SRC Initial Set up
(Seed Rate Controller)

The following pages will give a basic overview of the steps that are required to set up your X20 to control your Bourgault Air Seeder.
The X20 runs on a windows based program. It is set up to auto start the X20 Product Selection.
The X20 can run various programs. If you press STOP in the lower left corner you will have time to select the desired program before it auto starts.
The **Blue** tabs will do the following functions;

- **STOP** will stop the auto loading process
- **UPGRADE** will allow you to upgrade the software
- **ALIGN** will let you calibrate the touch screen
- **SETUP** should only be used when advised by Bourgault
- **START** will start the selected programs
The screen shown above is the basic SRC operating screen.

Throughout the program you will be able to access the operators manual by touching the Blue HELP tab.
Above is the basic SRC operating screen. Touch the blue OPTIONS tab to enter the set up pages.
These are the tabs marking the pages that have to be set up for the X20 Seed Rate Controller to work with your Bourgault Air Seeder.

Must match the Com Port that the SRC interface cable is plugged into at the back to the X20. Use COM3 so COM1 and COM2 are open for Guidance and Variable Rate Control.

Speed FromSeeder is the most common selection here because it is getting speed from the Bourgault speed sensor. Tractor radar is not accurate enough to use and GPS signal may be lost from time to time.

See the next page for these items.
External Switch Box may be selected if desired.
Allow you to control the master clutch with the external master switch.
The external switch box has only 4 tank switches so this can only be selected if the Bourgault Air Seeder is metering out of 4 or less tanks. (NH3 / Liquid is Tank 5)
Select Auto clutch switch enabled if using a work switch, VRC Enabled if Variable rate seeding is desired and/or Guidance master enabled if using Topcon Guidance and/or Sectional liquid/NH3 control.
Enter your units as indicated above unless using metric units!
Select the Machine tab

Select the model by touching the drop down arrow. If model is not in list contact Bourgault Industries Ltd.

Select your tire size by touching the drop down arrow then the set button to accept the new tire size!

Note; If the wheel factor is not correct go to the Setup tab!

With a Bourgault Air Seeder you can group tanks. The first number in a grouping is the tank that product meters out of plus the added volume of the next tanks in the group.
With your Bourgault air-seeder you are able to combine products and meter out of one auger. This is done by selecting one of the predetermined tank groupings based on the model selected.

It is important to note that when you select grouping the first number is the tank that the product will meter out of and the second number is the tank that will be added to the metering tank.

Above you will see that \((1+2)(4+3)\) Product will be metered from tanks 1 and 4, the product will flow from tank 2 into 1 and from tank 3 into 4.

The tanks not being used will drop off of the operating screen when using Tank Grouping.
Next is the Sections tab.

Only enter a Value here if using sectional liquid/NH3 control. If not using section control enter “0”.

If using Sectional Control touch the calculator tab to enter the width of each section.

If you enter a number in the Section Number box and you do not have liquid/NH3 section control there will be a faint chime alarm!

The section that is set up for sectional liquid/NH3 control is the only section that should not be checked and leave the Balanced Mode unchecked.
Next select the Seeder tab.

Turns tanks on and off when not in use.

Enter width here if not using sectional control.

Select the type of product per tank here.
Next select the Fans tab.

Select 1 or 2 fans here.

NEVER check these!!!
Next select the Tank tabs.

Select the correct auger type for each tank, identified by a stamp on the RH end of the auger shaft. (1R, 2R, HO)

Select Control to Rate for the actuator.

Select Tank Clutch

Set up all of the granular tanks as described above.
Next select the NH3 / Liquid tank if applicable.

Select the controller type. Regulator is an electrical valve to control the flow of the product and a Proportional valve controls the hydraulic flow to the motor.

Press the Controller Settings tab.

Enter 1 for # of Nozzles.
Select type of NH3/Liquid system

If the regulator valve is running the wrong direction you may reverse the polarity here.

This option is for Non Sectional control NH3 systems only!! DO NOT CHECK for liquid or Sectional control NH3

Leave Sensitivity, Max on time, Min on time, PWM settings and Gain settings at factory defaults unless advised by authorized technician!

Note; It would be wise to test all NH3 and Liquid settings without product!
If the seeder speed does not match the true ground speed you can calibrate and enter a new Distance/Pulse by touching the calculator here.

You can choose Tank or Bin as the display name.

Allows a calculated area remaining to be displayed on the operating screen.

Stationary is the preferred method of calibration.

**Note; Bourgault air-seeders may have a either a single pulse wheel sensor or a 20 pulse sensor, if the displayed ground speed is out by a factor of 20 you will have to enter a new Wheel Factor!!**
Next select the Blockage tab.

If the drill is not equipped with Factory installed blockage monitoring select No Monitoring and proceed to the next tab.

If using Factory installed blockage monitoring check as shown here.

If equipped with Factory installed Blockage Monitoring select 1 Monitor ECU and up to 16 Monitor Inputs (matches the number of sensors).
Next select the Seq. tab.

Enter the time it takes the product to get to the seed boot as On Time and the time it takes the product to stop as Off time in seconds.

Enter a value in seconds to ensure that there are no small gaps on the coverage map. This turns the mapping on sooner at the start of a pass and later at the end of a pass by the amount of time entered. 2 seconds is a good starting point.

**** see the next page for sequence time calculation procedure. ****
How to Adjust Sequence Times.

1. You must first find an open area of a level field large enough to make perpendicular passes.

2. With the guidemaster enabled in the X20 you must start a new field in the guidance program.

3. Make a straight pass with the openers down, master clutch on and the tank clutches off (no product in the ground).

4. Make a second pass across the first pass perpendicular to the first pass with the openers down, master clutch on and the tank clutch on (product in the ground).

5. To fine tune the off times you will dig in the ground to find where the product stops in relation to the leading edge of the first pass. Measure the gap or overlap.

6. To calculate the seconds that you need to adjust the sequence time you must first calculate how many feet per second you are traveling. (5280 multiplied by the ground speed then divided by 3600 will give you the feet per second) for example \( \frac{(5280 \text{ft/mile} \times 5 \text{ mph})}{3600 \text{ sec/hour}} = 7.3 \text{ ft/sec} \).

7. If the product ends before crossing the first pass you must take the distance that it is short and divide it by the ft/sec to get the number you must add to the off time in the sequence tab. (most customers would be more comfortable with some overlap).

8. If the product overlaps the first row you must divide the overlap by the ft/sec and subtract that number from the off time in the sequence times. (most customers would be more comfortable with some overlap).

9. If the product does not turn on quick enough when you exit the first pass you must measure the miss and divide it by the ft/sec to get the number that you must subtract from the on time in the sequence time. (most customers would be more comfortable with some overlap).

10. If the product overlaps too much as it exits the first row you must measure the overlap and divide it by the ft/sec and then add that number to the on time in the sequence time. (most customers would be more comfortable with some overlap).

Note: after the initial sequence time settings it is important to make some angle passes to make sure the customer is happy with the overlap and or gap.
Next select the Alarms tab

This button Tests the alarm that is displayed for the tank selected.

Each of the alarms is fully customizable, touch the Help button here for further explanation if you wish to customize your alarms.
Next select the Products tab

This page displays each product list, calibration factor and Density for each metering auger selected. Each list can be modified by touching the Change Product List button for the selected auger.
To edit or add a product to the list for a specific auger you must enter the name, Density and Cal. Factor (this can be a number from another product because the first time you run a tank calibration on the new product it gives you the option to over write the old Cal. Number. After you must press SAVE TO LIST.
If you have modified your product list you may wish to Backup the Product list to a folder or external memory. You may also wish to restore a list from a selected folder of external memory.
Next select the Sim. tab

This page is seldom used, but you may simulate functions here.
To complete your Bourgault SRC set up you select the Other tab where you can adjust the alarm volume. Close will exit the Options section and return to the operating screen.