OPERATION MANUAL

CT-8

CONTAINER FILLING SYSTEM BY COUNT

Congratulations,

You have just purchased, and are about to use, one of MAC's many engineered quality products. When you buy MAC, you buy not only equipment; but also the support of an organization with a caring staff of engineering, sales, service, and manufacturing professionals.

From all of us at MAC "Thank You" for favoring us with your business. We look forward to serving your future conveyor and automation needs. Should you have any questions or comments, our service department can be reached at:

MAC Automation Concepts, Inc.
1760 Kilkenny Court
Woodstock, Illinois 60098-7437

1-800-435-6979 or FAX 815-337-3020

Again, congratulations and welcome to the MAC Family of

Products

Your System Serial Number is:

All Data subject to change without notice

Owners Information Manual

1.0 Control System Information

2.0 System Startup

1.0 Control System Information

1.1 System Specifications:

Input Voltage: 115 VAC 60 HZ Single Phase
Input Current: 5 AMP Fused Main

1.2 Component Definitions

1.2.1 Standard System Components

Rotating Platform

System Control Enclosure

Contains all control wiring and interfaces to all the system to function

1.2.2 Standard Control Box Interfaces

SWITCHES

ON/OFF Selector Switch

The ON/OFF selector switches turn all the power OFF in the control box. This does not mean that incoming line is also turned OFF. This means

all power after the switch is OFF. To guarantee that there is no power in the control box you must unplug the unit.

E-STOP Push Button

The E-Stop Push Button is located on the control box. If this button is engaged, the unit will go into an E-Stop condition. This is a maintained push button. Once pushed it will remain latched until the operator pulls or disengages the button. The latched contacts will drop out the master control relay CR-1 that powers the AC line voltage to all moving devices. This will halt all system movement.

JOG Push Button

The JOG Push Button is located on the control box. If this button is momentarily depressed, the unit will abort the current container, and off load it to the discharge position. And will index in the next container. This is a momentary push button.

RESET Push Button

The Reset Button is located on the top of the control panel. If this button is momentarily depressed you will reset the counter without jogging to the next bag location. *NOTE: If the full container photo eye is added to the unit and the unit has filled all positions, and the bags have not been removed, the unit will go into a bypass state off-loading all parts by means of the Guide Deflection Shoot. Once the unit is in bypass and all bags need to be removed, the Reset Button can be hit and the system will go back to normal operation.*

CORDS

Power Cord

This cord brings power into the unit; it is Typically 110 Vac.

Interlock Signal Cord

When supplied, this cord interfaces the Container Filling system to the Production System, sending it an interlock signal. This status signal indicates that a container is ready to be filled.

Infeed Power Cord

This cord provides power to the Infeeding Device.

1.2.3 Standard Program Interfaces

Inductive Proximity Switch

This switch is used to locate the container filling location. It picks up target bolts attached to the bottom of the rotating platform.

Full Container Photo Eye

This eye is used to detect the presence of a full bag in the on deck position. The eye is used to generate an alarm when there are parts in this position.

Counting System

The Horner PLC

The Production Machine supplies an electrical signal to the PLC. The PLC then processes this signal and compares it to the control limit entered by the operator. The operator interfaces to the Horner PLC.

1.2.4 Standard Alarm Information

There are two groups of alarms represented by the indicator light. These groups signal the operator when the system is not operating properly.

Group One Alarms

1) A flashing light indicates that the system has a full bag in the on deck position. An operator must come over remove the bag and hit the reset button.

Group Two Alarms

Indicated by a solid light, indicating someone has pressed in or engaged the E-Stop button. The button must be pulled out or disengaged to reset this condition. When E-stop is engaged, the pressure to the cylinder is released, and all moving parts of the system stop. OR NOTE *if the full container photo eye is added*: *the system is completely full and the system is diverting through the Guide Deflection Chute. If the system is in this state, all bags need to be removed and then the Reset Button can be hit. The system will then start normal operation*

System Startup

1.3 Safety Precautions

Warning: This is an automatic operating pneumatic/electronic system, great care should be taken when servicing to avoid serious injury, and should only be done by a qualified maintenance technician.

1.3.1 Safety Features

E-Stop: if this button is engaged, the unit will go into an E-Stop condition. Once pushed it will remain latched until the operator pulls or disengages the button. The latched contacts will drop out the master control relay CR-1 that powers the AC line voltage to all moving devices.
Off/On Selector Switch: when turned off to it will assure no electrical power to the system beyond the switch.
Standard Line Cord: when unplugged assures no power is applied to the system.

1.4 System Sequence of Events

The rotary table will rotate until it senses a target bolt.
After a time delay the infeed conveyor will start to fill the empty container.

It will continue filling until the control target is reached.
Once the control target is reached the infeed device stops and the table rotates to the next fill position.

1.5 Starup Procedure

1.5.1 Hooking the System Up

Main electrical power is supplied be a standard 115 VAC 60 Hz single-phase line cord. This should be connected to an appropriate receptacle.
An Interlock interfacing cable is provided to interface with any user equipment
Infeeding conveyor power connection. The infeeding conveyor should be connected to this receptacle.

1.5.2 Setting the Control Target

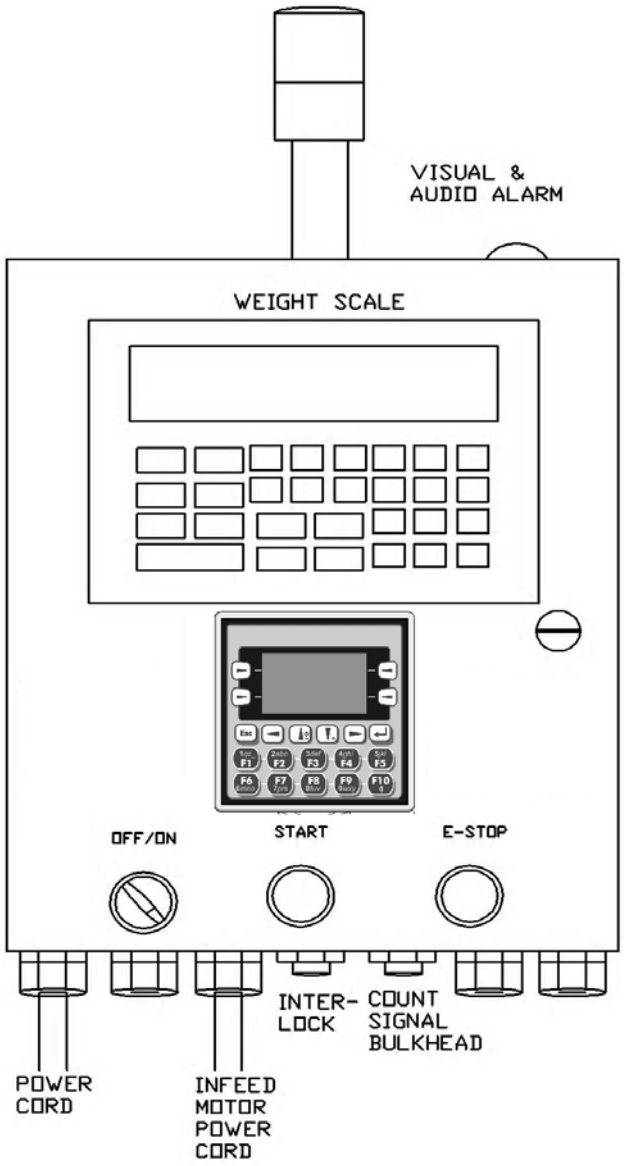
For The Horner PLC

1) The Horner interfaces the PLC to the operator. The count signal interfaces into the PLC. By following the menu options on the Microview you can view or change any of the control target parameters.

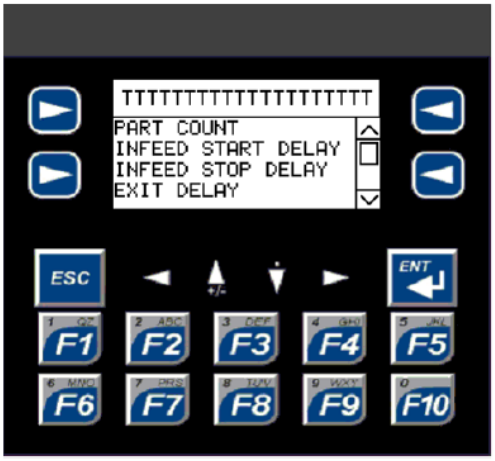
1.5.3 First Time Startups or Restarts

Before turning the power switch to the on position:
1) Engage the E-Stop, by pushing in the Red E-Stop operator.
2) Connect any interface cables and infeed devices.
3) Fill the empty container areas with empty containers.

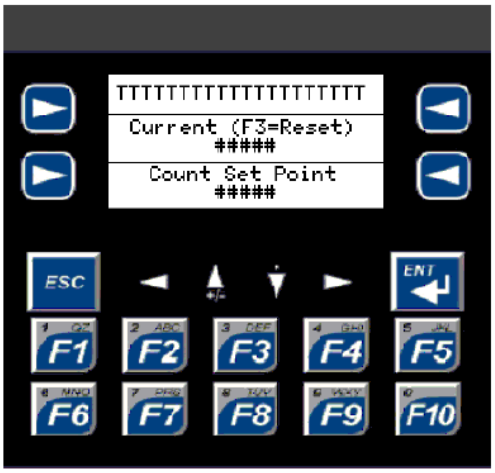
Turn on the power switch to the on position.
Disengage the emergency stop button by pulling out the Red E-Stop operator**.**
Motion of the empty container conveyor will begin. Motion will follow the sequence of operation.


VISUAL &
AUDIO ALARM
WEIGHT SCALE
OFF/ON
START
E-STOP
INTER-
LOCK
COUNT
SIGNAL
BULKHEAD
POWER
CORD
INFEED
MOTOR
POWER
CORD

Rotary Index Table



MAIN SCREEN
Use up/down arrows to select a menu item and press ENT.

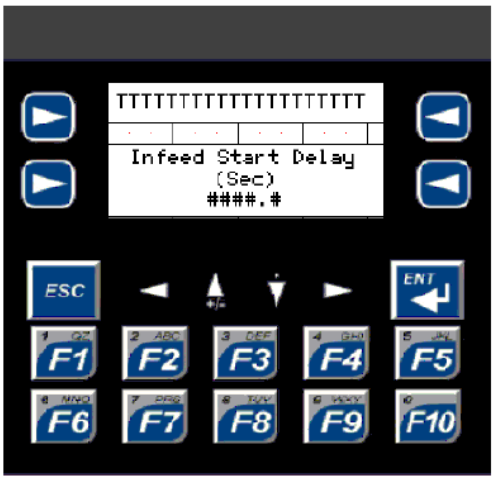


PARTS COUNTER
Set this to the number of parts that represent a full bag.
To change; press ENT then use keypad to modify.
Press ENT when done; ESC to cancel.

The current count is displayed.

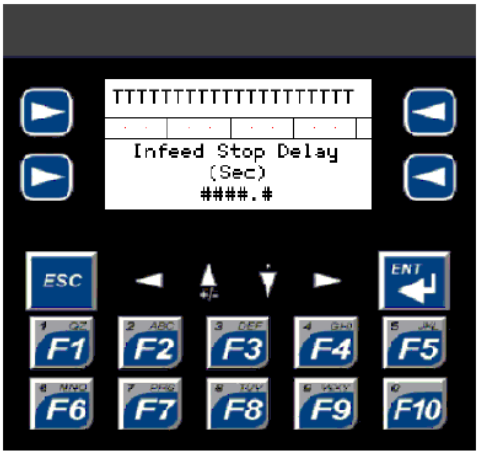
Press F3 to reset to zero.

Press ESC to return to the main menu.



INFEED START DELAY
This will delay starting of the parts conveyor after the table finishes indexing.
To change; press ENT then use keypad to modify.
Press ENT when done; ESC to cancel.

Press ESC to return to the main menu.

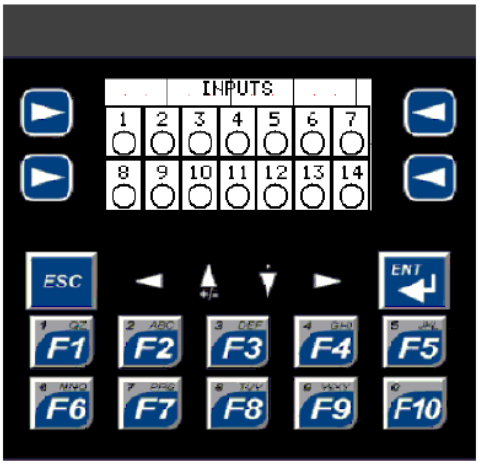


INFEED STOP DELAY
This will delay stopping the parts conveyor after the part count completes.
To change; press ENT then use keypad to modify.
Press ENT when done; ESC to cancel.

Press ESC to return to the main menu.

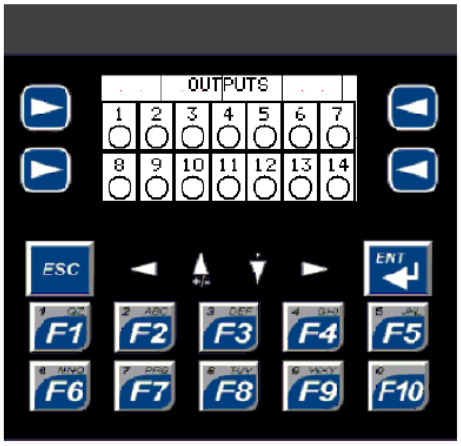
EXIT DELAY
This will delay rotation of the table after the parts conveyor stops.
To change; press ENT then use keypad to modify.
Press ENT when done; ESC to cancel.

Press ESC to return to the main menu.



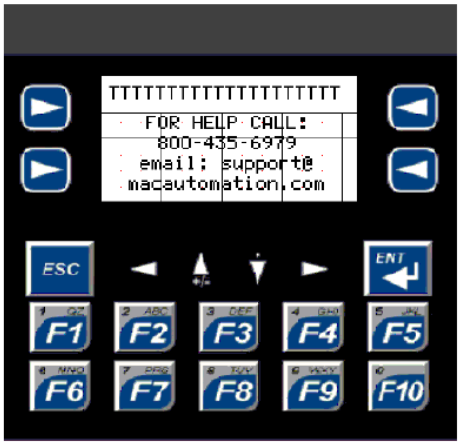
INPUTS SCREEN
This screen shows the status of the controller's inputs. Use this with the schematics to help diagnose problems.

Press ESC to return to the main menu.



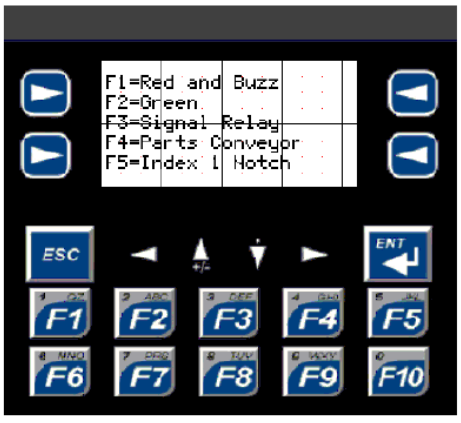
OUTPUTS SCREEN
This screen shows the status of the controller's outputs. Use this with the schematics to help diagnose problems.

Press ESC to return to the main menu.



HELP SCREEN
Call or e-mail for help.

Press ESC to return to the main menu.



MANUAL SCREEN
Press a function key to test the matching device.
F1=Red Light and Buzzer
F2=Green Light
F3=Test 'bag in fill position' Signal Relay
F4=Spare
F5=Index 1 Notch. Use this to line up the table with the filling chute.

Press ESC to return to the main menu and resume normal operation.

A screen saver will automatically activate after 15 minutes. Press Esc key to turn the backlight back on.

FAULT MESSAGES

THE EMERGENCY STOP BUTTON WAS PRESSED. RELEASE THE E-STOP BUTTON AND PRESS THE RESET/START BUTTON.

REMOVE FULL BAGS

PRESS F10 TO RESET

The table will not index until F10 or the red reset button on top of the box is pushed.

TABLE JAM

The table failed to index. Check the index drive for faults (See the NFX manual.) Try to rotate the table with F3 from the manual screen. Check the limit switch under the table for proper operation.