

# Deere Dry Rate Controller Troubleshooting

## Version 02

### Power and Fuses

#### Power Supply

- Controller needs 2 types of power to work: Valve Power and Electronics Power
- ISO socket 2 biggest pins = Valve Power and Ground
- ISO socket 2 medium pins = Electronics Power and Ground
- There are fuses on the spreader harness near the Rate Controller
- There are also fuses on the tractor, refer to operators manual for the location

### Spinner Speed

#### Spinner Speed always zero or jumping around

- Run the spinners and check the sensor Hz in DIAGNOSTICS > READINGS > DELIVERY SYSTEM
- The sensor on the spinner shaft must be 2mm away from the metal tag
- Check the light on the sensor turns on, each time the tag passes the sensor
- Check connector pin A has ground
- Check connector pin B has 12 volts
- Check connector pin C has 5 volts

### Rate Problems

#### Actual Rate always zero or jumping around when belt is turning

- The spreader has a sensor on the hydraulic motor
- Manually run the belt and check the sensor Hz in DIAGNOSTICS > READINGS > DELIVERY SYSTEM
- The sensor must be 2mm away from the tooth or metal surface
- Check the light on the sensor turns on, for each passing tooth
- Check the 37pin connectors at the rate controller (corroded pins, rotten wires inside the connectors etc)
- Check sensor connector pin A has ground
- Check sensor connector pin B has 12 volts
- Check sensor connector pin C has 5 volts

#### Product is going out too heavy

- Check that the hectares are counting correctly
- Check the spread width is correct
- Increase the calibration factor  
Goto PRODUCT SETUP > BIN SETUP and increase the CFR  
Example: If product is 10% too heavy, increase the CFR by 10%

#### Product is going out too light

- Check that the hectares are counting correctly
- Check the spread width is correct
- Decrease the calibration factor  
Goto PRODUCT SETUP > BIN SETUP and increase the CFR  
Example: If product is 10% too light, decrease the CFR by 10%

#### Cannot reach the target rate

- If slowing down fixes the problem  
Open the door and enter the new door height in PRODUCT SETUP > BIN SETUP  
Increase the tractor hydraulic flow

### Tractor Hydraulics

#### Connecting and setup

- Connect to standard hydraulic couplers, Do not use high flow return, Incorrect return will damage the tractor
- Tractor hydraulic pumps are coupled to the engine (low engine revs = low hydraulic flow)
- Tractor hydraulic specs are taken at high engine RPM (2000RPM or more)
- Auto transmissions that throttle back the engine can cause low flow issues
- Disable engine throttling, set to 1600RPM or more, as required

## Hydraulic Drive – using PWM valve on spreader

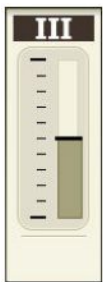
### Belt won't move

- Set the tractor hydraulic flow to 70% and the time to constant
- Warning: do not run the belt backwards
- Engage the tractor remote lever
- Tap MENU > DIAGNOSTICS > TESTS > CONTROL VALVE TEST in the dropdown
- Turn Master Footswitch ON, Tap START on the screen
- Hold down the plus button for 10 seconds
- If the belt doesn't move
  - Engage the lever the opposite direction
  - Check for locked couplers (unplug hoses and plug back in) and retry
  - Change hoses to a different hydraulic remote and retry
  - Test the connector on the PWM solenoid, there should be 12 volts when the PWM is 255
  - Check the Valve Power and Ground from the tractor (2 big pins in the ISO socket)
  - Check the fuses in the harness near the Rate Controller

## Hydraulic Drive – John Deere tractor Auto Hydraulics Requires a Ratex Hydraulic Controller

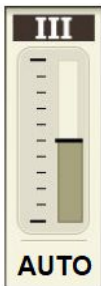
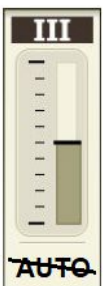
### Belt won't move

- Check belt hoses are plugged into remote number 3
- Set the tractor hydraulic flow to 70%
- Push remote 3 lever forward slowly, check the belt turns correctly  
(if belt doesn't turn, move lever both ways, remove and reconnect the hoses, try them in a different remote)
- Check the tractor hydraulic display shows AUTO below remote number 3



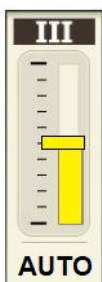
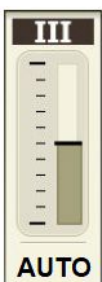
AUTO is missing

- Turn tractor off, kill battery isolator
- Unplug the auto hydraulics connector at the front of the spreader
- Start the tractor
- Move remote lever 3 forward for 5 seconds
- Turn tractor off, kill battery isolator
- Plug in the auto hydraulics connector
- Start the tractor, check the display shows AUTO
- If AUTO is still missing, turn tractor off, kill isolator
- Unplug the auto hydraulics connector at the front of the spreader
- Power up the Dry Controller and Ratex Hydraulic Controller
- Check the voltage at the 3pin auto hydraulics connector: PIN B = 2.5v PIN C = ground



AUTO is crossed out

- Quickly click the lever forward and release it
- The line should disappear
- Don't click too far forward, that will engage float



AUTO is showing

- The tractor must be moving (this is a tractor safety feature, cannot be changed)
- Tap MENU > DIAGNOSTICS > TESTS > CONTROL VALVE TEST in the dropdown
- Turn Master Footswitch ON, Tap START on the screen
- Hold down the plus button for 10 seconds
- The tractor hydraulic display must show remote 3 is flowing (yellow bar graph)