

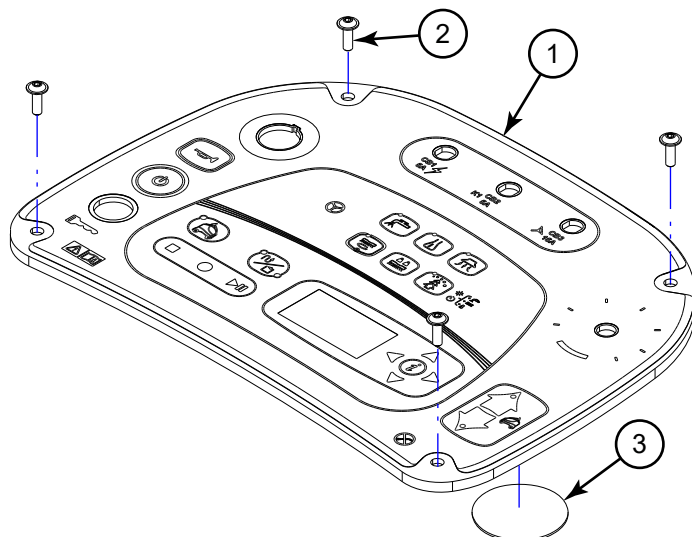
56122799 USER INTERFACE KIT

For Liberty SC50 Models: ALL

CONTENTS OF KIT

Item	Part Number	Qty	Description
[]	56090413	1	Instruction Sheet
1		1	Interface Panel Assy - includes PCB
2		4	SCR M5X16 ISO7380-2 FLG BLK
3		1	Tape-Circle-VHB 4952

[] = Not Shown

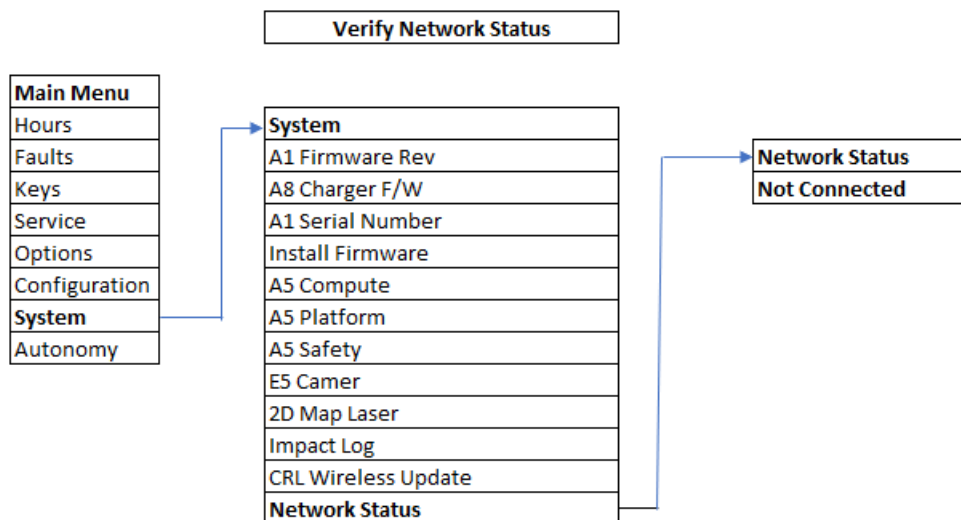


INSTALLATION INSTRUCTIONS

•Steps to check for Network status:

Step 1: Power the machine.

Step 2: Select "Main menu" -----Select "System" -----Select "Network Status" -----"Not Connected".



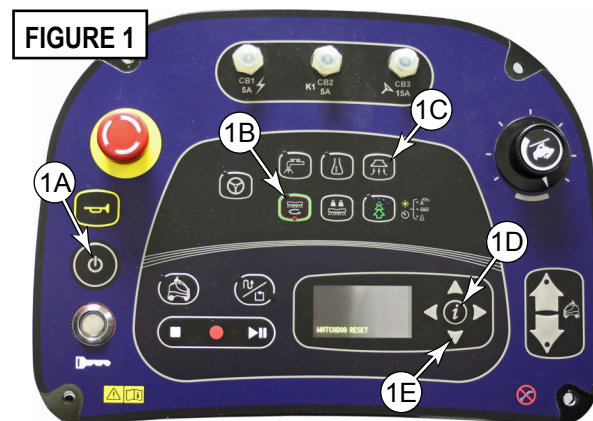
INSTALLATION INSTRUCTIONS

The interface panel kit replaces the machine's interface panel, including the Main Machine Controller, but not the discrete electrical components attached to the panel. Therefore, it is necessary to transfer all components attached to the original interface panel over to the new interface panel.

PREPARING THE MACHINE

If the machine is functional enough to boot up and gain access to the Service Menus, record as much of the machine's existing configuration as possible. If the machine is completely non-functional, you may skip this section.

1. **See Figure 1.** Power the machine with Service Mode access.
 - a. Press and hold the Scrub (**1B**) and Vacuum (**1C**) buttons.
 - b. Press and release the Power button (**1A**).
 - c. When the display illuminates and the machine begins its bootup process, you may release the Scrub and Vacuum buttons.
2. View the hour meter in the upper right corner of the main display screen. Record the hours of the machine in the table on top of page 6.
3. Press the information button (**1D**) to enter the menu system, and use the arrow buttons (**1E**) to navigate down to the Options Menu.
 - a. Scroll through the options list and record the current "options" menu settings in the tables on pages 6 & 7.
4. Exit the Options Menu and navigate to the Configuration Menu.
 - a. Scroll through the configuration list and record the current settings in the table on page 7.
5. Exit the menu system and power down the machine.



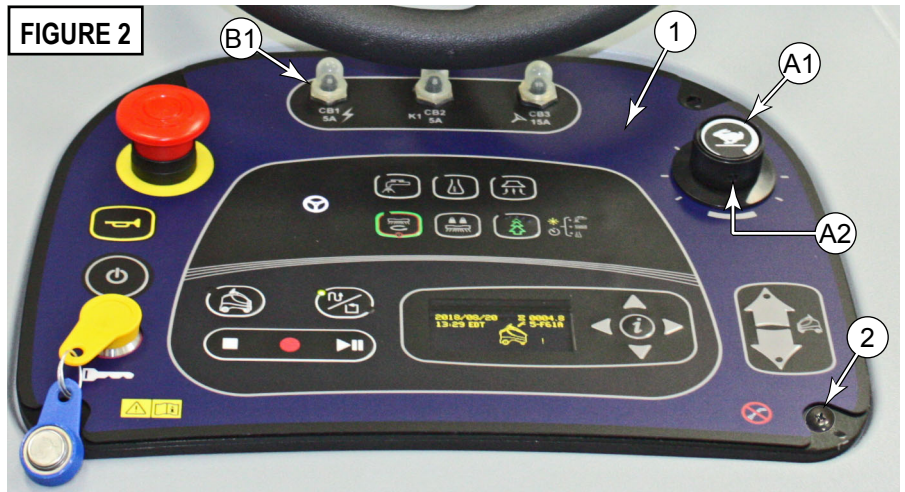
⚠ CAUTION!

When working on an SC50 and a battery disconnect is needed, ensure that the Autonomy Module is completely powered off before the power is pulled from the system. To verify that the Autonomy Module is completely powered down simply wait for both the safety LiDAR's and Dropoff lasers to power off, plus an additional 15 seconds after that. If this procedure is not followed when disconnecting the battery, there is a chance that the Autonomy Module could be permanently damaged and would need replacement.

⚠ WARNING! Disconnect battery before servicing.

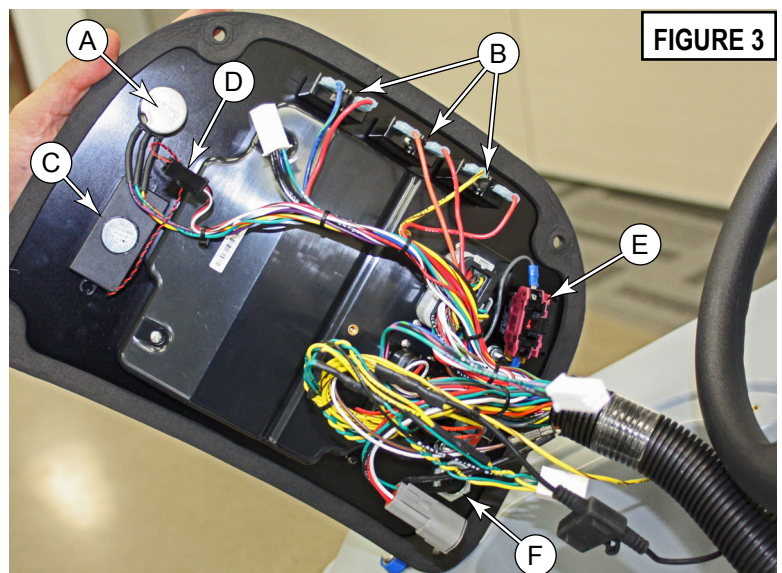
REMOVE THE ORIGINAL INTERFACE PANEL

6. Disconnect the main battery connector located in the main electrical bay. (The main controller will still be powered until the battery is disconnected.)
7. **See Figure 2.** Loosen the setscrew (**A2**) in the speed limit knob (**A1**), and slide the knob off the potentiometer shaft.
8. Remove the nut and lock washer from the potentiometer shaft.
9. Remove the front retaining nut (**B1**) from each of the 3 circuit breakers (**B**).
10. Remove the 4 mounting screws (**2**) that secure the interface panel to the Main Controller Bay.
11. Lift/tilt the interface panel out of the Main Controller Bay to access the wiring components on the back side. Use caution so that none of the wires are damaged.



REMOVE DISCRETE COMPONENTS FROM INTERFACE PANEL

12. **See Figure 3.** Remove the potentiometer (**A**) from the back of the interface panel.
13. Remove the 3 circuit breakers (**B**) from the back of the interface panel. If possible, avoid disconnecting the wires.
14. Disconnect the speaker electrical connector (**D**).
15. Carefully pry the speaker (**C**) from the back of the interface panel. Pry from the ends, instead of the center. The speaker cone is located in the center, and could be damaged.
16. Clean any tape residue from the back of the speaker.



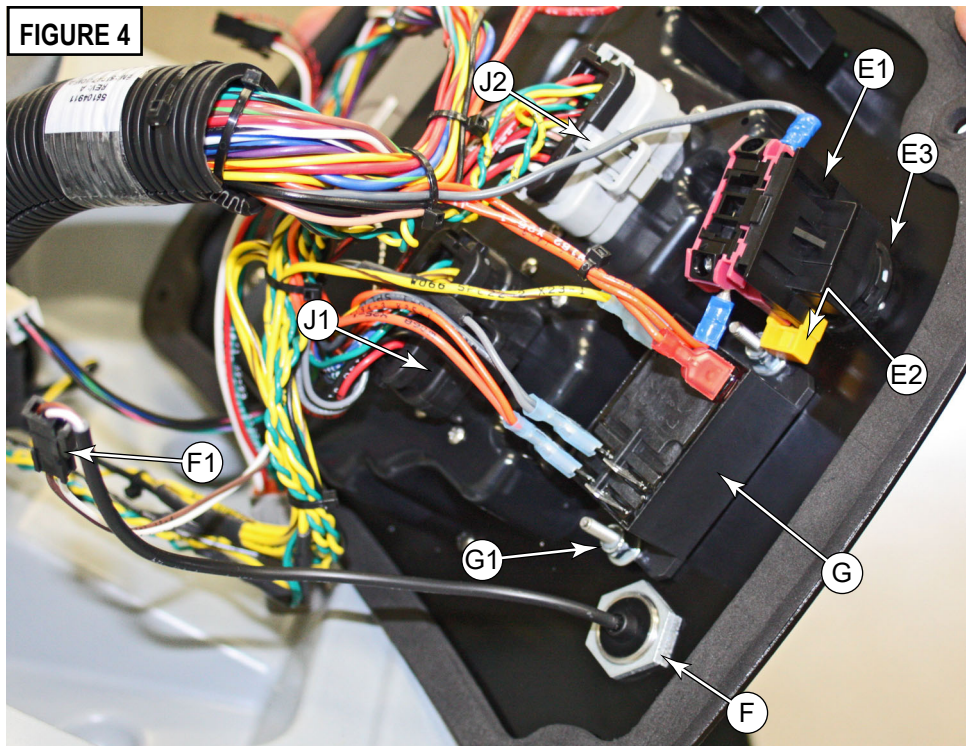
17. See **Figure 4**. Disconnect the **J1** and **J2** connectors from the main machine controller.

18. Pull off the yellow lever cover (**E2**) (in the direction of the arrow) on the E-stop switch release lever. Rotate the release lever to unlock position. Then lift the E-stop switch body (**E1**) off the button body (**E3**).

19. Remove the nut and washer that secures the E-stop button body (**E3**) to the interface panel, and remove the button body from the front of the panel.

20. Remove the two nuts and washers (**G1**) that secure the KSI relay (**G**) to the interface panel, and remove the relay. If possible, avoid disconnecting the wires.

21. Disconnect the wire connector (**F1**). Remove the nut that secures the smart key reader (**F**) to the interface panel, and remove the reader.



22. Verify that all electrical components and connectors are removed from the interface panel, and separate the panel from the wiring harness.

TRANSFER DISCRETE COMPONENTS TO NEW PANEL

Figure 5 shows the bare interface panel and the mounting locations of the discrete components.

23. Install the SmartKey reader (**F**) to the interface panel, and secure it with the nut. Plug the wire connector (**F1**) into the main machine harness.

24. Install the KSI relay (**G**) to the interface panel, and secure it with the two nuts and washers. Make sure the wires are securely connected.

25. Install the E-stop button body (**E3**) to the interface panel, and secure it with the washer and nut.

26. With the E-stop switch release lever still in the unlock position, insert the E-stop switch body (**E1**) onto the button body (**E3**). Rotate the release lever to lock in place. Install the yellow lever cover (**E2**).

27. Apply new double sided tape (**3**) to the back of the speaker.

28. Align the speaker cone with the hole in the back of the interface panel, and press the speaker onto the panel at location (**C**).

29. Connect the speaker electrical connector (**D**) (Figure 3).

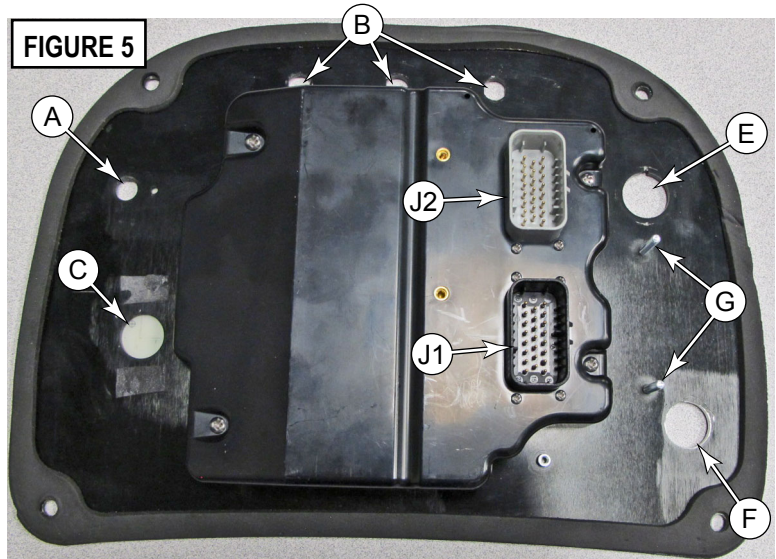
30. Insert the 3 circuit breakers (**B**) through the back of the interface panel and secure them with the retaining nuts.

31. Insert the potentiometer (**A**) from the back of the interface panel, and secure it with the retaining nut.

32. Turn the potentiometer knob shaft all the way to the left then press the speed limit knob (**A1**) onto the shaft. Align the arrow on the knob with the left most edge of the white bar on the interface panel. Tighten the setscrew (**A2**). Rotate the knob fully right and left and verify the arrow on the knob does not go into the area of the white bar.

33. Connect the **J1** and **J2** connectors to the main machine controller.

34. Insert the interface panel into the Main Controller Bay, and secure it with the 4 mounting screws (**2**), do not fully tighten until all four screws are started.



CONFIGURE THE MAIN MACHINE CONTROLLER

1. Reconnect the main battery connector located in the main electrical bay.
2. Power the machine with Service Mode access.
 - During the bootup process, the Autonomy module should transfer a copy of the Main Machine Controller firmware to the controller.
 - a. Press and hold the Scrub (**1B**) and Vacuum (**1C**) buttons.
 - b. Press and release the Power button (**1A**).
 - c. When the display illuminates and the machine begins its bootup process, you may release the Scrub and Vacuum buttons.
3. Press the information button (**1D**) to enter the menu system, and use the arrow buttons (**1E**) to navigate down to the Options Menu.
 - a. Go through each of the options listed in the table below, and set them as appropriate for the current machine.
4. Exit the Options Menu and navigate to the Configuration Menu.
 - a. Go through each of the configuration settings listed in the table below, and set them as appropriate for the current machine.
 - b. If you were not able to get the current settings off the existing controller use “default” values shown in the tables on the next two pages.



Machine Hours	
Hour Meter Reading	

Options Settings		
Parameter	Default Setting	Current Machine Setting
Language	• English	
Scrub Startup	• Last Used	
Scrub Max	• Heavy	
Solution	• SmartFlow	
Solution In Rev	• No	
Warning Beep	• Backup Beep	
Autonomy Beep	• Beep Off	
Other Sounds	• Normal	
Manual Light	• On to Scan	
Obstacle Color	• Orange	
Detergent Low	Ratio xxx:1 - ratio cannot be > Detergent High	
Detergent High	Ratio xxx:1 - ratio cannot be < Detergent Low	
Detergent shown as	xxx:1 or x.x%	
Neutral Delay (s)	• Default 0.5	
Vac Off Delay (s)	• Default 10	
Vac Startup	• Last Used	
Burst Of Power (s)	• Default 60	
Fwd Speed Max (%)	• Default 100	
Record Speed Max	• Default 50	
Inactive Time (min)	• Default 65	
User	• Replay Only	
User	• No Add/Delete Tags	
Delete ALL PLANS?	Yes/No	
Delete ALL TAGS?	Yes/No	
Ignore water meter?	Yes/No	
OvrCurProt. Enabled?	Yes/No	

Options Settings		
Parameter	Default Setting	Current Machine Setting
Impact Level	• High	
Impact Action	• Log Only	
Impact Log User ID?	Yes/No	
Show Charging Lights?	Yes/No	
Date / Time / Timezone	global timezones.	

Configuration Settings		
Parameter	Default Setting	Current Machine Setting
Deck	• REV	
Battery	• AGM	
Charge Algo	43	
TrackClean	• Yes	

Software Update Process Steps

Below are the Panel assembly revisions and Software package details for reference.

1. Latest revision Main Controller and Firmware Revisions:

Main Machine Controller Hardware- 56122782 Rev C (Interface Panel Assembly)

Main Machine Firmware- 56122783 Rev B Version 3.00 or later

Autonomy Module-56104927

A5 Compute (Autonomy) firmware- Version 8.8.6 or later.

2. SC50 Software package:

• Software package minimum

A5 Compute (Autonomy firmware) version: 8.8.6 or later

A1 F/W Rev (Main Controller firmware: 3.02

Software Update Process Steps - continued

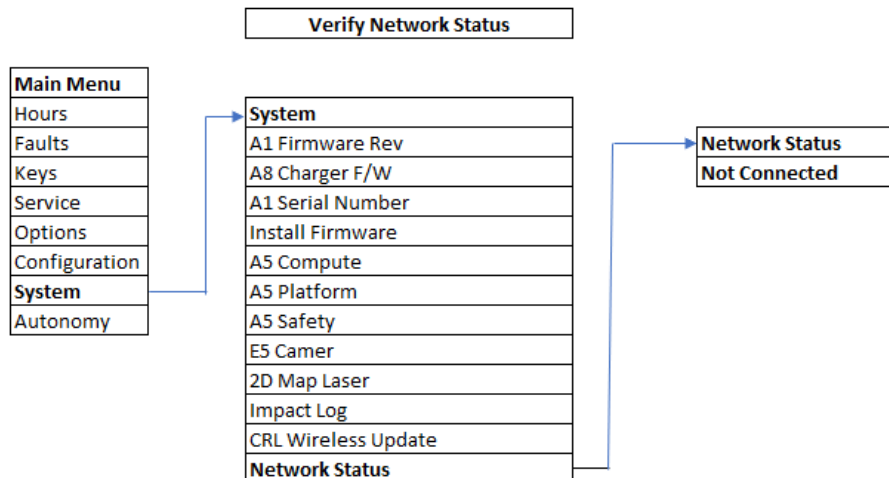
Follow software update process from one of the below paths (1 or 2).

Path 1: If SC50 is not connected to a Network.

•Steps to check for Network status:

Step 1: Power the machine.

Step 2: Select "Main menu" -----Select "System" -----Select "Network Status" -----"Not Connected".

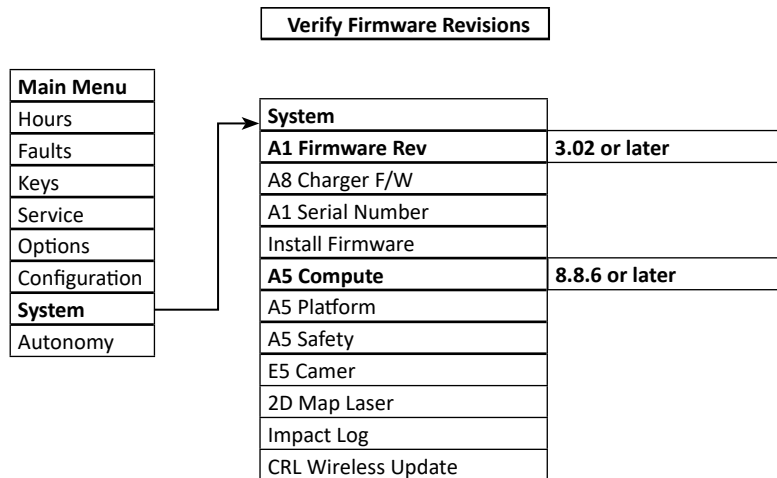


Software Update Process Steps - continued

•Steps to verify software versions:

Step 1: Power the machine

Step 2: Select "Main menu" -----Select "System" -----Verify that "A1 F/W version (3.00.xxx.xxxxxx) and A5 Compute Version (8.8.6 or later)"



•Steps to update software:

Step 1: Installed new Interface Panel Assembly per installation instructions.

Step 2: Power the machine.

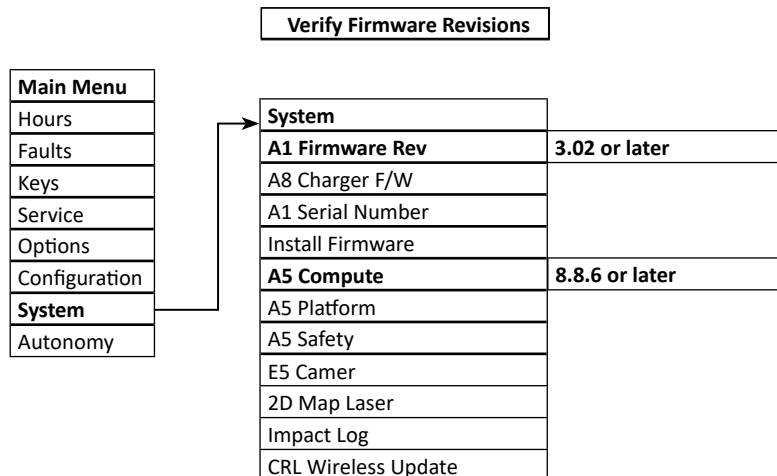
Step 3: A fault code: 5-0000 (A5 F/W Update) is displayed on the menu, because of the incompatibility between A5 Compute version (8.8.6 or later).

Step 4: Reboot the machine,

- During the bootup process, the Autonomy should automatically transfer a copy of the Main Machine controller firmware i.e. 3.02 or later to the controller.
- If firmware does not automatically transfer go to System menu -> update FW 3.02 or later - > download - > go.

Step 5: Power the machine and verify Main controller firmware version is upgraded to 3.02 or later and A5 Compute firmware version is 8.8.6 or later.

- Select "Main menu" -----Select "System" -----Verify that "A1 F/W version (3.02 or later) and A5 Compute Version (8.8.6 or later)"



Step 6: Interface Panel Assembly Installation and SC50 software updates are done.

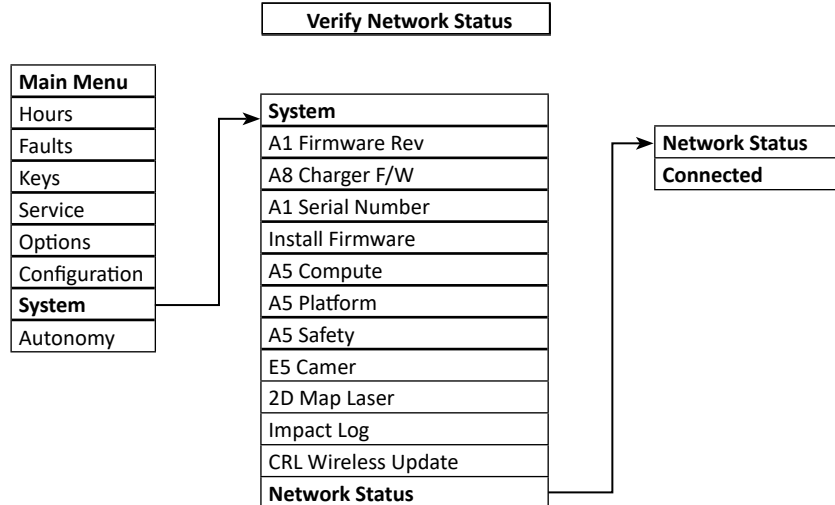
Software Update Process Steps - continued

Path 2: If SC50 is connected to a Network.

•Steps to check for Network status:

Step 1: Power the machine.

Step 2: Select “Main menu” -----Select “System” -----Select “Network Status” -----”Connected”.



•Steps to update software:

Step 1: Installed new Interface Panel Assembly per installation instructions.

Step 2: Power the machine with Service mode access.

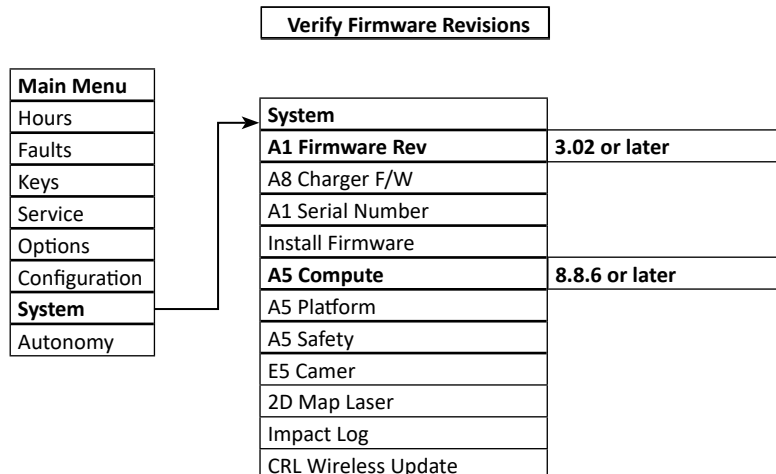
Step 3: A fault code: 5-0000 (A5 F/w Update) is displayed on the menu, because of the incompatibility between A5 Compute (Autonomy Firmware) version (8.8.6 or later) and A1 F/W Rev (Main Controller firmware).

Step 4: Reboot the machine again,

- During the bootup process, the Autonomy should automatically transfer a copy of the Main Machine controller firmware to the controller.
- If firmware does not automatically transfer go to System menu -> update FW 3.02 (or later) - > download - > go.

Step 5: Power the machine and verify Main controller firmware version is upgraded to 3.02 or later and A5 Compute (Autonomy firmware) version is 8.8.6 or later.

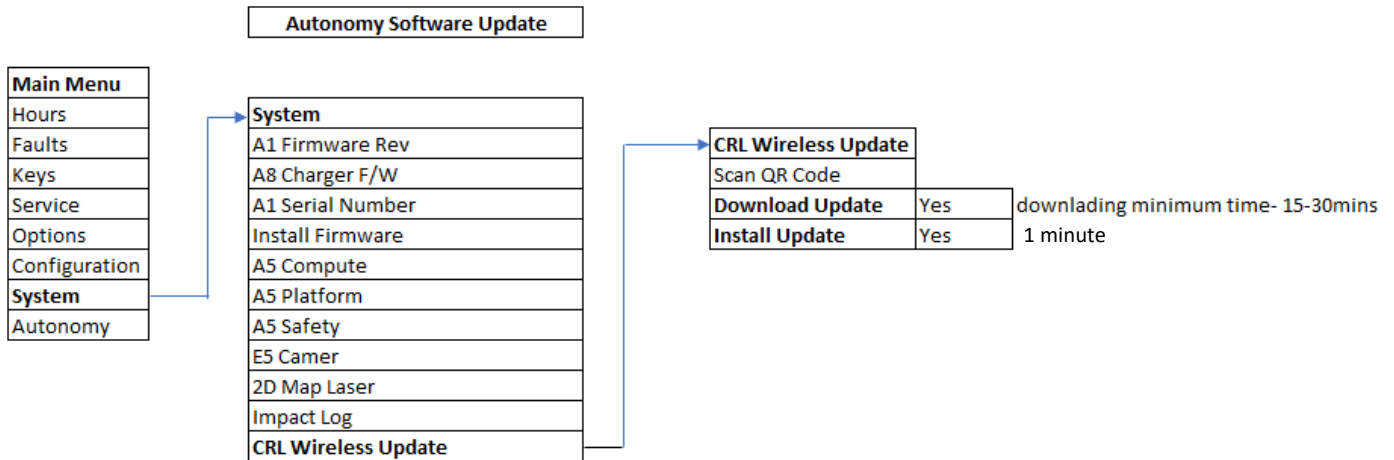
- Select “Main menu” -----Select “System” -----Verify that “A1 F/W Rev (3.02 or later) and A5 Compute Version (8.8.6 or later).”



Software Update Process Steps - continued

Step 6: Update Autonomy Controller software using the steps below:

- Select "Main Menu"----Select "System"-----Select "CRL Wireless update"-----Select "Download update"---Select "Yes" using up & down arrows---downloading takes minimum 30 minutes (**** There will not be any message displayed that the software is downloaded**)----Select "Install update".... Select "Yes" using up & down arrows--Installing takes 2 minutes (**** There will not be any message displayed that the software is Installed**)-----Reboot the machine----Wait for 2 min for machine to bootup----

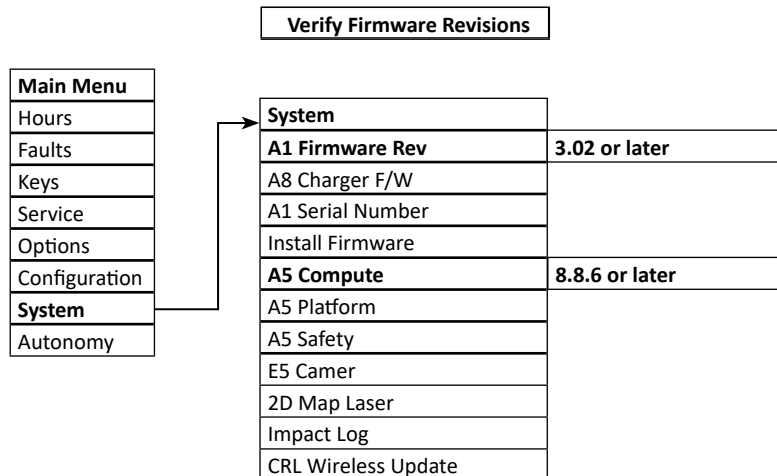


Step 7: Power OFF the machine, wait for a minute, power ON the machine.

- During the bootup process, the Autonomy should automatically transfer a copy of the Main Machine controller firmware 3.02 or later to the controller.

Step 8: Verify Main controller firmware version is upgraded to 3.02 or later and A5 Compute (Autonomy firmware) version is upgraded to 8.8.6 or later.

- Select "Main menu" -----Select "System" -----A1 F/W Rev (3.02 or later) and A5 Compute version (8.8.6 or later)
- If either main controller firmware or autonomy firmware did not upgrade, repeat steps 6 - 8 and wait an additional 10 minutes on Step 6 (download part only).



Step 9: If step 4 & 6 are successful, perform basic scrubbing and vacuuming in both Manual and Auto mode (CopyCat™ and Fill-In).