

DRILL CONTROL OPERATION

Lift Master Feature (This is standard equipment)

This feature, once connected and configured in the monitor, allows the monitor to lift and lower the openers. (If the optional Pack Master feature is not installed then the 410/415 drill control box is still required solely for controlling the opener hydraulic pressure.)

1. The Drill Control panel can be viewed in the Seeder Controller mini-view or in the expanded view by scrolling through the panels.



- A. **Lift Master Control** - lifts and lowers the openers manually. Leave this button on for ASC to lift/lower the openers automatically based on coverage.
- B. **Drill Lift Track Master** - links the opener lift/lower state to the Master Switch state. With Track Master on, when you shut the Master Switch off it will override the Lift Master state and lift the openers so you don't have to press both buttons when stopping seeding.

! Important: Turn the Drill Control boom ASC & Track Master off for scenarios where you normally leave the openers in the ground to prevent skewing (e.g. steep hills) otherwise the openers may lift unintentionally over covered area.

Pack Master Feature (This is optional equipment)

This feature adds control of the opener hydraulic pressure within the monitor.

1. Go to settings and set Control Type for Pack Master operation.



i. Hydraulic Pressure

– will hold the opener hydraulic pressure at a preset pressure (the pack force on the ground will vary depending on soil conditions).

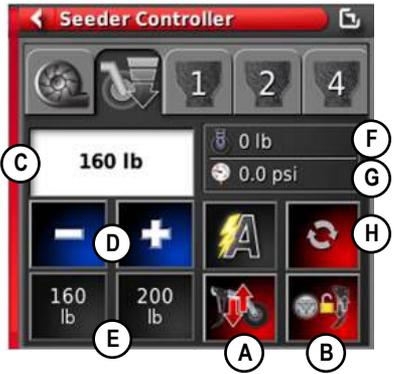
ii. Pack Force (before using this control type the Pack Master Calibration procedure needs to be performed on the load sensor)

– will automatically adjust the opener hydraulic pressure to maintain a preset pack force on the ground. The hydraulic pressure will change in different soil conditions to maintain the pack force. Harder areas will require more pressure to overcome the draft and keep the pack force on the ground.

Note: when it is desired to operate near or below the low end of the pack force range (PHD:110lb/50kg, XTC:160lb/70kg, ICD:200lb/90kg), the Hydraulic Pressure control type should be used for stable control as the load sensor will be out of range.

2. The Drill Control panel will have the extra controls added for the Pack Master feature.

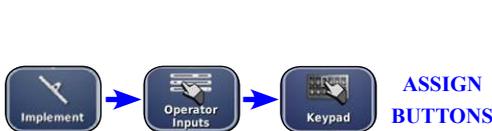
- C. **Requested Pack Master Value** - set to requested Pack Master value.
- D. **Increment Buttons** - increase or decrease Pack Master value by specific amount entered in the settings page.
- E. **Preset Buttons** - select a preset Pack Master value to control to. These values are entered in the settings page.
- F. **Pack Force** - actual Pack Force value (only accurate once calibrated).
- G. **Hydraulic Pressure** - actual Hydraulic Pressure.
- H. **Pack Master Control** - turns Pack Master on or off. Pressure will be applied to the openers when Pack Master is on as long as the openers are lowered and you are on an uncovered area or ASC is off. Turning Pack Master off with the openers lowered keeps them in the float position with no extra down pressure applied.



In Cabin Keypad Buttons

It is recommended that you assign some of the drill control functions to the in cabin keypad for easy access.

1. These are the suggested settings for buttons A & B.



2. Use the provided cabin keypad decal to mark the function of the assigned buttons.

Control Adjustments

1. If openers are lowering too late, or too soon, based on coverage then adjust the Lower Time setting accordingly (increase time to lower sooner).



2. If the opener pressure is spiking too high at the start of passes (packing too much / lifting rear wheels off ground) then decrease the Maximum PWM setting further. If trying to control to a very high packing pressure but it cannot be reached then slightly increase the Maximum PWM setting.



PACK MASTER CALIBRATION (This is optional equipment)

A calibration needs to be performed for the load sensor before controlling opener pressure based on packing force.

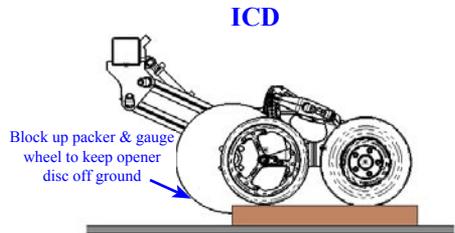
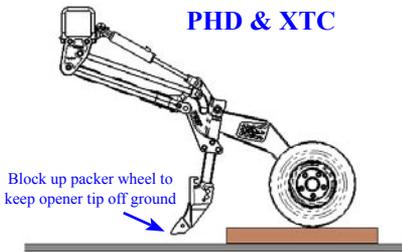
1. Go to settings and confirm that Drill Model and Opener Type are set to match your equipment for proper calibration.



2. Locate the opener with the load sensor installed (opener with cable coming out of spindle at rear of main frame). Set depth setting for specific opener type following chart.

Opener Type	Depth Setting
3320/3420 PHD	8
3320/3420 XTC	7
3720 ICD	1 (walking axle free to move)

3. Block up packer wheel (and gauge wheel for ICD) just enough to keep opener tip (disc) off ground when lowered and pressure is applied.



4. Engage opener hydraulic circuit.

5. Open Pack Master Calibration wizard by pressing the button on the seeder controller configuration panel.



Step 1: Warns that openers will lower. Press next arrow .

Step 2: Openers should lower and apply pressure to the 1st calibration point (low end of the packing range). After Calibration Value stabilizes within +/-5 press the next arrow .

Step 3: The sensor load will be entered automatically based on drill model and opener type. Confirm from chart on right. Press next arrow .

Step 4: Opener pressure will increase to the 2nd calibration point (high end of the packing range). After Calibration Value stabilizes within +/-5 press the next arrow .

Step 5: The sensor load will be entered automatically. Confirm from chart on right. Press next arrow .

Step 6: Press check mark to complete calibration.

1st Calibration Point

Opener Type	Hydraulic Pressure (psi)	Sensor Load (lb)	Hydraulic Pressure (kPa)	Sensor Load (kg)
3320/3420 PHD	500	121.5	3447	55.1
3320/3420 XTC	500	175.0	3447	79.4
3720 ICD	250	179.5	1724	81.4

2nd Calibration Point

Opener Type	Hydraulic Pressure (psi)	Sensor Load (lb)	Hydraulic Pressure (kPa)	Sensor Load (kg)
3320/3420 PHD	1500	222.5	10342	100.9
3320/3420 XTC	1500	261.0	10342	118.4
3720 ICD	1000	361.0	6895	163.7



Important: If the Calibration Value and Sensor Load at the 2nd calibration point are not significantly higher than the 1st point, Pack Master will not perform properly. Recalibrate for proper operation.

6. Remove blocking and set opener back to appropriate depth.

IMPORTANT

- Calibration should be repeated anytime the load sensor is replaced.
- Record your specific calibration values below. If you create a new profile the calibration values can be re-entered instead of recalibrating. (Use a permanent marker on this card to record your values; it can still be washed off if changes are needed)
- These settings can be accessed by selecting:



MINIMUM SENSOR LOAD



MAXIMUM SENSOR LOAD



MIN CALIBRATION VALUE



MAX CALIBRATION VALUE





For more information go to the Customer Service area of www.bourgault.com.