



Installation Instructions



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LIST OF CONTENTS

- 1. Components Introduction**
 - 1.1. Standard Components**
 - 1.2. Optional Components**
- 2. Plumbing box**
 - 3.1 Plumbing Box Overview**
 - 3.2 Plumbing Box Installation**
 - 3.3 Configurations**
- 3. Tubing**
- 4. Wiring**
- 5. Smart Clean app**
 - 5.1 Download the App**
 - 5.2 Connect to your Martin-Till SmartClean**
 - 5.3 Configure your Martin-Till SmartClean**
 - 5.4 Single Valve Bank (No Air Bag)**
 - 5.5 Single Valve Bank (Air Bag)**
 - 5.6 Bi-Directional Control**
 - 5.7 Dual Valve Bank**
 - 5.8 Saved States / Presets and Resume**
 - 5.9 Updating your Oriole Firmware**
- 6. ISOBUS cables and connections**
- 7. Recommended Settings**
- 8. Troubleshooting**

Components Introduction

1.1. Standard Components

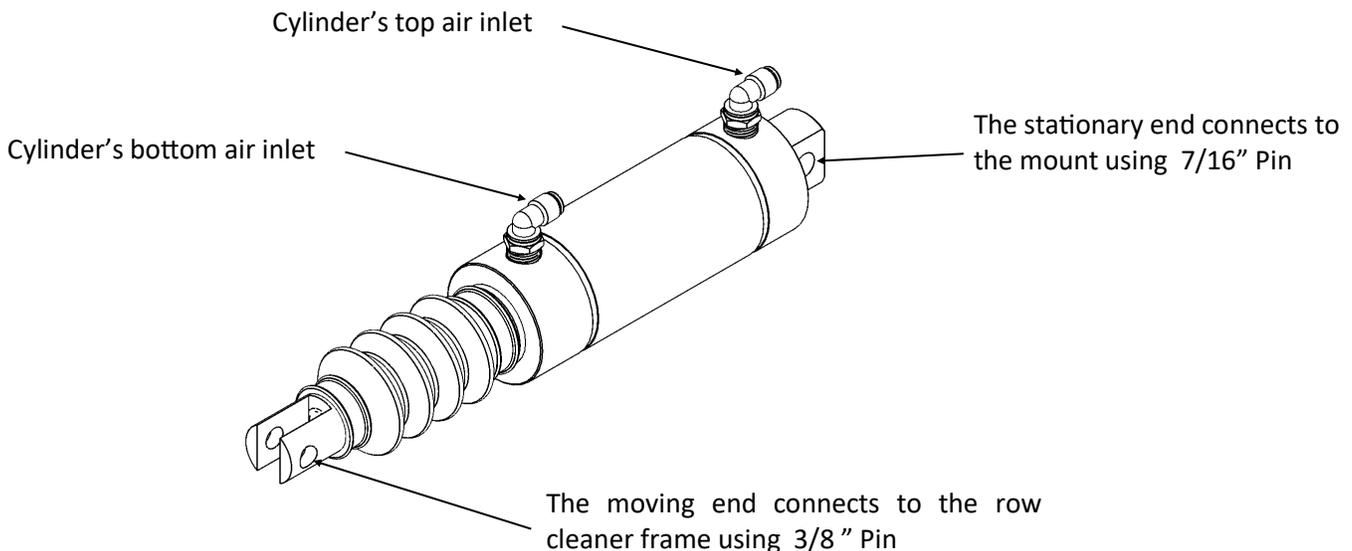
The following standard components are included in your Smart Clean purchase:

- Plumbing Box (SC-ASSEMBLY-1) (Standard or High Flow)
- Air Prep Filter/Regulator (SC-FILTER) (600062-1/4") (600051-3/8" High Flow)
- Signal Converter Box (JCA00-015001) (600061)
- ORIOLE Controller Box (JCA00-009001) (600060)
- Planter Harness (JCA86-000012) (800985)
- Power Harness (JCA86-000011) (800986)

1.2. Optional Components

The following optional components to be ordered separately:

- Air Cylinders (PP755271) (800322)
- Double valve Plumbing Box (With additional airbag valve)(SC-ASSEMBLY-2)
- Top and bottom Cylinder Brackets (Specific to your order)
- Hardware (Pins and Mounting Hardware)
- Pneumatic lines and fitting kits (Tubing Kits) (Standard or High Flow)
- Heavy duty Compressor (PP755279)
- Compressor harness
- ISOBUS connection harness. See Page 13 for Cable Selection.



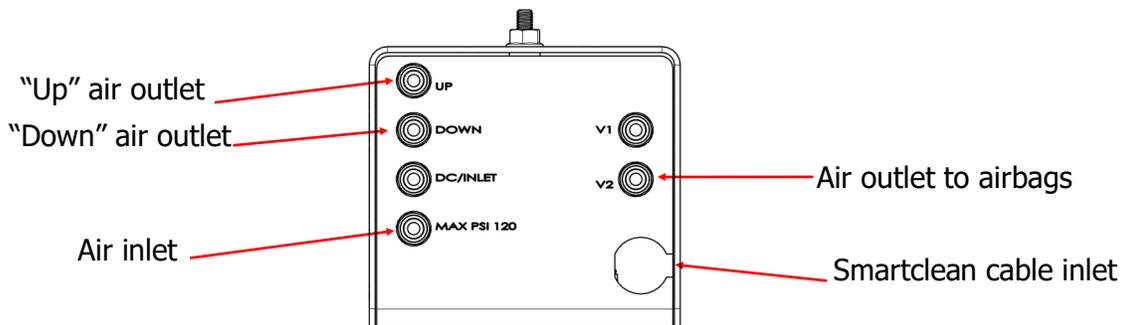
Plumbing box

2.1 Plumbing box overview

The plumbing box come in 8 different configurations depending on what you ordered to achieve the desired control functions. It connects wirelessly to your smart phone or through your Tractor/planters ISOBUS system and allows you to control the row cleaner’s downforce by controlling the cylinder’s air pressure . The control box includes one pressure regulator valve (SC-QB1), one optional airbag pressure regulator valve (SC-QB1), one directional valve (SC-DIR-VALVE), signal converter box (JCA00-015001), ORIOLE controller box (JCA00-009001)), and an external air filter/ regulator (SC-FILTER).

2.2 Plumbing box installation

To install Plumbing box, open the cover loosening the 3/8” locknuts on the top of the box and use the 3/8” holes under the box to attach and secure the plumbing box on the planter. We recommend a central location close to the air compressor. See Page 18 for mounting layout.



2.3 Configurations

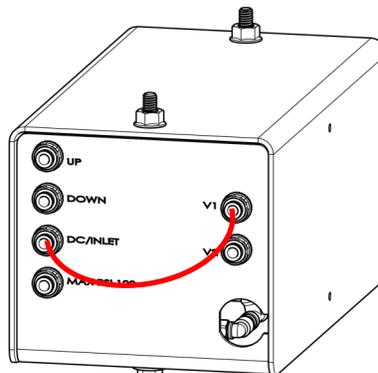
There are 8 Configurations of the Smart Clean Plumbing Box, 4 Standard Flow and 4 High Flow. High Flow Boxes are plumbed with 3/8” Tubing instead of 1/4” tubing.

For Row Cleaner Adjust System (900182), connect the line from the pressure regulator to the port -MAX PSI 120, connect the jumper tube (supplied) to the V1 and DC/INLET ports. Connect the Smartclean cylinder UP line to UP port , and the Smartclean cylinder DOWN line to DOWN port. Place orange plug (supplied) in the unused V2 port.

For Row cleaner with Air Bag System (900180), a jumper tube (supplied) must be placed between the V1 port and the DC/ INLET port as shown .The air line to the airbags must be connected to the V2 port. The Smart clean cylinder lines are connected to the UP and DOWN ports respectively.

For Bidirectional Control System (900181), the Smartclean cylinder UP line is connected to V1 port, and the DOWN line is connected to the V2 port. NO JUMPER tube is installed and unused ports are to be plugged off using the supplied port plugs.

**Row Cleaner Adjust (900182) and
Row Cleaner Plus Airbag (900180)**

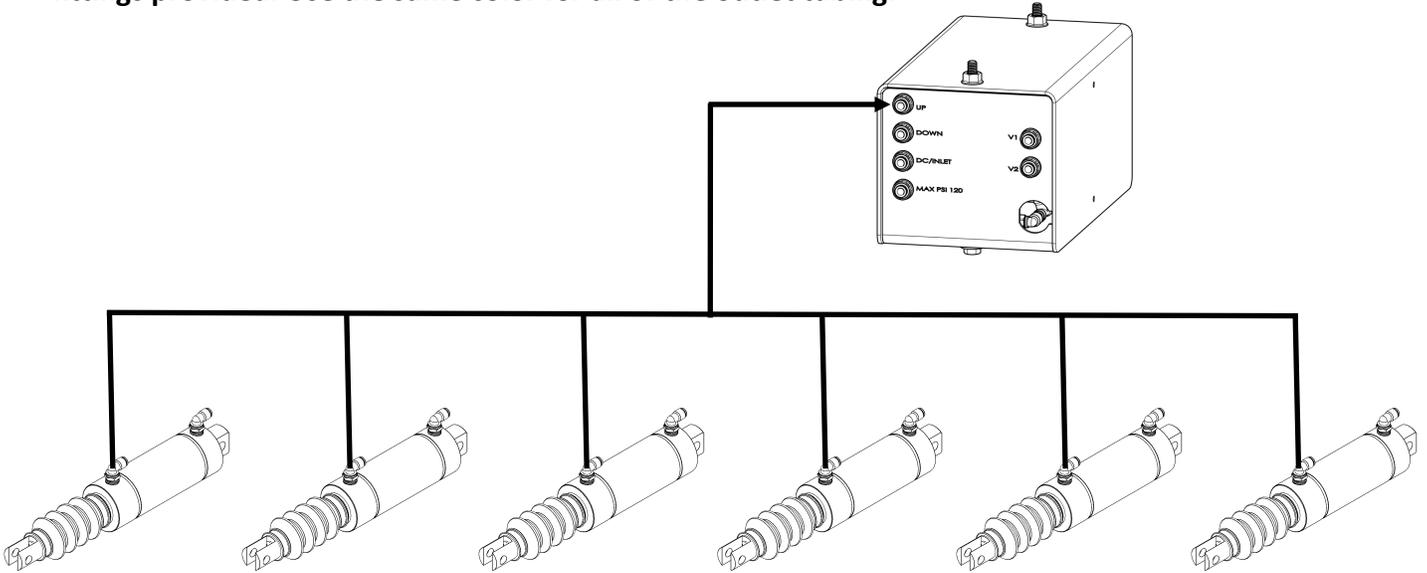


Tubing

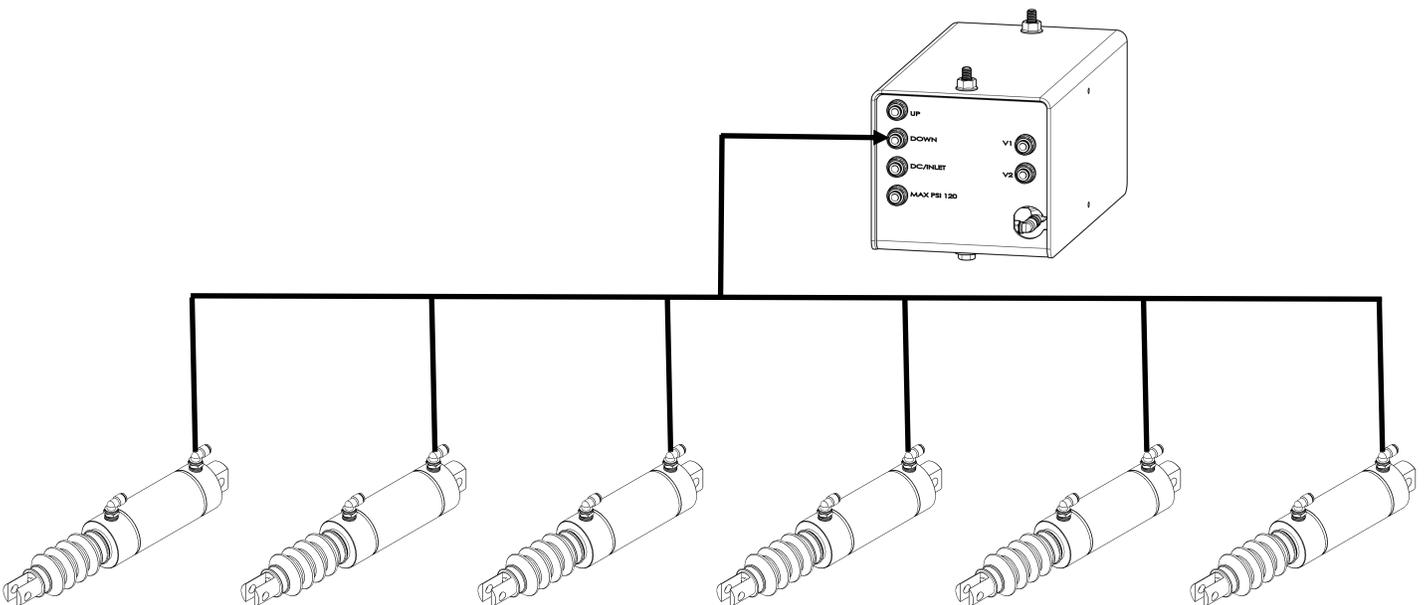
For best fit and safety, tubing should be routed from the Smart Clean box to the cylinders with the planter raised, folded halfway for transport and with row units and row cleaners fully down.

Tubing kits ordered separately. Note that if High Flow tubing kit was ordered, Main Trunk lines and fittings will be Brass and 3/8 NPT.

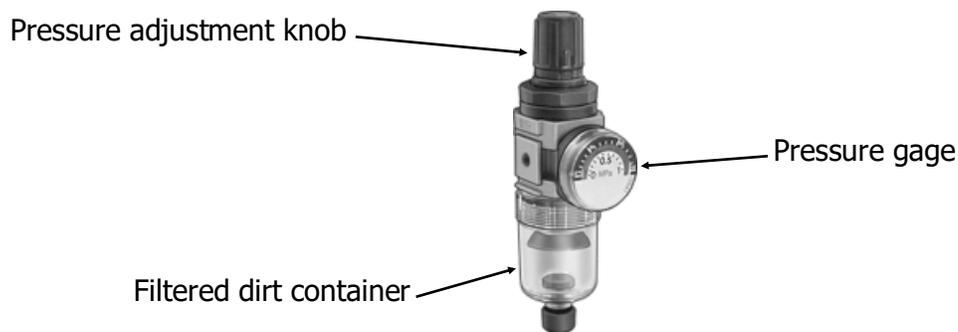
- Connect the box's "Up" air outlet to the bottom air inlets of the cylinders using the 1/4" tubing and tee fittings provided. Use the same color for all of the outlet tubing.



- Use different colored tubing for the up and down circuits. Connect the box's "Down" air outlet to either the extend or retract end of the cylinder and use the other color for the opposite end.



- If your planter is equipped with airbags and you ordered the optional double valve plumbing box with additional airbag valve(900180), connect the box’s “Airbag” (V2)outlet to the airbags circuit using the 1/4” tubing and tee fittings provided.
- Use the provided zip ties to secure the tubes.
- Make sure that the tubes will not be stretched or sharply bent during planter movement or folding/unfolding. It is highly recommended to follow the existing wiring harnesses or airbag tubing routes.
- To make tubing easier, you can start by connecting the very first air cylinder to the very last air cylinder (for both inlets), then cut the tube at any conjunction and take branches for middle air cylinders and plumbing box by adding Tee connections.
- Connect the air preparation filter/regulator (SC-FILTER) to your air supply. You can use your own air compressor or buy the optional compressor (SC-AC-12). Look at the air flow arrow shown on the filter/regulator and connect the air supply to the inlet port of the filter/regulator.



- Connect the air preparation filter/regulator’s outlet port to the air inlet of the control box using the provided black 1/4” tubing.
- Turn on the air supply, then lift up the top knob on the filter/regulator and rotate it to adjust the air pressure shown on the gage to 120 PSI max.

Wiring:

Your smartclean unit will arrive fully assembled, the only electrical connections that need to be made are 12 VDC power and ground to a “key switched” source , and the ISOBUS connection if that option was purchased.

It is strongly recommended that the power supply to the Smartclean unit is connected to a key switched circuit to ensure that the system is powered off when not in use, leaving the system on without air pressure can cause damage to the valves and substantially shorten valve life. Some operators /installers prefer to power the Smartclean system from accessory power supply connectors built into the planter harness, ensuring the Smartclean system is off when the planter is off.

See page 13 for ISOBUS Instructions.

SMART CLEAN APP

The Martin-Till SmartClean system is controlled via an app that can be installed on iOS and Android devices. The app controls the system over a wireless Bluetooth connection. When ISOBUS connection option is used, the screen appearance is the same as the app so you can proceed to Step 3 and configure your system.

1. Download the App

Installing the Martin-Till Smart Clean V2 app on an iOS or Android mobile device is the first step.

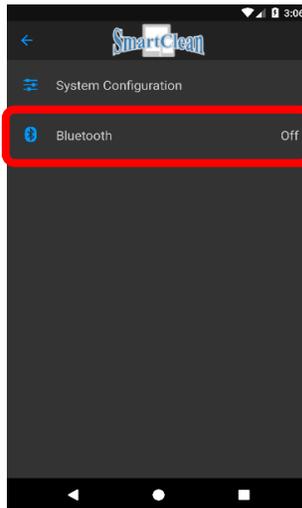
- Go to the Google Play Store or the iOS App Store
- Search for Martin-Till Smart Clean V2
- Install the app titled Martin-Till Smart Clean V2 (Software Update 3.4.101)

2. Connect to your Martin-Till SmartClean

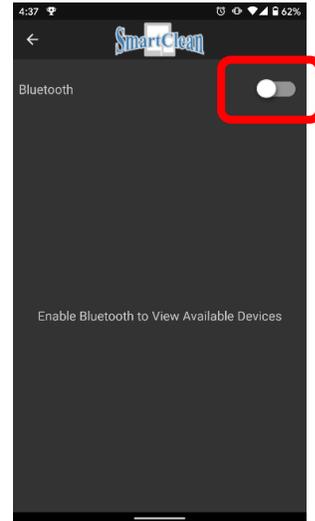
Follow the below steps to connect to the Martin-Till SmartClean system.



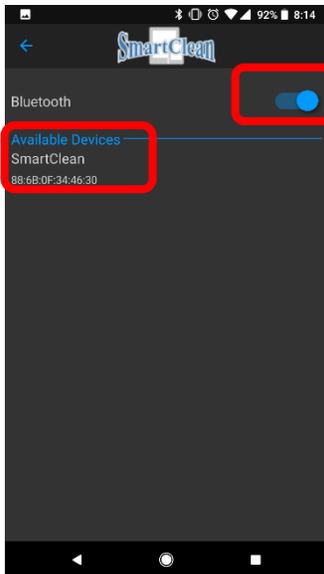
1. Notice the Bluetooth: Not Connected message. Click on the gear



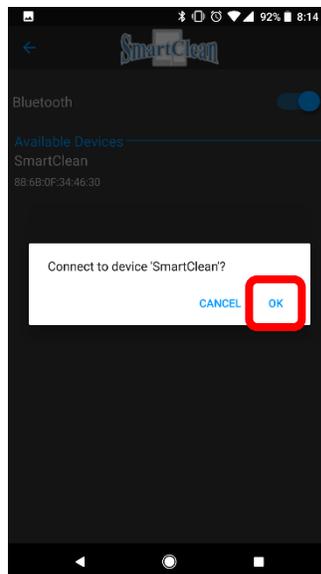
2. Click on the Bluetooth label



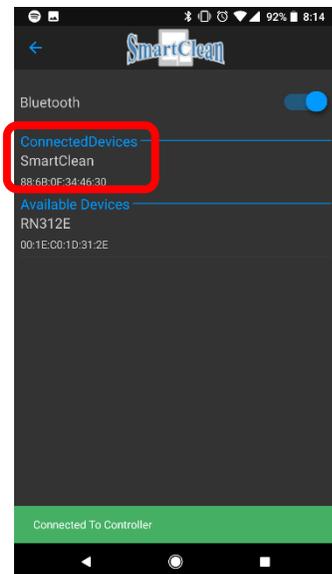
3. If Bluetooth is disabled, ENABLE will have black font. Click ENABLE



4. When Bluetooth is enabled, ENABLE will have grey font and available devices will be listed. Click SmartClean in the list of Available Devices.



5. A verification prompt will be displayed. Click OK



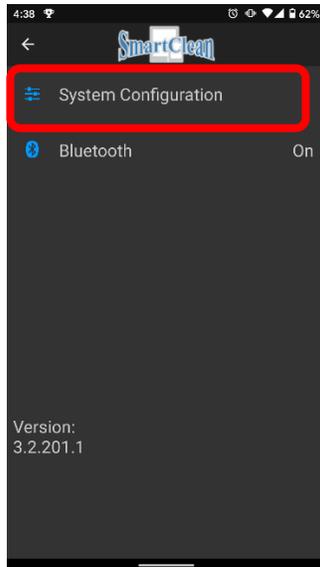
6. After the device is successfully connected, a green Connected To Controller message will be displayed momentarily and the SmartClean device will be in the list of Connected Devices.

3. Configure your Martin-Till SmartClean

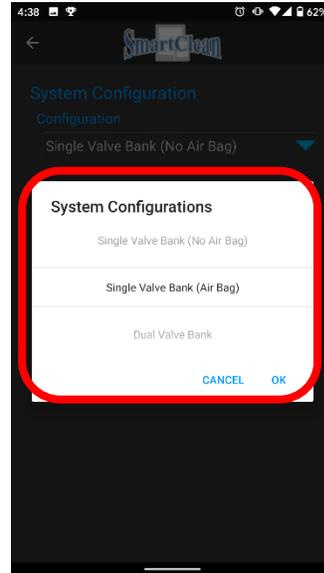
The Martin-Till SmartClean can have several different configurations. The operator must select the proper configuration within the app by launching the Smart Clean V2 app following the instructions below.



1. Click on the gear



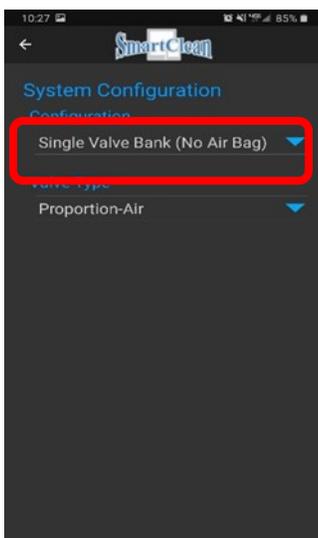
2. Click on System Configuration



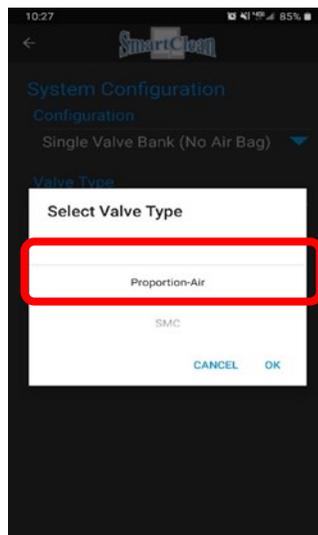
3. Select the appropriate configuration

The Smart Clean App also provides compatibility for earlier and current style systems through the new “Valve Type” Setting in System Configurations Menu, follow instructions below.

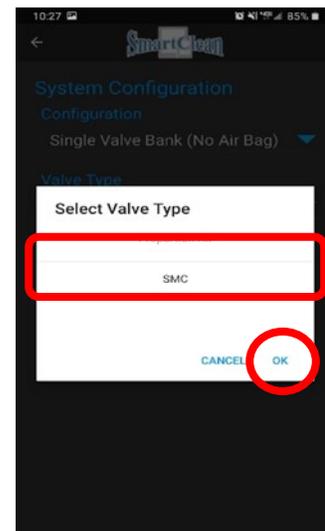
If unsure which valve is needed, compare the Set PSI to the Actual. If the two are approximately 20 psi different, you may need to change the valve type.



Go to System Configurations Menu



Selecting Proportion Air will make app compatible with Earlier Smart Clean Systems

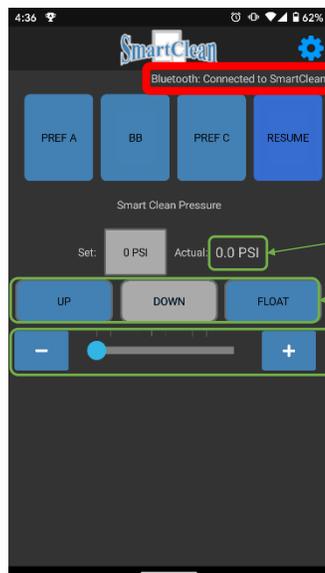


Selecting SMC Valve will make your app compatible for the current Smart Clean Systems

4. Single Valve Bank (No Air Bag) (900182)



Not Connected State (Bluetooth: Not Connected and UP/DOWN/FLOAT buttons are all blue)



Connected State

Actual pressure value.

Select the direction pressure is applied.

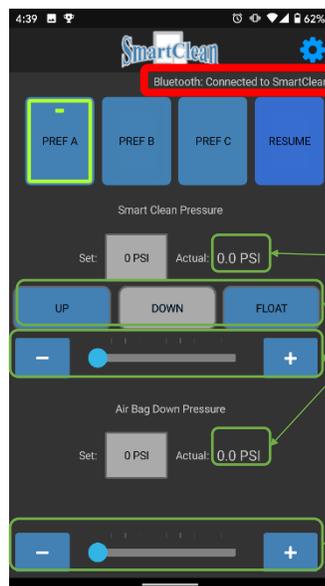
Select the set/target pressure applied by clicking the plus and minus buttons or adjusting the slider.

5. Single Valve Bank (Air Bag) (900180)

NOTE: To run this configuration the Part SC-Assembly-2 (2-Valves) must be installed



Not Connected State (Bluetooth: Not Connected and UP/DOWN/FLOAT buttons are all blue)



Connected State

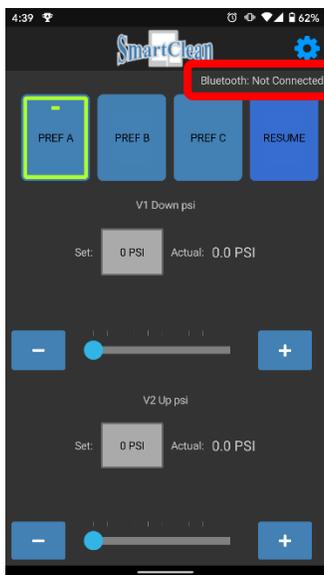
Actual pressure value.

Select the direction pressure is applied.

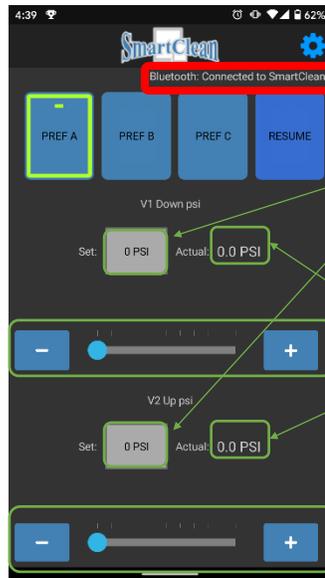
Select the set/target pressure applied by clicking the plus and minus buttons or adjusting the slider.

6. Bi-Directional Control (900181)

The bi-directional control configuration requires a 2-valve system (Part No: SC-ASSEMBLY-2). The plumbing box valve connection needs to be reconfigured for bi-directional control. Please contact your dealer or call Martin-Till for reconfiguration directions and more information.



Not Connected State (Bluetooth: Not Connected)



Connected State

Select the set/target pressure by clicking on it and entering a value.

Actual pressure value.

Select the set/target pressure applied by clicking the plus and minus buttons or adjusting the slider.

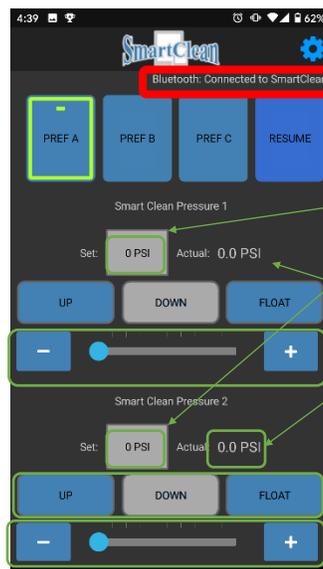
If this is the first time using the system and the actual pressure is not responding to target pressure adjustments, change the System Configuration to single valve, select UP direction, and then change the System Configuration back to Bi-Directional Control.

7. Dual Valve Bank (900183)

When using the dual valve bank configuration the V1 and V2 ports comprise one (up/down) control circuit and the UP and DOWN ports comprise the second control circuit. The pressure for each circuit may be varied independently of the other, as well as up, down and float operation for each circuit.



Not Connected State (Bluetooth: Not Connected and UP/FLOAT/ DOWN buttons are all blue)



Connected State

Select the set/target pressure by clicking on it and entering a value.

Actual pressure value.

Select the direction pressure is applied.

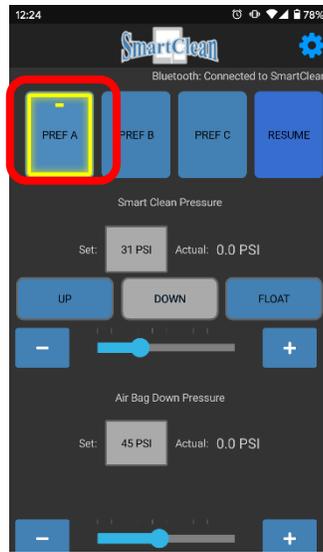
Select the set/target pressure applied by clicking the plus and minus buttons or adjusting the slider.

8. Saved States / Pre-sets and Resume

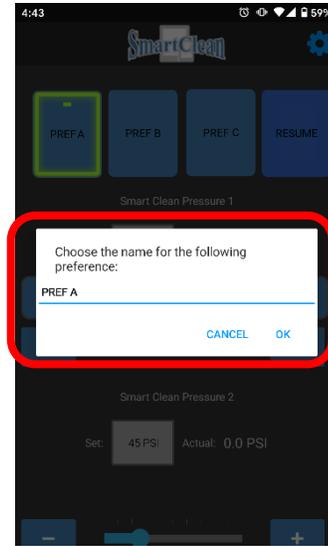
The application can store up to three saved states using pre-set buttons, which are by default named PREF A, PREF B and PREF C but can be given meaningful names. The saved states are configuration specific (single valve bank, bi-directional control, etc.) and are used to quickly change between commonly used SmartClean states.



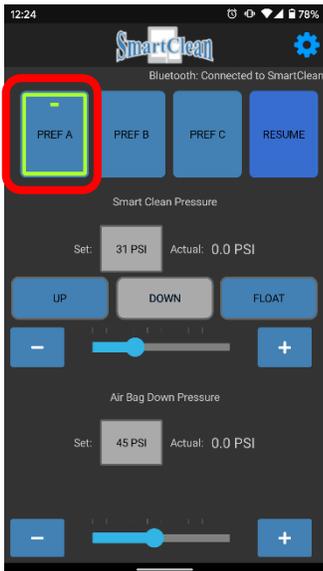
1. Adjust the pressure(s) and position to the desired set/target values.



2. Press and hold one of the three pre-set buttons.



3. When prompted, name the saved state and click OK.



4. Notice the button for the updated saved state is highlighted, indicating the current SmartClean state and the saved state are equal.



The RESUME button is used to restore the previous SmartClean state, that has been stable for at least two seconds. This includes pressure(s) and position(s). It is used to toggle between two states.

For example, if the SmartClean system was targeting 31 PSI DOWN for a couple of minutes and then was manually adjusted to 50 PSI DOWN by using the slider or +/- buttons, as long as the operator made the change quickly and didn't stay at any of the intermediate pressures for more than two seconds, then when the operator pressed RESUME the 31 PSI DOWN state would be restored.

Updating Oriole Firmware

If Smart Clean Box came with an Oriole marked Blue Tooth, firmware must be updated at Martin Industries, call (270) 265-5817 for more details.

If Smart Clean Box came with an Oriole marked Wi-Fi, follow the steps below for updating the firmware.

With your device connected to the controller over Wi-Fi, click on the settings “Gear” on the top right corner of the app home screen.

Next, click “Software Update”

If there is an update available, a version number will appear below “Available Software Update”. If available, click the Update button.

Stages of update and progress will be shown below as in figure 4. Installation time depends on the size of the update. Usually updates will only have 2 stages.

Figure 1

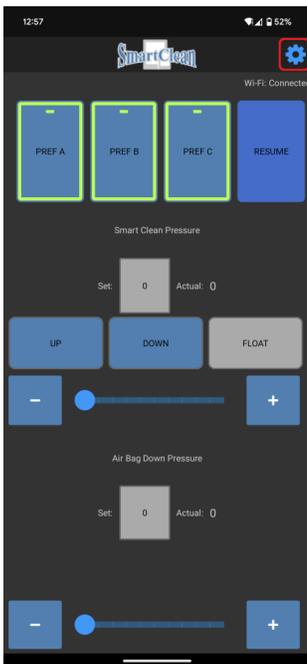


Figure 2

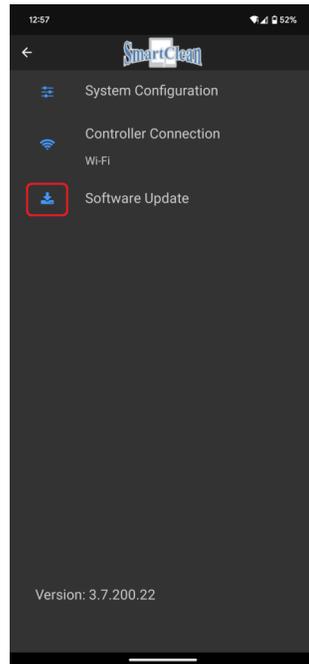


Figure 3

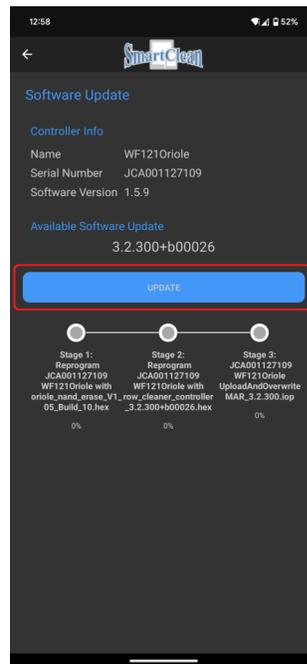
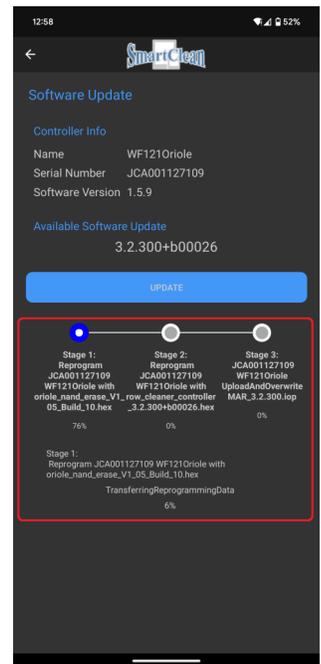


Figure 4



ISOBUS Cables and Connections

SmartClean Systems sold since 2020 should come from our factory with ability to connect to your tractor's ISOBUS. To check if your system has this capability, check that your oriole has either a pink or yellow dot sticker on the front or back of the Oriole. If you do not have a sticker, please contact us about sending your oriole in to be updated or exchanged.

(800620) This cable provides for connection of the Smartclean control to the Tractor ISOBUS system and allows for an additional connection to another ISOBUS controlled implement such as a fertilizer cart or other ISOBUS equipped implement.

(800621) This cable provides for connection of the Smartclean control to the Tractor only. This would be the cable used to connect the Smartclean control to a planter NOT equipped with ISOBUS. This cable would also be used with planters that have proprietary networks independent of ISOBUS such as Precision Planting products and Kinze planters .

(800612) This is a 40 foot long extension cable that extends from the Tractor connection to the Smartclean control unit mounted on the planter.

(800535) This cable is made to connect to the ISOBUS connection on John Deere planters and allows control of the Smartclean unit using the 2630, 4630 or the Tractors armrest display . The terminator cap is removed from the "Main CAN Terminator" pigtail located in the center of the planter adjacent to the Task Controllers, and the matching end of the 800535 cable is connected , with the other end connecting to its mating plug on the Smartclean control.



Below are the screen configurations as they appear in the ISOBUS application on a John Deere 2630 display. Each screen and its associated Smartclean control box part number is shown . Single Valve, Single Valve w Airbag, Bi-directional and Dual Valve.



SINGLE VALVE 900182



BI-DIRECTIONAL 900181



**SINGLE VALVE W/AIRBAG
900180**



**DUAL VALVE
900183**

Notes

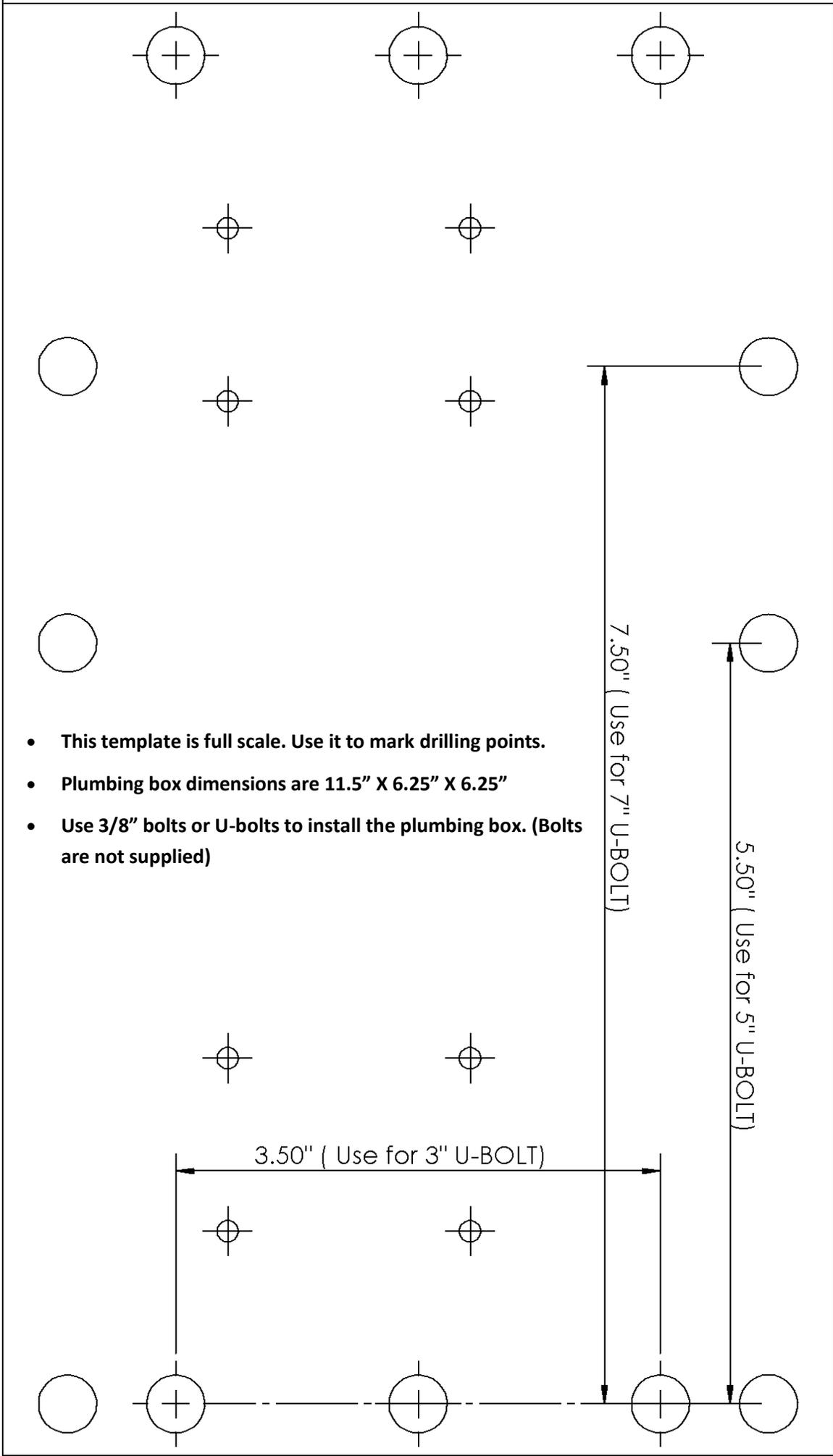
9. TROUBLESHOOTING:

Please make sure that your phone's Bluetooth is working. All the buttons in the app get faded or their colors are changed when you touch them. Verify that your phone's touchscreen works properly, and If you use a case or screen protector for your phone, take them off temporarily before troubleshooting.

Problem	Solution
The app doesn't find the Smart Clean after searching.	<p>1– check to see if the operating status light on the ORIOLE controller box (JCA00-009001) is on. If the light is off :</p> <ul style="list-style-type: none"> • Disconnect the connector between the power harness and the planters harness and check the voltage at the power harness's end to be 12V. The power harness has an in-line fuse . Check the fuse and your tractor power supply if you don't see any voltage . • If there is voltage at the end of the power harness, then check the polarity of the voltage. Make sure that the red wire is connected to positive and the black wire is connected to negative. <p>2– If the operating status light is on, then reset the circuit by turning off the power supply or disconnecting the connector between the power and planters harnesses.</p> <p>3– Close the app, and reopen it.</p> <p>4– Update your device's Operating System (OS) version to ensure it uses latest Bluetooth drivers.</p>
The app finds the Smart Clean, but it doesn't connect.	This happens when another phone has been paired with the system. Reset the circuit by turning off the power supply or disconnecting the connector between power and planters harnesses to unpair the other phone.
The compressor works continuously and doesn't build up pressure.	Check all the tubing and connections for air leaks .
The compressor works continuously and does build up pressure.	Verify the compressor automatic switch is wired correctly and works properly according to the compressor manufacturer's instruction included with the compressor.
Air is leaking from the directional valve mufflers.	This happens when one or more air cylinders are defective and have internal leaks. To find the defective cylinders, adjust to 100% pressure and select the Down position on the main page of the app. Then test each individual cylinder by unplugging the cylinder's bottom air inlet. If air leaks out from the cylinder bottom air inlet, the cylinder has an internal leak and needs to be replaced.
The "Down" setting lift the row units and the "Up" setting lower them.	It happens In some of the bracket designs, where the stationery end of the cylinder is located under the row cleaner pivot point. Switching the air outlet tubes on the plumbing box will fix the problem.
App doesn't respond and appears frozen.	Check OS version . Smart Clean requires iOS 10 or later or the latest version of Android . Some older device's may not be compatible. Remove phone case to verify it is not prohibiting your touch screen.

TROUBLESHOOTING (continued)

Problem	Solution
<p>Smartclean app does not appear on the home or MENU screen when connected to ISOBUS.</p>	<p>Check to ensure the control box is powered and the Operating Status light is green and steady. The Status 2 light should flash RED intermittently about one time per every 2 seconds , this indicates the unit is communicating. If the light is not flashing , check the wiring connection to the tractor or planter ISOBUS to make sure the connectors are fully engaged and making contact. Please see pages 15 and 16 for a description of the cables and connections.</p> <p>Check that both connectors to the Oriole control unit are fully seated and the snap locks are engaged.</p> <p>Cycle power to the Smartclean unit and the tractor and allow all implements to reload in the display.</p> <p>If the Status 1 or the Status 2 lights are RED and on steady please call Martin-</p>



- This template is full scale. Use it to mark drilling points.
- Plumbing box dimensions are 11.5" X 6.25" X 6.25"
- Use 3/8" bolts or U-bolts to install the plumbing box. (Bolts are not supplied)

CONTROL SERIAL NUMBER _____

DATE INST _____

Notes:



**The most trusted name in no-till
Established 1991**

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