# GILTRAP GENERATION II
## WIRELESS CONTROL SYSTEM

February 2008

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Introduction

The *Giltrap Generation II RF Control System* consists of a Controller that is mounted on the wagon that uses wireless technology to relay data such as feed rate, load weights or feed-out amounts (depending on options purchased) from the wagon and displays it on the Remote Display mounted near the operator on the tractor, allowing the operator to control the feed rate using different modes.

Powerfully capable, yet simple to use, the controller has large buttons and an easy-to-read display allowing the operator to constantly monitor, and adjust the feed rate when needed, all while on the move.

Control Mode Options

The system has a total of five different operation modes available. The availability of these are dependant on the hardware options fitted to the machine.

Hardware available:  
- Load cells – for weight readings  
- Solenoid coil – for floor control  
- Wheel sensor – for ground speed calculation

**Standard Mode**  
The operator controls the feed rate through a percentage range from 0 to 100%. Requires a solenoid coil to be fitted.

**Weight Mode**  
The operator can enter a target weight to feed. The feed rate control is the same as Standard mode. Requires load cells and solenoid coil to be fitted.

**Distance Mode (also known as Fully Automatic mode)**  
The wagon will unload the required amount over the required distance, and will compensate for changes in ground speed. Requires load cells, solenoid coil and wheel sensor to be fitted.

**Speed Mode**  
The operator controls the feed out rate through a percentage range from 0 to 100% and the feed rate is automatically adjusted according to ground speed. Requires a solenoid coil and wheel sensor to be fitted. Load cells are optional.

**Scales Mode**  
Only has a weight display. Requires load cells to be fitted. Floor rate is controlled manually.
Remote Display Layout

- Display screen
- UP button
- GO button
- STOP button
- RIGHT button
- MODE button
- DOWN button
- Power plug
- Power switch
- TARE/GROSS button
- LEFT button
- ZERO button

Controller Layout

- Power ON button
- Power OFF button
- Power light
- Signal light
- Signal light
- Valve light
- Weight connection
- Valve connection
- Power connection
Operation Section

Overview

Assuming installation (page 11 – 23) has been completed, the power for the system is controlled by the switch adjacent to the Remote Display.

1. Turn the switch on to provide power to the Remote Display and the wagon.
2. If the wagon is disconnected, press and hold the ON button on the Controller for one second. The Controller is now operating on its own battery.
3. Begin loading the wagon. See more detailed information regarding modes and buttons.
4. Once completed loading, connect the wagon to the tractor and connect the 7-pin plug.
5. Once ready to feed, select the appropriate mode and press GO button. You are now ready to proceed.

Note: The Controller power light will illuminate when the ON button is pressed or the wagon is plugged into the tractor. To turn off, the wagon must be un-plugged before pressing the OFF button.

Valve Over-ride Function

When a solenoid is fitted for floor control, a manual over-ride function will also be provided.

Note: This function over-rides all RF floor rate control.

Use ¼ - ½ turn adjustments per time. Do not over-adjust.
For electronic operation with RF control, the screw adjuster must be unscrewed all the way out (anti-clockwise) and the locking ring tightened.
Remote Display Screens

Screen Symbols
Apart from usual text characters, the screen can display other symbols at various times.

- The battery symbol indicates when the system is operating on its own battery. The voltage display indicates the condition of the battery.

- The antenna symbol indicates when the Controller and Remote Display have communication between them. This must show at all times for successful operation.

Start-up Screen
When the Remote Display is powered up, the start-up screen is displayed for 3 seconds as below. After this the screen will change to the operating screen.

If the wagon is not connected i.e. not getting power from the tractor, the controller will not start. The screen below will display until communication has begun by plugging in the wagon or pressing and holding the GO button on the controller for 1 or more seconds. After establishing communication, it will proceed directly to the next screen.

Once communication has begun between the devices, a screen similar to the one below will show.

The modes that are available are dependant on the hardware options fitted to the machine.
Standard Mode Screen

In standard mode, the feed rate is shown as a percentage. A range of 1-100% is available with 100% being maximum feed rate. This rate is shown on the top line of the screen. This mode is useful for general operation and is the simplest to use.

**Screen Features:**
- The top line shows the feed rate.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Std) and connectivity status.

**Additional features that show if load cells are fitted:**
- The second line will show the weight dispensed since GO was pressed.
- The third line will display the present wagon weight. This may be gross or tare.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Std), the battery voltage (highest voltage available to the unit. When disconnected from the tractor, this will be the internal battery voltage), and connectivity status.

**Operating Notes:**
- The operator can adjust the rate percentage figure by pressing UP or DOWN on the keypad.
- The operator can select between gross and tare weight to be displayed by pressing TARE/GROSS on the keypad.
- The operator can zero only the dispensed weight by pressing GO on the keypad.
- The operator can start and stop the feed-out by pressing GO and STOP on the keypad.
- The operator can switch to other available operating modes by pressing MODE on the keypad.
- The operator can zero the gross and dispensed weight by pressing ZERO on the keypad.

**Screen Warnings:**
- “WAGON POWER NOT CONNECTED” will flash on the display if the GO button on the Remote Display is pressed without the wagon being plugged into the tractor and/or power not getting from the tractor to the Controller.
Weight Mode Screen

In Weight mode, the feed rate is shown as a percentage. A range of 1-100% is available with 100% being maximum feed rate. This rate is shown on the top line of the screen. The operator can enter a target weight to feed before a beeper will sound, the wagon floor will stop moving and the system status will return to STOP.

Screen Features:
- The top line shows the feed-out rate.
- The second line shows the weight to feed out before a beeper sounds.
- The third line shows the weight of the current load. This may be gross or tare.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Weight), the battery voltage (highest voltage available to the unit. When disconnected from the tractor, this will be the internal battery voltage), and connectivity status.

Operating Notes:
- The operator can alter the feed-out rate by adjusting the rate percentage by pressing UP or DOWN on the keypad.
- The operator can adjust the weight to be dispensed by adjusting the ‘TO FEED’ figure. This is done by pressing UP or DOWN on the keypad when the ‘TO FEED’ figure is underlined. Use the RIGHT or LEFT button to move the underline cursor.
- The operator can start and stop the feed-out by pressing GO and STOP on the keypad.
- The operator can switch to other available operating modes by pressing MODE on the keypad.
- The operator can select between gross and tare weight to be displayed by pressing TARE/GROSS on the keypad.
- The operator can zero the gross and dispensed weight by pressing ZERO on the keypad.

Screen Warnings:
- “WAGON POWER NOT CONNECTED” will flash on the display if the GO button on the Remote Display is pressed without the wagon being plugged into the tractor and/or power not getting from the tractor to the Controller.
Distance Mode Screen

In Distance mode, the feed rate is automatically set by dispensing feed over a set distance.

**Screen Features:**
- The top line shows the weight to feed out.
- The second line shows the distance over which to feed this weight.
- The third line shows the present wagon weight. This may be gross or tare.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Dist), the battery voltage (highest voltage available to the unit. When disconnected from the tractor, this will be the internal battery voltage), and connectivity status.

**Operating Notes:**

The operator can adjust the weight to be dispensed by adjusting the ‘TO FEED’ figure. This is done by pressing UP or DOWN on the keypad when the ‘TO FEED’ figure is underlined. Use the RIGHT or LEFT button to move the underline cursor.

The operator can adjust the distance to feed the weight over by adjusting the ‘LENGTH’ figure. This is done by pressing UP or DOWN on the keypad when the ‘LENGTH’ figure is underlined. Use the RIGHT or LEFT button to move the underline cursor.

The operator can start or stop the operation by pressing GO or STOP on the keypad. If the feed bins are unequal in length, enter the total length of the bins in the ‘LENGTH’ figure and the total amount to feed in the ‘TO FEED’ figure. After travelling the first bin, press STOP on the keypad. The display will change from RUN to WAIT. You can then travel forward or backward without the distance changing. Press GO to continue or press and hold the STOP button for 3 or more seconds to reset the system status to STOP. The system will automatically return to STOP mode after counting down the distance to zero.

The operator can switch to other available operating modes by pressing MODE on the keypad.

The operator can select between gross and tare weight to be displayed by pressing TARE/GROSS on the keypad.

The operator can zero the gross and dispensed weight by pressing ZERO on the keypad.

**Screen Warnings:**
- "WAGON POWER NOT CONNECTED" will flash on the display if the GO button on the Remote Display is pressed without the wagon being plugged into the tractor and/or power not getting from the tractor to the Controller.
- "INCREASE GROUND SPEED" will flash on the display when the wagon is travelling too slow and causing the machine to overfeed. Note that ground speed needs to increase not tractor revs.
- "DECREASE GROUND SPEED" will flash on the display when the wagon is travelling faster than the machine can feed. Note that ground speed needs to decrease not tractor revs.
Speed Mode Screen

In Speed mode, the machine will maintain a consistent feed-rate relative to ground speed. The feed rate percentage is adjustable from 1 – 100%.

Screen Features:
- The top line shows the feed rate.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Speed) and connectivity status.

Additional features that show if load cells are fitted:
- The second line shows the weight fed out since the wagon was loaded.
- The third line shows the present wagon weight. This may be gross or tare.
- The bottom line of the screen shows the status of the system (STOP), the mode of operation (Speed), the battery voltage (highest voltage available to the unit. When disconnected from the tractor, this will be the internal battery voltage), and connectivity status.

Operating Notes:
- The operator can alter the feed-out rate by adjusting the rate percentage by pressing UP or DOWN on the keypad.
- The operator can adjust the weight to be dispensed by adjusting the ‘TO FEED’ figure. This is done by pressing UP or DOWN on the keypad when the ‘TO FEED’ figure is underlined. Use the RIGHT or LEFT button to move the underline cursor.
- The operator can start or stop the feed-out by pressing GO or STOP on the keypad.
- The operator can zero only the dispensed weight by pressing GO on the keypad.
- The operator can switch to other available operating modes by pressing MODE on the keypad.
- The operator can select between gross and tare weight to be displayed by pressing TARE/GROSS on the keypad.
- The operator can zero the gross and dispensed weight by pressing ZERO on the keypad.

Screen Warnings:
- “WAGON POWER NOT CONNECTED” will display if the GO button on the Remote Display is pressed without the wagon being plugged into the tractor and/or power not getting from the tractor to the Controller.
Scales Screen

In Scales mode, the screen will only display weight figures. This mode is used when no rate control is fitted to the wagon. No other modes are available if only load cells are fitted. The operator can enter a target weight to feed when a beeper will sound, the wagon floor will stop moving (if the floor control solenoid is fitted) and the system status will return to STOP.

Features:

- The top line shows the weight to feed out before a beeper sounds.
- The second line shows the weight dispensed since GO was pressed.
- The third line shows the tare or gross weight in the machine.
- The bottom line of the screen shows the mode of operation (Scales), the battery voltage (highest voltage available to the unit. When disconnected from the tractor, this will be the internal battery voltage), and connectivity status.

Operating Notes:

- The operator can adjust the weight to be dispensed by adjusting the ‘TO FEED’ figure. This is done by pressing UP or DOWN on the keypad when the ‘TO FEED’ figure is underlined. Use the RIGHT or LEFT button to move the underline cursor.
- The operator can select between gross and tare weight to be displayed by pressing TARE/GROSS on the keypad.
- The operator can zero only the dispensed weight by pressing GO on the keypad.
- To allow the dispensed weight to accumulate and the target feed weight to work, the operator must press GO before commencing feeding.
- The operator can zero the gross weight and dispensed weight by pressing ZERO on the keypad.

Screen Warnings:

- None
Installation Section

Component Layout

12 – 24VDC Supply
[Tractor battery preferably]
Brown - Positive
Blue - Negative

5A Fuse

Cable from battery to switch (5m)

Remote display cable
#TCS-CABLE

Remote display
#TCS-V2DISP

Cab switch

12 – 24VDC Supply
[Tractor battery preferably]
Brown - Positive
Blue - Negative

5A Fuse

Cable from switch to tractor plug (2m)

Power module
#TCS-V2PB

Battery (0.55m)
#TCS-V2CABBAT

Cable from battery to switch (5m)

5A Fuse

Battery
#TCS-BATTERY2

Tail lights

#LIGHTLED-LH
#LIGHTLED-RH

Wheel sensor (5m)
#TCS-OEM-PROX

Load cells (4 or 6)
#ES-WLY00003P

Install loom #TCS-LOOM1 (with box)
Install loom #TCS-LOOM1V2 (no box)

Data cable (1m) #TCS-V2CABWGT

Weight module
#TCS-V2WGTMOD

Controller
#TCS-V2CONTR

Cable from battery to switch (5m)

5A Fuse

Controller power cable (1m)
#TCS-V2CABCON

Controller
#TCS-V2CONTR

7 core cable (5.5m) with plug
#TCS-LOOM2

Valve cable
#TCS-V2CABVAL

Valve assembly
#HYSUPERVC-DPBM

7 pin plug
#PLUG7PINM

7 pin plug
#PLUG7PINM
Remote Display Mounting & Power Supply
The Remote Display is designed to be mounted in the tractor cab and be easily accessible to the driver. It contains a radio frequency (RF) communication device to control the Forage Wagon Controller (Controller). It will require shielding from the weather elements of sun and rain etc.

The Remote Display requires 12-24 volts DC to operate. It will typically only draw 0.2A. The power supply will originate from the tractor battery as part of the installation loom (supplied with the machine).

Forage Wagon Controller & Power Supply

The Forage Wagon Controller is powered from the tractor while operating. When disconnected from the tractor, it draws power from its own sealed lead acid battery.

No installation wiring is required on the Forage Wagon.

The tractor requires an installation loom (supplied) which provides a switched and fused positive and negative supply from the tractor battery to the rear 7-pin socket. The tractor battery is the best power supply point as it provides the most stable and “quiet” power source.

Note: If pin 5 is already used, connect the blue wire into pin 3 and do the same with the trailer plug.

There are three CPC connectors on the Controller. If a connector is not used, place the sealing cap over it.
Mounting the Modules

Modules should be mounted as illustrated.

- Power wires should be kept separate where possible from the load cell cables.
- Only 2 screws are required at opposite corners of each module.
- Keep all cables clear of moving parts.
Setting the RFID Number

The RFID Number setup screen is used to assign a wireless address to the Controller. This feature is available to prevent interference between two systems when they are operated in close proximity to each other.

To access the Remote Display RFID screen, re-power the display and press and hold the MODE button until a setup screen appears.

![Setup Screen]

The operator can press the UP button or the DOWN button to adjust this value. Press GO to enter then STOP to escape. Re-power the Remote Display to access the new channel.

Controller Settings

After removing the Controller cover, a DIP switch with 8 white switches is visible.

- The D.I.P. (dual inline plastic) switches which are labelled 1 to 8 are used to select the RF channel ID.
- The switch is considered to be ‘on’ when switched to the right hand side.
- The channel ID of the Controller MUST match the software setting of the Remote Display.
- If the channel ID is changed in either the Remote Display or Controller then you must re-power both devices for the new setting to take effect. To re-power the Controller, unplug the POWER cable for 5 seconds.
- The DIP switch settings are shown in the following table.

<table>
<thead>
<tr>
<th>RFID #</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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<tr>
<td>Switch On</td>
<td>None</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
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Fitting the Power Module Circuit Board

The power board will need to be fitted if load cells are fitted. It is fitted into the power module.

- Open the Power Module lid.
- Remove the wire joining block.
- Fit the circuit board with the supplied screws.
- Attach the wires as noted on the board.

Fitting the Wheel Sensor

- The wheel (proximity) sensor has to be adjusted halfway between the range of being always on and always off. This is approximately 5mm between the end of the sensor and the wheel plate.
- Take care when running the cable that there is enough slack to allow the axle to fully oscillate.
Fitting the Load Cells

- Fit the studs to the load cell first before fitting the load cells to the machine using the bolts provided.
- Lower the top half of the wagon onto the studs.
- Tighten the top nut then back off ½ turn.
- Route the wiring through the pipe/brackets provided through to the junction box taking care to keep the wiring tidy and away from moving objects.

![Image of load cell fitting components]

**Recommended Load Cell Bolt Torque Settings**

M20 - 280 ft/lbs or 380Nm
M24 - 490 ft/lbs or 660Nm

**Note:** If installing PT brand load cells, there will be two extra blue and brown wires. Connect the Sense +ve (brown) together with Excitation +ve (red) and Sense –ve (blue) together with Excitation –ve (black).

Weight Module Connection

When fitting load cells or a wheel sensor, see below for fitting information about connecting wires into the weight module.

![Image of weight module connection]

- Insert screw driver for top layer here
- Top layer
- Insert screw driver for bottom layer here
- Bottom layer
Setting System Parameters

Parameters are required to be set for the machine to function correctly.

Entering Configuration Screens
- To enter set-up, press TARE/GROSS and ZERO together for 4 seconds or until the set-up screen appears.
- Press UP or DOWN to adjust the parameter.
- Press MODE to move to the next configuration screen. It will save what is displayed on the screen.
- Press STOP to exit the configuration screens.

Scale Damping Value
The “Scale Damping Value” parameter is a weighting value over which the weight is averaged. A higher value will display a smoother weight display but won’t react to weight changes as quickly.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Load Cell Type
The “Load Cell Type” parameter specifies the maximum load for each individual load cell used on the wagon.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Number of Load Cells
The “Number of Load Cells” parameter specifies the total amount of load cells fitted to the machine. Enter 0 if no load cells are fitted.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Load Cell Sensitivity
The “Load Cell Sens.” parameter specifies sensitivity of the load cells used on the wagon. The setting is in mV per Volt. This means mV output per Volt of excitation. This is a characteristic of the load cells used.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.
Scale Hysteresis
The “Scale Hysteresis” parameter specifies how much a weight reading needs to change before the reading on the screen will change.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Scale Increments
The “Scale Increments” parameter specifies minimum scale increment displayed on the screen.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Maximum Valve Pressure
The ‘Max Valve PSI’ parameter sets the elevator load sensing pressure. Reduce this value if the elevator stalls too often. Ideally this should be set approximately 200 – 300 PSI below tractor relief pressure.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Wheel Sensor Fitted
The ‘Wheel Sensor Fitted’ parameter indicates if the wheel sensor is fitted or not and displays appropriate modes to suit.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Wheel Diameter
The “Wheel Diameter” parameter is used to calibrate the wheel size on the machine.
The operator can press UP or DOWN to adjust this value. Note: For accuracy, measure from the ground to the centre of the hub (and double) when the machine is half loaded. This will compensate for tyre pressure. Press MODE to continue.

Number of Wheel Holes
The “Number of Wheel Holes” parameter is used to calibrate the distance measurement for the number of holes on the encoder disk used by the speed sensor.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.
Low Battery Level
The "Low Batt Level" parameter defines the minimum battery voltage level at which the screen will switch from displaying voltage to displaying "LOBAT". This function can be cancelled by setting the voltage to 0.00V.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Solenoid Valve Fitted
The ‘Valve Fitted’ parameter indicates if the solenoid valve is fitted or not and displays appropriate modes to suit.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Minimum Valve Setting
The "Min Valve Setting" parameter defines the minimum valve opening percentage when in Distance and Speed mode, while running. When stopped, the valve will go to 0.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Valve Ramp Up Time
The ‘Valve Ramp Up Time’ parameter changes the valve ramp up time.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Valve Ramp Down Time
The ‘Valve Ramp Down Time’ parameter changes the valve ramp down time.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Valve Start-up for Distance Setting
The “Valve Startup Dist.” parameter is the initial valve setting to use when the machine is started in Distance mode.
The operator can press UP or DOWN to adjust this value. Press MODE to continue.
Minimum Speed while in Speed Mode
The "Speed Mode Min Speed" parameter is only used for Speed mode. It defines the minimum speed the machine must be moving before the machine begins to operate. This function is adjustable between 0 and 5 km/h, with increments of 0.1km/h. The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Maximum Speed while in Speed Mode
The "Speed Mode Max Speed" parameter is only used while in Speed mode. It defines the theoretical maximum speed the machine will reach at which point the machine will be operating at maximum feed rate. The lower this is set, the more aggressive the machine will operate. This function is adjustable between 1 and 20 km/h with increments of 1km/h. Any speed over this parameter will cause the machine to run at the percentage setting on the display. The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Speed Mode Start-up Time
The "Speed Mode Strt. Time" parameter is only used while in Speed mode. It defines the length of time the machine must be moving above the minimum speed before it begins its usual function. This function is adjustable between 1 and 20 seconds with increments of 1 second. The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Distance before Finish
The "Dist. Before Finish" parameter is only used while in Distance mode. It defines the length before the end of the run at which the valve controller will return to zero hence stopping the floor operation and clearing the machine. When set on zero, the machine will continue functioning until the distance reads zero. This function is adjustable between 0 and 10 metres with increments of 0.5 m. The operator can press UP or DOWN to adjust this value. Press MODE to continue.

Shut Down Timer
The shut down timer controls the time that the Controller will stay powered up while running on battery power. The operator can press UP or DOWN to adjust this value. Press MODE to continue.
Checking Setup Parameters

A Function screen is available to check current settings. To enter, press and hold the left arrow for three or more seconds.

- The top line shows the requested valve position.
- The second line shows the present gross load weight.
- The third line shows the current machine ground speed.
- The bottom line of the screen shows the current mode of operation (Std), the Controller software revision and connectivity status.

The Function mode screen is shown below:

By pressing the UP or DOWN buttons, you can scroll and view parameters. They cannot be changed here.

Press GO or STOP to exit and return to the operating screen.
Factory Parameter Settings

Software Revision: Remote Display 3.4, Controller 3.8

- To enter set-up, press TARE/GROSS and ZERO together for 4 seconds or until the set-up screen appears.
- Press MODE until the correct parameter is displayed.
- Press UP or DOWN to adjust the parameter.
- Press STOP to exit the configuration screens.
- Remove power from the Controller to update changes.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Scale Damping Value</td>
<td>4.00</td>
</tr>
<tr>
<td>Load Cell Type</td>
<td>5000.00 kg</td>
</tr>
<tr>
<td>Number Of Load Cells</td>
<td>4.00</td>
</tr>
<tr>
<td>Load Cell Sens.</td>
<td>2.00 mV/V (PT) or 2.20mV/V (Kelba)</td>
</tr>
<tr>
<td>Scale Hysteresis</td>
<td>10.00 kg</td>
</tr>
<tr>
<td>Scale Increments</td>
<td>10.00 kg</td>
</tr>
<tr>
<td>Wheel Sensor Fitted</td>
<td>Yes</td>
</tr>
<tr>
<td>Wheel Diameter</td>
<td>760.00 mm</td>
</tr>
<tr>
<td>No. of Wheel Holes</td>
<td>15.00</td>
</tr>
<tr>
<td>Low Batt Level</td>
<td>11.50 V</td>
</tr>
<tr>
<td>Valve Fitted</td>
<td>Yes</td>
</tr>
<tr>
<td>Max Valve PSI</td>
<td>2250.00 psi</td>
</tr>
<tr>
<td>Min Valve Setting</td>
<td>30.00 %</td>
</tr>
<tr>
<td>Valve Ramp Up Time</td>
<td>0.00 sec</td>
</tr>
<tr>
<td>Valve Ramp Down Time</td>
<td>0.00 sec</td>
</tr>
<tr>
<td>Valve Startup Dist.</td>
<td>85.00 %</td>
</tr>
<tr>
<td>Speed Mode Min Speed</td>
<td>1.00 km/h</td>
</tr>
<tr>
<td>Speed Mode Max Speed</td>
<td>10.00 km/h</td>
</tr>
<tr>
<td>Speed Mode Strt Time</td>
<td>1.00 sec</td>
</tr>
<tr>
<td>Dist. Before Finish</td>
<td>1.00 m</td>
</tr>
<tr>
<td>Shut Down Timer</td>
<td>20.00 min</td>
</tr>
</tbody>
</table>

Note: These are factory default settings. Some machines will require different settings.
Final Check

Check that the Controller is working correctly:
Plug in the 7-pin plug into the tractor and turn on the power switch. This applies power to the Controller. The POWER LED on the Controller should be illuminated. Unplug the 7-pin tractor plug. A battery power symbol (هُمْ) will show on the screen which indicates the system is running on battery power and the wagon is not plugged into the tractor.

After disconnecting the 7 pin plug and waiting 20 minutes (depending on parameter setting), the Controller should power down. If tractor power is reapplied, the Controller will restart. Note: To force power off and preserve battery power, press and hold the OFF button on the Controller when tractor power is disconnected.

Check that the Power module is working correctly:
When the wagon is plugged in the tractor, voltage should be higher than when unplugged. Plugged in should read approx 13.9 – 14.5V. Unplugged should read approx 11.5 – 12.8V.

Check that there is RF communication:
There should be an antenna symbol () displayed in the bottom right hand side of the screen.

Check that the valve (if fitted) is working correctly:
Change the mode to Std, increase the ‘FEED RATE’ to 100% and press GO. The Controller LED will be illuminated when the valve reaches 100% setting and the valve solenoid will make a light buzzing noise. The wagon floor chain should start and stop when GO or STOP is pressed. System hydraulic pressure can sometimes cause the floor to not quite stop. In this case, increase tractor revs and recheck.

Check that the load scales (if fitted) are weighing correctly:
This can be done by applying a known load to the floor after zeroing. The Weight module LED labelled ‘Weight’ should be illuminated whenever the system is running. If the weight display is unstable when stationary, charging the battery will help. The voltage will be displayed on the lower line of the screen. When the system is running on battery power, a () symbol will display alongside the voltage reading.

Check that the wheel sensor (if fitted) is working correctly:
Jack up the wheel with the wheel sensor fitted and check that the sensor light blinks for each hole while the wheel rotates. The green LED labelled PROX in the weight module should also blink at the same time as the sensor light.

In distance mode, dial up a distance of say 20 metres on the Remote Display and press GO. Rotate the wheel 2-3 revolutions (forward or reverse) and check that the distance is decreasing.

All complete:
Ship with battery connected (it will power down to preserve power).