



CONTROL SYSTEM OPERATING INSTRUCTIONS –
BAG DUMP DUST EXTRACTION SYSTEM – BD-H30T-X.

PROJECT:-	PREMIER FOODS GROCERY
ASSOCIATED GENERAL ARRANGEMENT DRAWING No:-	C25783
ASSOCIATED ELECTRICAL DRAWING No:-	W25802
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OVERVIEW

The dust collection system for a bag dump station comprises of 2 main operating devices, the motorised fan for extracting air and dust from the bag loading entrance of the station and (2 off) electrically activated, pneumatic reverse jet filter valves for keeping the filters in the filter housing compartment clean. The standard way of operating this system is to have a local control panel close to the bag dump station for ease of access by the machine operator, the control panel will have START and STOP push buttons on the door of the control panel for use by the machine operator.

Operation of the dust collector system differs dependant upon whether an optional sack dump hood access door interlock switch is fitted or not, if a door interlock switch is not fitted the fan motor and reverse jet valve cleaning cycle is entirely dependant upon whether the system has been started using the START button, if a door interlock switch is fitted then activation of the system still requires the START push button to be pressed but fan motor and reverse jet valve activity only occurs when the access door is open.

Regardless of whether a door interlock switch is fitted or not, the machine operator should open the access door and then momentarily depress (less than 3 seconds) the START push button, the extraction fan will start to draw air into the sack dump station through the open access door thus preventing dust from tipped bags entering the atmosphere outside of the bag dump station. Whilst the extraction fan is operating, the reverse jet filter valves alternately pulse on a timed basis to remove dust from the filter units thus preventing the filters from becoming choked. When bag dumping by the machine operator has been completed, the machine operator should close the access door, if a door interlock is not fitted the machine operator should momentarily press the STOP button to cancel activation of the extraction fan motor and reverse jet valves, if a door interlock switch is fitted pressing the STOP push button is optional.

A jog facility is included in the control system for activation of the reverse jet valves only, without the operation detailed above being activated, the access door should be closed and then the machine operator should hold in the START push button, after three seconds the reverse jet filter valves alternately pulse on a timed basis to remove dust from the filter units subject to the START push button being held in, as soon as the START push button is released, reverse jet valve activity ceases. Jogging of the reverse jet valves can be used to test the valves and remove excess dust from the filters not removed during normal operation. **Caution is advised that because the extractor fan motor is not operating during the jogging sequence, dust may escape from around the access door seal.**



CONDITIONS FOR OPERATION

1. Suitably protected power from the client electrical distribution system is available and wired correctly to the Flexicon control panel.
2. Machine operating field and signalling devices are correctly electrically wired from the machine control system.
3. A compressed air supply from the client compressor is correctly connected to the supply input point(s) of the machine, adjusted to the required pressure value and turned on.
4. The Flexicon control panel main isolator switch on the control panel door is turned on.
5. The Flexicon control panel Power On lamp on the control panel door is illuminated.
6. The Flexicon control panel Motor Tripped lamp on the control panel door is not illuminated.
7. The Flexicon control panel Emergency Stop push button on the control panel door (or remote Emergency Stop button if fitted) is not activated.
8. Required operational program data entries and pre-operation procedures have been made (see page 6 of this document).



SEQUENCE

SEQUENCE – SACK DUMPING

1. Open the sack dump station access door.
2. Momentarily depress the START push button (less than 3 seconds).
3. Extraction fan starts.
4. Control system confirms extraction fan is operating.
5. Reverse jet filter valves operate alternately on a cycle time basis, each reverse jet valve is activated for a timed pulse width basis. Refer to the instructions at the end of this document for entering/editing the cycle and pulse width times. The maximum cycle time should be set that still ensures the filters are kept clean.
6. When sack dumping is complete close the access door.
7. If an access door interlock switch is not fitted, momentarily press the STOP button. If an access door interlock switch is fitted, pressing the STOP button is optional.
8. All extraction fan and reverse jet filter valves operations are cancelled and will not restart until the START button is again depressed.

SEQUENCE – REVERSE JET VALVE JOGGING

1. Keep the sack dump station access door closed.
2. Keep the START push button depressed for at least 3 seconds and for as long as reverse jet valve activity is required.
3. Reverse jet filter valves operate alternately on a cycle time basis, each reverse jet valve is activated for a timed pulse width basis. Refer to the instructions at the end of this document for entering/editing the cycle and pulse width times.
4. When reverse jet valve activity is no longer required, release the START push button.
5. Reverse jet filter valves operations are cancelled and will not restart until the START button is again depressed.



MOTOR TRIP SITUATION

Should the dust extractor system fan motor trip out, any 'in progress' operation is cancelled and the control power is disconnected from the extractor fan motor and reverse jet valve solenoids operating field devices. The fan motor trip lamp will illuminate as an aid for rectification. When the trip situation has been rectified, operations can be restarted.

FAULT SITUATION

Should the control system main controller unit detect a fault, any 'in progress' operation is cancelled and the START push button switch extinguishes but it will subsequently flash twice to inform the machine operator that a fault has occurred. After fault rectification an operation can be restarted.

Apart from a motor starter trip situation other faults monitored for by the control system are actuation of the motor starter when commanded to do so by the control system, if the motor starter does not actuate a fault will be indicated.

EMERGENCY STOP SITUATION.

Should the control panel (or remote if fitted) emergency stop push button switch be depressed, any 'in progress' operation is cancelled and the control power is disconnected from the extractor fan motor and reverse jet valve solenoids operating field devices. When the emergency stop situation has been rectified and the activated emergency stop push button switch has been reset, operations can be restarted.

CAUTION IS ADVISED THAT SHOULD THE FILTERS IN THE FILTER HOUSING BECOME COVERED WITH POWDER, A RESULTING LOSS OF EFFICIENCY OF THE DUST EXTRACTION SYSTEM WILL OCCUR – REGULAR INSPECTION OF THE FILTERS IS ADVISED ON A PERIODIC BASIS AS A MATTER OF COURSE.



NOTES.

During machine maintenance, repair or inspection, Emergency Stop situation or Fault situation etc, It is recommended that the control panel main isolator switch is turned off and the supply power from the clients distribution system is disconnected.

The machine safety system relies on a mechanical device for human safety by means of the grill covering the air outtake port of the dust extraction fan assembly, removable only by tools, should this assembly be removed, human safety may be compromised therefore it is also recommended that the control panel main isolator switch is turned off and the supply power from the clients distribution system is disconnected during these situations.

The necessary precautions required when dealing with compressed air and electricity should also be adhered to.

WARNING !! - 400 VOLTS AC & 24 VOLTS DC EXIST IN THE FLEXICON SYSTEM – ACCESS TO THE INSIDE OF THE CONTROL PANEL, EXTERNAL WIRING AND ELECTRICALLY POWERED FIELD OPERATING DEVICES SHOULD BE LIMITED TO COMPETANT AND/OR QUALIFIED PERSONNEL.

SIEMENS LOGO CONTROLLER PARAMETER SETTING CHANGE.

There are 2 user changeable parameters, the time period between reverse jet pulses and the pulse width of the reverse jet valves on the display screen on the LOGO controller module (CNR1-1).

To change the timer settings on the display, hold down the ESC button for 3 seconds then momentarily press the OK button, the first number that can be changed becomes underscored, use the ^ (up) and v (down) buttons to change the number, after changes have been completed momentarily press the OK button then the ESC button to complete the changes and return the controller to normal mode.

