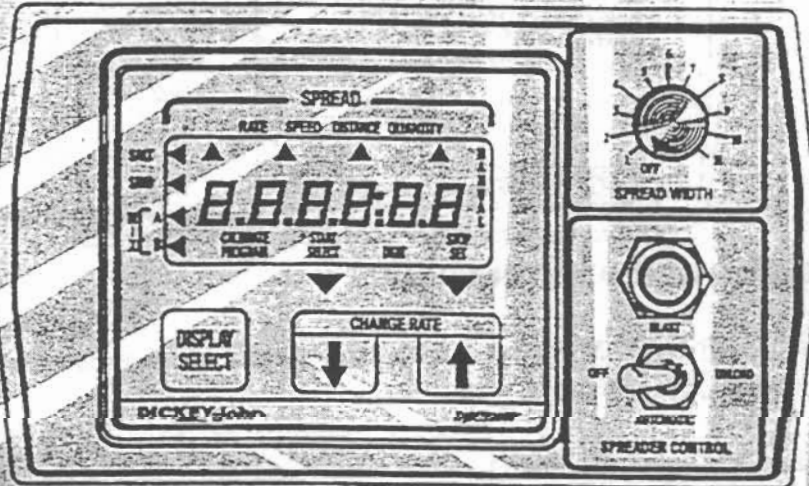




DICKEY-john[®]
CORPORATION

ICS2000



ICE CONTROL SYSTEM Troubleshooting

SYMPTOM 1

THE SPREADER VALVE WILL NOT OPEN (CONVEYOR WILL NOT TURN) WHEN SPREADER CONTROL SWITCH IS SET TO THE AUTO POSITION. VALVE WILL OPEN WHEN SWITCH IS SET TO UNLOAD OR BLAST BUTTON IS PRESSED.

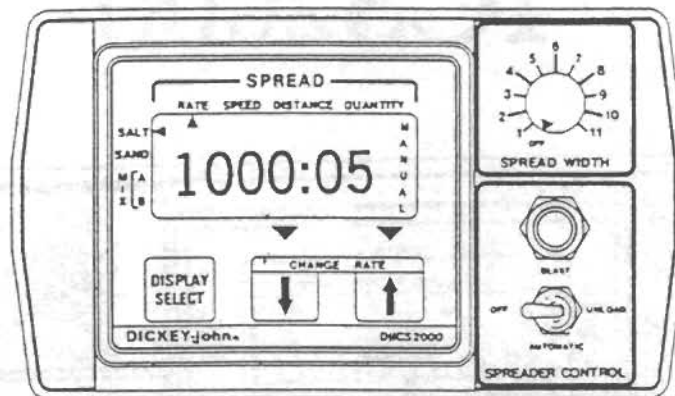
POSSIBLE CAUSES AND REMEDIES

1. Application rate is set at (0) zero.
2. The ground speed reading on the console is (0) zero.

Drive the truck and watch the speed readout on the console. If speed reads 0, check that a ground speed calibration number has been entered into the console. Next, check the connections and wires between the ground speed sensor and ICS2000 console wiring.

3. If all above checks out OK, replace the ground speed sensor.

*NOTE: The control system may still be operated without a ground speed sensor input by setting the console into the manual speed format as described below.



MANUAL SPEED OVERRIDE PROCEDURE

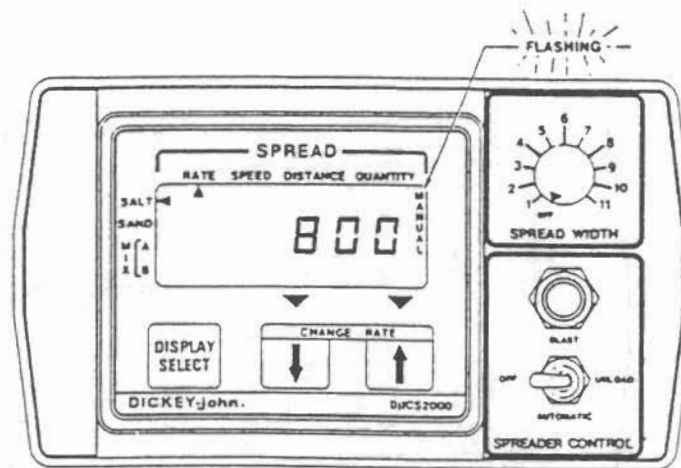
- Step 1. Enter the CALIBRATE MODE and enable the Manual Mode (answer yes to manual). Return to OPERATE MODE.
- Step 2. Select Material Type to be spread. Set Application Rate to desired setting.
- Step 3. Momentarily press the DISPLAY SELECT touch switch until the MANUAL message is displayed as shown above.

Note that the Material Type pointer shows the selected material and the spread pointers are indicating RATE and SPEED. The selected application rate is shown in the left three digits of the six digit display and the SPEED, which must be maintained to achieve the application rate, is shown in the right two digits.

- Step 4. To begin spreading, set the SPREADER CONTROL switch to AUTO and drive at the displayed SPEED value. To stop spreading set the SPREADER CONTROL switch to OFF.

SYMPTOM 2

THE WORD "MANUAL" IS FLASHING ON THE RIGHT SIDE OF CONSOLE DISPLAY



The ICS2000 control system has an automatic override function. This occurs in the event of a conveyor sensor failure. The system converts automatically to open loop control. This allows you to continue spreading until a replacement sensor is installed.

POSSIBLE CAUSES AND REMEDIES

1. Check to see if the conveyor or auger is still spreading material.
 - A. If material is not being spread (conveyor or auger stopped)
 - Check to make sure PTO is engaged.
 - Check for obstacle lodged in conveyor or auger
 - Check for hydraulic system failure (pump, valve, hydraulic motor)
 - B. If material is being spread and conveyor or auger is turning.
 - Using a voltmeter, go to the connection closest to the application rate sensor and unplug. There are three wires in this connector, RED, BLACK and GREEN.
 - Check between the RED and BLACK wires. There should be a +12 volt reading.
 - Check between the GREEN and BLACK wires. There should be a +5 volt reading.

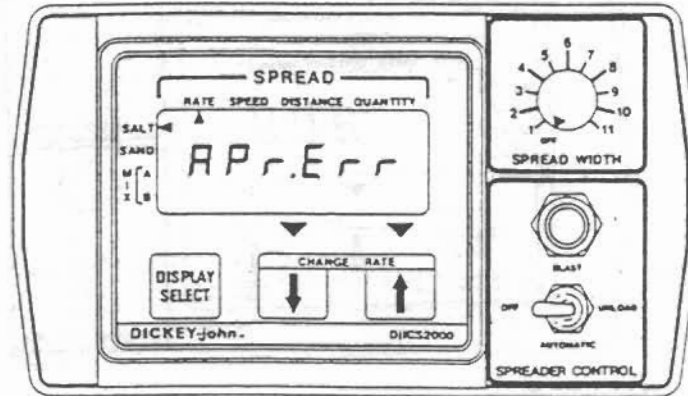
If voltage is not present, then there is a broken wire in the cable assembly, a corroded pin in the connector, or short in the wiring harness.

If voltage is present, replace the application rate sensor.

SYMPTOM 3

APR ERR IS FLASHING ON THE DISPLAY AND ALARM IS SOUNDING.

The illustration below indicates an application rate error.



APPLICATION RATE ERROR

POSSIBLE CAUSES AND REMEDIES

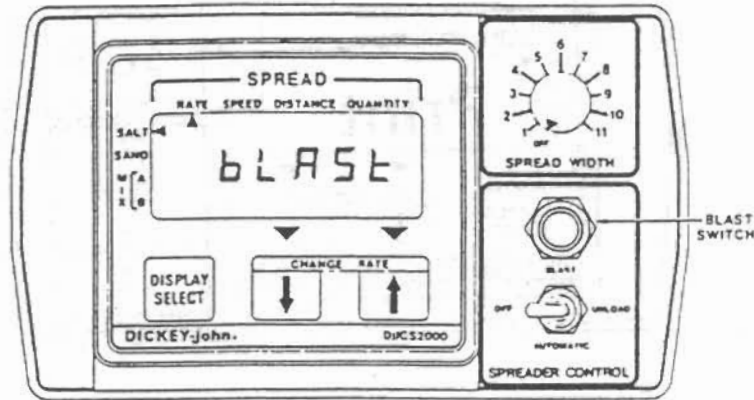
APr Err indicates the truck ground speed exceeds the capability of the spreader to apply the target application rate. If this occurs . . . slow down . . . until the display and alarm quit sounding.

If slowing down the speed of the truck does not help, then check the following.

1. Not enough oil from pump to hydraulic motor.
2. Conveyor or auger jammed or binding.
3. Engine RPM too low due to using too high of a gear.

SYMPTOM 4

THE BLAST MESSAGE IS CONTINUOUSLY BEING DISPLAYED ON THE CONSOLE

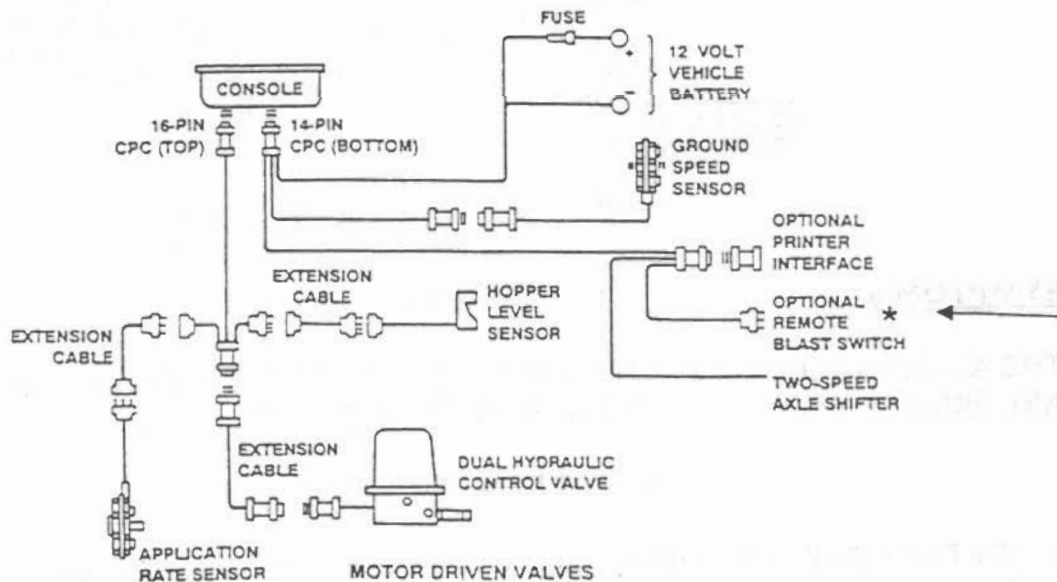


POSSIBLE CAUSE AND REMEDY

1. There is a short between the RED and BLACK wires of remote BLAST switch lead.*

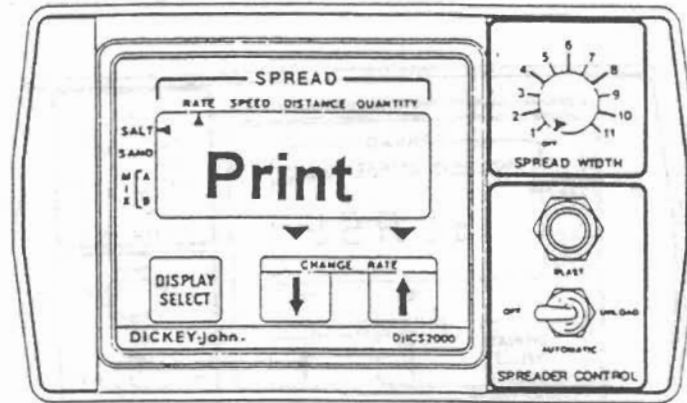
There is a 2 pin rectangular connector on the power/ground speed harness. This connection is intended to be used for a hook up to a remote BLAST switch.

Check for a short at this 2 pin connector (caused by water, ice, etc.) or a pinched cable.



SYMPTOM 5

THE "PRINT" MESSAGE IS CONTINUOUSLY BEING DISPLAYED ON CONSOLE

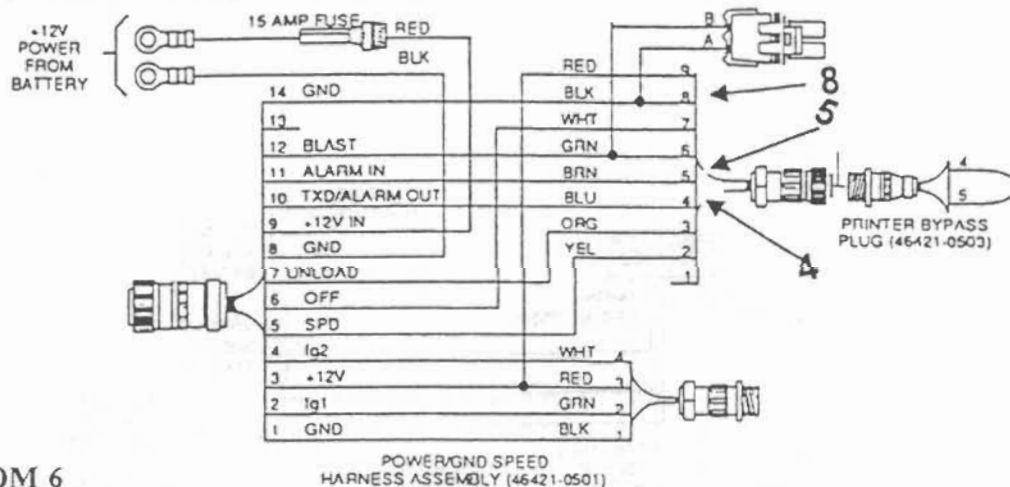


POSSIBLE CAUSE AND REMEDY

1. There is a short in the 9 pin printer access plug located on the power/ground speed harness. Check for short between pins #8 and #5, #8 and #4.

This is the same 9 pin plug the data printer is hooked into for printing out accumulated data the ICS2000 console is tabulating.

The 9 pin plug is shipped with a dust cap from the factory. Make sure if plug is missing that it is replaced to avoid problem from reoccurring in the future.



SYMPTOM 6

THE ALARM WILL NOT SOUND WHEN THE TOUCH SWITCHES ON THE CONSOLE ARE PRESSED OR WHEN AN ERROR MESSAGE IS DISPLAYED

POSSIBLE CAUSE AND REMEDY

1. The Printer By Pass Plug (dust cap) is not plugged into the 9 pin connector. This is the same 9 pin connector which the data printer would be plugged into when printouts are needed. Pins #4 and #5 must be shorted to cause the alarm to work.

SYMPTOM 7

THE SPREADER VALVE WILL NOT OPEN (CONVEYOR OR AUGER WILL NOT TURN) WHEN THE SPREADER CONTROL SWITCH IS SET TO AUTO, UNLOAD OR WHEN THE BLAST BUTTON IS PRESSED.

POSSIBLE CAUSES AND REMEDIES

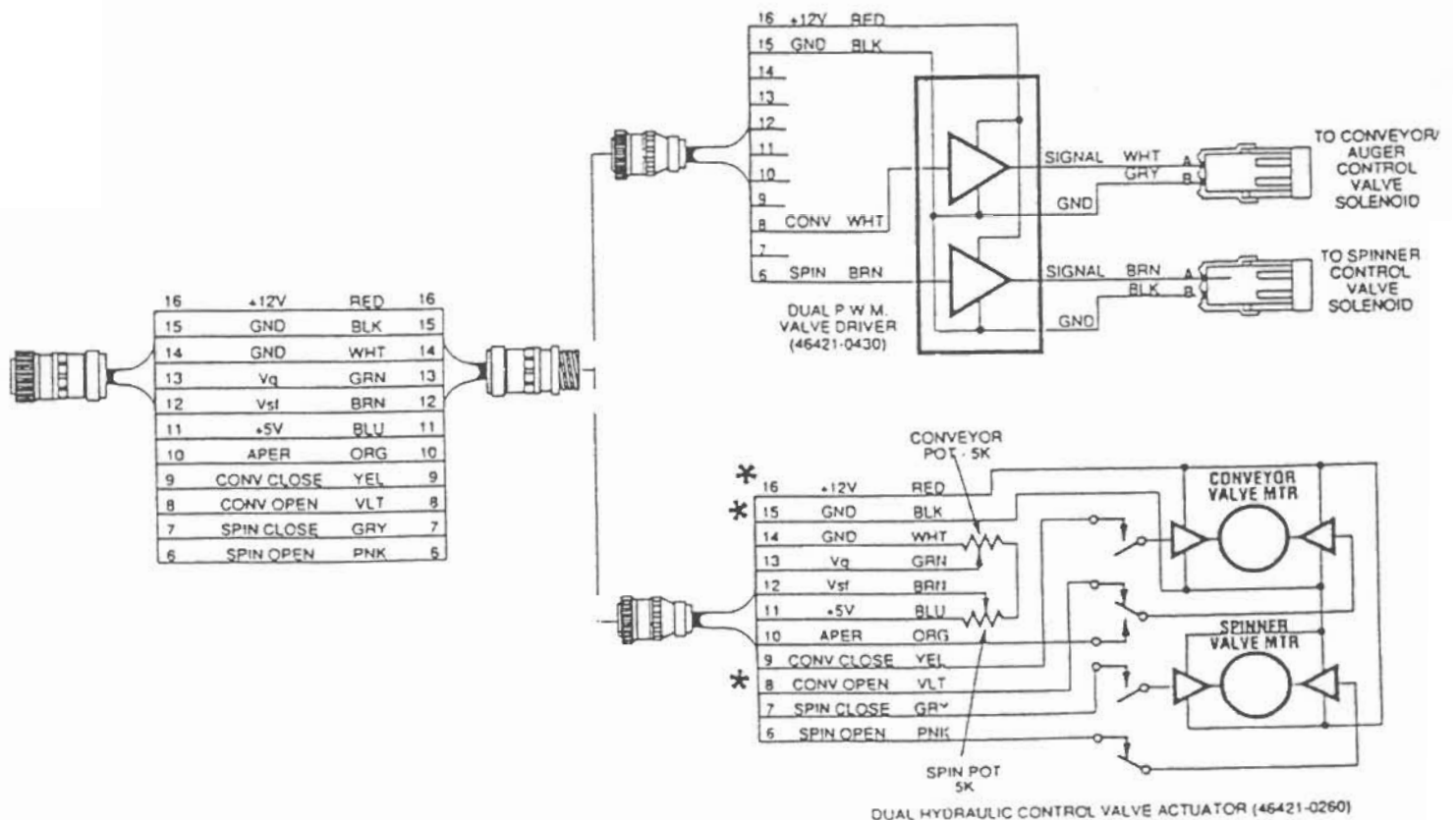
The wiring harness or cables could be shorted or pinched. Actuator or PWM Driver has failed or the control console needs replaced.

1. Unplug the valve actuator/PWM Driver cable from the mating harness.
2. With a voltmeter, check between pins #15 and #16 of valve connector. Should read +12 volts on meter.*
3. While holding BLAST or UNLOAD switch, check between pins #15 and #8 of valve connector for +12 volts.*

If voltages are present, replace valve actuator. If voltages are not present, visually inspect wiring for damage and bad connections and perform continuity test.

On Hydraulic System with PWM Valve use voltmeter to check between white and grey wires that connect to conveyor solenoid coil. In unload, +12 should be present. Same test can be ran on spinner wires brown and black. Remember to rotate speed width knob from 1 - 11. Voltage reading will increase as spreader knob setting is increased.

If inspection of wiring harness checks out OK, replace control console.



SYMPTOM 8

THE SPREADER IS OVER OR UNDER APPLYING COMPARED TO THE TARGET APPLICATION RATE

POSSIBLE CAUSES AND REMEDIES

1. Feed gate setting has changed. The gate height must be at the same position used during the Spreader Calibration Procedure.
2. Ground speed input to control console inaccurate. Compare ground speed reading on console to speedometer in truck. If there is a discrepancy, perform the ground speed calibration procedure. (Refer to page 12 of Calibration and Programming Manual.)
3. Material density has changed from the original spreader calibration. Re-calibrate the spreader. (Refer to pages 8-11 of Calibration and Programming Manual.)
4. If using a sensed motor (Eaton, White) instead of the Dj Application Sensor, check gap setting of sensor. It's possible that if the gap is too close or too wide that only part of the pulses are being picked up.