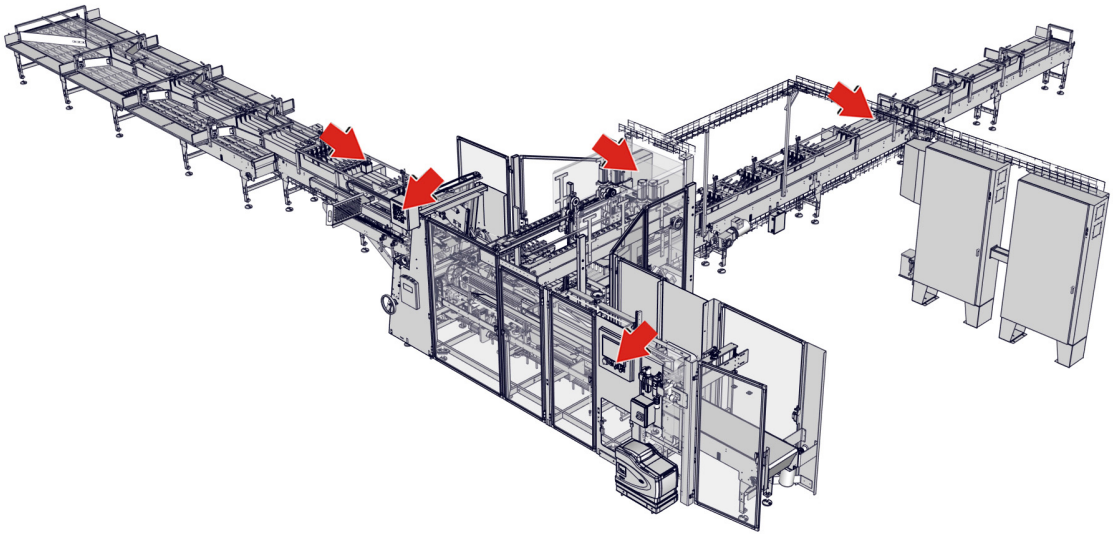
The machine has an air pressure sensor which displays the current psi reading. Machine operation will automatically shut down if the air pressure drops below the minimum psi and a low air pressure message will appear on applicable HMI screens.

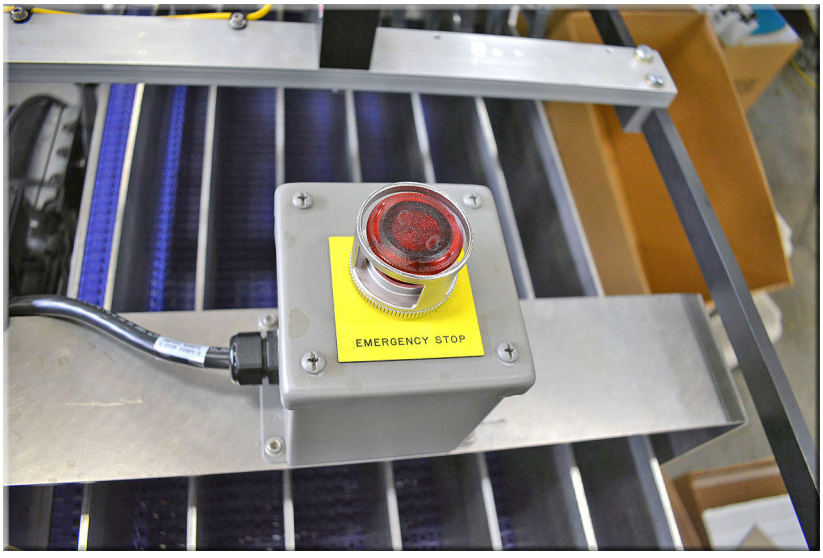
To resume production, press the Reset button after the air pressure has reached the operating pressure.

Turn the black and blue valve to disrupt and dump the air supply to the machine. To allow pneumatic pressure to return to the machine, turn the valve back to the shut position.

Safety Circuits

Emergency Stop Buttons





The E-Stop buttons are one of the main safety features of this machine. The buttons are part of a dual-redundant circuit.

E-Stop buttons are located on the control panel and other strategic points around the machine.

The E-Stop is an input to the safety control system that is responsible for disabling hazardous output devices. These devices include: servo drives, motor starters or contactors, VFDs, and air pressure relief valves. The air pressure relief valve dumps a portion of the machine's air supply to components plumbed with a blue airline. This is known as the controlled air system.

Emergency Stop Buttons (continued)

CAUTION

Repeated use of the emergency stop could result in damage to the machine. E-Stop buttons are not intended for routine cycle stops or maintenance. They should only be used for emergencies: life, limb, or major machine damage.

Do not use emergency stops, guard doors, or safety switches to routinely stop the machine as machine and product damage may result. Use the Cycle Stop buttons to bring the machine to a controlled stop.

Guard Door Interlock Switches

A magnetically coded guard door interlock switch is mounted on guard doors that may be opened without the use of a tool.

The guard door switches are connected in series with dual-redundant circuits. These circuits are monitored by the safety control system and will stop the machine immediately if either circuit opens. This protects the operator from the moving parts of the machine and reduces the probability of injury.

The switch sensor is mounted to the machine frame. The actuator is mounted to the corresponding guard door. If the indicator light is green, the switch senses the actuator. If the indicator light is flashing green, the actuator is present on the switch but another guard door may be open. A red light indicates the actuator is not present.

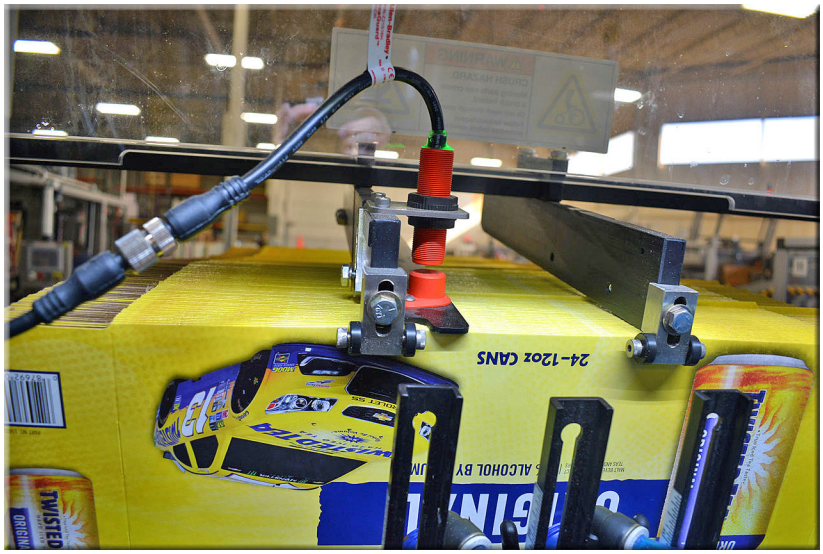
These switches are designed to prevent the machine from accidental startup, not for stopping the machine. Always use the Cycle Stop button to stop the machine before opening a perimeter guard door. If a guard door or E-Stop is activated, the machine will stop immediately.

To close the safety circuit, close the guard door.

DANGER

Personnel entering the guard package, without first locking out the power, risk accidental restart and potential serious injury or death. Do not enter the machine without first performing the lockout/tagout procedure required by your facility.

Magazine Safety Switch



A magnetic magazine safety switch is mounted on the magazine, which controls two parallel contacts. The switch is connected in series to provide the machine with redundant circuits. The machine cannot run without blanks in the magazine.

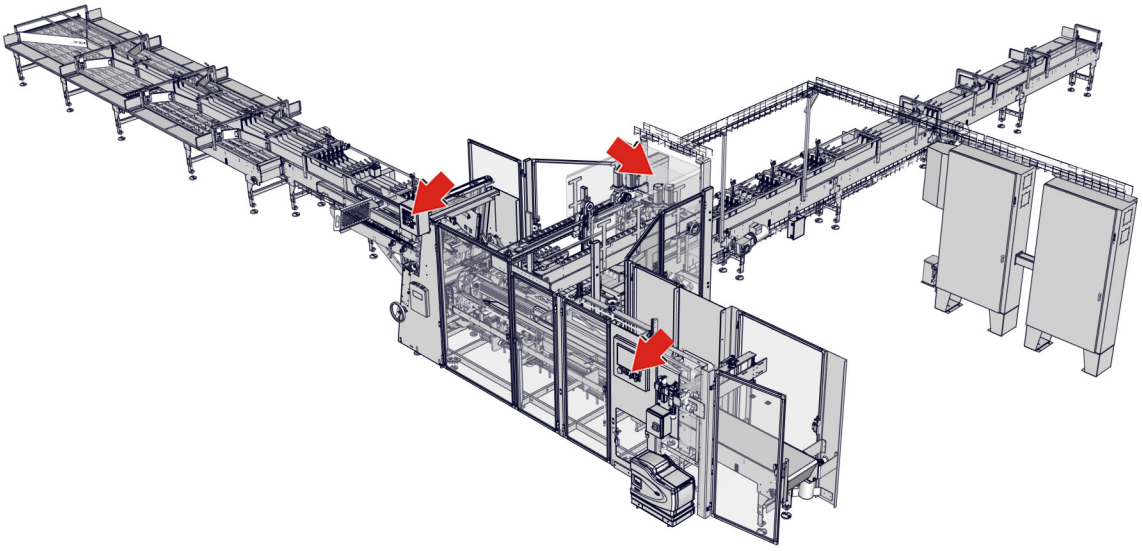
The safety switch is monitored by a safety control system. If either set of contacts open, the safety circuit opens and immediately stops the machine. This protects the operator from the moving parts of the machine and reduces the probability of injury.

The magazine safety switch is designed to prevent the magazine from running without blanks, not for stopping the machine. Always use the Cycle Stop button to routinely stop the machine.

DANGER

Personnel entering the guard package, without first locking out the power, risk accidental restart and potential serious injury or death. Do not enter the machine without first performing the lockout/tagout procedure required by your facility.

Machine Entry No/Allowed Selector Switches



The Machine Entry No/ Allowed selector switches are a safety feature used to protect the operator from moving parts when entry into the machine is necessary.

- In the No mode, entry into the machine is not allowed and production can occur.
- In the Allowed mode, entry into the machine is allowed. The switch will open the guard door safety circuit, preventing accidental startup. A locking device can be placed on the selector switch when lockout is desired. Set the selector switch back to No and then reset the machine to allow for restart.

DANGER

Personnel entering the guard package, without first locking out the power, risk accidental restart and potential serious injury or death. Do not enter the machine without first performing the lockout/tagout procedure required by your facility.

Light Column

The stackable light column contains three lights and a horn to signal the operator of a machine condition.

Lights

- The Red light remains solid when the machine has a shutdown fault condition and the machine is not ready.
- The Amber light flashes when the machine has low materials.
- The Green light remains solid when the machine is running and flashes when the machine is dwelling.

WARNING

When the green light is flashing, the machine can start automatically with no warning. Be sure that personnel are away from the machine.

Horn

This machine is equipped with startup delay. The Machine Start button must be pressed for a predetermined number of seconds before the machine will begin running. During this time, the horn will sound off to warn personnel of impending machine startup.

Section 2

Operator Controls

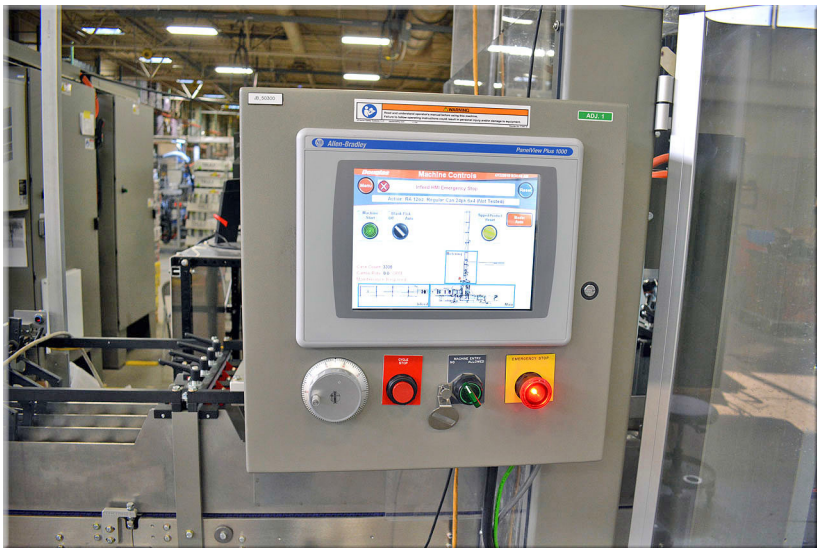
HMI Control Panels

Auxiliary Controls

HMI Screen Banner

HMI Screens

HMI Control Panels



NOTICE The two HMI control panels contain the same buttons and screens.

The **HMI** touchscreen allows for human/machine interface.

The **Jog Wheel** corresponds with the Jog Wheel selector switch on the Machine Control - Manual Screen and the Maintenance Screens.

- On the Machine Control - Manual Screen, the jog wheel manually jogs the corresponding line shaft when the selector switch is set to On.
- On the Maintenance Screens, the jog wheel manually jogs the selected servo axis when the selector switch is set to On.

The **Cycle Stop** button brings the machine to a controlled stop in a predetermined position.

HMI Control Panels (continued)

The **Machine Entry No/Allowed** selector switch is a safety feature used to protect the operator from moving parts when entry into the machine is necessary.

- In the No mode, entry into the machine is not allowed and production can occur.
- In the Allowed mode, entry into the machine is allowed. The switch will open the guard door safety circuit, preventing accidental startup. A locking device can be placed on the selector switch when lockout is desired. Set the selector switch back to No and then reset the machine to allow for restart.

Personnel entering the guard package, without first locking out the power, risk accidental restart and potential serious injury or death. Do not enter the machine without first performing the lockout/tagout procedure required by your facility.

The **Emergency Stop** button provides safety for personnel.

- Press the E-Stop button to stop the machine. The button illuminates while in the Stop position. The Emergency Stop message appears on the message display bar after pushing the button. The E-Stop system immediately disables the drive motors. The vacuum system is independent of the E-Stop system. A case blank sitting on the vacuum cups should not fall off when the machine stops.
- Pull the E-Stop button out and press the Reset button to clear the message and allow for machine restart.

Repeated use of the emergency stop could result in damage to the machine. E-Stop buttons are not intended for routine cycle stops or maintenance. They should only be used for emergencies: life, limb, or major machine damage.

Do not use emergency stops, guard doors, or safety switches to routinely stop the machine as machine and product damage may result. Use the Cycle Stop buttons to bring the machine to a controlled stop.

Auxiliary Controls

Auxiliary Control Panel

The **Panel Enable** button enables the auxiliary control panel. The operator cannot start the machine from this control panel unless the Panel Enable button is pressed and illuminated.

The **Machine Start** button initiates machine recovery and, after a time delay, starts the machine.

The **Cycle Stop** button brings the machine to a controlled stop in a predetermined position.

The **Machine Entry No/Allowed** selector switch is a safety feature used to protect the operator from moving parts when entry into the machine is necessary.

- In the No mode, entry into the machine is not allowed and production can occur.
- In the Allowed mode, entry into the machine is allowed. The switch will open the guard door safety circuit, preventing accidental startup. A locking device can be placed on the selector switch when lockout is desired. Set the selector switch back to No and then reset the machine to allow for restart.

Auxiliary Control Panel (continued)

The **Emergency Stop** button provides safety for personnel.

- Press the E-Stop button to stop the machine. The button illuminates while in the Stop position. The Emergency Stop message appears on the message display bar after pushing the button. The E-Stop system immediately disables the drive motors. The vacuum system is independent of the E-Stop system. A case blank sitting on the vacuum cups should not fall off when the machine stops.
- Pull the E-Stop button out and press the Reset button to clear the message and allow for machine restart.

⚠CAUTION

Repeated use of the emergency stop could result in damage to the machine. E-Stop buttons are not intended for routine cycle stops or maintenance. They should only be used for emergencies: life, limb, or major machine damage.

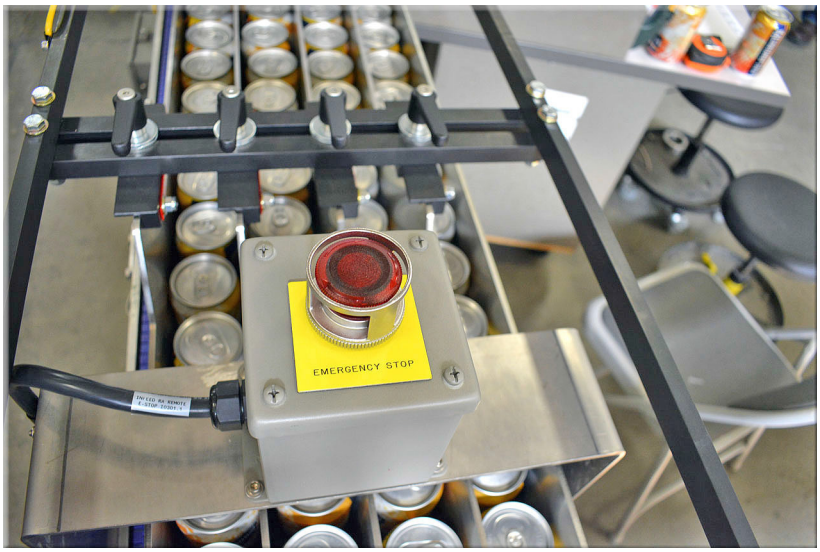
Do not use emergency stops, guard doors, or safety switches to routinely stop the machine as machine and product damage may result. Use the Cycle Stop buttons to bring the machine to a controlled stop.

The **Machine Reset** button resets the machine for operation following a fault.

Remote Enclosure Light Selector Switches

The **Enclosure Light Off/On** selector switches turn the corresponding electrical enclosure's light off and on. The selector switch is illuminated while in the on position.

Remote E-Stop Buttons



The **Emergency Stop** buttons provide safety for personnel.

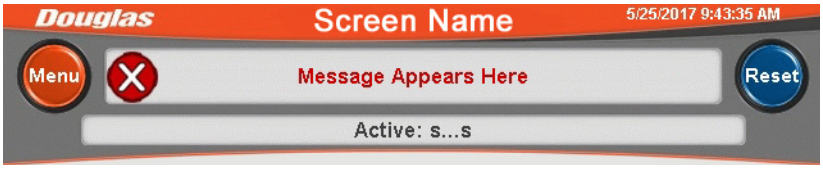
- Press the E-Stop button to stop the machine. The button illuminates while in the Stop position. The Emergency Stop message appears on the message display bar after pushing the button. The E-Stop system immediately disables the drive motors. The vacuum system is independent of the E-Stop system. A case blank sitting on the vacuum cups should not fall off when the machine stops.
- Pull the E-stop button out and press the Reset button to clear the message and allow for machine restart.

⚠CAUTION

Repeated use of the emergency stop could result in damage to the machine. E-Stop buttons are not intended for routine cycle stops or maintenance. They should only be used for emergencies: life, limb, or major machine damage.

Do not use emergency stops, guard doors, or safety switches to routinely stop the machine as machine and product damage may result. Use the Cycle Stop buttons to bring the machine to a controlled stop.

HMI Screen Banner



NOTICE

This screen banner appears on most HMI screens. The banner's button functions are described on this page to prevent redundancy.

The **Screen Name** banner at the top of the screen advances the current screen to the Machine Controls - Auto Screen or the Machine Controls - Manual Screen, whichever is selected by the Control Mode Manual/Auto selector switch.

The **Message Display Bar** indicates current fault and status messages. Pressing the message display bar advances the current screen to the Active Alarms Screen.

The **Recipe Display Bar** indicates the active recipe.

The **Menu** button returns the current screen to the previous Menu Screen.

The **Reset** button resets the machine for operation following a fault. The existing fault condition appears on the message display bar. After correcting the fault, pressing the Reset button clears the fault message and allows for machine restart.

HMI Screens

NOTICE

Depending on the application of this machine, one or more of the display items may or may not be visible.

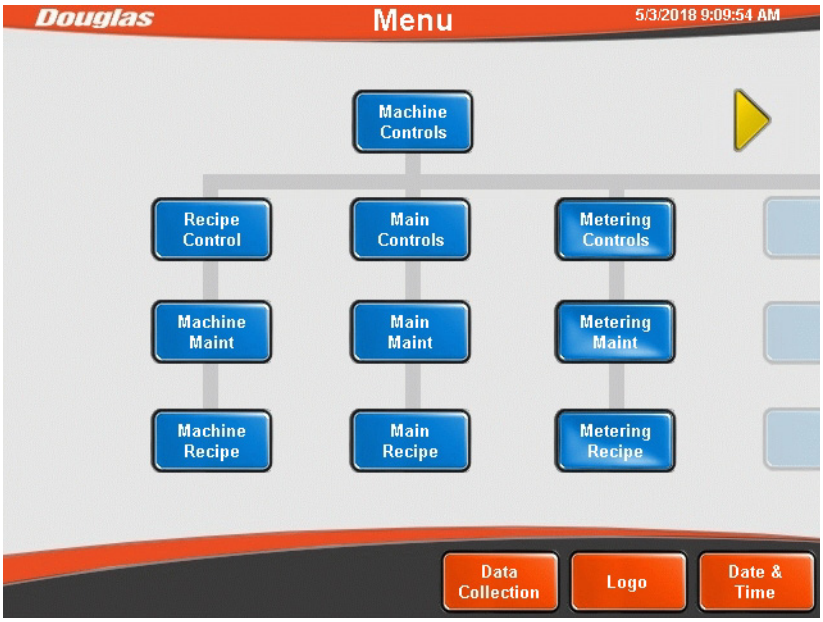
Logo Screen

The **PLC Local IP Address** display indicates the local PLC ethernet card's IP address.

The **HMI Config** button shuts down the current machine application and advances the current screen to the Allen-Bradley Configuration Screen. Refer to the Allen-Bradley manual provided for further information.

The **Menu** button advances the current screen to the Menu 1 Screen.

Menu 1 Screen



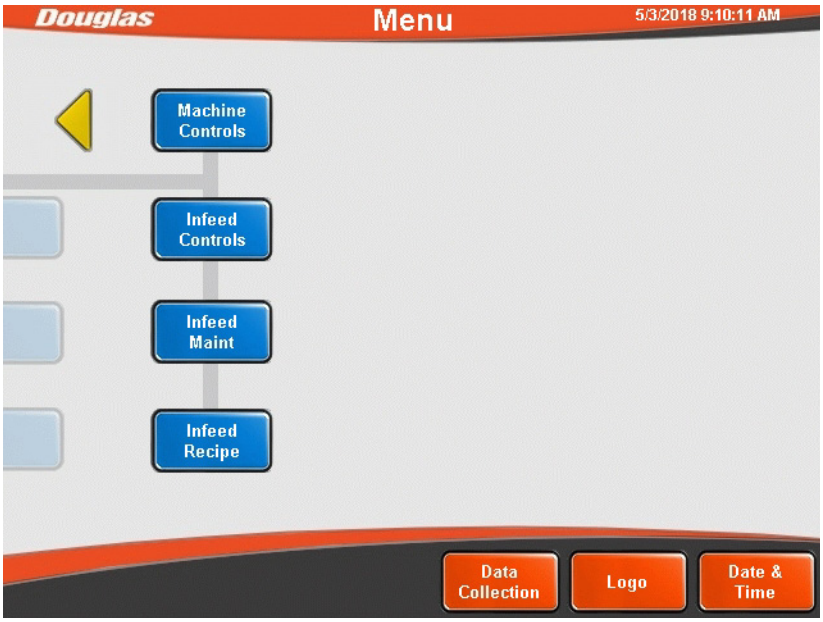
The Menu Screen allows the operator to navigate between screens. Press the desired screen button to advance to the corresponding screen.

The **Yellow Arrow** button advances the current screen to the Menu 2 Screen.

The following buttons advance the current screen to the corresponding screen:

- **Data Collection**
- **Logo**
- **Date and Time**

Menu 2 Screen



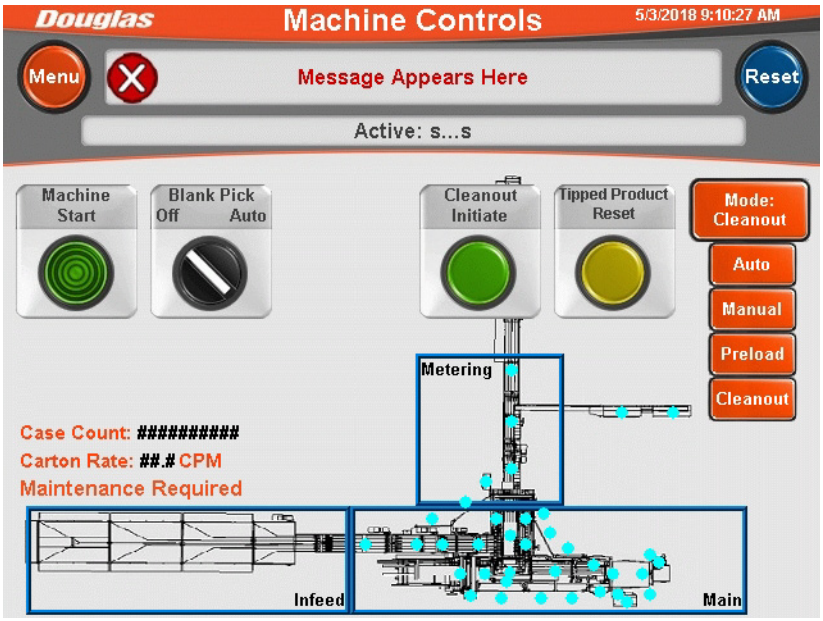
The Menu Screen allows the operator to navigate between screens. Press the desired screen button to advance to the corresponding screen.

The **Yellow Arrow** button advances the current screen to the Menu 1 Screen.

The following buttons advance the current screen to the corresponding screen:

- **Data Collection**
- **Logo**
- **Date and Time**

Machine Controls Auto - Screen



NOTICE

An image of the machine's floor plan is displayed on buttons that are used to access the modules' Control Screens. The floor plan is populated with indicators corresponding with various fault and status messages that flash the message's color (yellow or red) while the message is active.

The **Machine Start** button initiates machine recovery and, after a time delay, starts the machine.

The **Blank Pick Off/Auto** selector switch disables or enables the blank pick vacuum.

While in the cleanout mode, the **Cleanout Initiate** button causes the loader to load whatever products are in the load area by overriding the need for a full load.

The **Tipped Product Reset** button resets the machine after correcting tipped product. Pressing this button is the only way of resetting a tipped product fault.

The **Machine Mode** display indicates the current machine mode. Press the display to cycle through the following machine modes:

- Auto
- Manual
- Preload
- Cleanout

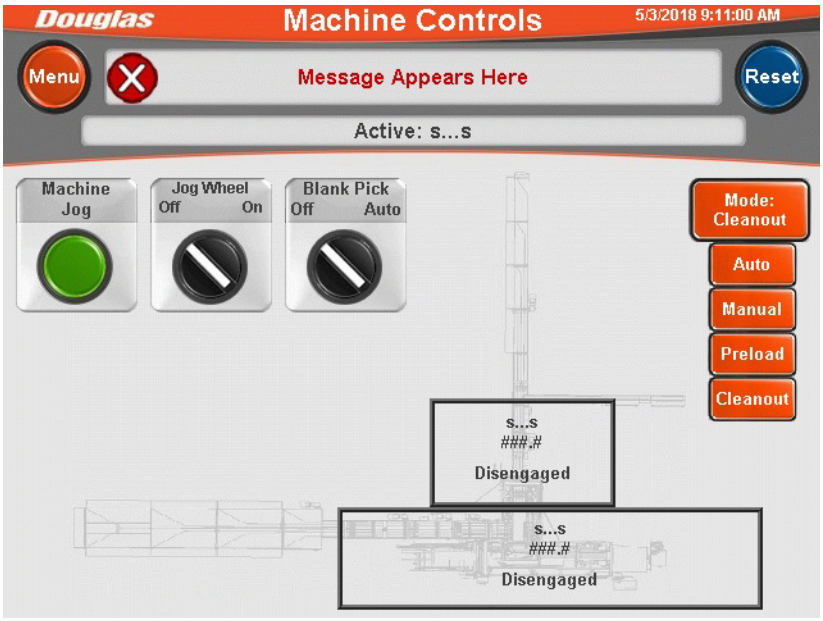
Machine Controls Auto - Screen (continued)

The **Case Count** display indicates the number of cases produced since the Case Count Reset button on the Maintenance Screen was last pressed.

The **Carton Rate** display indicates the current machine speed in cycles per minute (CPM).

The **Maintenance Required** display appears when a meter on the Maintenance Screen reaches its preset value. After the required maintenance is performed, press and hold the meter's reset button to reset the meter and clear the Maintenance Required display.

Machine Controls Manual - Screen



The **Manual Mode** buttons are displayed on an image of the machine's floor plan. Each module's button displays its line shaft's actual position and jog status (Disengaged, Will Engage, Engaged, or Will Disengage). Press one or more Manual Mode buttons to select or deselect the line shafts for jogging.

The **Machine Jog** button initiates machine recovery and, after a time delay, jogs the selected modules' line shafts forward while the button remains pressed.

CAUTION

Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

The **Jog Wheel Off/On** selector switch disables or enables the jog wheel, which jogs the machine forward and backward. Set this switch to Off to run production and to On to enable the jog wheel.

CAUTION

Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

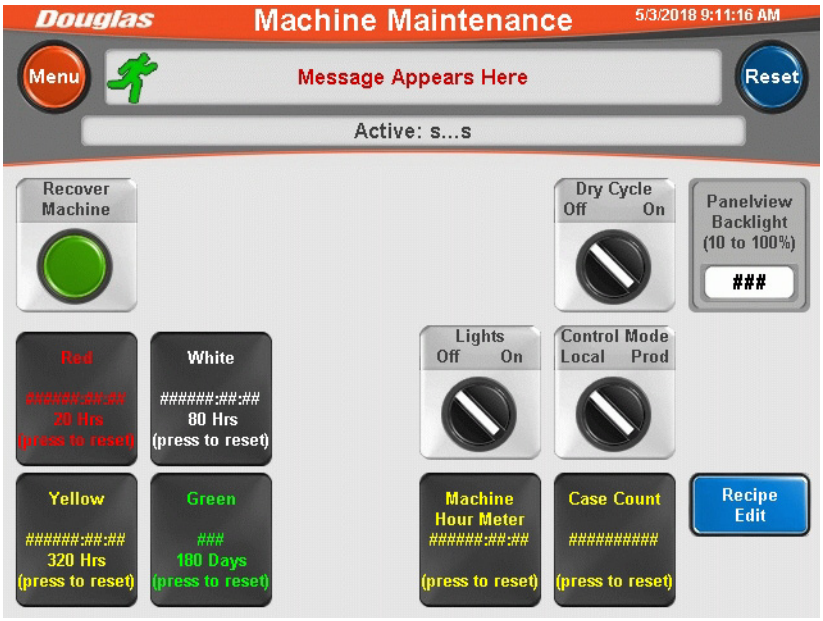
The **Blank Pick Off/Auto** selector switch disables or enables the blank pick vacuum.

Machine Controls Manual - Screen (continued)

The **Machine Mode** display indicates the current machine mode. Press the display to cycle through the following machine modes:

- Auto
- Manual
- Preload
- Cleanout

Machine Maintenance Screen



The **Recover Machine** button initiates machine recovery, which recovers the machine's servos to their proper positions.

The **Lube Frequency** meters indicate the machine run time since the meters' reset buttons were last pressed. When a meter reaches the recommended time for lubing, the meter flashes and a Maintenance Required display appears on the Machine Controls Screen. After lubing, press the flashing meter to reveal the meter's reset button. Press and hold the button to reset the meter and clear the Maintenance Required display.

The **Lights Off/On** selector switch turns the machine lights off and on.

The **Machine Hour Meter** indicates the machine run time since the meter's reset button was last pressed. Press the meter to reveal the meter's reset button. Press and hold the button to reset the meter.

The **Dry Cycle Off/On** selector switch, which is visible while the Control Mode Local/Prod selector switch is set to Local, disables or enables the dry cycle feature. In the On mode, the machine is allowed to cycle without product or blanks. Press the Machine Start button to start the dry cycle process. While the machine is running in the dry cycle mode, the machine speed increases by five cycles per minute (up to the maximum machine speed) each time the Machine Start button is pressed.

CAUTION

The Dry Cycle On feature is only intended for experienced maintenance personnel. This feature overrides machine controls, which could result in machine or product damage. Do not dry cycle with product in the machine.

Machine Maintenance Screen (continued)

The **Control Mode Local/Prod** selector switch determines the machine interface control mode (local or production). Set the switch to Prod to operate the machine with active line controls or to Local to override upstream and downstream line controls.

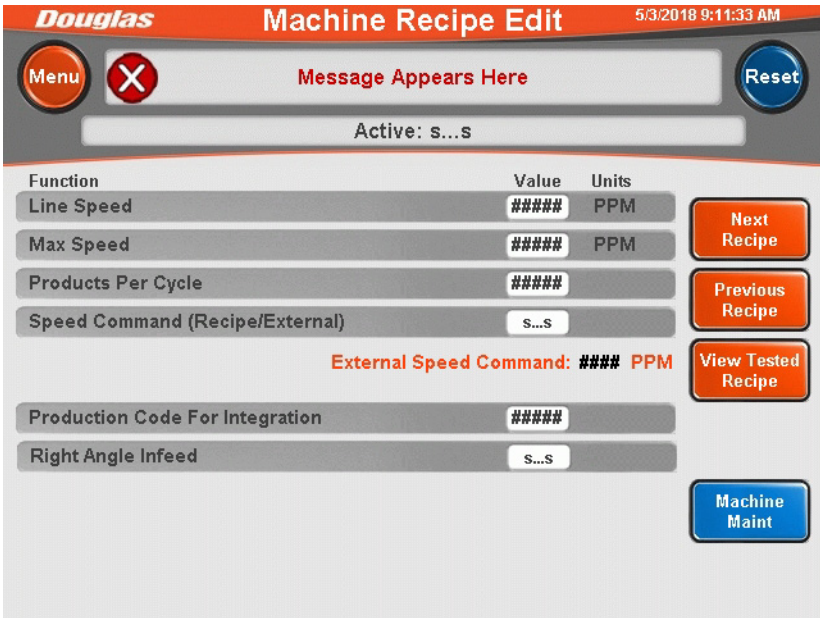
The Control Mode Local feature is only intended for experienced maintenance personnel. This feature overrides line controls, which could result in machine or product damage.

The **Case Count** display indicates the number of packages produced since the meter's reset button was last pressed. Press the meter to reveal the meter's reset button. Press and hold the button to reset the meter.

The **Panelview Backlight** setting specifies the percentage of Panelview backlight intensity.

The **Recipe Edit** button advances the current screen to the Machine Recipe Screen.

Machine Recipe Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

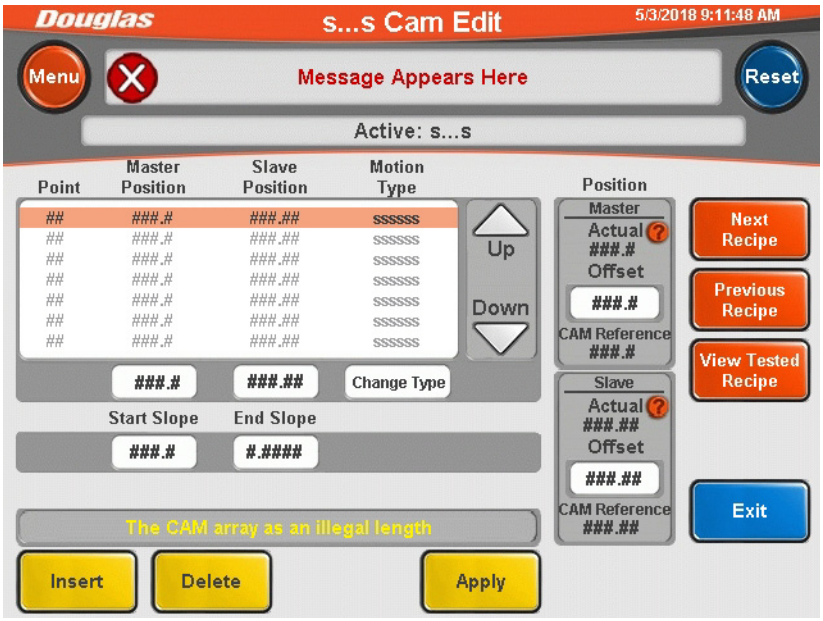
The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **Next Recipe** and **Previous Recipe** buttons allow personnel to view or edit settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested cam settings can not be edited. Offsets can be edited.

The **Machine Maint** button returns the current screen to the Machine Maintenance Screen.

Global Cam Edit Screen



NOTICE

The screen, as shown above, will appear when viewing untested recipes (recipes designated as *Not Tested*). After a recipe is saved as tested within the program (no special recipe designation), changing the cam profile is limited to the offset setting for the Master and Slave Positions. Other editing buttons will not appear on the screen.

A fault message will appear when attempting to make edits to this screen while the machine is running.

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **Master Position, Slave Position,** and **Motion Type** settings for the displayed points can be viewed or edited. The **Up** and **Down** arrow buttons allow scrolling up or down through the selected points.

The **Change Type** button opens a window from which the desired motion type for the highlighted point may be selected.

The **Actual** and **Cam Reference** settings are displayed for the Master Position and Slave Position. The **Master Offset** and **Slave Offset** settings can be viewed or edited.

Global Cam Edit Screen (continued)

The **Start Slope** and **End Slope** settings can be viewed or edited.

The **Insert** button inserts a new cam point to the current display at the highlighted position.

The **Delete** button removes the highlighted cam point from the current display.

The **Apply** button accepts all changes made to this screen when the machine is at the cycle stop position.

NOTICE

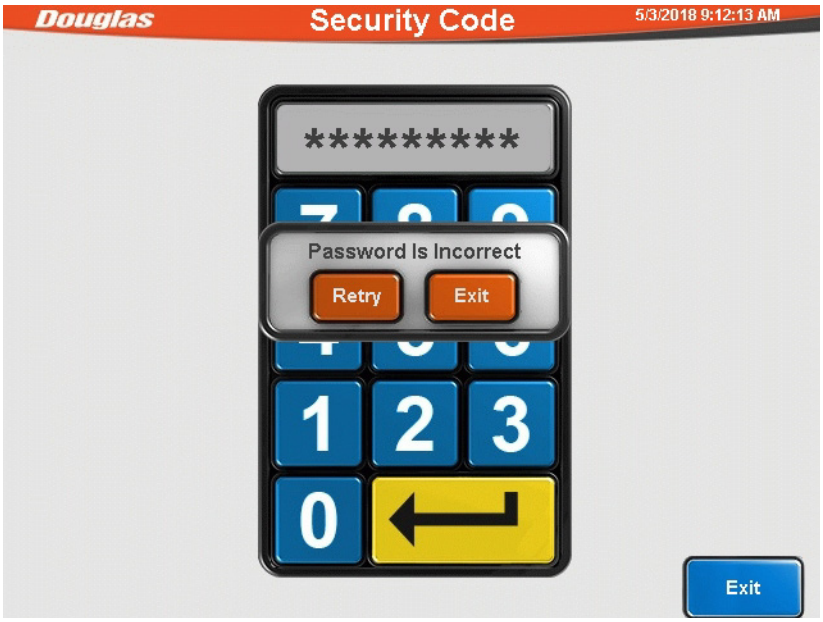
Unless changes are applied, they will not take effect and the original settings will replace the edits when the screen is exited.

The **Next Recipe** and **Previous Recipe** buttons allow personnel to view or edit settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested cam settings can not be edited. Offsets can be edited.

The **Exit** button returns the current screen to the previous screen.

Security Screen



The Security Screen provides a keypad to allow authorized personnel to perform protected edits and recipe variable functions.

When the Security Screen appears, enter the security code and press the enter (arrow) button. If the code is entered incorrectly, a Password is Incorrect window will pop up. Press the **Retry** button to reenter the code or the **Exit** button to exit the screen.

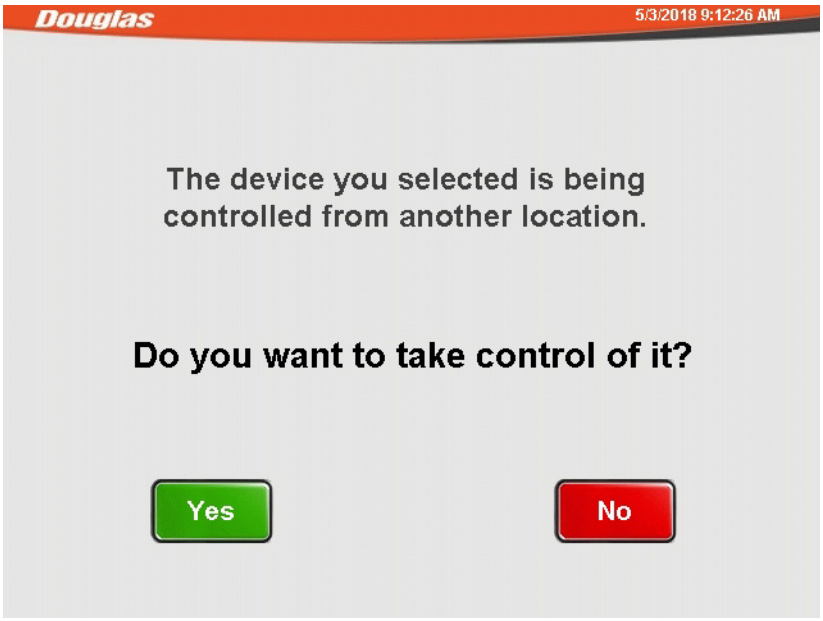
NOTICE

Secured screens may be viewed by any personnel, but the security code is required to implement changes.

Once the correct security code is provided, all protected settings and recipe variable functions on all screens within the same security level will be accessible. They will remain unlocked until a non-secured screen (a screen that is not normally protected) is accessed for a preset time.

The **Exit** button returns the screen to the previous screen.

Take Control Screen



This screen allows personnel to take control of machine operation controlled from another location.

Press the **Yes** button to confirm the control. Press the **No** button to cancel.

Date Time Set Screen

To set the date and time:

1. Press the desired button.
2. A keypad will appear.
3. Enter the setting.
4. Press the Enter button on the keypad.
5. Repeat the above steps until all values are correct.
6. Press the **Set Date/Time** button.

Recipe Control Screen

NOTICE

The **Recipe Manager** button disappears when pressed, allowing the Copy Recipe, Delete Recipe, Rename Recipe, Move Recipe Up, and Move Recipe Down buttons to display.

Fault and status messages may appear toward the bottom of the screen when the Copy Recipe, Delete Recipe, or Select Recipe buttons are pressed.

A list of the available recipes appears in the center display. Use the **Up** or **Down** arrow buttons to scroll through the recipes.

The **Changeover Position** button moves certain machine components/assemblies to a position conducive to changeover. This button must be pressed before selecting a new recipe. If a module is running while the Changeover Position button is pressed, the Stop Machine & Try Again message prompts the machine operator to stop the machine before pressing the Changeover Position button.

The **Stop Machine & Try Again** message prompts the machine operator to stop the machine before pressing the Copy Recipe, Delete Recipe, Rename Recipe, or Select Recipe buttons.

The **Copy Recipe** button copies the highlighted recipe's information to use for a new recipe. Contact Douglas Machine Technical Support for assistance in creating new recipes.

The **Delete Recipe** button advances the current screen to the Recipe Delete Warning Screen.

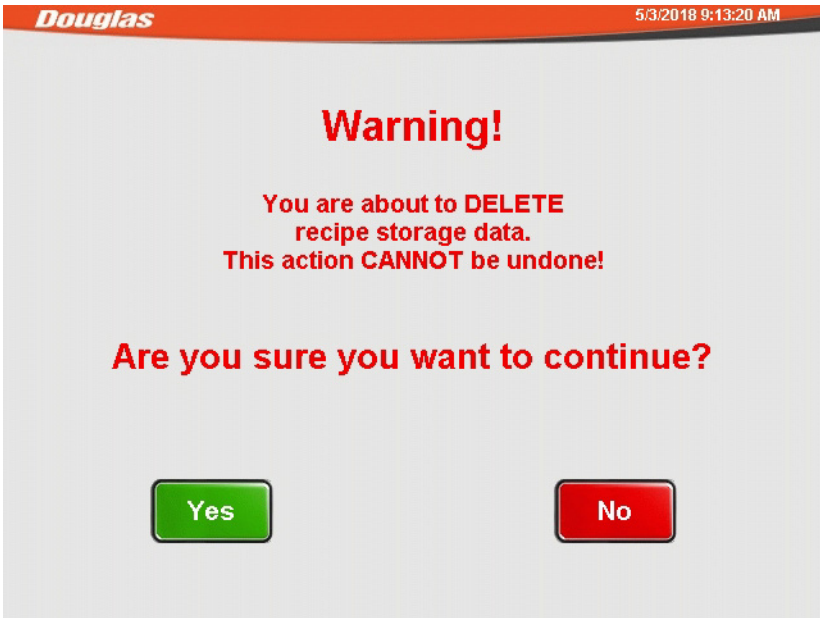
The **Rename Recipe** button allows the operator to rename the highlighted recipe.

Recipe Control Screen (continued)

The **Move Recipe Up** and **Move Recipe Down** buttons reposition the highlighted recipe within the list.

The **Select Recipe** button changes the highlighted recipe to the active recipe.

Recipe Delete Warning Screen

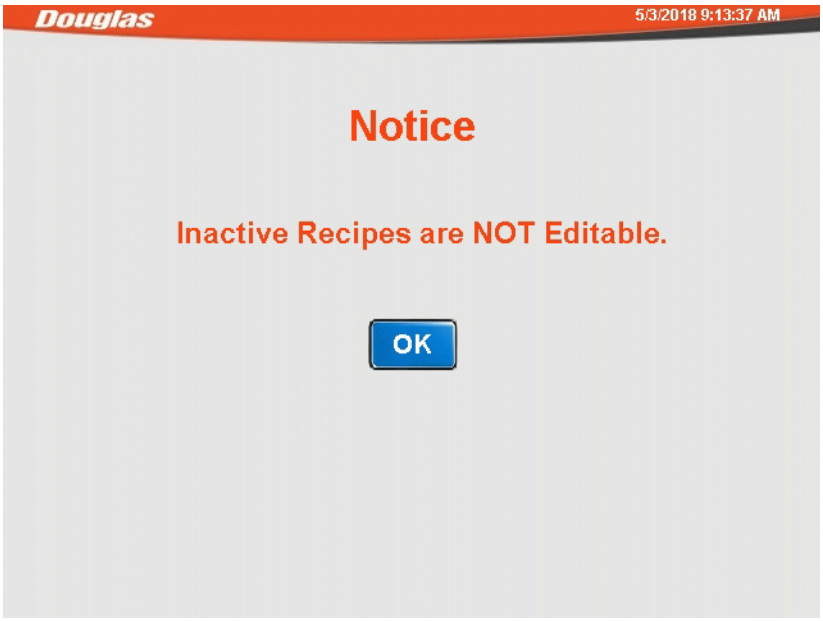


This screen will appear after the Delete Recipe button on the Recipe Control Screen is pressed.

The **Yes** button deletes the recipe and returns the current screen to the Recipe Control Screen.

The **No** button cancels the action and returns the current screen to the Recipe Control Screen.

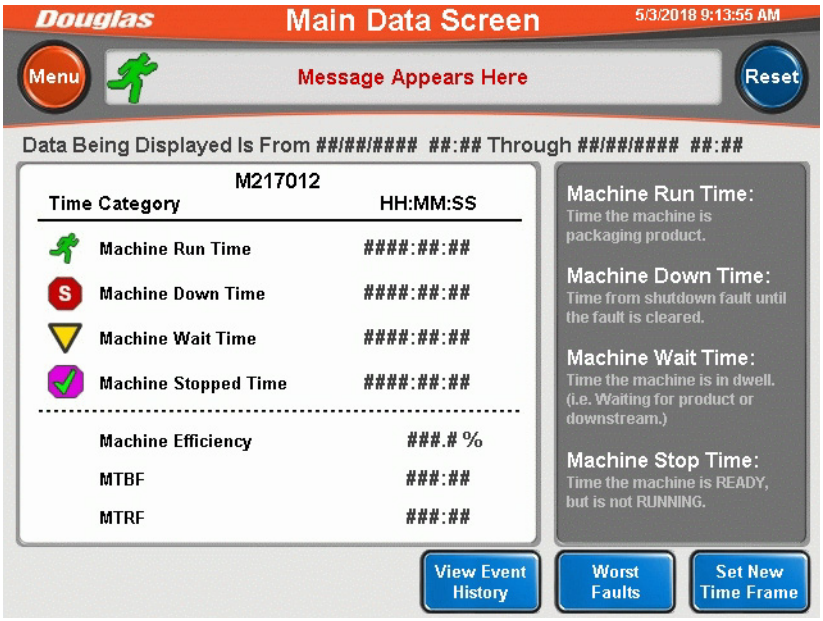
Inactive Recipe Warning Screen



This screen will appear after attempting to edit inactive recipes.

The **OK** button advances the current screen to the previous screen.

Main Data Screen



The **Data Being Displayed Is From # Through #** display indicates the time frame of the displayed data. The percentages for selected data will appear when the Set Data Time Frame button on the Time Frame Setup Screen is pressed.

This screen displays the following information:

- Machine Run Time
- Machine Down Time
- Machine Wait Time
- Machine Stopped Time
- Machine Efficiency (percent)
- MTBF (Mean Time Between Faults)
- MTRF (Mean Time to Reset Faults)

The Machine Run Time, Machine Down Time, Machine Wait Time, and Machine Stop Time functions are explained on the side of the screen.

The following buttons advance the current screen to the corresponding screen:

- **View Event History** (Event History Screen)
- **Worst Faults**
- **Set New Time Frame** (Time Frame Setup Screen)

Active Alarms Screen

This screen displays currently active faults and alarms. It can be accessed by pressing the message display bar on any applicable screen.

The **Exit** button returns the current screen to the previous screen.

Event History Screen

The **Data Being Displayed is From # Through #** display indicates the time frame of the displayed data. The percentages for selected data will appear when the Set Data Time Frame button on the Time Frame Setup Screen is pressed.

A list of previous events, the date and time the event occurred, and the duration of the event are displayed on this screen. A color-coded key indicates each event type. Events included in the selected time frame are shown in color. Use the **Up** and **Down** arrow buttons to scroll through the events.

The **Capture Time Stamp** button causes the Capture As Start Time and Capture As End Time buttons to appear.

The **Capture As Start Time** button copies the time from the top entry in the events list for use on the Time Frame Setup Screen. Press the Paste Start Time button on the Time Frame Setup Screen to change the start time. This button only appears when the Capture Time Stamp button is pressed.

The **Capture As End Time** button copies the time from the top entry in the events list for use on the Time Frame Setup Screen. Press the Paste End Time button on the Time Frame Setup Screen to change the end time. This button only appears when the Capture Time Stamp button is pressed.

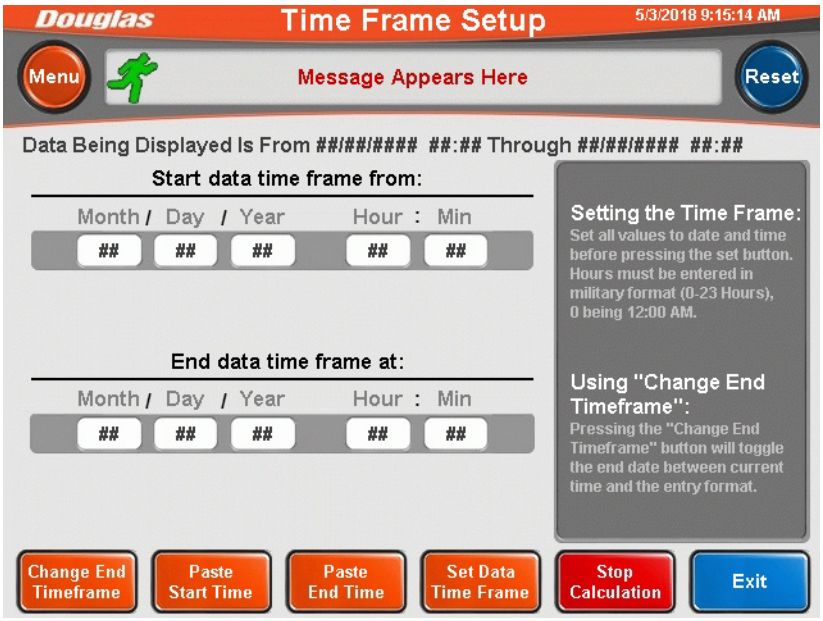
The **Up/Down x1/Page/x100/x1000** button causes the Up and Down arrow buttons to move the events list up or down by one entry, one page (13 entries), 100 entries, or 1000 entries, respectively.

Event History Screen (continued)

The following buttons advance the current screen to the corresponding screen:

- **Set New Time Frame** (Time Frame Setup Screen)
- **Exit** (Previous Screen)

Time Frame Setup Screen



This screen is used to set up a time frame (range of time) to calculate data. The data can be evaluated in as large or small of a range as needed as long as there is time stamped data in the event history for that range of time. Setting the time frame (calculating the data) indicates that the data displayed on the Main Data Screen and the Worst Faults Screen is updated according to the selected time frame.

The **Data Being Displayed Is From # Through #** display indicates the time frame of the displayed data. The percentages for selected data will appear when the Set Data Time Frame button on the Time Frame Setup Screen is pressed.

The time settings for the **Start Data Time Frame From** display appear for viewing or editing.

The time settings for the **End Data Time Frame At** display appear for viewing or editing.

The **Change End Timeframe** button changes the specified end data time to the current time. When this button is pressed, the end data time settings disappear and the **Time Frame End is Current Time** display and the **Paste End Time** buttons appear. Press the Set Data Time Frame button to return to the time settings display.

The **Paste Start Time** button changes the start time to the time copied from the Event History Screen.

The **Paste End Time** button changes the end time to the time copied from the Event History Screen.

Time Frame Setup Screen (continued)

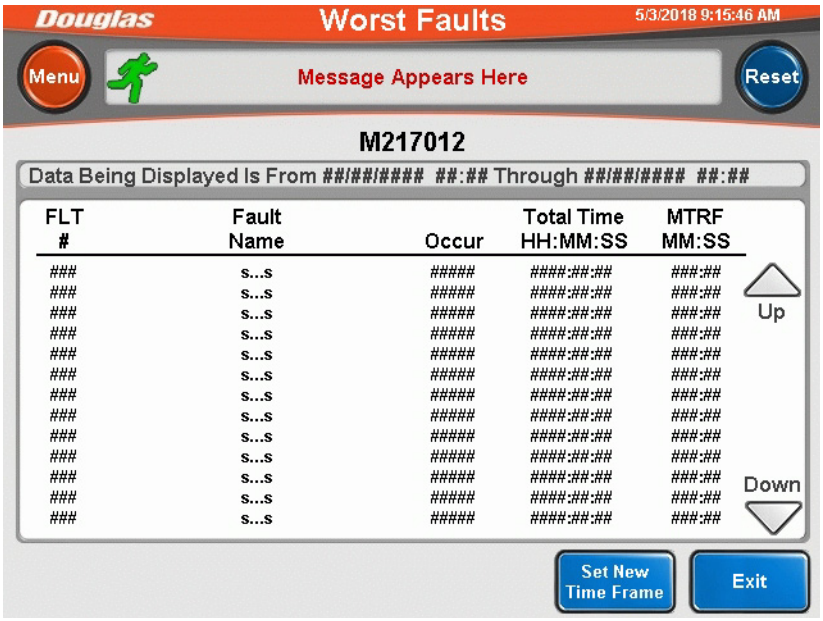
The **Set Data Time Frame** button processes the machine data for the specified start and end data time frames. When this button is pressed, it will read Data Calculating and the percentage of calculated data will appear on the blue banner at the top of the screen. The **Stop Calculation** button will also appear. If an error was made on one of the entries, press the Stop Calculation button to prematurely stop the calculations from processing. After the Stop Calculation button is pressed, it will disappear and the Data Calculating message will revert to Set Data Time Frame.

NOTICE

Enter all values for the date and time functions before pressing the Set Data Time Frame button.

The **Exit** button returns the current screen to the previous screen.

Worst Faults Screen



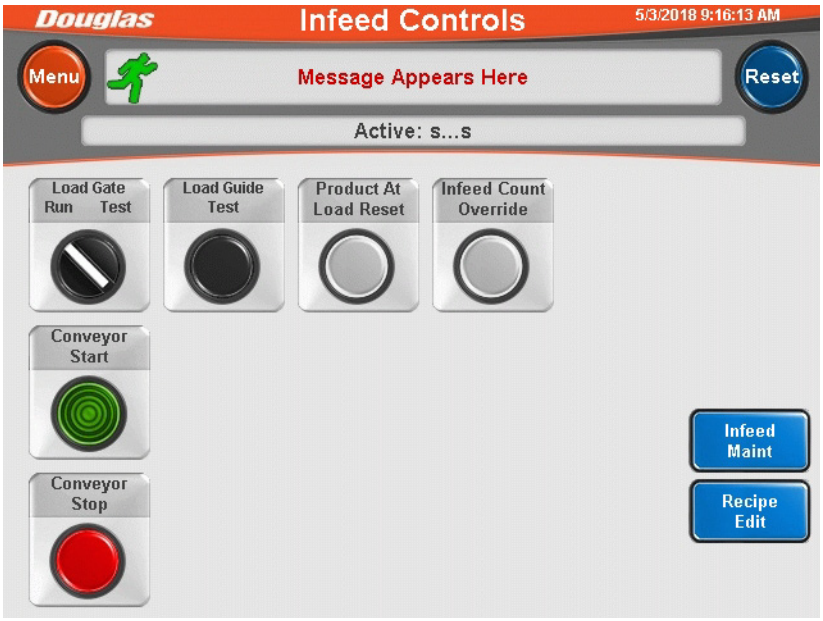
The **Data Being Displayed Is From # Through #** display indicates the time frame of the displayed data. The percentages for selected data will appear when the Set Data Time Frame button on the Time Frame Setup Screen is pressed.

The center display lists all faults for the selected time frame. The faults are sorted in order by number of occurrences. Use the **Up** or **Down** arrow buttons to scroll through the faults.

The following buttons advance the current screen to the corresponding screen:

- **Set New Time Frame** (Time Frame Setup Screen)
- **Exit** (Main Data Screen)

Infeed Controls Screen



The **Load Gate Run/Test** selector switch, when set to Test, makes the **Load Guide Test** button appear.

The **Conveyor Start** and **Conveyor Stop** buttons start and stop the conveyor.

The **Load Guide Test** button moves the load gate up and down when pressed.

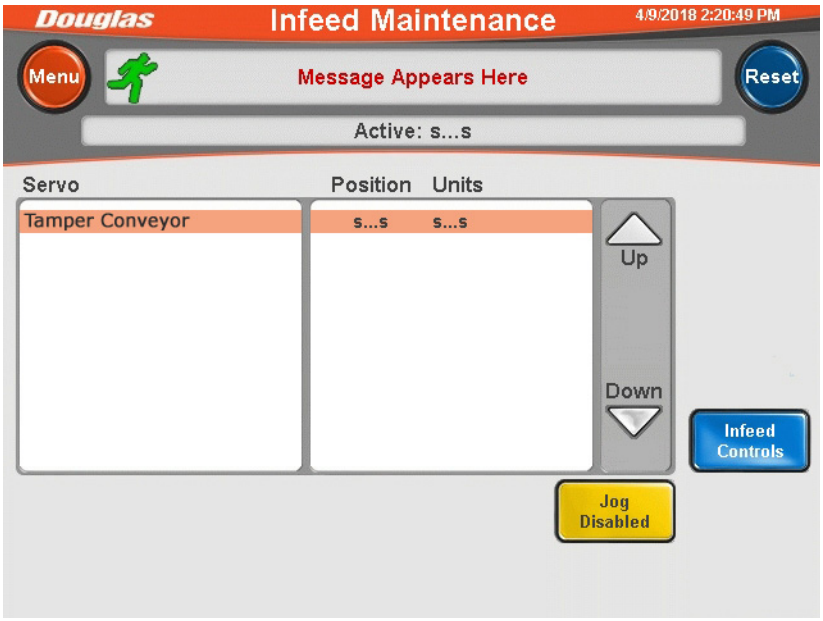
The **Product At Load Reset** button sends the surge release back to the product stop position and resets the loader enable from infeed. This allows new product into the load area. When using this button, clear all product from the load area before restarting the machine.

The **Infeed Count Override** button allows the operator to replace product in the load area. When pressed, the loader is enabled.

The following buttons advance the current screen to the corresponding screen:

- **Infeed Maint** (Infeed Maintenance Screen)
- **Recipe Edit** (Infeed Recipe 1 Screen)

Infeed Maintenance Screen



The current **Position** and **Units** are displayed for each **Servo** on this module. Press the **Up** or **Down** arrow buttons to scroll through the listed servos.

The **Jog Disabled/Enabled** button disables or enables the **Jog Negative** and **Jog Positive** buttons for jogging the selected servo(s) backward and forward.

CAUTION

Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

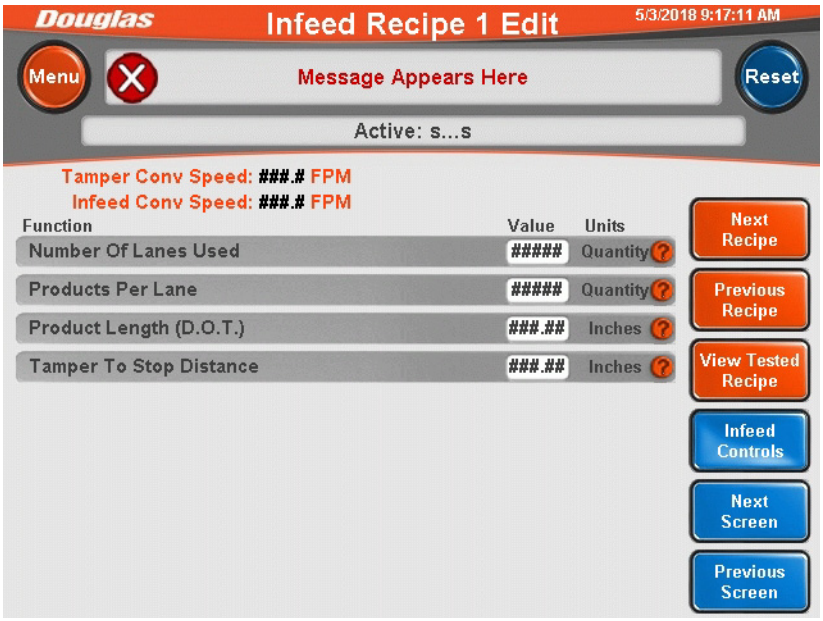
The **Jog Disabled/Jog Enabled** button disables or enables the jog wheel dial for jogging the selected servo(s) forward or backward.

CAUTION

Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

The **Infeed Controls** button advances the current screen to the Infeed Controls Screen.

Infeed Recipe 1 Screen



The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens Section of the service manual for more information.

The **Tamper Conv Speed** and **Infeed Conv Speed** displays each indicate the current corresponding conveyor speed in feet per minute (FPM).

The **?** buttons display a help message for the corresponding recipe variable. The help message disappears when pressed.

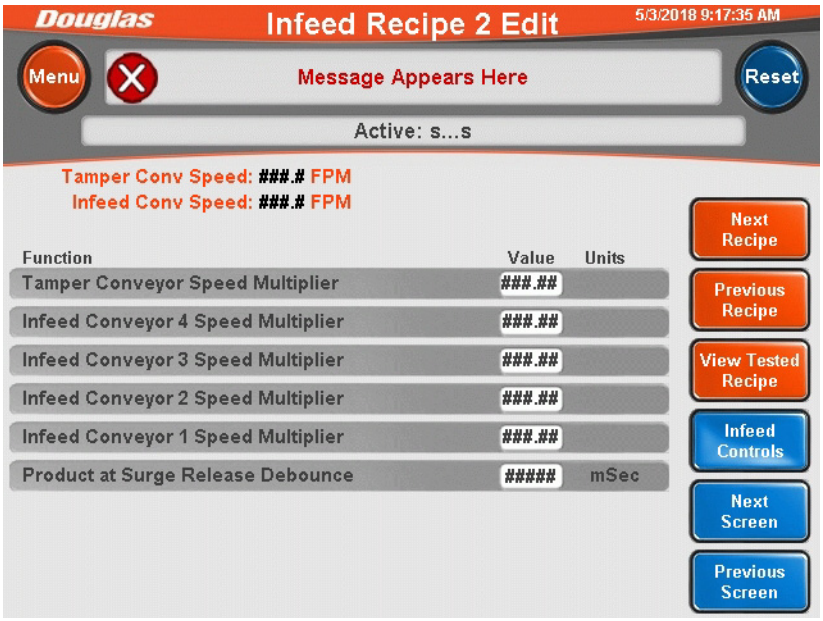
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings can not be edited.

The **Infeed Controls** button returns the current screen to the Infeed Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's Recipe Screens.

Infeed Recipe 2 Screen



The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens Section of the service manual for more information.

The **Tamper Conv Speed** and **Infeed Conv Speed** displays each indicate the current corresponding conveyor speed in feet per minute (FPM).

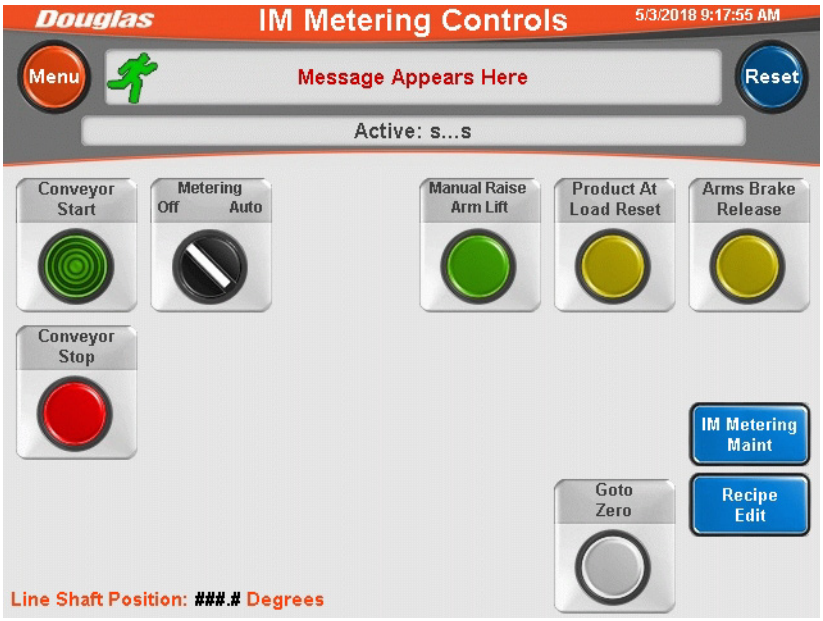
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings can not be edited.

The **Infeed Controls** button returns the current screen to the Infeed Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's Recipe Screens.

IM Metering Controls Screen



The **Conveyor Start** and **Conveyor Stop** buttons start and stop this module's conveyor(s).

The **Metering Off/Auto** selector switch deactivates or activates the metering system. When the selector switch is set to Auto, automatic metering will occur when certain machine conditions are met.

The **Manual Raise Arm Lift** button moves the arm up to a preset position.

The **Product At Load Reset** button sends the surge release back to the product stop position and resets the loader enable from infeed. This allows new product into the load area. When using this button, clear all product from the load area before restarting the machine.

The **Goto Zero** button is visible while the Control Mode Manual/Auto selector switch is set to Manual. This button homes this module's line shaft and then recovers the associated servos to the line shaft.

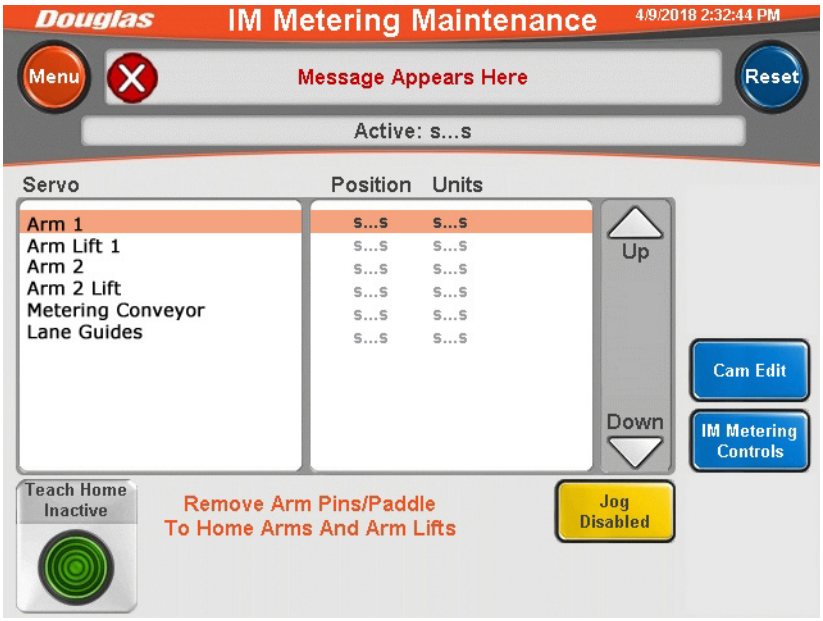
The **Arms Brake Release** button immediately releases the arms' servo brakes, allowing the arms to move freely.

The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The following buttons advances the current screen to the corresponding screen:

- **IM Metering Maint** (IM Metering Maintenance Screen)
- **Recipe Edit** (IM Metering Recipe Edit Screen)

IM Metering Maintenance Screen



The current **Position** and **Units** are displayed for each **Servo** on this module. Press the **Up** or **Down** arrow buttons to scroll through the listed servos.

The homing button's text reads **Teach Home Inactive** while homing is disabled.

If the selected servo is homed by the manual homing process, the homing button's text reads **Teach Home** when homing is enabled. Pressing this button establishes the selected servo's current physical position as its home position by setting the servo's absolute position to zero.

CAUTION

The Homing feature is only intended for experienced maintenance personnel. Failure to place the selected servo at its yellow home position before pressing the Teach Home button will home the servo at the wrong position. This may result in machine components colliding with product, blanks, or other machine components.

The **Jog Disabled/Jog Enabled** button disables or enables the jog wheel for jogging the selected servo(s) forward or backward.

CAUTION

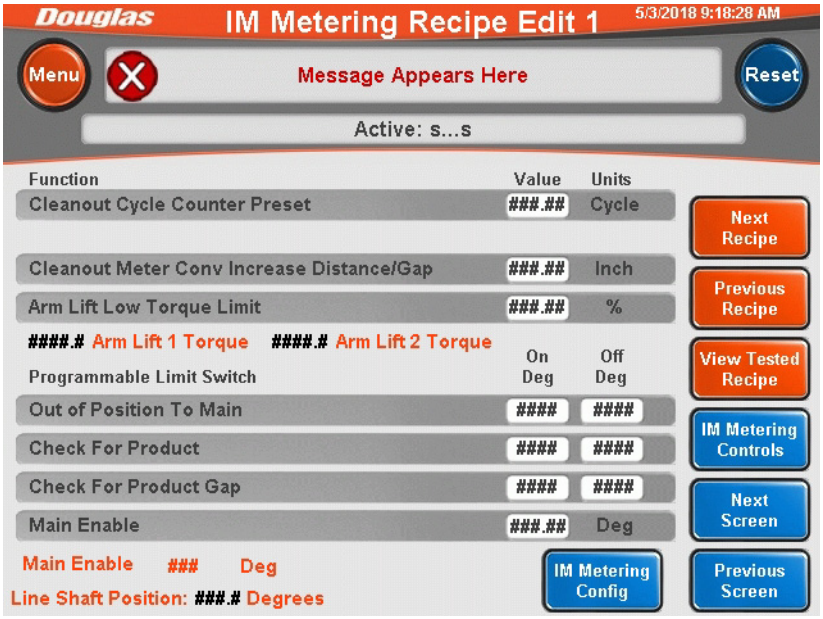
Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

IM Metering Maintenance Screen (continued)

The following buttons advance the current screen to the corresponding screen:

- **Cam Edit** (Global Cam Edit Screen)
- **IM Metering Controls**

IM Metering Recipe Edit 1 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **Arm Lift 1 Torque** and **Arm Lift 2 Torque** displays indicate the torque value of the corresponding arm lift.

The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The **IM Metering Config** button advances the current screen to the IM Metering Config Initialize Screen.

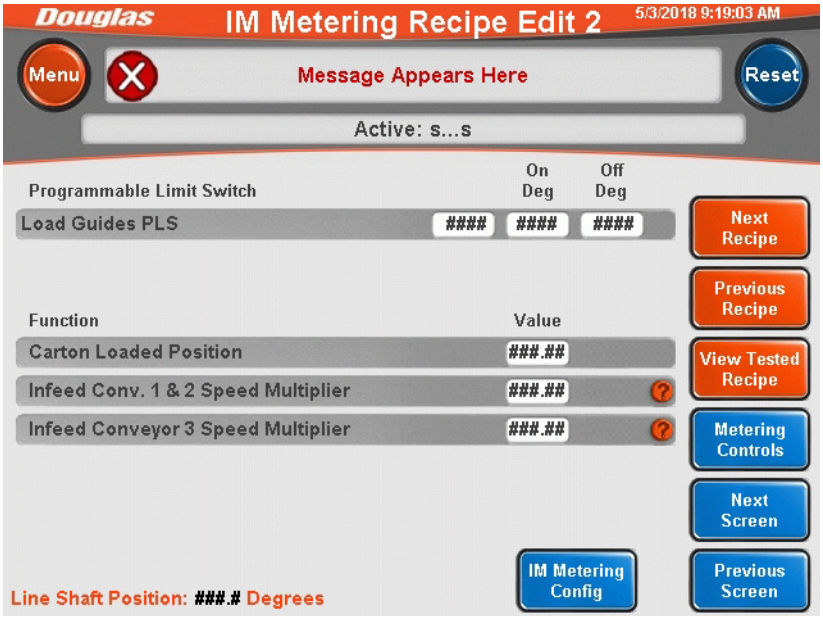
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Controls** button advances the current screen to the IM Metering Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Recipe Edit 2 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The **IM Metering Config** button advances the current screen to the IM Metering Config Initialize Screen.

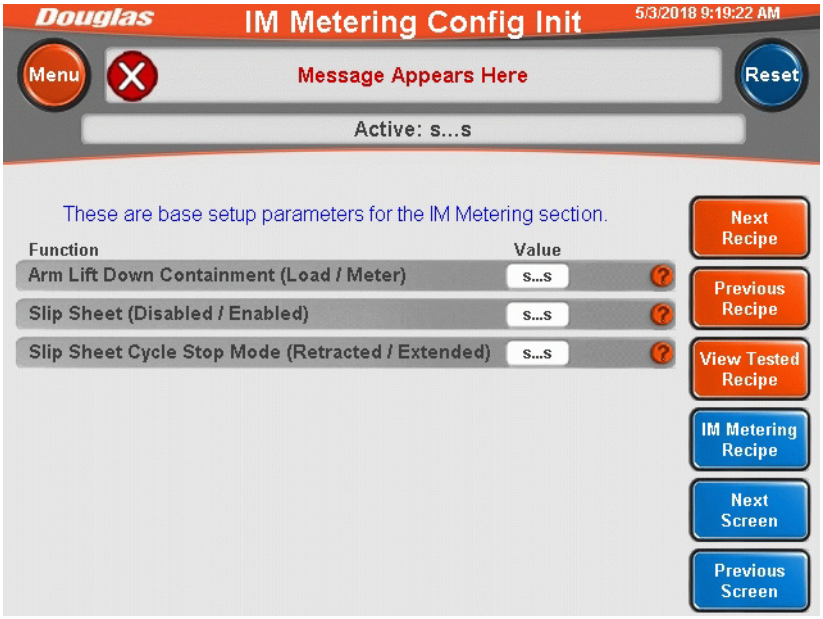
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **Metering Controls** button advances the current screen to the IM Metering Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Initialize Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

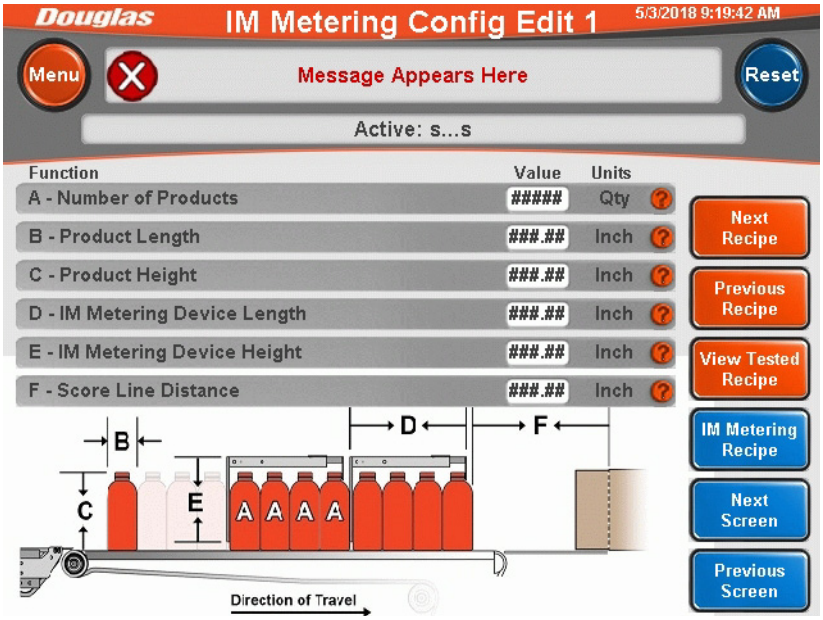
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Edit 1 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

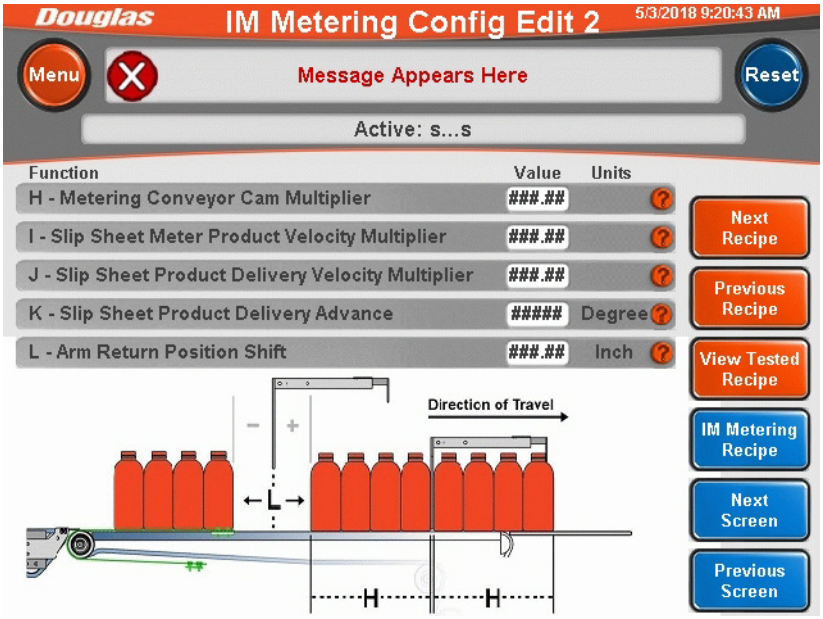
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Edit 2 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

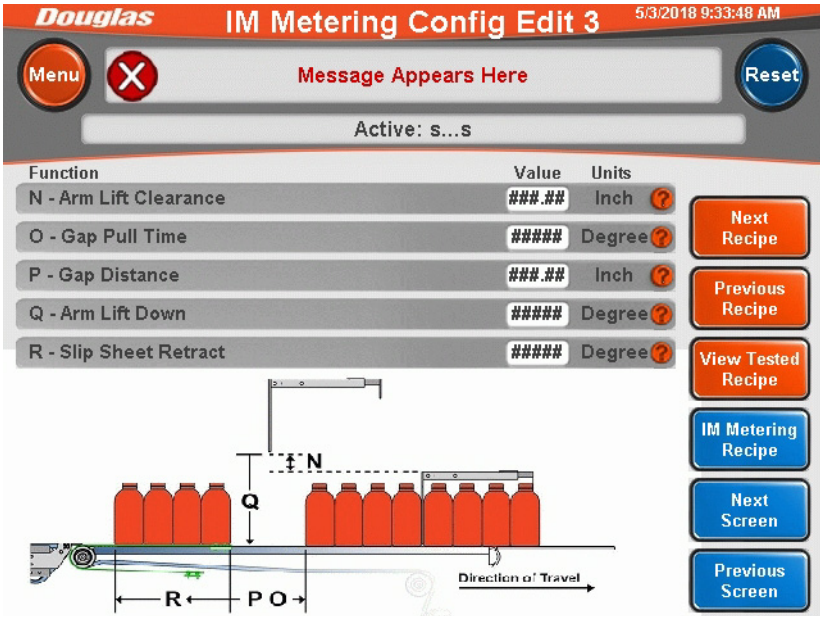
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Edit 3 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

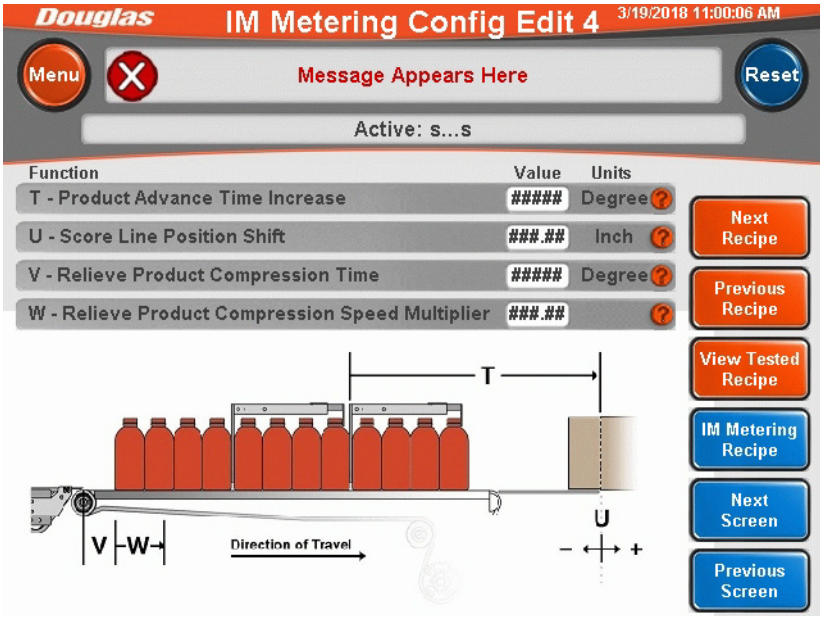
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Edit 4 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

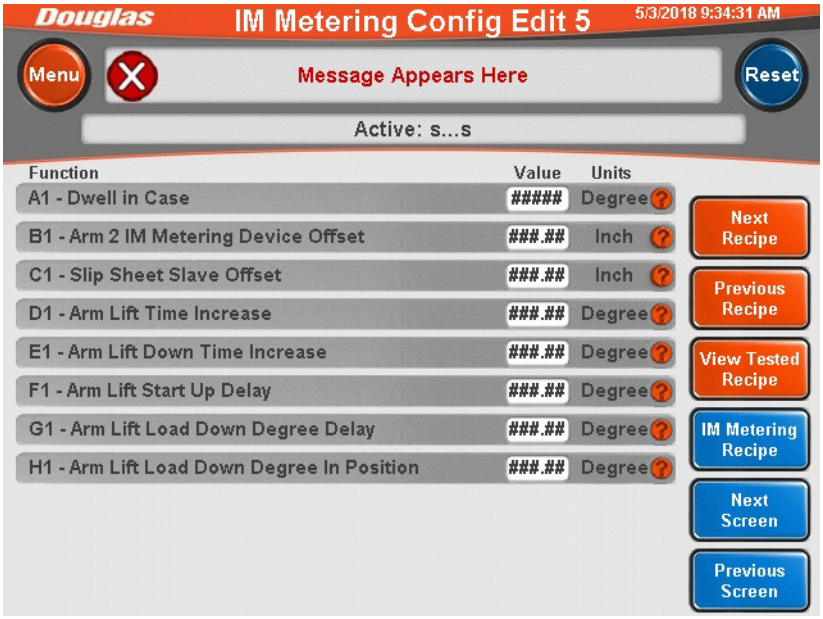
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

IM Metering Config Edit 5 Screen



NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens section of the service manual for more information.

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

The **?** button displays a help message for the corresponding recipe variable. The help message disappears when pressed.

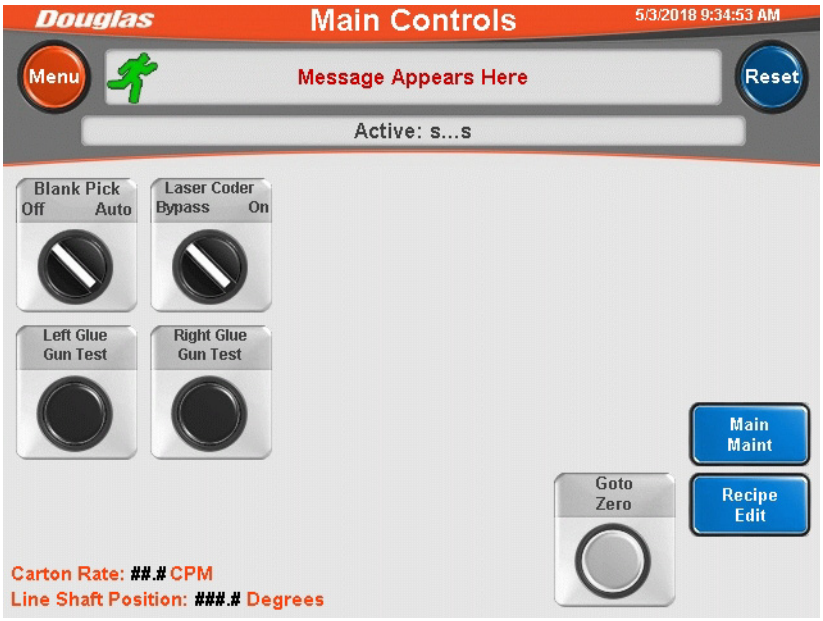
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings found on this screen for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings cannot be edited.

The **IM Metering Recipe** button advances the current screen to the IM Metering Recipe Edit 1 Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's screens.

Main Controls Screen



The **Blank Pick Off/Auto** selector switch disables or enables the blank pick vacuum.

The **Left Glue Gun Test** and **Right Glue Gun Test** buttons test-fire the designated glue gun(s). Test-firing the glue guns ensures the nozzles are clear of glue buildup. Position a piece of waste material in front of the nozzles to intercept the glue before test-firing.

The **Laser Coder Bypass/On** selector switch determines the operating mode of the laser coder. In Bypass mode, the machine will ignore the coder interlock signal.

The **Carton Rate** display indicates the current machine speed in cycles per minute (CPM).

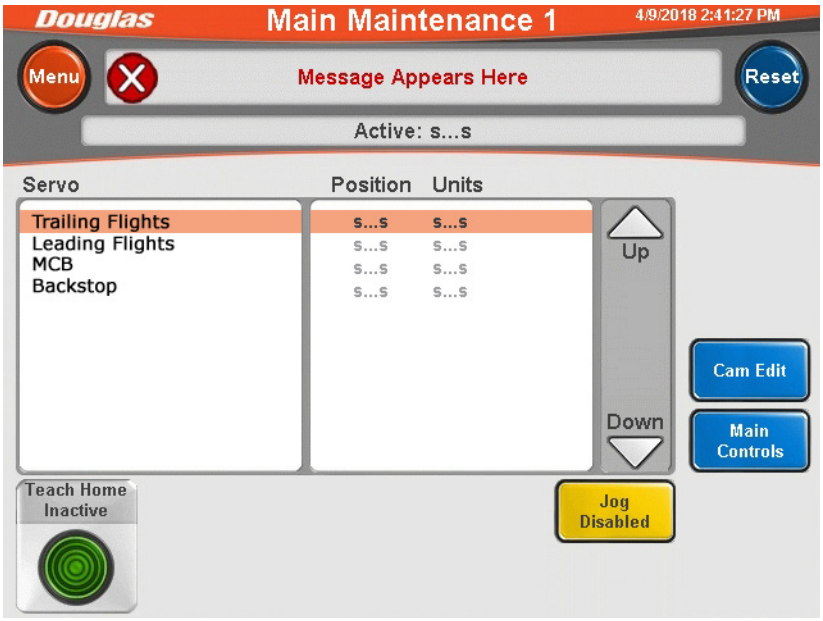
The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The **Goto Zero** button is visible while the Control Mode Manual/Auto selector switch is set to Manual. This button homes this module's line shaft and then recovers the associated servos to the line shaft.

The following buttons advance the current screen to the corresponding screen:

- **Main Maint** (Main Maintenance 1 Screen)
- **Recipe Edit** (Main Recipe 1 Screen)

Main Maintenance 1 Screen



The current **Position** and **Units** are displayed for each **Servo** on this module. Press the **Up** or **Down** arrow buttons to scroll through the listed servos.

The homing button's text reads **Teach Home Inactive** while homing is disabled.

If the selected servo is homed by the manual homing process, the homing button's text reads **Teach Home** when homing is enabled. Pressing this button establishes the selected servo's current physical position as its home position by setting the servo's absolute position to zero.

CAUTION

The Manual Homing feature is only intended for experienced maintenance personnel. Failure to place the selected servo at its yellow home position before pressing the Teach Home button will home the servo at the wrong position. This may result in machine components colliding with product, blanks, or other machine components.

The **Jog Disabled/Jog Enabled** button disables or enables the jog wheel for jogging the selected servo(s) forward or backward.

CAUTION

Machine or product damage may occur. Use caution when jogging machine components to prevent them from colliding with product, blanks, or other machine components.

Main Maintenance 1 Screen (continued)

The following buttons advance the current screen to the corresponding screen:

- **Cam Edit** (Global Cam Edit Screen)
- **Main Controls**

Main Recipe 1 Screen

The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens Section of the service manual for more information.

The **?** buttons display a help message for the corresponding recipe variable. The help message disappears when pressed.

The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The **Carton Rate** display indicates the current machine speed in cycles per minute (CPM).

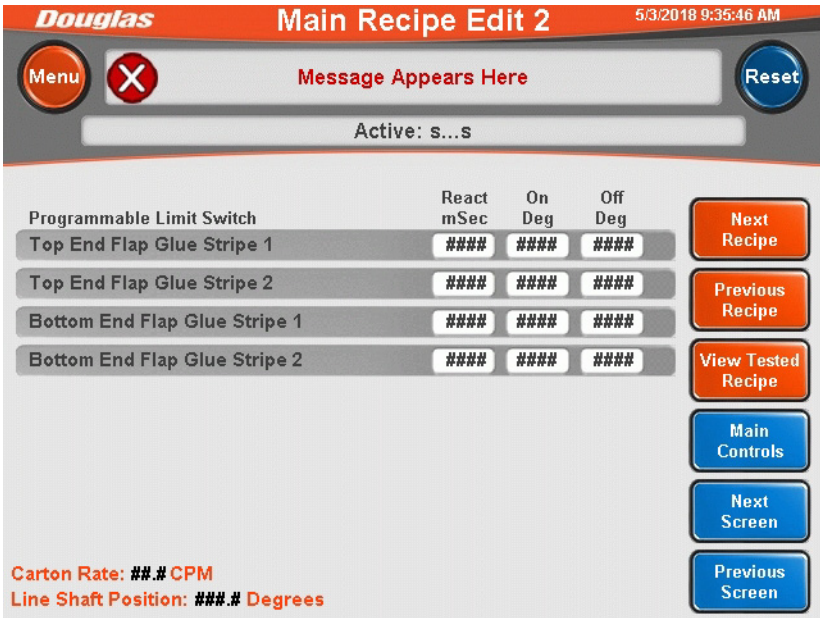
The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings can not be edited.

The **Main Controls** button returns the current screen to the Main Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's Recipe Screens.

Main Recipe 2 Screen



The **Recipe Display Bar** indicates the recipe to which the screen settings apply. An active or inactive display bar indicates the recipe status. The active recipe is the recipe the machine is currently running.

NOTICE

This screen's settings may be viewed or edited. Refer to the Recipe Screens Section of the service manual for more information.

The **Carton Rate** display indicates the current machine speed in cycles per minute (CPM).

The **Line Shaft Position** display indicates the actual position of this module's virtual line shaft.

The **Next Recipe** and **Previous Recipe** buttons allow personnel to view settings, found on this screen, for recipes other than the currently selected recipe.

The **View Tested Recipe** button allows the operator to view the most recently saved tested recipe settings for the current recipe. Pressing the button will not change the current settings and the tested recipe settings can not be edited.

The **Main Controls** button returns the current screen to the Main Controls Screen.

The **Next Screen** and **Previous Screen** buttons advance through this module's Recipe Screens.

Section 3

Startup/Shutdown

Machine Operation

Machine Loading

Startup/Shutdown

Machine Cleanout

Machine Operation

Before operating the machine:

- All personnel must read and familiarize themselves with the safety precautions (see the Safety section). Failure to observe these precautions may result in damage to the machine or serious personal injury.
- Examine the machine. Ensure that guard doors are closed, the machine has power, no obstructions are present, and E-stops are not activated.

General Production

- The machine will load and seal cases as long as machine conditions are met for the active recipe.
- Some faults will disable operation of the machine until the fault is corrected.
- For routine stops, always cycle stop the machine. Ensure the machine has come to a complete stop before opening a guard door.
- The machine will cease to operate if a guard door is opened. Close the door and press the Reset button on the control panel to allow for restart.

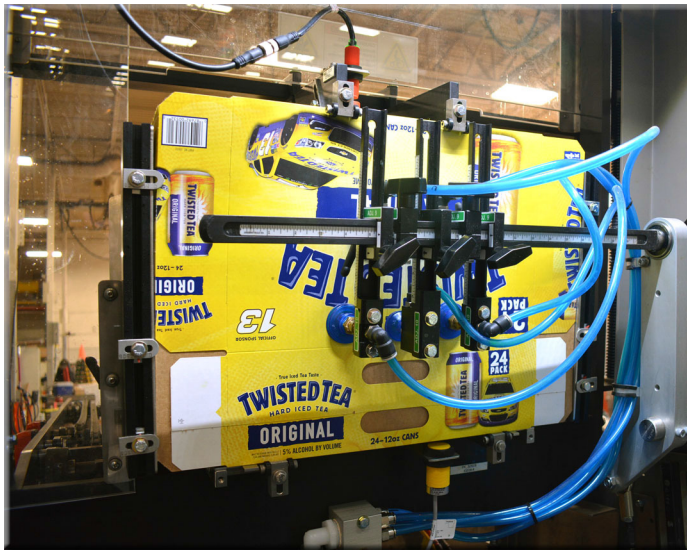
General Fault Recovery Procedure

1. Check the HMI for fault messages.
2. Refer to the Troubleshooting section in the service manual for specific recovery information on each fault message.
3. Check the position of the machine before restarting. Clear any cases or products that obstruct a moving part.
4. Reset the machine.
5. Press the Machine Start button to resume automatic operation.

Machine Loading

Magazine

1. If the magazine is empty, load it by sliding the bottom of the blanks up to the clips. Let the top of the blanks fall into place.



2. Adjust the magazine clips if necessary. Continue to load blanks until the magazine is full.

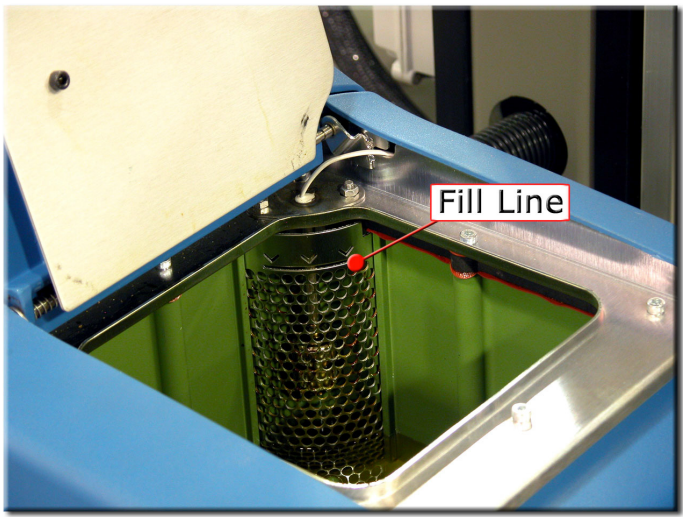
   During production, continue to load blanks as needed. It is easier to load the magazine if it does not completely run out of blanks. The back pressure from a loaded magazine is also beneficial because it allows the setup to pick blanks more easily.

Machine Loading (continued)

Glue System

1. Ensure the machine and glue system have power.

2. If required, pour glue pellets into the glue tank reservoir up to the fill line.



3. Turn on the glue tank to begin heating the pellets. The hot melt glue will require about 35-40 minutes to reach the operating temperature. The machine will not start if the glue is not at operating temperature.

   Refer to all service manuals supplied by the hot melt and glue system manufacturers for recommended operating procedures and safety precautions.

WARNING

- The tank, hoses, or guns of the glue system can cause severe burns. Hot melt glue systems use glue at high temperatures and air pressures. When filling the glue tank, wear safety goggles, gloves, and other protective clothing to prevent injury from splashed glue.
- Store glue in a closed container to prevent contamination which can cause blockages in the hoses and nozzles.

Machine Loading (continued)

Preload - Right Angle Infeed

1. Access the Machine Controls Auto - Screen.
2. Select the Mode: Preload.
3. Load the lanes so product is even across all lanes.
4. Press the Machine Start button.
5. Run product until it gets to the back of the arm.
6. Once sufficient surge has been met, the machine will automatically switch to Auto Mode.
7. Set the Blank Pick Off/Auto selector switch to Auto.

Preload - Inline Infeed

1. Access the Machine Controls Auto - Screen.
2. Select the Mode: Preload.
3. Load the lanes so product is even across all lanes.

   Watch for tipping cans as they enter the load area.
4. Press the Machine Start button.
5. Once sufficient surge has been met, the machine will automatically switch to Auto Mode.
6. Set the Blank Pick Off/Auto selector switch to Auto.

Startup/Shutdown

Machine Startup

1. Connect the power source to the machine to begin heating the glue system. The hot melt glue will require about 35-40 minutes to reach the operating temperature.
2. Complete the changeover adjustments as outlined in the Changeover section of the service manual. Ensure the machine adjustments correspond to the product and case sizes.
3. Advance to the Recipe Control Screen.
4. Press the Up or Down buttons to highlight the desired recipe and press the Select Recipe button.
5. Advance to the Machine Controls - Auto Screen.
6. Set the Mode to Preload.
7. Press the Machine Start button.
8. Set the Blank Pick Off/Auto selector switch to Auto.

Machine Shutdown

1. On the HMI control panel, press the Cycle Stop button.
2. Advance to the Machine Controls - Auto Screen.
3. Set the Blank Pick Off/Auto selector switch to Off.
4. Disconnect the power to the machine and the glue system.

DANGER

Personnel entering the guard package, without first locking out the power, risk accidental restart and potential serious injury or death. Do not enter the machine without first performing the lockout/tagout procedure required by your facility.

Machine Cleanout

1. Run the machine until the machine is low on surge and the HMI displays the *Infeed Low Surge* message.
2. Manually balance the lanes.
3. Insert the cleanout blocks.
4. On the HMI control panel, advance to the Machine Controls - Auto Screen.
5. Set the Mode to Cleanout.
6. Once the machine stops auto picking blanks, press the Cleanout Initiate button to load product until there is not enough for a full case.
7. Remove the remaining product by hand.
8. Remove the cleanout blocks.