INSTRUCTION BULLETIN

No. 9021935
Machine: T380AMR/ T7AMR/T16AMR
Published: 09-2022
Rev. 00

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.

NOTE: Numbers in parenthesis ( ) are reference numbers for parts listed in Bill of Materials.

Installation instructions for **kit number 9052020**

Kit installation must be performed by Tennant*True*® service or an authorized service provider.

SYNOPSIS:

This kit contains the parts needed to replace the UI to BMS cable on T380AMR, T7AMR, and T16AMR scrubbers equipped with lithium batteries.
Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 1.5- 2 hours)

PROTECT THE ENVIRONMENT

Please dispose of packaging materials, used machine components such as batteries and fluids in an environmentally safe way according to local waste disposal regulations.

Always remember to recycle.

PREPARATION: T380AMR

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, and remove key.

1. Completely empty the recovery tank.

*NOTE: **Do** **Not** empty the solution tank before installing the UI to BMS electrical harness(1). The solution tank must be full when installing this kit so the machine does not tip over.*

2. Turn off the lithium battery pack. Press and hold the power button on one of the lithium batteries for 20 seconds to turn the entire battery pack off. (Fig. 1)

   Quickly press the power button on each lithium battery and observe the indicator bars near the button. None of the indicator bars should illuminate, indicating the battery is off.

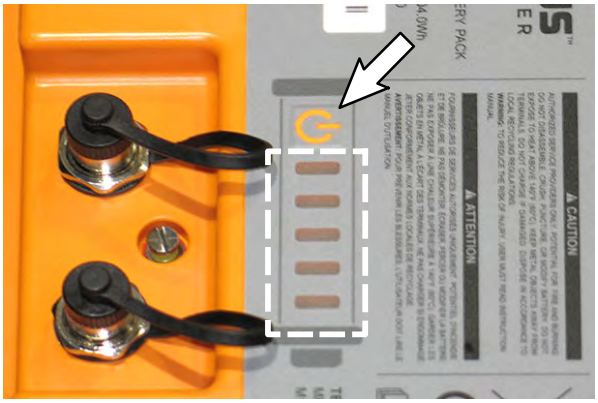

FIG. 1

3. Disconnect the battery cable from the machine.

WARNING: Always disconnect battery cables from machine before working on electrical components.

4. Set the recovery tank into the service position. (Fig. 2)

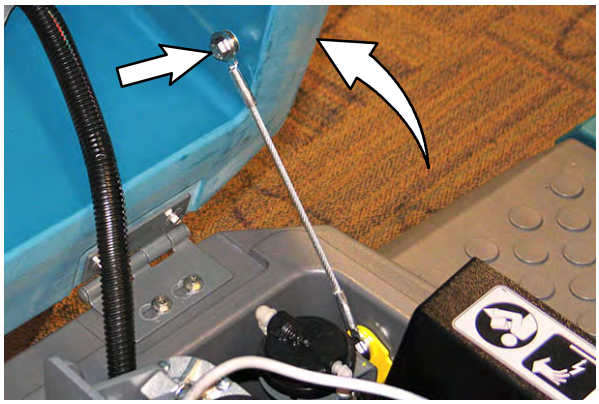

FIG. 2

INSTALLATION: T380AMR

1. Disconnect the UI to BMS electrical harness from lithium battery communication terminal. (Fig. 3/Fig. 5)

FIG. 3

2. Remove the board bracket from the board mounting plate. Set the hardware and cable clamp aside. (Fig. 4/Fig. 5)

FIG. 4

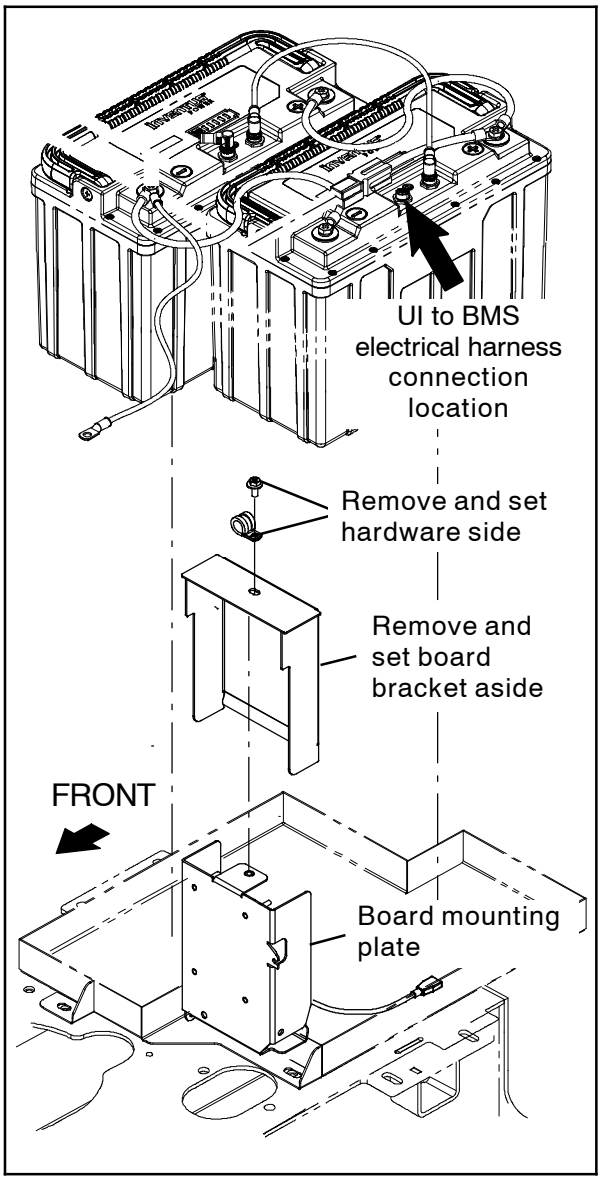

FIG. 5

3. Disconnect the signals UI to BMS electrical harness from the communication board J3 and J10 terminals. Discard the removed UI to BMS electrical harness. (Fig. 6)

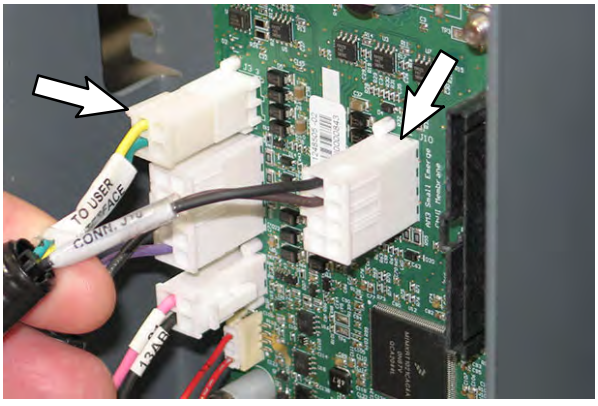

FIG. 6

4. Connect the new signals UI to BMS electrical harness (1) to the communication board J3 and J10 terminals. (Fig. 6/Fig. 7)

5. Route the new UI to BMS electrical harness (1) as the removed harness had been routed and connect the UI to BMS electrical harness to the lithium battery communication terminal. Torque the UI to BMS electrical harness ring to 0.6 Nm (0.44 ft. lbs.). (Fig. 3/Fig. 7)

6. Reinstall the board bracket onto the board mounting plate.

7. Reconnect the battery cable to the machine.

8. Turn on the batteries. Hold the power button on each lithium battery for 5 seconds to turn on the battery.

9. Quickly press the power button again and observe the indicator lights near the button. The indicator lights should be illuminated.

10. Repeat previous two steps to turn on the remaining battery.

11. Confirm lithium battery system is functioning properly. See CHECK LITHIUM BATTERY STATUS for confirmation procedure.

12. Set the recovery tank into the regular position.

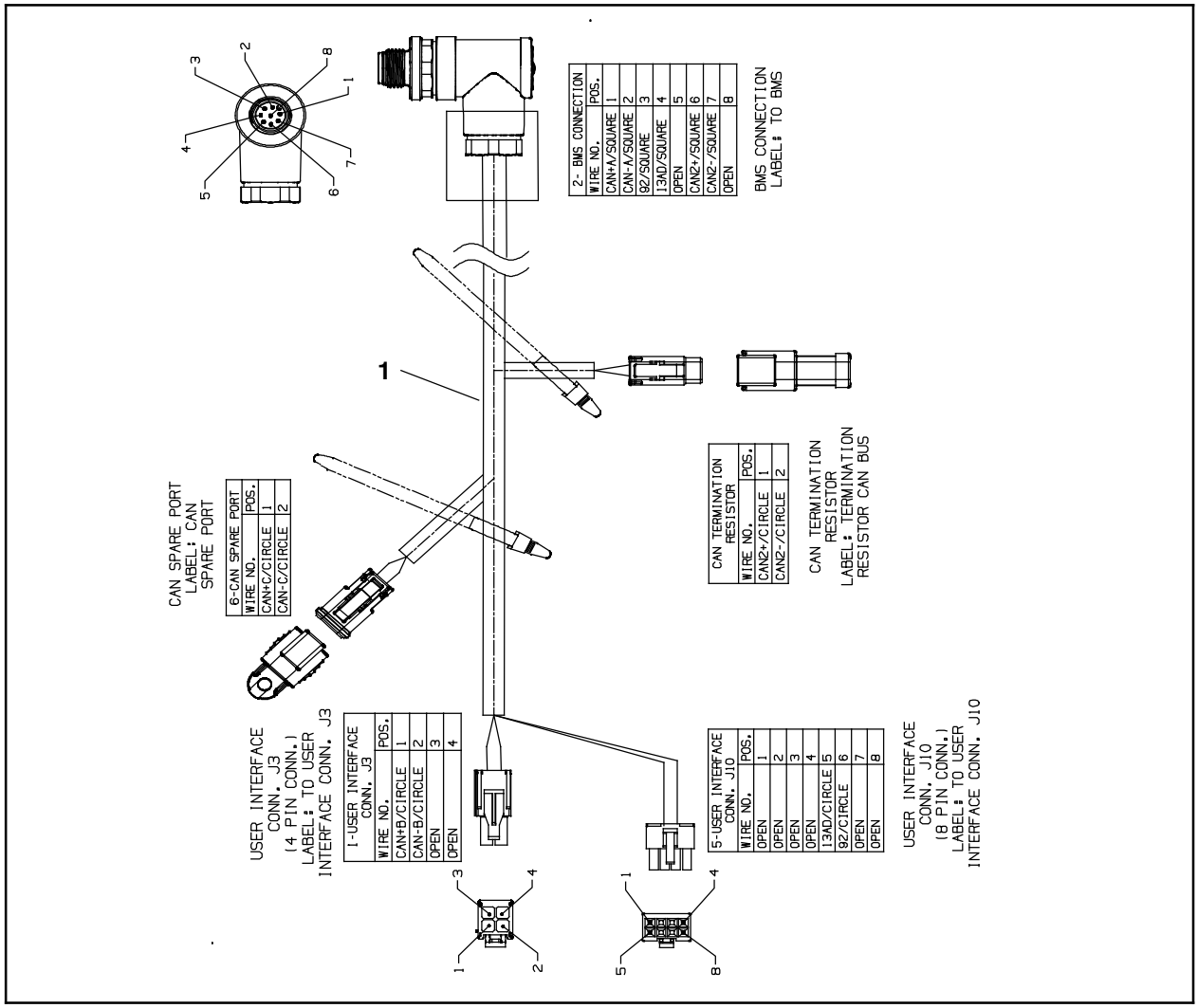

FIG. 7

PREPARATION: T7AMR

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, and remove key.

1. Completely empty the recovery tank.

2. Tilt the recovery tank back. Ensure the recovery tank is empty before tilting. (Fig. 8)

FIG. 8

3. Disconnect the main wire harness from the operator seat switch harness. (Fig. 9)

FIG. 9

4. Remove the operator seat/seat plate from the machine. Set seat/seat plate aside. (Fig. 10)

FIG. 10

5. Remove the battery box cover from the machine. Set the battery box cover aside. (Fig. 11)

FIG. 11

6. Loosen the strap from around the four lithium batteries to allow easier access to the lithium battery terminal where the UI to BMS electrical harness is connected. (Fig. 12)

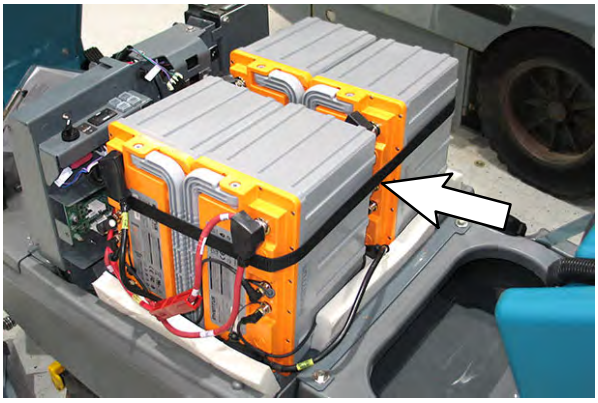

FIG. 12

7. If necessary, remove the foam spacer(s) to allow easier access to the lithium battery terminal where the UI to BMS electrical harness is connected. (Fig. 12)

8. Turn off the lithium battery pack. Press and hold the power button on one of the lithium batteries for 20 seconds to turn the entire battery pack off. (Fig. 13).

   Quickly press the power button on each lithium battery and observe the indicator bars near the button. None of the indicator bars should illuminate, indicating the battery is off.

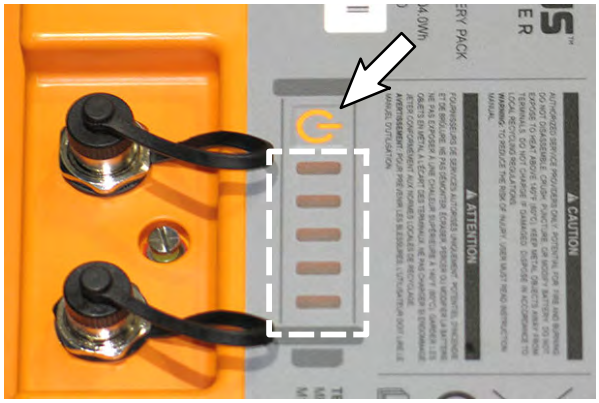

FIG. 13

9. Disconnect the battery cable from the machine.

WARNING: Always disconnect battery cables from machine before working on electrical components.

INSTALLATION: T7AMR

1. Disconnect the UI to BMS electrical harness from the lithium battery communication terminal. (Fig. 14)

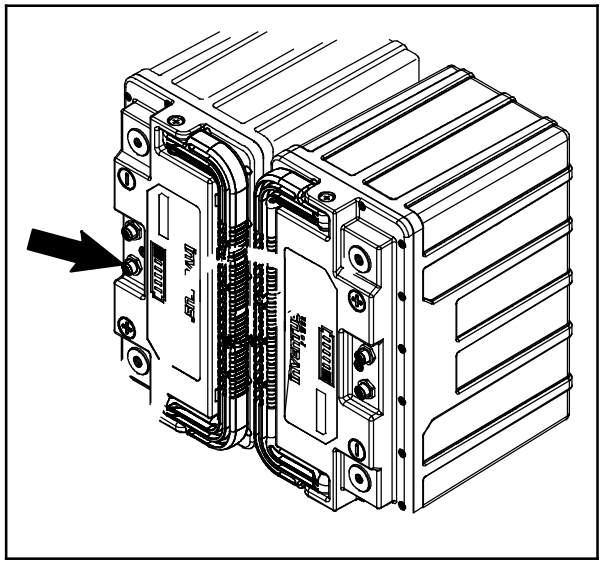

FIG. 14

2. Remove the board cover from the board mounting plate. Set the board cover and mounting hardware aside. (Fig. 15)

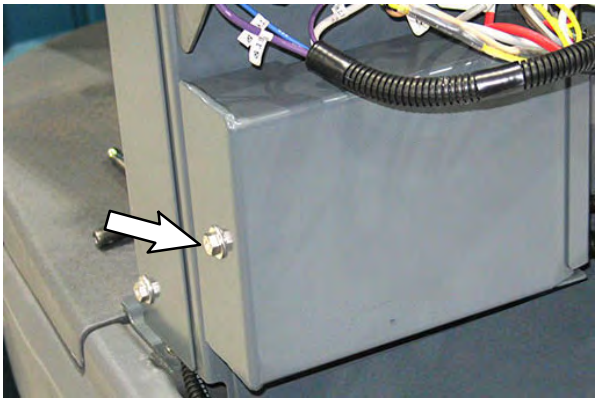

FIG. 15

3. Disconnect the signals UI to BMS electrical harness from the communication board J3 and J10 terminals. Discard the removed UI to BMS electrical harness. (Fig. 16)

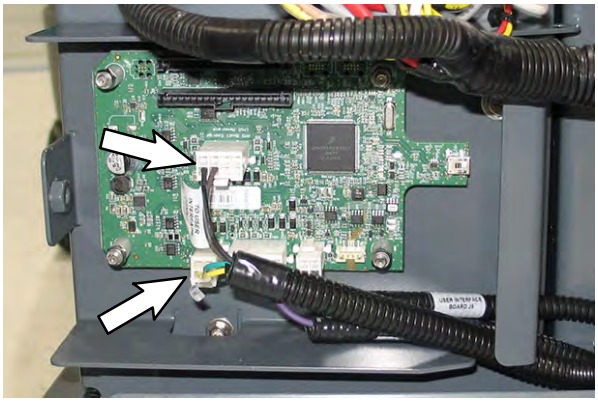

FIG. 16

4. Connect the new signals UI to BMS electrical harness (1) to the communication board J3 and J10 terminals. (Fig. 16/Fig. 17)

5. Route the new UI to BMS electrical harness (1) as the removed harness had been routed and connect the UI to BMS electrical harness to the lithium battery communication terminal. Torque the UI to BMS electrical harness ring to 0.6 Nm (0.44 ft. lbs.). (Fig. 16/Fig. 17)

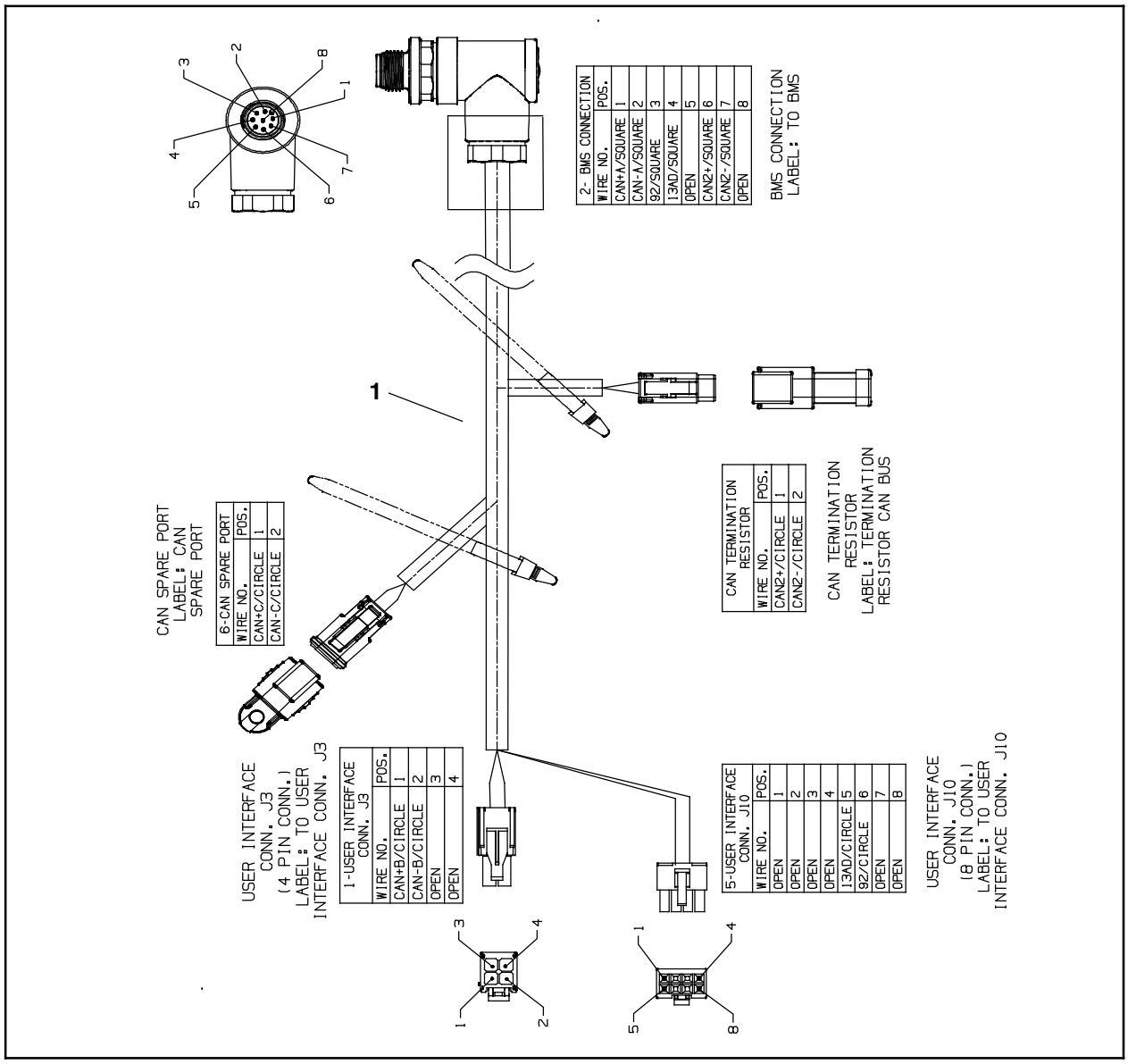

FIG. 17

6. Reinstall the board cover onto the board mounting plate.

7. Reinstall the battery box cover and operator seat/seat plate onto the machine. Reconnect the wire harness to the operator seat harness.

8. Reconnect the battery cable to the machine.

9. Turn on the batteries. Hold the power button on each lithium battery for 5 seconds to turn on the battery.

10. Quickly press the power button again and observe the indicator lights near the button. The indicator lights should be illuminated.

11. Repeat previous two steps to turn on the remaining batteries.

12. Reinstall the foam spacer(s) if removed to allow easier access to the lithium battery terminal where the UI to BMS electrical harness is connected.

13. Tighten the strap around the four lithium batteries to secure them into place in the battery compartment.

14. Reinstall the battery box cover onto the machine.

15. Reinstall the operator seat/seat plate onto the machine and connect the main wire harness from the operator seat switch harness.

16. Confirm lithium battery system is functioning properly. See CHECK LITHIUM BATTERY STATUS for confirmation procedure.

PREPARATION: T16AMR

1. Turn off the lithium battery pack. Press and hold the power button on one of the lithium batteries for 20 seconds to turn the entire battery pack off. (Fig. 18)

   Quickly press the power button on each lithium battery and observe the indicator bars near the button. None of the indicator bars should illuminate, indicating the battery is off.

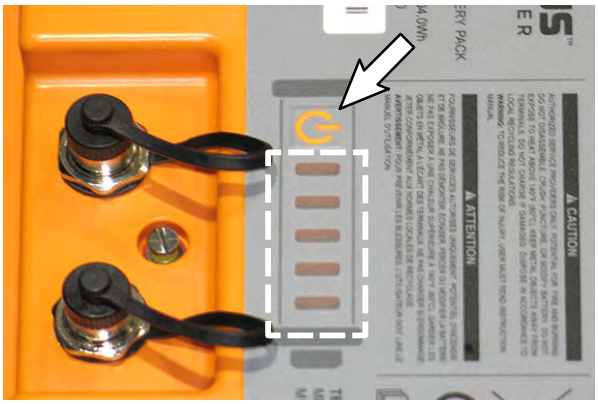

FIG. 18

2. Disconnect the battery cable from the machine.

WARNING: Always disconnect battery cables from machine before working on electrical components.

3. Disconnect the wire harness from the seat switch. (Fig. 19)

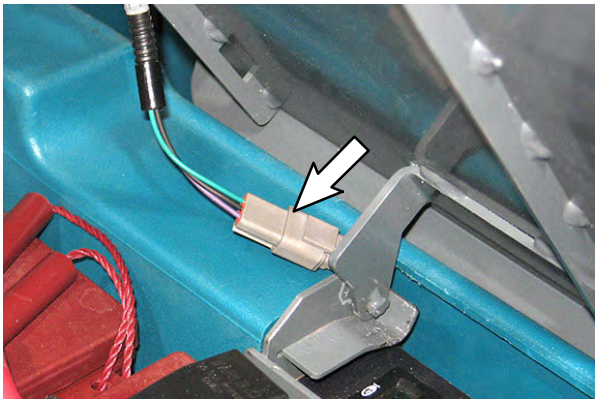

FIG. 19

4. Lift the seat/seat plate from the machine. Set the seat/seat plate aside.

INSTALLATION: T16AMR

1. Disconnect the UI to BMS electrical harness from the communication terminal on lithium battery. (Fig. 20)

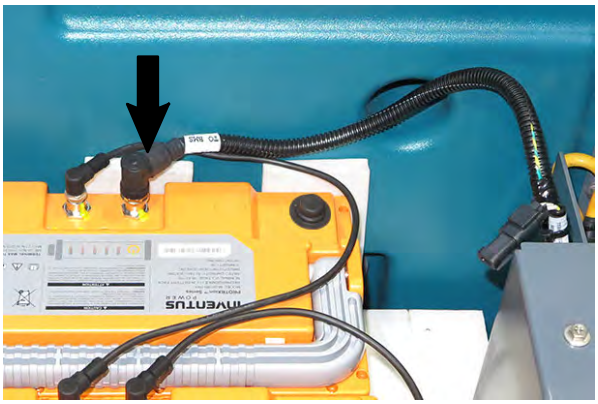

FIG. 20

2. Remove the board mounting bracket from the board mounting plate. Set the board mounting bracket and mounting hardware aside. (Fig. 21)

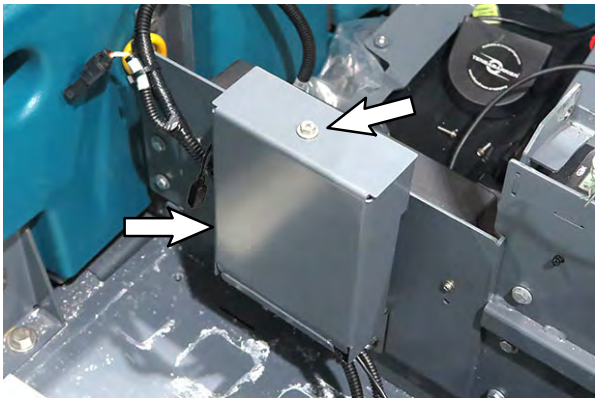

FIG. 21

3. Disconnect the signals UI to BMS electrical harness from the communication board J3 and J10 terminals. Discard the removed UI to BMS electrical harness. (Fig. 22)

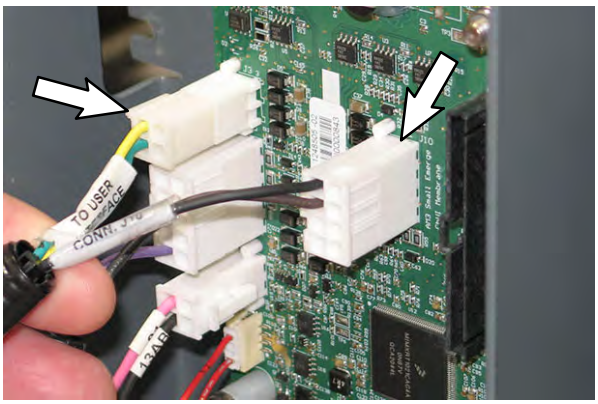

FIG. 22

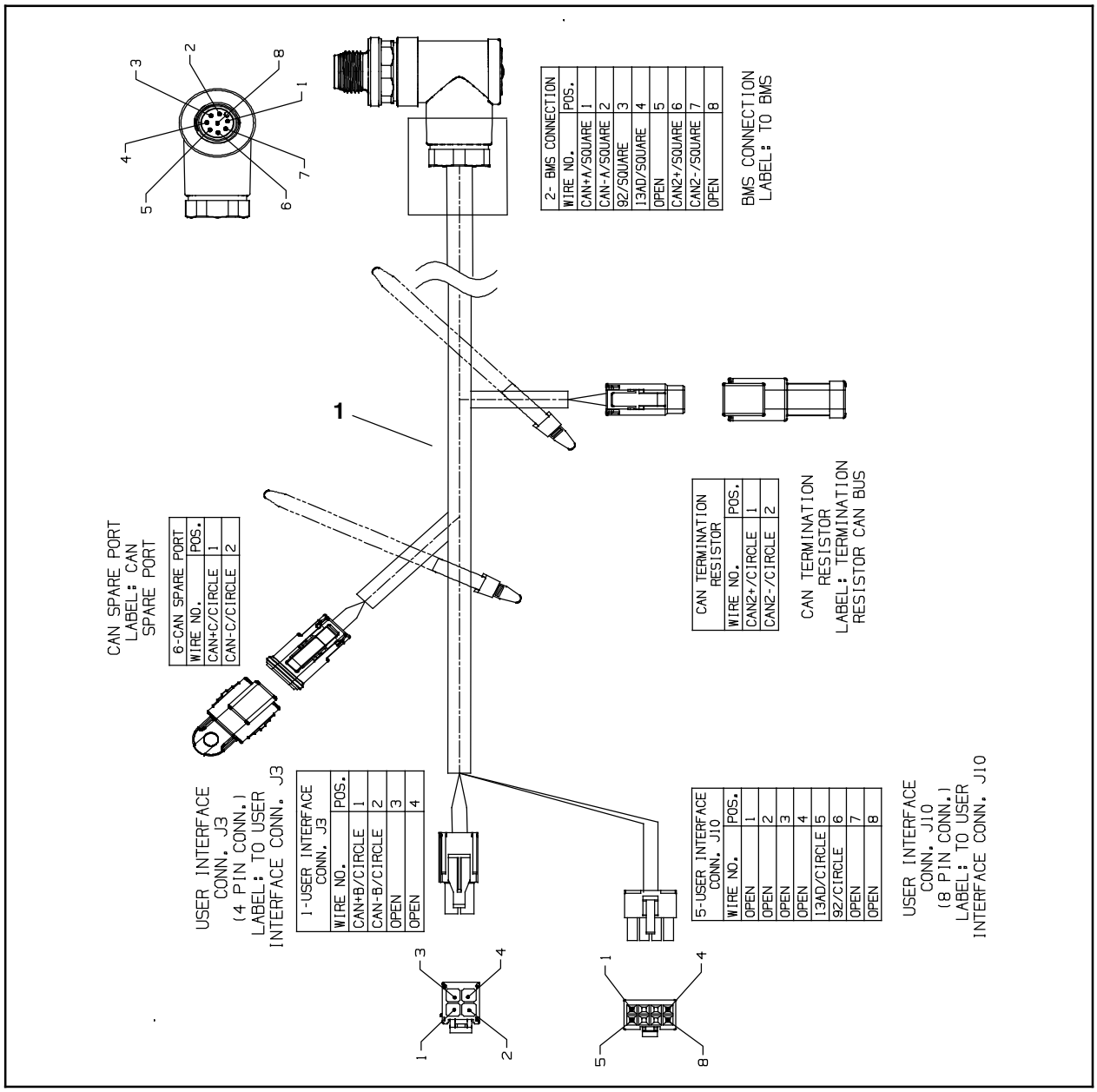

FIG. 23

4. Connect the new signals UI to BMS electrical harness (1) to the communication board J3 and J10 terminals. (Fig. 22/Fig. 23)

5. Route the new UI to BMS electrical harness (1) as the removed harness had been routed and connect the UI to BMS electrical harness to the lithium battery communication terminal. Torque the UI to BMS electrical harness ring to 0.6 Nm (0.44 ft. lbs.). (Fig. 21/Fig. 23)

6. Reinstall the board mounting bracket onto the board mounting plate.

7. Reinstall the seat/seat plate onto the machine and reconnect the wire harness to the seat switch.

8. Turn on the batteries. Hold the power button on each lithium battery for 5 seconds to turn on the battery.

9. Quickly press the power button again and observe the indicator lights near the button. The indicator lights should be illuminated.

10. Repeat previous two steps to turn on the remaining batteries.

11. Reconnect the battery cable to the machine.

12. Confirm lithium battery system is functioning properly. See CHECK LITHIUM BATTERY STATUS for confirmation procedure.

CHECK LITHIUM BATTERY STATUS: ALL MACHINES

1. Connect a USB cable to the service device.

ATTENTION: *Never allow the metallic tip on the loose end of the service USB cable to touch a lithium battery positive (+) terminal when connecting the USB cable to the service device/ USB cable connected to the lithium battery control board. USB cables, service device, and/or lithium battery control board could be damaged if loose metallic end of the service USB cable touches a lithium battery positive (+) terminal.*

2. Connect the other end of the USB cable connected to the service device in the previous step to the USB cable installed on the lithium battery communication board.

3. Turn the key switch ON.

4. Double click the Service Diagnostics desktop shortcut or find the software in All Programs to launch the software.

5. Allow the Service Diagnostics tool to connect to the lithium battery network and the lithium battery service screen to open. (Fig. 24)

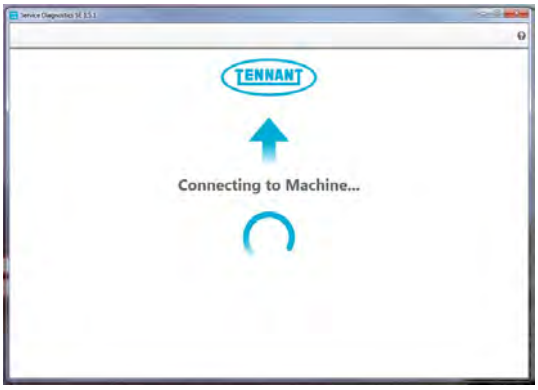

FIG. 24

6. Use the Service Diagnostics tool to access the lithium battery screen. (Fig. 25)

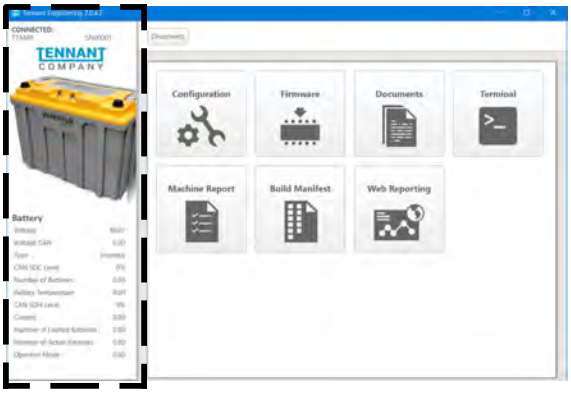

FIG. 25

7. Observe the lithium battery information pane on the left side of the screen. Both the "Number of Batteries" and "Number of Active Batteries" should reflect the number of lithium batteries (either four (4.00) or two (2.00)), and the number of "Number of Faulted Batteries" should be zero (0.00). (Fig. 26)

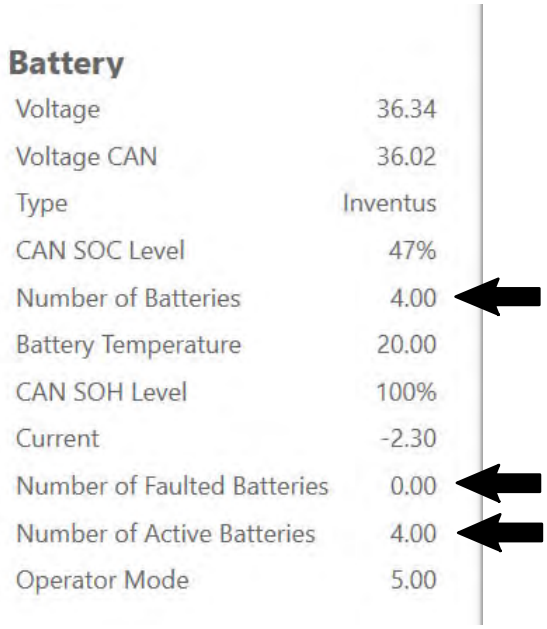

FIG. 26

8. Disconnect the USB cable from the service device and the USB harness (18).

NOTE: Ensure communication board USB cable end is again oriented down when finished checking battery status and disconnecting the communication board USB cable from the service device.

9. Turn the key switch OFF.

Bill Of Materials For Harness, Replmt [Battery To UI] - 9052020

Ref.	Tennant Part No.	Description	Qty.
1	1077080	Harness, Ele [Signals, UI to BMS]	1

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