

The In-Cab Row Unit Controller lets you adjust the Breakout Force and Contact Force of your row units from the comfort of your cab. The following information provides basic instructions for familiarisation, adjustment and troubleshooting.

Warning: Stored Energy Hazard: Before disconnecting or performing maintenance on your machine, verify that oil pressure has been safely released from the system. Follow all safety precautions for your tractor and planter. See further below for Releasing Oil Pressure instructions.

Initial Setup

Hydraulic Hookup

Ensure your seeder is properly connected to your tractor. Follow all instructions provided by your tractor manufacturer and the BOSS seeder manuals to connect all electrical harnesses, connect all hydraulic hoses, and lock on the relevant remote to supply hydraulic pressure.

Screen and Button Familiarisation

- The in-cab control unit (Figure 1) is where you will adjust your row unit breakout force and/or contact force. The controller automatically turns on when power is applied.
- The controller comprises a digital screen with a physical keypad in the lower section.
- As you move through the functions, the menu selections for the chosen function appear at the bottom of the screen, which are closely aligned with the physical keypad buttons, 1 through 4 and the D-Pad (direction pad).
- Depending on the configuration of your control unit, you will either have a single channel unit, or a dual channel unit, which is indicated in the bottom right corner showing either CH1 only or CH1/CH2 (5).
- The single channel unit allows for adjusting either the Breakout Force or the Contact Force. Not both. This will be preconfigured based on your quote.

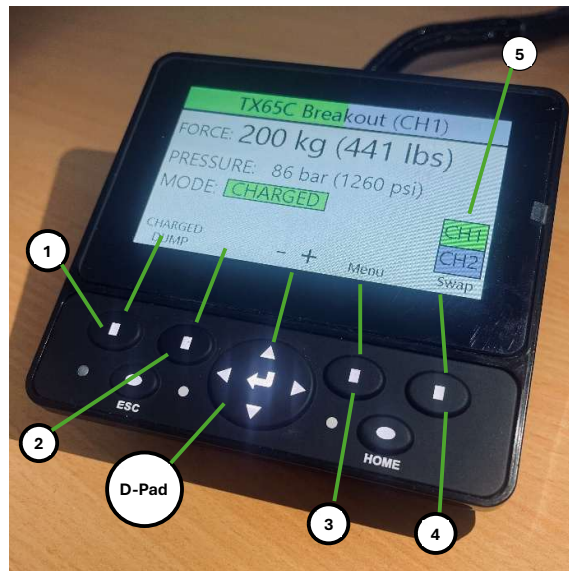


Figure 1: In-Cab Control Unit Button Layout

Control Screen Layout

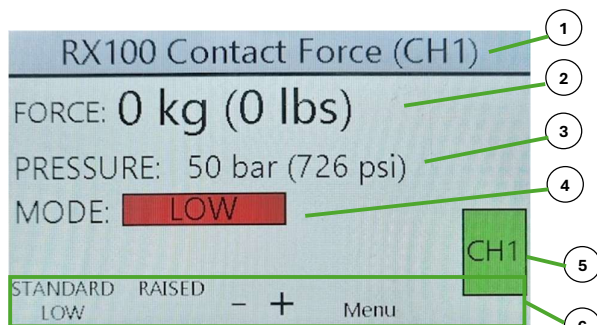


Figure 2: Screen Layout

Number	Function
1	Row Unit model (e.g. RX100), Function (e.g. Contact Force), Channel
2	Force
3	Pressure
4	Mode
5	Chosen channel
6	Menu bar

Adjusting Breakout Force and Contact Force

The control unit comes pre-configured with your chosen function and row unit model, but you may need to adjust the pressures to suit local conditions.

✓ Breakout pressure may need to be increased if the tynes are showing signs of chatter.

To do this, follow these steps.

Single Channel Unit

1. When you turn on your machine, the display unit will boot up and open to the primary control screen (see Figure 3).
2. Press button (1) to choose the mode you want to adjust e.g. CHARGED or DUMP mode (3).
3. Use the D-Pad left and right arrows (2) to increase or decrease the force as required.
4. Note the green and blue bar at top of the screen (4) will increase or decrease as a visual indicator.



Figure 3: Single Channel Display Unit

Dual Channel Unit

Note: Breakout Force will be set to Channel 1 and Contact Force on Channel 2.

1. When you turn on your machine, the display unit will boot up and open to the primary control screen (see Figure 4).
2. Press button (1) to choose the channel or function you want to adjust i.e. Breakout or Contact Force.
3. Use buttons (2) and (3) to choose the mode you want to adjust e.g. Raised, Standard or Low (4).
4. Use the D-Pad left and right arrows (5) to increase or decrease the force as required.
5. Note the green and blue bar at top of the screen (6) will increase or decrease as a visual indicator.



Figure 4: Dual Channel Display Unit

Troubleshooting

Problem	Possible Causes	Possible Solutions
Screen Error Message – Check Harness	Deutsch connector to XMD unit disconnected	Locate the SUN XMD unit below the oil pressure gauges. Check and/or re-seat the connector into the XMD unit.
	Deutsch connector to solenoid disconnected	Locate the solenoid below the oil pressure gauges. Check and/or re-seat the connector into the XMD unit.
The control unit screen will not turn on	No power to unit	Do all other in-cab electronic components have power? If not, check tractor power supply. If yes, check the power light on the XMD unit is green and that the Deutsch connector behind the unit is properly seated. If all other connectors and other instruments appear to be connected and working properly, contact BOSS for support.
The system is not building oil pressure	The Dump Taps may not be closed	Locate the Dump Taps beneath the oil pressure gauges. Ensure they are in the closed position.
	The tractor may not be supplying oil pressure	NOTE: Consult the tractor manual for further information. Check that the oil pressure hose is connected securely from the tractor to the planter, and that there are no leaks.
The screen is stuck on the bootup display	The XMD is not connected properly or has the wrong configuration settings	Check Deutsch connector is plugged in, and the drawbar harness is connected to the tractor cab harness. Check for faulty wiring. If all other connectors and other instruments appear to be connected and working properly, contact BOSS for support.

Identifying the SUN XMD Model



Figure 5: SUN XMD unit

- The SUN XMD solenoid driver controls the flow of oil to the hydraulics systems.
- The XMD unit will be located below the oil pressure gauges.
- The XMD unit has a Deutsch-style connector plugged into the bottom of it, connecting it to the In-Cab Controller and solenoids.
- Two LED lights on the unit indicate whether the unit has power, and if it is communicating with connected devices. LED statuses include:
 - Power: Solid Green: Normal operating status
 - Power: Solid Red: Supply voltage below 9VDC
 - Comm/Fault: No light: Normal operating status
 - Comm/Fault: Solid Red: Coil short

Unit Configuration and Calibration

In the event you need to reconfigure or recalibrate your control unit, follow these steps.

Single Channel Unit - Configuring Breakout Force or Contact Force

1. For Single Channel units, press the **Menu** button (3).
 2. Scroll up or down to choose the function you want to configure (it will be **green**), then press **Enter**.
 3. Choose your **Row Unit** model, then press **Enter**, which will take you to the main Control screen.
 4. From this screen, you can adjust the force as needed.
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Dual Channel Unit - Configuring Breakout Force or Contact Force Channel Setup

Note: We recommend you set the Breakout Force on Channel 1 and the Contact Force on Channel 2.

1. For Dual Channel units, press the **Home** button (3) (you may already be on the Home screen).
 2. Scroll up or down to choose the channel to configure and press **Enter**.
 3. Scroll up or down to choose the function to configure and then press **Enter**.
 4. Choose your **Row Unit** model and press **Enter**, which will take you to the main Control screen.
 5. From this screen, you can adjust the Contact force as needed.
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Calibrating the Contact Force

1. Go to the Contact Force screen.
2. Press button (1) to switch to the **LOW** output mode. The screen should show **LOW** in the MODE text box.
3. Press the left arrow on the D-pad to adjust the displayed Force to 0kg (the pressure will show approximately 726 psi).
4. On the machine draw bar or tool bar, confirm the pressure gauge labelled **PARA DOWN** also shows approximately 726 psi.
5. Locate the hydraulic pressure valve below the pressure gauge labeled **PARA UP**. With an Allen key, adjust the pressure valve until the row units almost lift off the ground.

NOTE: If the row units do not lift, increase the **PARA UP** pressure. If the row units lift too high, decrease the **PARA UP** pressure.

6. On the control unit, press button (2) to change the Mode to **RAISED** and confirm that the row units lift all the way off the ground. The screen should show **RAISED** in the MODE text box.
 7. Press button (1) until the screen shows **STANDARD** in the MODE text box.
 8. Use the left and right buttons on the D-pad to adjust the displayed Force to 100kg and check if the row units are pushed onto the ground.
 9. If not, adjust the pressure until they are.
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Releasing Oil Pressure

Warning: Stored Energy Hazard: Before disconnecting or performing maintenance on your machine, verify that oil pressure has been safely released from the system. Follow all safety precautions for your tractor and planter.

How to Release Oil Pressure

1. Shut down the tractor and remove the keys.
 2. Locate the oil **Dump Taps** beneath the oil pressure gauges.
 3. Turn each tap to the Open (on) position. Depending on your configuration, you will have one, two or three taps.
 4. Your planter is now ready for maintenance or other activities.
 5. Don't forget to Close (turn off) the **Dump Taps** prior to use.
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