OPERATORS MANUAL FOR CS-130-SC MANUAL/OPEN-LOOP CONTROLLER

- User friendly
- Removes all hydraulics from the cab
- Simplicity in front face controls
- Detented Spread Width and Application Rate knobs
- Blast function
- Stationary Unload feature
- Auger/Conveyor Reverse and Pause functions
- Remote Pause and Blast feature

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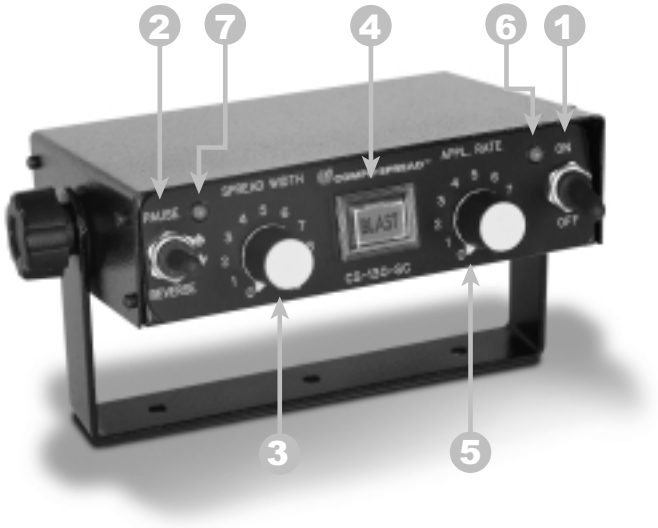
F U N C T I O N A L P U R P O S E

The CS-130-SC controller is capable of three modes of operation: Manual Mode; 12 Volt Triggered Manual Mode and “Open-Loop” Mode. The controller is designed to provide simplified installation, timely setup and operation. The benefits are simple, more value-added features at a lower cost. These objectives have been achieved with the CS-130-SC.

The front console layout has been designed to reflect the traditional layout of a manual spreader control block, thus allowing an easy transition for understanding and operating the CS-130-SC control functions.

INTRODUCTION TO THE FRONT FACE CONTROLS

NOTE: This section pertains to driver activated operations only. For Calibration and programming, please refer to module 5B in the CompuSpread manual.



1. POWER ON/OFF

Turns the control unit on and off. The power LED illuminates when the switch is in the ON position.

2. PAUSE / REVERSE

This toggle switch, when moved downward, will reverse the rotating direction of the auger. When moved upward, it will pause the Spinner and Auger / Conveyor circuit. Note that when activating pause, the pause LED illuminates.

3. SPREAD WIDTH

Controls the width of the spread pattern, by increasing or decreasing the speed of the Spinner motor.

4. BLAST

This illuminated button allows you to achieve two functions:

- When the truck is running you may press Blast to go to a higher than selected Application Rate.
- Blast is used when the truck is stationary to access the Stationary Unload feature.

5. APPLICATION RATE

Allows you to control the amount of material spread by increasing or decreasing the speed of the Auger/Conveyor circuit.

6. POWER LED

This illuminates when powered ON.

7. PAUSE LED

This illuminates when Pause is activated.

C O N F I G U R A T I O N

M A N U A L M O D E

The CS-130-SC, once installed, is programmed to operate in one of three modes. The default mode is Manual Mode. This means the operator has full control over the spreader functions. He must adjust the Application Rate output to suit the road conditions. He also must intervene with spreading operation, pausing the controller when necessary (i.e. approaching an intersection).

Manual Mode is easily identified. The Auger/Conveyor will operate **AT ALL TIMES** when the Application Rate knob is rotated to any of the 1-10 position settings.

1 2 V O L T T R I G G E R E D M O D E

When programmed to this mode, the operator needs only to adjust his Application Rate to suit the road conditions. The spreader operation is triggered by vehicle movement, and therefore, the Conveyor will automatically stop when necessary (i.e. at an intersection).

Additionally, the Spinner may be set to stop when the vehicle stops.

" O P E N - L O O P " M O D E

When programmed to this mode, the operator needs only to adjust his Application Rate ONCE to suit the road conditions. The rate at which the Auger/Conveyor rotates will increase proportionally with the speed of the truck (to the maximum speed at which the vehicle should be spreading).

The spreader operation is triggered by vehicle movement, and therefore, the Conveyor will automatically stop when necessary (i.e. at an intersection).

Additionally, the Spinner may be set to stop when the vehicle stops.

O P E R A T I N G A D J U S T M E N T S

These steps should be taken or checked prior to setting out on each spreading route.

1 . P O W E R

Use Power ON/OFF toggle to ensure power is on. The Power LED will signify power is on.

2 . A P P L I C A T I O N R A T E

Adjustment should be set to the application rate required for the existing weather conditions.

NOTE: At any time, truck stopped or travelling, you can select another Spread Rate.

3 . S P R E A D W I D T H

Set the Spread Width selector to the desired spread pattern.

NOTE: This setting may be changed at any time. However, the spinner speed is best adjusted while the truck is spreading so that the operator can see the resulting width of the spread pattern.

SPECIAL OPERATING CONDITIONS

STATIONARY UNLOAD

This is the function of dumping off the remaining material after a route has been completed. To run the conveyor and off-load this material, follow these steps:

A. Toggle on box power if necessary. Ensure the vehicle is stationary.

B. Toggle the Pause/Reverse switch to 'Pause'. Note the Pause LED illuminates.

C. Press Blast. The Blast button indicator will illuminate to indicate the truck is unloading. Use the Application Rate knob to increase/decrease speed.

NOTE: To reach higher conveyor speeds the truck must be throttled off idle and held at a higher R.P.M.

E. Use the spread width selector to set the spinner speed, if the spinner is required to run.

F. To shut off the conveyor when the box is empty, toggle the Pause/ Reverse switch back to its centre position.

NOTE: At any time during stationary unload, the process will **AUTOMATICALLY STOP** if the vehicle is moved (when in 12 Volt-Triggered, or "Open-Loop" Mode).

BLAST

To temporarily increase the spread rate higher than selected with the APPL. RATE selector, you can press the Blast button.

- The conveyor (not the spinner) will speed up instantly to give a higher spread rate.
- While Blast is left ON, the Blast button indicator will remain on.
- When the increased rate is no longer required, press Blast again to instantly return to the selected spread rate.

NOTE: Blast has no effect on spinner speed.
Blast will not operate when the truck is stationary (**AND** the controller is set to 12 Volt Triggered or 'Open-Loop' Mode).

The Blast function should only be used when necessary. Never continuously run in Blast mode.

AUGER REVERSE

This usually only applies to trucks equipped with augers as opposed to trucks with conveyors.
The purpose of Reverse is to reverse the Auger to free up any obstruction caused by oversized foreign material caught in the auger.

- Reverse can be activated when the truck is stationary or mobile.
- Reverse is activated by the Reverse toggle, and must be held to keep the Auger Reverse feature active. To stop the Auger, release the Reverse toggle.

CAUTION: DO NOT OPERATE IN REVERSE FOR ANY EXTENDED PERIODS.

AUGER / CONVEYOR PAUSE

Switched in the upward direction, this function will pause the Spinner and Auger/Conveyor, until switched back to the center position.

T R O U B L E S H O O T I N G G U I D E

Symptoms	Probable Cause	Corrective Action
The Auger/Conveyor is running when vehicle is stopped.	• Valve spool jammed open.	• Remove and inspect. Replace if necessary. See Module 4A.
NOTE: Only applicable when operating in 12 Volt Triggered or 'Open-Loop' Mode	• Stray ground speed signal.	• Check sensor or connection point. Recalibrate ground speed.
	• Minimum conveyor null to high.	• See Parameter 8-1. Lower the value.
The Auger/Conveyor is stopped when vehicle is running.	• Hydraulic/Mechanical	• Check for system pressure and flow. Check hoses, pumps, motors and gearboxes for leaks and proper operation. Check oil level in reservoir. Check shafts and chains.
	• Electrical	• Check cables and solenoids; repair or replace if required. Check CS-130-SC for output to solenoids; replace or repair as required.
Ground speed calibration is incorrect.	• Incorrect ground speed calibration procedure.	• Recalibrate ground speed.
There is no spinner, or Auger/Conveyor Output.	• Defective component.	• Return CS-130 to supplier for repair.
	• Low vehicle voltage.	• Check ground connection. • Check battery voltage.

Symptoms	Probable Cause	Corrective Action
CS-130-SC will not turn on.	• Poor power connection.	• Check power and ground connections.
	• Defective power cable.	• Test, repair or replace power cable.
	• Blown fuse.	• Wait for 5 minutes and fuse will reset.
	• Burnt traces.	• Return CS-130-SC to supplier for repair.
	• Low vehicle voltage.	• Check vehicle voltage. Check ground connection.
CS-130-SC turns on, but does not operate.	• Poor power connection.	• Check power and ground connections.
		• Reset Parameter 5-9.
Conveyor/Auger settings slow to respond.	• Conveyor/Auger nulling too low.	• Recalibrate Parameters 8-1 and 8-2.

T R O U B L E S H O O T I N G C H A R T

S T E P 1 Check Operator Fault Log

- Collect information from the operator
- See what action the operator noted as being abnormal

S T E P 2 Perform Visual Inspection

- Perform visual walk-around inspection
- Check the general condition of the complete system.
- Look for loose electrical of hydraulic connections, leaks, fluid levels, etc.
- Record but DO NOT fix faults.
- Troubleshoot the system and verify the cause of fault.

S T E P 3 Prepare Unit for Troubleshooting

- Increase and maintaining engine RPM above the critical flow limit for your system.
- Engage pump drive
- Turn on all accessories, lights, etc. that the operator uses during normal spreading

NOTE: You may have to alter engine RPM in order to simulate conditions before and during the described fault.

S T E P 4 Review System Operation

- Review the operation of a correctly functioning system for comparison purposes.

S T E P 5 Confirm Operator Set-up Adjustments

- Reset if necessary

S T E P 6 Confirm Operator Fault

- Simulate, where possible, the conditions "Before" and "During" the fault listed on the Operator Fault Log

S T E P 7 Repair System and Retest

- Perform the adjustments or repairs as identified in Step 6 and then retest the system

O P E R A T O R F A U L T L O G

TRUCK IDENTIFICATION NUMBER _____

FAULT _____

DATE _____

TIME _____

	CONDITIONS BEFORE FAULT	CONDITIONS DURING FAULT
ENGINE RPM		
TRANSMISSION GEAR		
VEHICLE SPEED		
SYSTEM OPERATION MODE		
GATE POSITION OR SETTING		
LOAD SETTING		
SPREAD WIDTH SWITCH SETTING		
SPINNER ACTION		
APPLICATION RATE SWITCH SETTING		

OTHER INFORMATION _____

CAUSE OF FAULT _____

SOLUTION _____