

CS 550i, 551i/150RC

Spreader Joystick Controller Operator Manual



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Please check for updates at: www.boschrexroth.ca/compu-spread

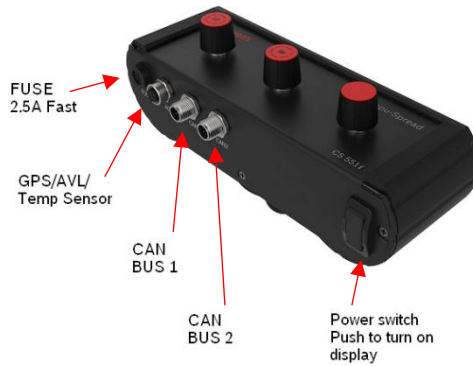
1 Panel Controls



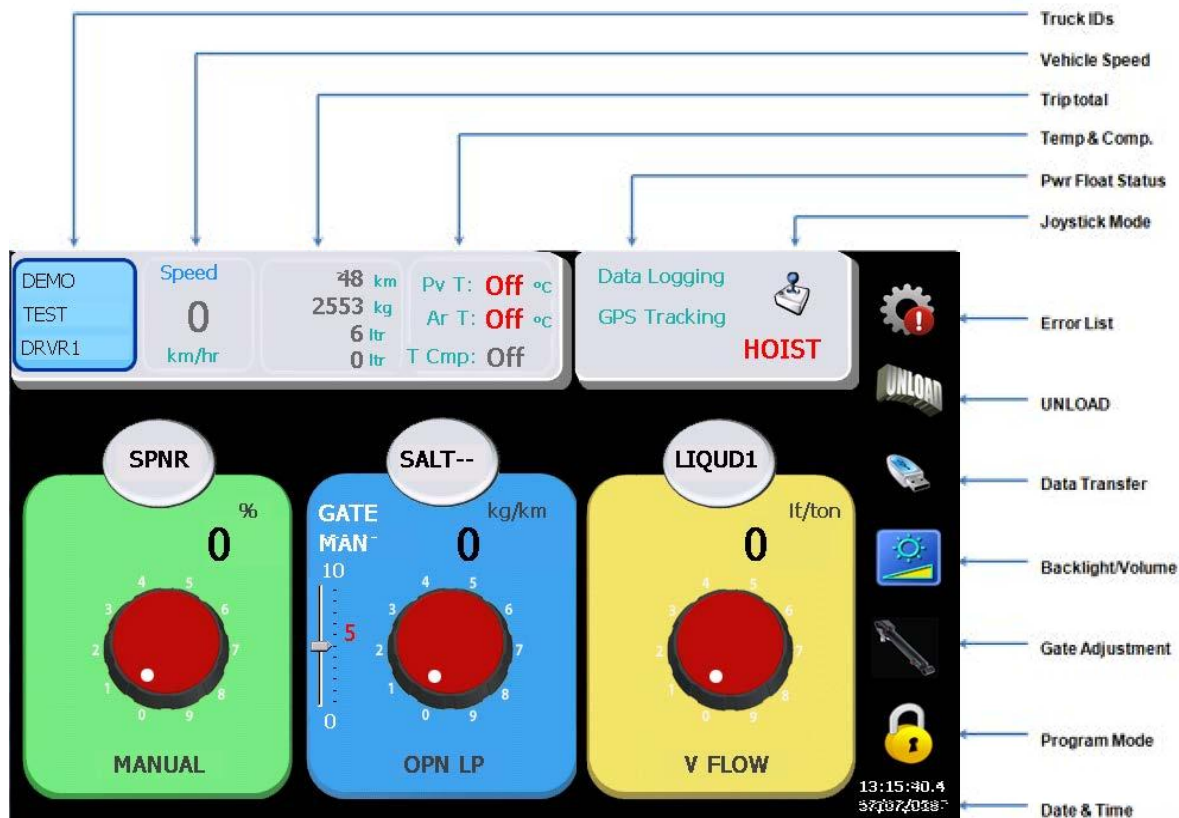
550i Unified System



551i Split System

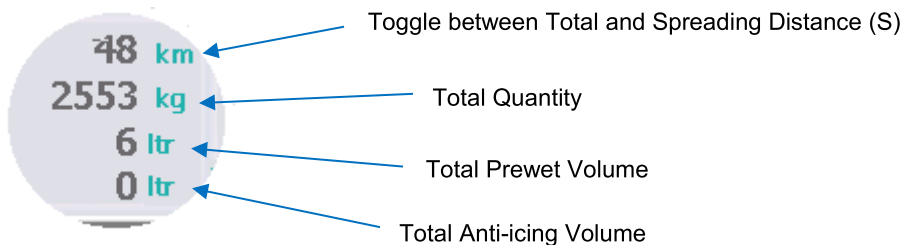


2 Program Screen Layout



| SPNR | SALT - - | LIQUID1 |
|------------------|-------------------------|-----------------|
| Spinner Label | Solid Name | Liquid Name |
| Spread Width % | Gate Mode/Solid Rate | Liquid Rate |
| Spinner Setpoint | Gate Position/Conv Set. | Liquid Setpoint |
| Spinner Mode | Conveyor Mode | Liquid Mode |
| Pause Button | Blast Button | Reverse Button |

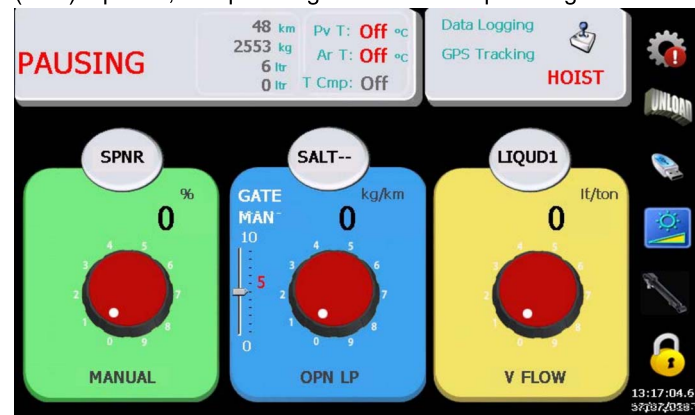
Trip Summary



3 Screen Controls

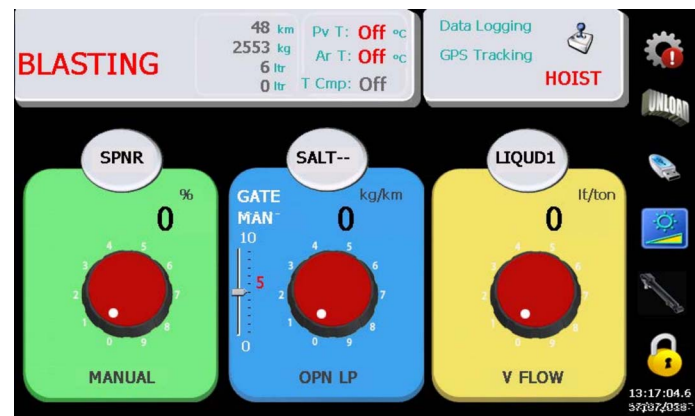
3.1 Pause

Press the Spinner knob/Pause button on the front of the display (550i) or Encoder box (551i) to pause, and press again to resume spreading.



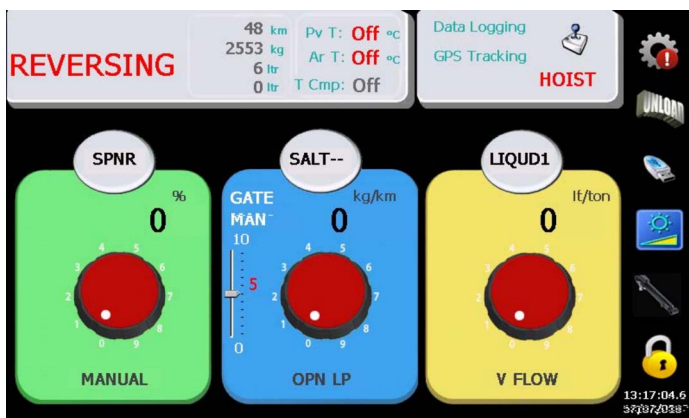
3.2 Blast

Press the Conveyor knob/Blast button on the front of the display (550i) or Encoder box (551i) to increase the spreading output, and press again to resume regular rate.



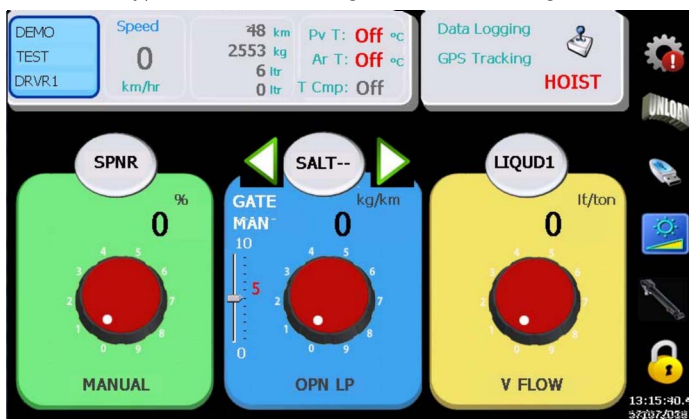
3.3 Reverse

Press and hold the Liquid Knob/Reverse button on the front of the display (550i) or Encoder box (551i) to change the direction of the Auger (an optional feature to dislodge obstructions). Release the button to resume spreading.



3.4 Change Solid Material

Press the oval button with "SALT- -" text on it to adjust material type. (Note: Vehicle must be stationary) Use the left and right arrows to change.

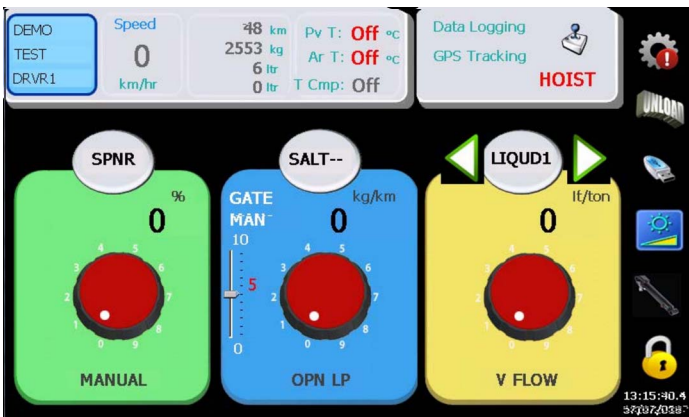


Use the Left and Right to adjust

Press the oval button again to confirm and save the selection.

3.5 Change Liquid Material

Press the oval button with the "LIQUID1" text to adjust the material type. (Note: vehicle must be stationary)



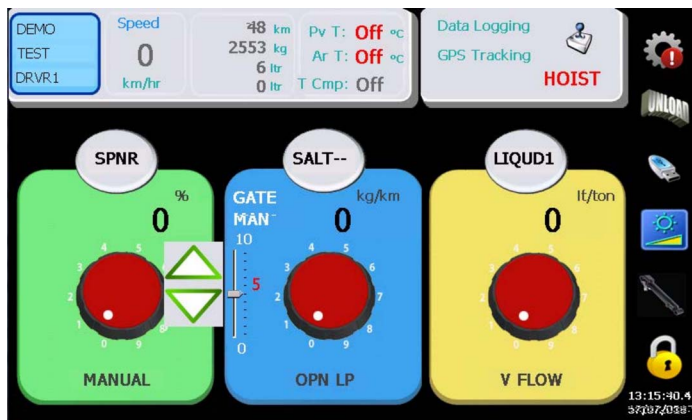
Use the Left and Right arrows to adjust.

Press the oval button again to confirm and save the selection.

3.6 Manual Gate Adjustment

For Manual Gate operation ONLY.

Press the Gate Position Number to select the gate adjustment mode.

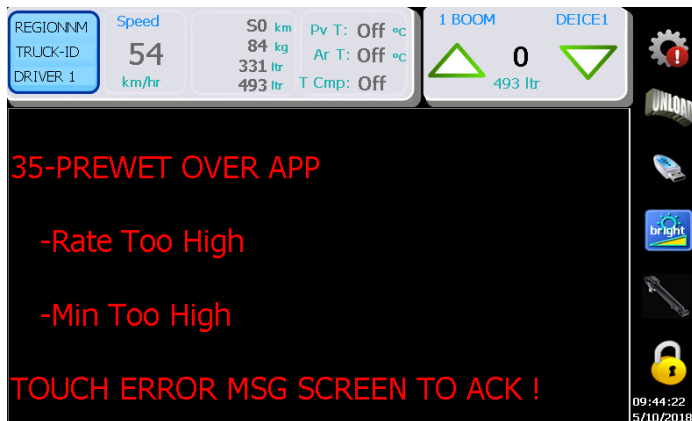


Use the up and down arrows to adjust.

Press the Gate Position again to verify the selection.

3.7 Error Messages

During the operation when an error occurs, a message will appear in the centre of the screen. Tap anywhere on the message to clear the window.



4 Symbol Actions

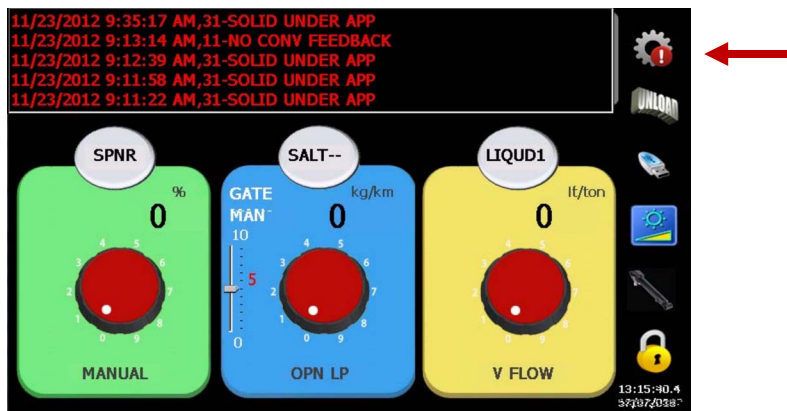
All symbols on the right of the screen require a press and hold for >1 seconds.



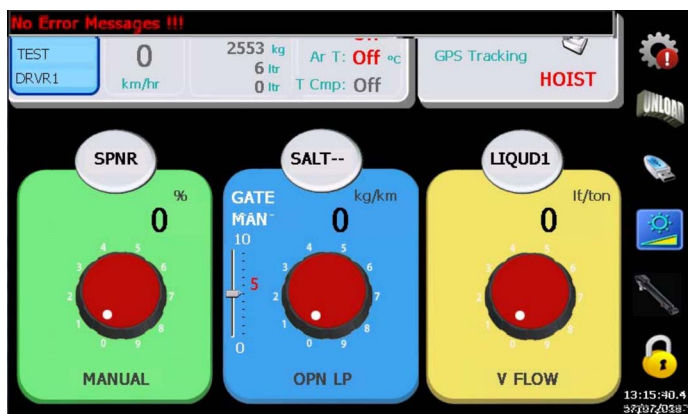
Err/Diag Unload USB Bright/Vol Cylinder Lock

4.1 Error Log/Diagnostic

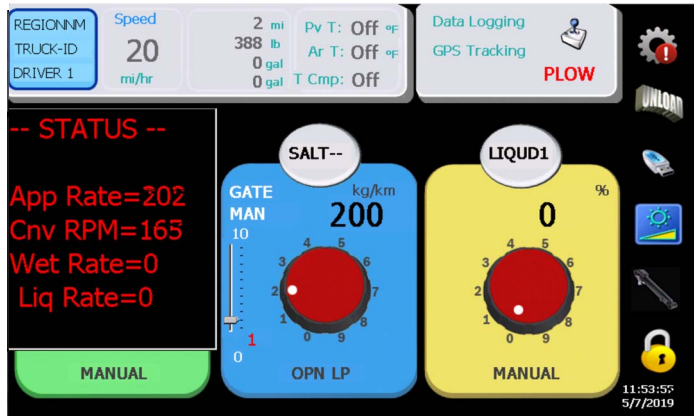
When the vehicle is stationary press the 'Gear' symbol to display most recent error messages. If a hydraulic pressure & temperature sensor is connected both readings will be displayed on the top right of the screen.



A program key is required to clear the error log; hold the button for >5 seconds.



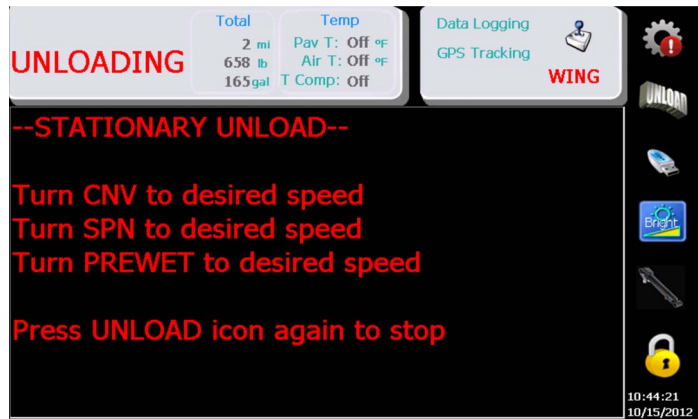
When a vehicle is moving press the 'Gear' symbol to display the real-time status of spreading.



4.2 UNLOADING



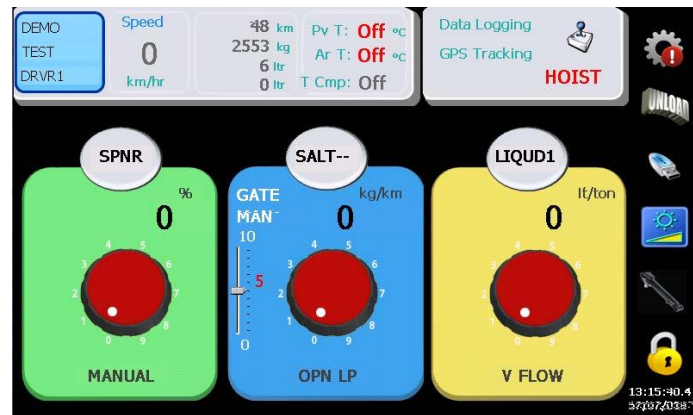
Press the 'Unload' symbol to enter into unload mode. (Note: The vehicle must be stationary.)



Turn the dials until the desired speed is achieved. Press the symbol again and to exit unload mode. Moving the vehicle will suspend the unload process. It will automatically resume when the truck is stopped again.

For firmware version 93 or higher this is also the diagnostic screen as well, see Diagnostic screen on page 23.

4.3 Data Retrieval/Clear Trip Summary



With a 'LOG DATA KEY' inserted

Press the '**USB**' symbol to transfer the log data.

With a 'PROGRAMMING KEY' inserted

Press the '**USB**' symbol to transfer the parameter. "Transfer Successful" will appear on the screen momentarily when it finishes.

Without a key inserted

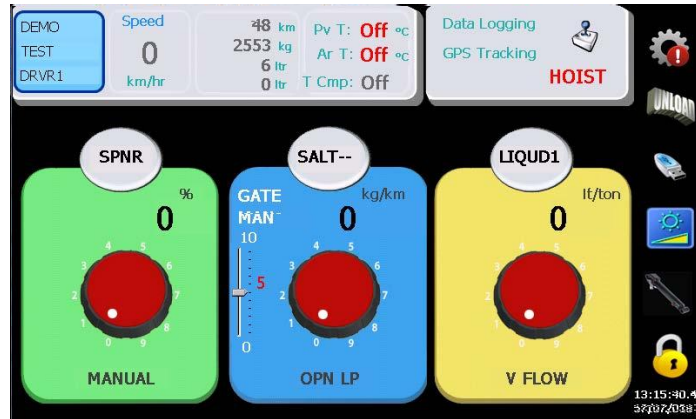
Press the '**USB**' symbol to clear trip summary.

Note: Displays version 82 or newer 'PROGRAMMING KEY' is for programming ONLY (for older versions 'PROGRAMMING KEY' is for both log data and programming). 'DATA LOG KEY' is for log data ONLY.

4.4 Brightness and Volume Adjustment

Press the '**Bright/Vol**' symbol to enter into adjustment mode, volume or bright. Press again to toggle the other mode.

Use the up and down arrows to adjust (only adjustable with vehicle stationary).

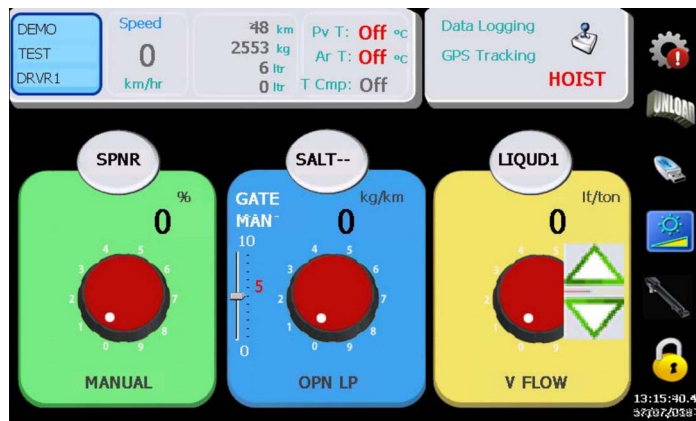


← To adjust volume, the “Vol Adj” needs to be checked on setup user screen.

4.5 Manual Hydraulic Gate Adjustment

For hydraulic gate operation ONLY.

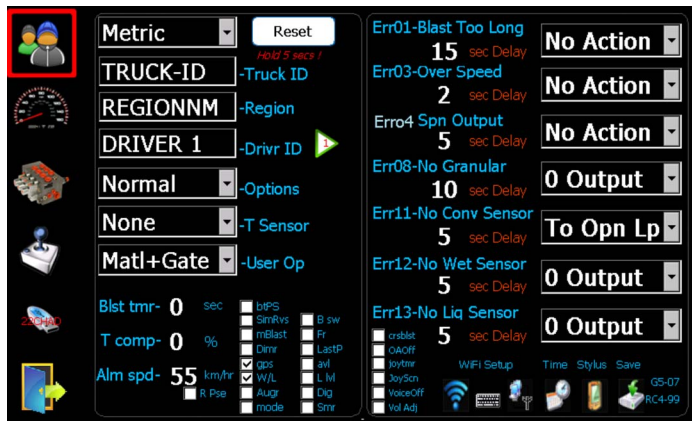
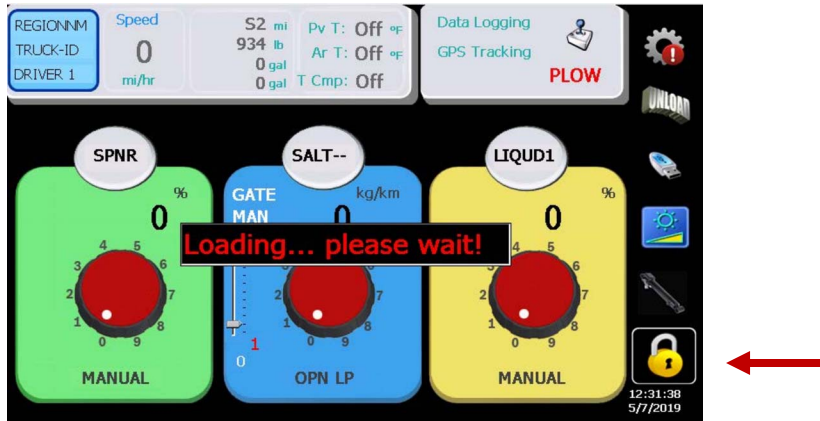
Press the **‘Cylinder’** symbol to select the gate adjustment mode. Use the up and down arrows to adjust.



Press the **‘Cylinder’** symbol again to end the gate adjustment.

4.6 Programming Mode

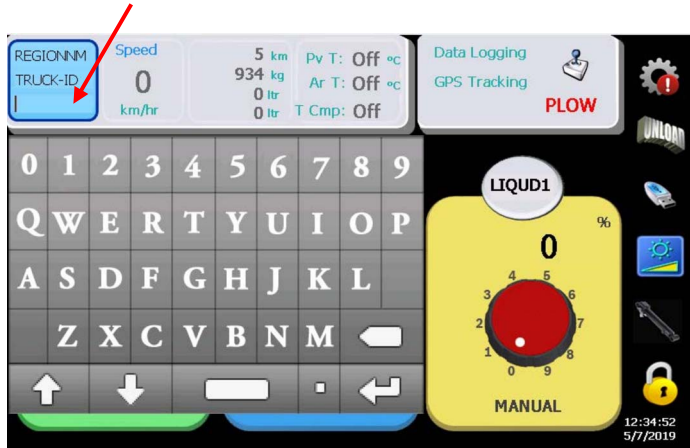
Press the **‘Lock’** symbol to enter into programming mode. (Note: A valid ‘PROGRAMMING KEY’ must be inserted into the USB port.)



See Calibration Manual for programming details.

5 Operator Input (Version87 or higher)

This option is used for AVL interface and or multiple profile operation. If this option is enabled in the programming mode, the operator can input a custom ID/Name from the operator screen. Press on the blue square on the top left of the screen, and if enabled, a keyboard will pop up to allow input. Press the Enter key to save.

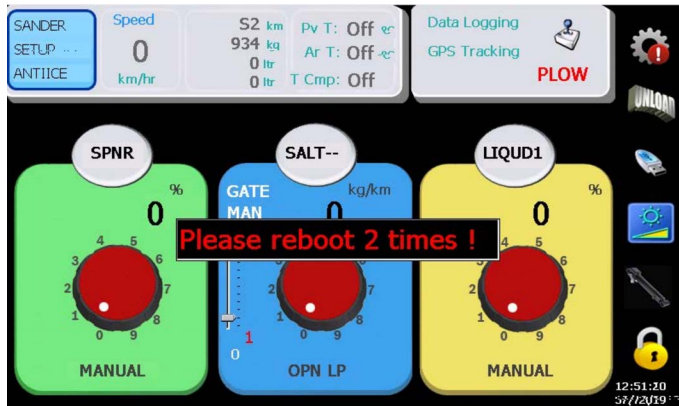


6 Selectable Profiles

If this option is set up in the programming mode, the operator can change the machine profile to work with different truck setups. Click on the DriverID field to pop up the keypad. Type the name of the desired profile (eg. 'SANDER', 'ANTI-ICE'...) then click ENTER on the keypad to proceed.



The following prompt will show. Reboot the system two times for the profile change to take effect.



7 Joystick Control

For systems equipped with Joystick Option ONLY.

7.1 Joystick Screen

Available only when equipped with a CS-150 Armrest Console.

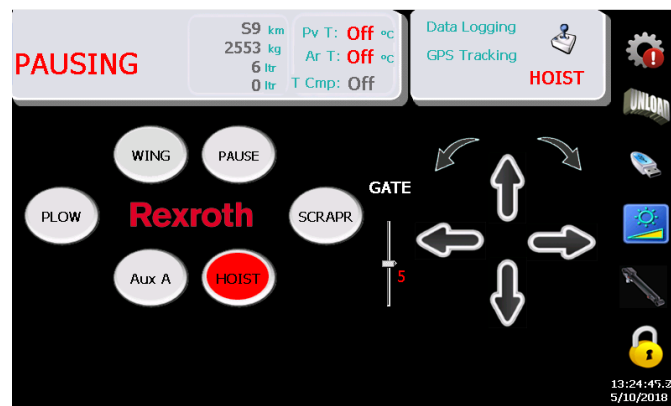
Screen flips when the Deadman Trigger is pressed. When the trigger is released, the screen reverts back to the spreader layout.

Note: The joystick will only operate while the Deadman Trigger is pulled.

The default spreader or joystick screen is selectable on USER setup screen.

7.2 Button Status

The oval buttons represent the push buttons on the handle of the joystick. When a joystick button is pushed, the proper mode or function activated (illuminated in red).



7.3 Joystick Status

The arrow symbols represent the direction the joystick handle is being deflected. **The mode status is always displayed in the top right of the screen, and the voice output feature audibly lets the the Mode selected.**

8 Anti-ice Mode

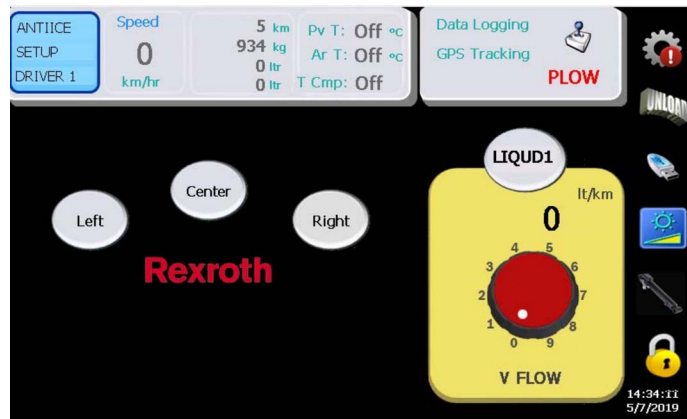
8.1 3 Boom

Boom Selection

Press the oval buttons to select the desired boom (*disabled if external boom switches used*). Pause and Blast operate the same as a Granular Spreader.

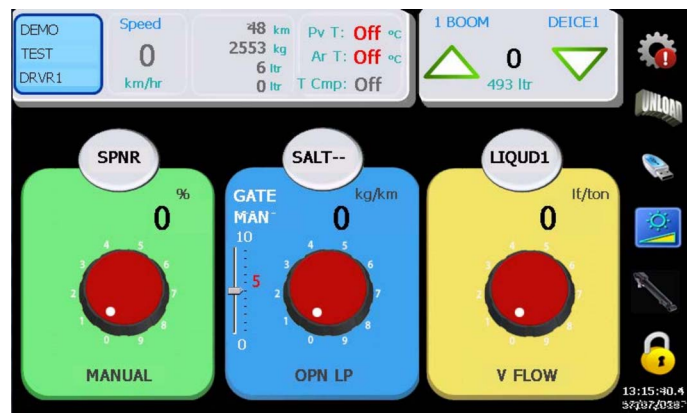
Rate Selection

Use the dial on the right to select the desired liquid flow rate. The reverse button is deactivated for this mode.



8.2 Single Boom

Use the upper right arrows to select the desired liquid flow rate.

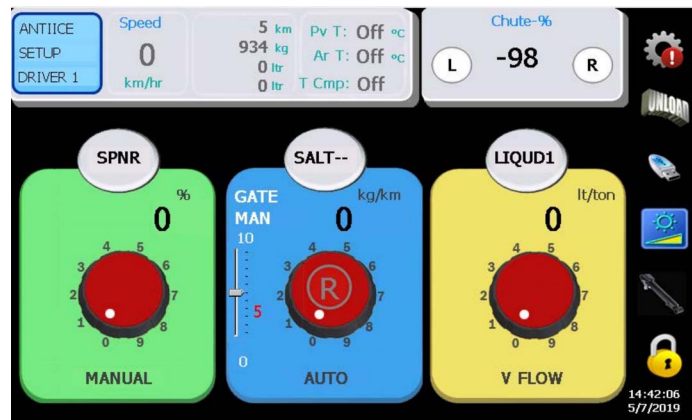


9 Pattern Mode

Use the controls on the top right of the screen to control the Chute. Select left or right with the circular buttons.

To toggle between normal operation and Simulated Anti-icing press the button of the center knob. In Simulated Anti-icing mode it allows system to spray liquid only.

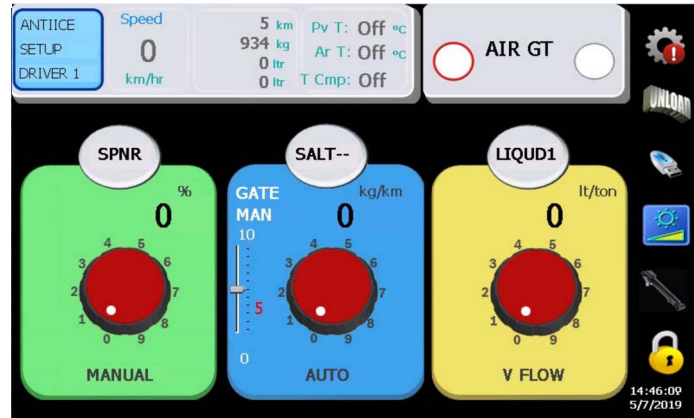
Note: To calibrate the centre position you would need to click on the symmetry reading while a program key is inserted.



10 Air Gate Mode

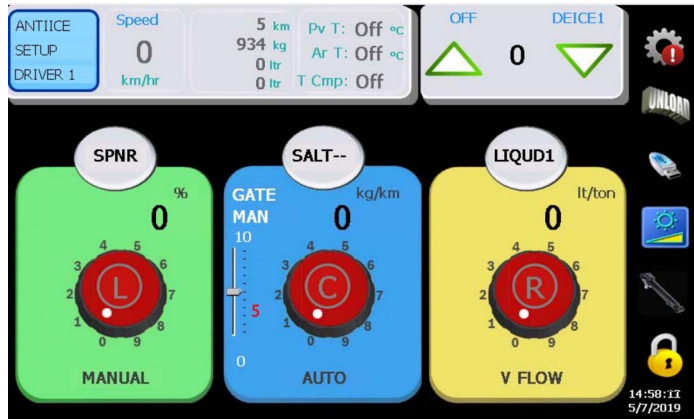
Use the controls on the top right of the screen to control the Air Gate.

When vehicle is stationary click on left or right button to toggle between two materials, and automatically set the operation gate to the calibrated gate for the material selected.



11 Liquid+ Mode

This screen is only available when the LIQUID+ mode is selected in the programming mode. (See Calibration Manual for details.)



Boom Selection

Press the red dial buttons to select the desired Boom (*disabled if external boom switches used*). Pause and Blast operate the same as a Granular Spreader.

Rate Selection

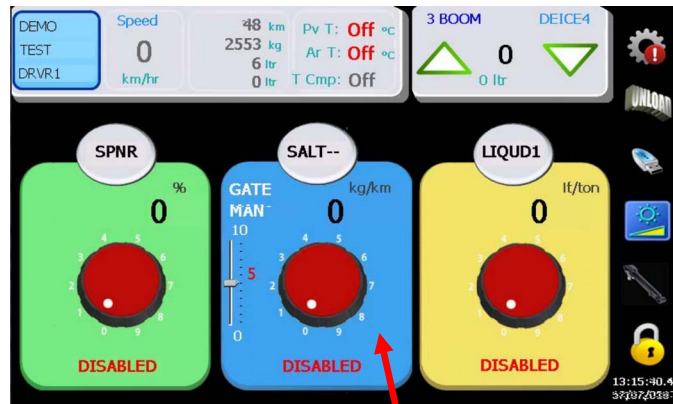
Use the upper right arrows to select the desired liquid flow rate.

Solid and Pre-wet

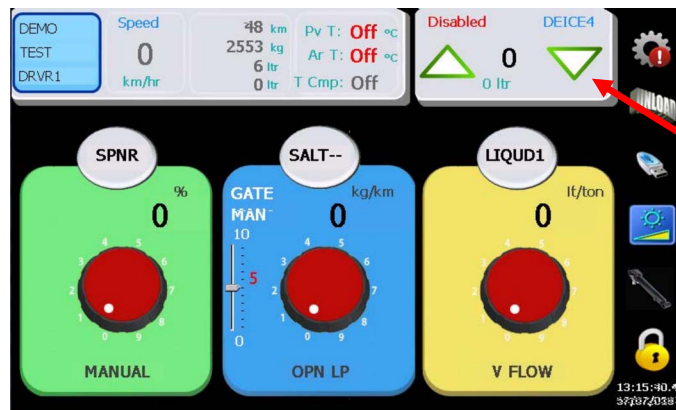
All standard spreader functions perform as defined earlier in the manual

Note: For safe operation either Spreader or 3Boom Anti-ice function can be disabled.

Program or Log key needs to be removed to perform this DISABLE function.



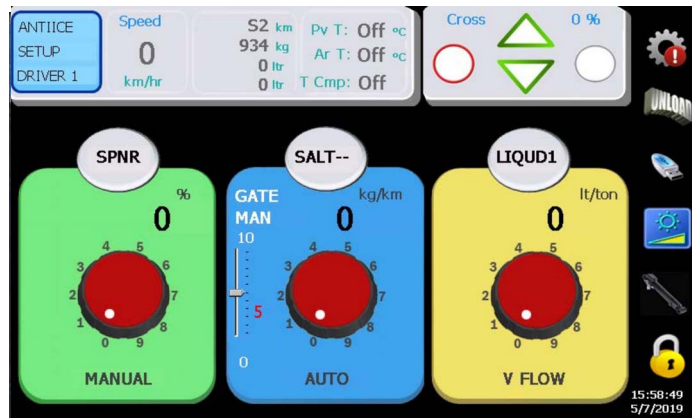
Press&Hold blue space for 10 sec to disable/enable spreader



Press&Hold grey space for 10 sec to turn off/on DLA

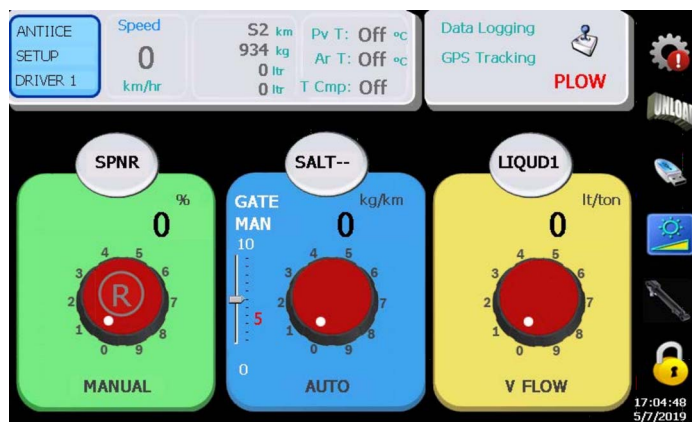
12 Cross Conveyor Mode

Use the controls on the top right of the screen to control the Cross Conveyors. Select left or right with the circular buttons. Use the up and down arrows to adjust the speed.



13 Spinner Reverse Mode

On firmware version 5 or older, click the “R” button of spinner knob on the screen to control spinner forward or reverse. Version 6 and above uses an external rocker switch to reverse direction.

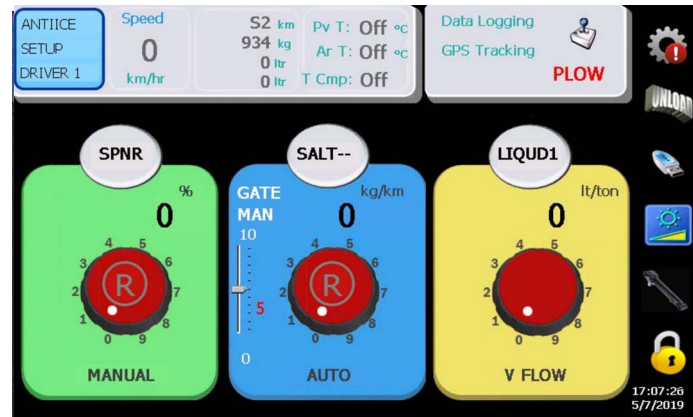


When the “R” button is pressed, or the reverse switch is toggled, the controller will ramp down the spinner from the speed selected and ramp up to the opposite direction to the speed selected.

14 Spinner & Conveyor Reverse Mode

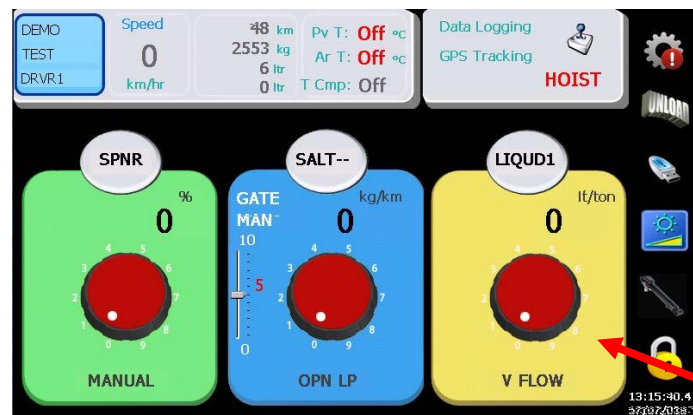
Click the “R” button of spinner knob on the screen to control spinner forward/reverse, and “R” button of conveyor knob to control conveyor forward/reverse.

When the “R” button is pressed the controller would ramp down the spinner from the speed selected and ramp up to the opposite direction to the speed selected.

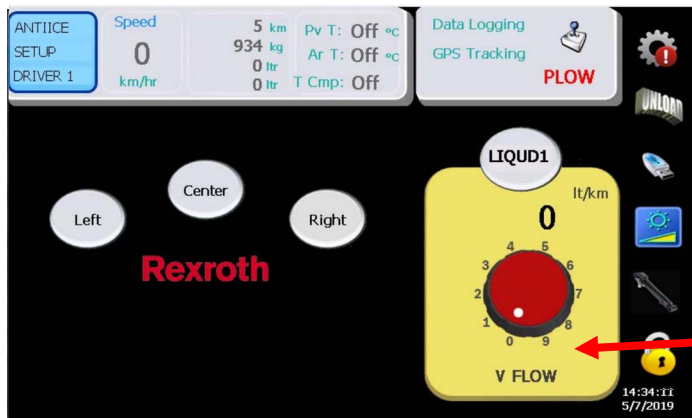
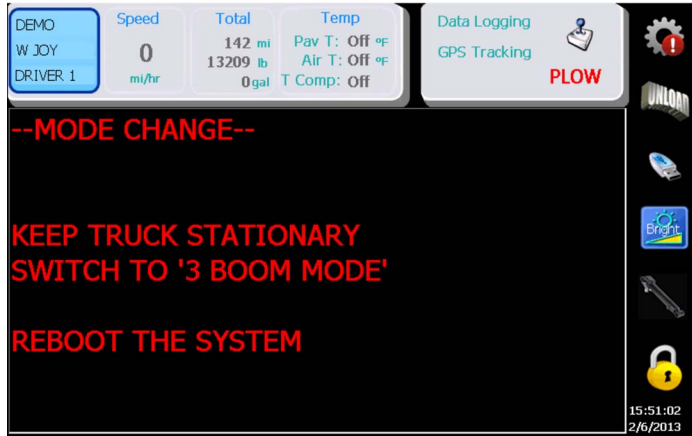


15 Mode Change (Version 87 or higher)

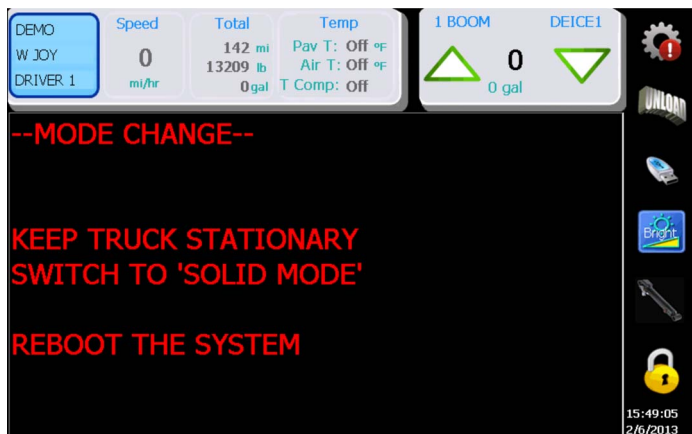
If enabled in the calibration and settings page, the operator can switch between spreading functions and liquid only mode. Press and hold an empty spot of the yellow WET panel for 15 seconds then release. If successful, a message will appear prompting the user to reboot the system. Follow the same procedure to reverse the mode change.



Press & hold on empty spot of the WET panel for 15 secs to Toggle modes

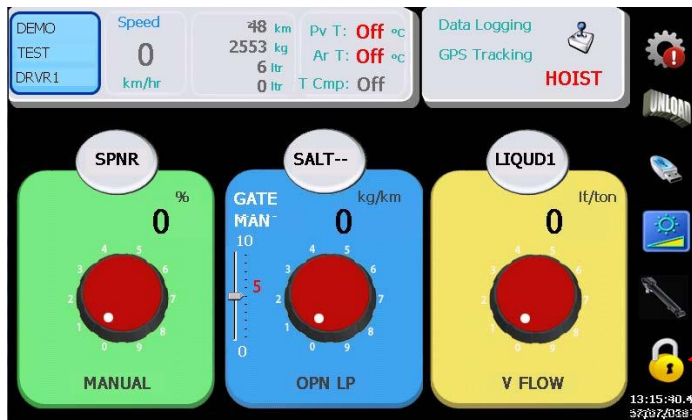


Press & hold on empty spot of the WET panel for 15 secs to Toggle modes

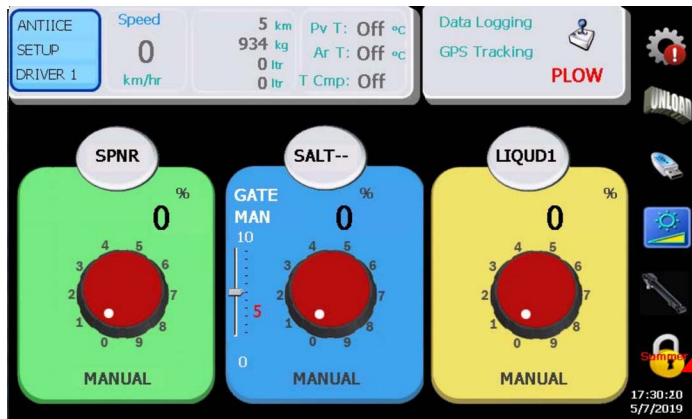


16 Summer Mode (Version 82 or higher)

If enabled in the calibration and settings page, the operator can switch between winter and summer mode. Summer mode turns all functions to Manual. Press and hold the lock button for 15 seconds to toggle between summer and winter modes without using PROGRAM key.




Press and hold for 15 seconds.

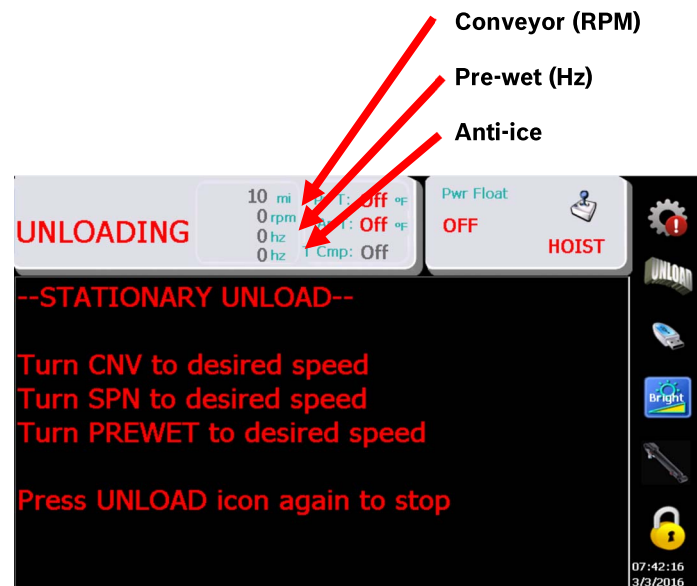


Notice it says "Summer" in summer mode

17 Diagnostic Screen (Version 93 or higher)

For the purpose of diagnostics and troubleshooting, the feedback values for Conveyor, pre-wet, and anti-icing can be displayed when the vehicle is stationary. To access this function:

1. Place the vehicle in park. There must be no ground speed.
2. Press the Unload  button.
3. Diagnostic values will appear in the top of the display where Totals usually are.



18 Error Codes

| Error Messages | # | Suggested Solution |
|------------------------------|----|-----------------------------------------------|
| ERROR BLAST TOO LONG | 1 | Turn off blast, reset timer |
| ERROR DEICE BLST TOO LONG | 2 | Turn off blast, reset timer |
| ERROR OVERSPEED | 3 | Slow down, reset max speed |
| ERROR SPIN PROP | 4 | Check cables, replace coil |
| ERROR CONV PROP | 5 | Check cables, replace coil |
| ERROR CROSS1 PROP | 6 | Check cables, replace coil |
| ERROR CROSS2 PROP | 7 | Check cables, replace coil |
| ERROR NO MATL DETECT | 8 | Load material, check sensor |
| ERROR NO LIQ DETECT | 9 | Load material, check sensor |
| ERROR NO GROUND SPEED | 10 | Check cable/sensor |
| ERROR NO CONVEYOR | 11 | Check cable/sensor |
| ERROR NO LIQUID | 12 | Check cable/sensor |
| ERROR NO DEICE | 13 | Check cable/sensor |
| Warning Messages | # | Suggested Solution |
| BB3 SYSTEM ERROR | 22 | Check if RCE present, Reboot |
| RC COMMUNICATION ERROR | 23 | Comm failure between display and RC |
| RCE COMMUNICATION ERROR | 24 | Comm failure between RC and RCE |
| JOY 1 COMMUNICATION ERROR | 25 | Comm failure between RC and Joystick 1 |
| JOY 2 COMMUNICATION ERROR | 26 | Comm failure between RC and Joystick 2 |
| NO GATE SENSOR | 27 | Check gate sensor, cable break |
| GATE POSITION ZERO | 28 | Gate closed in READBACK mode |
| NO GROUND SPEED SIMULATION | 29 | Speed Simulation mode stopped |
| UNDER APPLICATION-SPINNER | 30 | Spinner not able to reach desired RPM |
| UNDER APPLICATION-CONVEYOR | 31 | Rate or speed too high, incorrect calibration |
| UNDER APPLICATION-PREWET | 32 | Rate or speed too high, incorrect calibration |
| UNDER APPLICATION-ANTI-ICING | 33 | Rate or speed too high, incorrect calibration |
| CALIB:GND SPD PULSES TOO LOW | 37 | Too few or no pulses, recalibrate |
| SPINNER MAX RPM TOO LOW | 38 | Bad or no sensor |

| | | |
|--------------------------------|----|----------------------------------------------|
| CONVEYOR MAX RPM TOO LOW | 39 | Bad or no sensor |
| PREWET MAX HZ TOO LOW | 40 | Too few pulses, or sensor failed |
| ANTI_ICING MAX HZ TOO LOW | 41 | Too few pulses, or sensor failed |
| WRONG SPINNER CONTROL MODE | 42 | Auto null not allowed for MANUAL mode |
| SPARE | 43 | Not used |
| WRONG PREWET CONTROL MODE | 44 | Auto-null or volume calibration not allowed |
| WRONG ANTI-ICING CONTROL MODE | 45 | Check Anti-icing or Cross-Conv modes |
| WRONG CROSS-CONVEYOR MODE | 46 | Check Cross-Conv mode setting |
| WT/REV TOO LOW | 47 | Check conveyor sensor, and calibrate again |
| WT/REV TOO HIGH | 48 | Check conveyor sensor, and calibrate again |
| PREWET PULSES/GAL TOO LOW | 49 | Check prewet sensor, and calibrate again |
| PREWET PULSES/GAL TOO HIGH | 50 | Check prewet sensor, and calibrate again |
| ANTI-ICING PULSES/GAL TOO LOW | 51 | Check anti-icing sensor, and calibrate again |
| Warning Messages | # | Suggested Solution |
| ANTI-ICING PULSES/GAL TOO HIGH | 52 | Check anti-icing sensor, and recalibrate |
| SPNR WIDTH AT 0 RPM TOO LOW | 53 | Check spinner sensor, and recalibrate |
| SPNR WIDTH PER RPM TOO LOW | 54 | Check max width, and recalibrate |
| GATE MOVEMENT TOO LOW | 55 | Calibration gate move too low |
| GATE AT CALIBRATION TOO LOW | 57 | Calibrated gate needs to be a non-zero value |
| SPINNER SENSOR PULSES TOO LOW | 58 | Spinner sensor pulses 0 or too low |
| CONV SENSOR PULSES TOO LOW | 59 | Conv sensor pulses 0 or too low |
| SPINNER OUTPUT RANGE TOO LOW | 60 | Range between spn Min and Max too small |
| CONV OUTPUT RANGE TOO LOW | 61 | Range between Conv Min and Max too small |
| CROS CONV1 OUTPUT RANGE LOW | 62 | Range between Cros1 Min and Max too small |
| CROS CONV2 OUTPUT RANGE LOW | 63 | Range between Cros1 Min and Max too small |
| PREWET OUTPUT RANGE LOW | 64 | Range between prewet Min and Max too small |
| ANTI-ICING OUTPUT RANGE LOW | 65 | Range for anti-icing Min to Max too small |
| JOY1 OUTPUT RANGE TOO LOW | 66 | Range between Joy1 Min and Max too small |
| JOY2 OUTPUT RANGE TOO LOW | 67 | Range between Joy2 Min and Max too small |
| REQUIRED CONV RPM TOO HIGH | 68 | Setpoints too high, incorrect wt/rev |
| REQUIRED PREWET FLOW TOO HIGH | 69 | Setpoints too high, incorrect pulses/gallon |

| | | |
|---------------------------------|----|---------------------------------------------|
| REQUIRED ANTI-ICING FLOW TOO HI | 70 | Setpoints too high, incorrect pulses/gallon |
|---------------------------------|----|---------------------------------------------|

19 Warning

This glass LCD touch screen display has been extensively tested and validated against its intended use. This glass could crack and break if the display is dropped on to a hard surface or receives a substantial impact. If the glass chips or cracks, discontinue use and contact Bosch Rexroth Canada to have it replaced - do not touch or attempt to remove the broken glass. Any misuse/abuse causing damage, whether intended or not, will become the sole responsibility of the owner/buyer which will render the warranty of this product, void.

Notes: