INSTRUCTION BULLETIN

No. 9021417
Machine: M20/M30/T20 (w/ES Only)
Published: 06-2021
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 9021419**

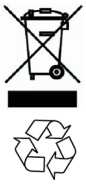
Kit installation must be performed by Tennant*True*® service or an authorized service provider.

SYNOPSIS:

This kit contains the parts needed to replace the liquid level sensors on M20/M30/T20 machines equipped with the optional ES system.
Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: M20- 1 hour, M30- 1.5 hours, T20- 2.5 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: ALL MACHINES (Unless otherwise noted)

1. Completely empty the recovery tank.
2. **M20/M30 machines only:** Turn on the machine, raise the hopper to the middle support position, engage the hopper support pin, and turn off the machine.

WARNING: Raised hopper may fall. Engage hopper support pin.

WARNING: Lift arm pinch point. Stay clear of hopper lift arms.

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

3. Disconnect the battery cables from the battery.

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

4. Open the recovery tank cover and secure the cover open.
5. Disconnect the main harness from the existing recovery tank liquid level sensor. (Fig. 1)

NOTE: If installing kit onto M20/M30 machines proceed to INSTALLATION: M20/M30. If installing kit onto T20 machine proceed to INSTALLATION: T20.

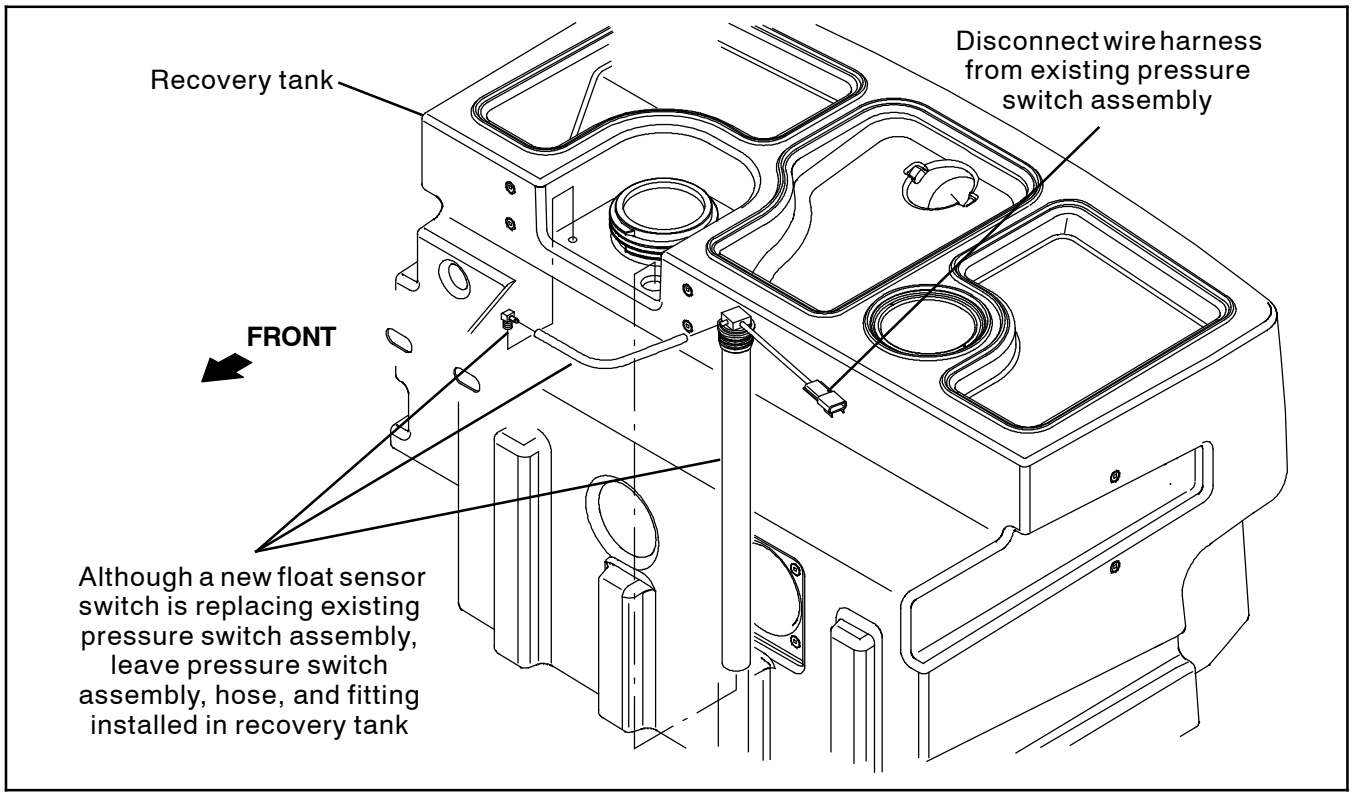


FIG. 1

INSTALLATION: M20/M30

1. **M20 machines only:** Disconnect the wire harness from the existing float sensor. (Fig. 2)

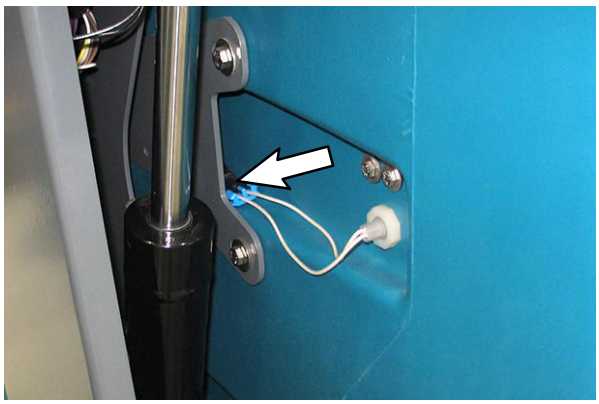


FIG. 2

2. **M20 machines only:** Remove all hardware securing the existing float sensor/protector bracket to the recovery tank and remove the sensor and bracket from the recovery tank. Discard the float sensor, protector bracket, and all hardware. (Fig. 3/ Fig. 4)

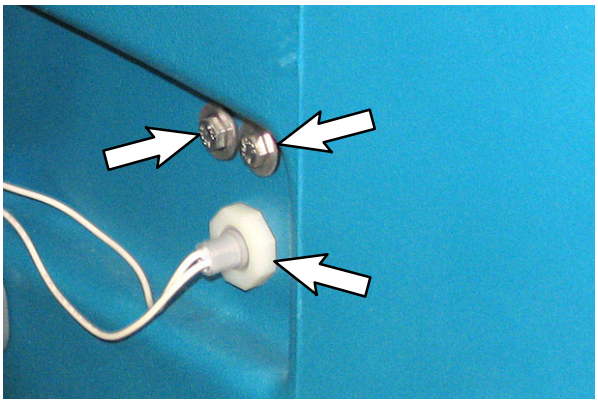


FIG. 3

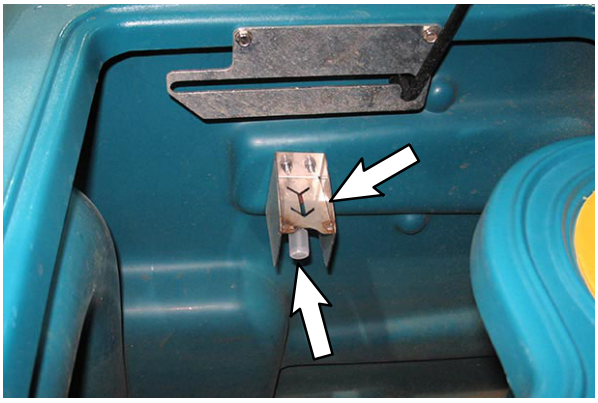


FIG. 4

3. **M30 Machines only:** Drill a 5/8 in. (16 mm) hole into the side of the recovery tank where the slight indentation (dimple) is located. (Fig. 5)

4. **M30 machines only:** Route the main wire harness liquid level sensor to where new liquid sensor (1) will be installed and connect the main harness to the new liquid level sensor.

5. Remove the lock nut and gasket from one of the new liquid level sensors (1).

6. Use the lock nut and gasket to install the liquid level sensor (1) and float switch protector bracket (2) into the recovery tank. (Fig. 5)

NOTE: Position the liquid level sensor so the narrow end of the float mechanism is oriented as shown in Fig. 5.

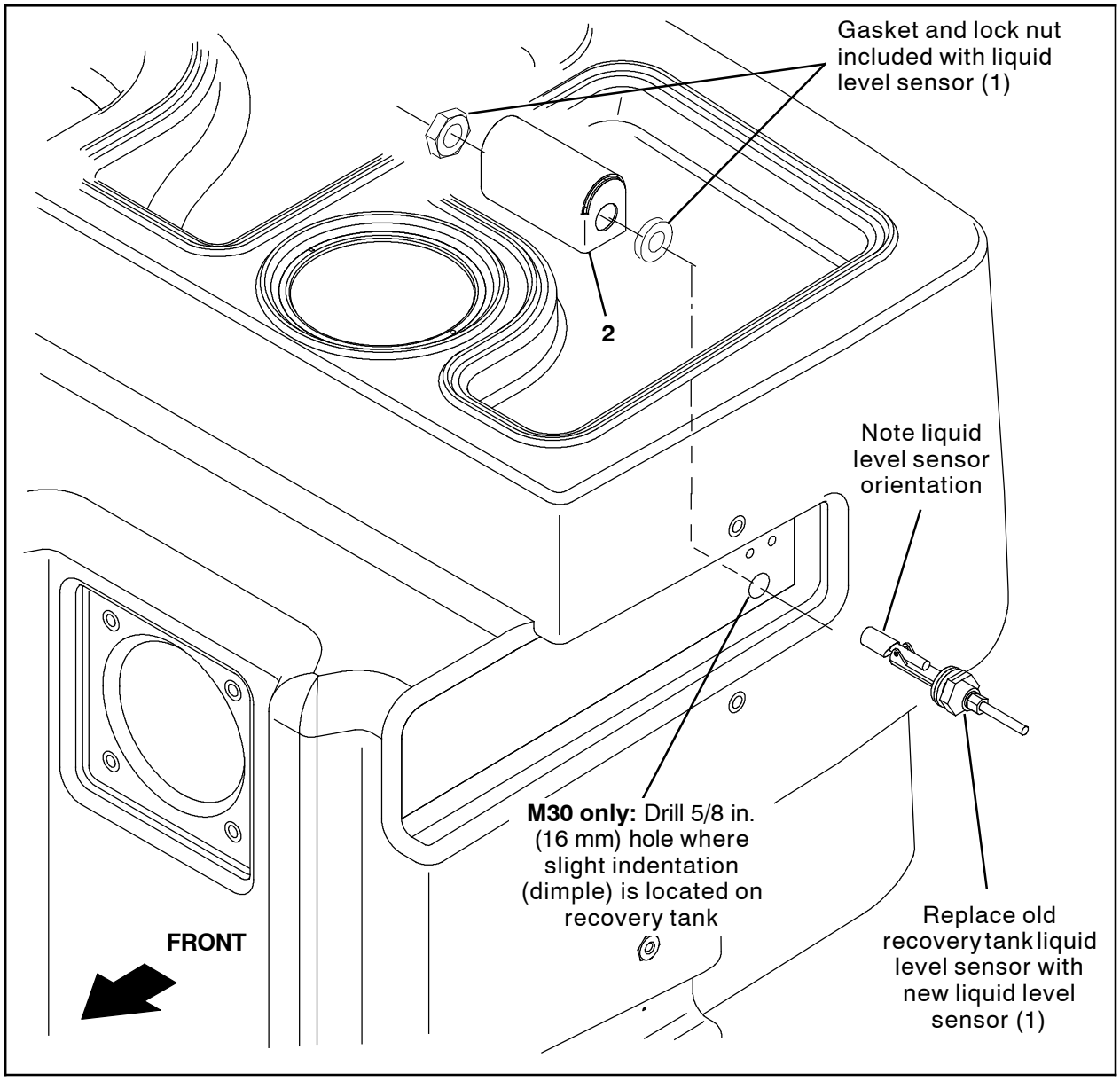


FIG. 5

7. Drill a 5/8 in. (16 mm) hole into the side of the recovery tank. (Fig. 6)

8. Remove the lock nut and gasket from the remaining new liquid level sensor (1).

9. Use the lock nut and gasket to install the liquid level sensor (1) and float switch protector bracket (2) into the 5/8 in. (16 mm) hole drilled into the side of the recovery tank. (Fig. 6)

NOTE: Position the liquid level sensor (1) so the narrow end of the float mechanism is oriented as shown.

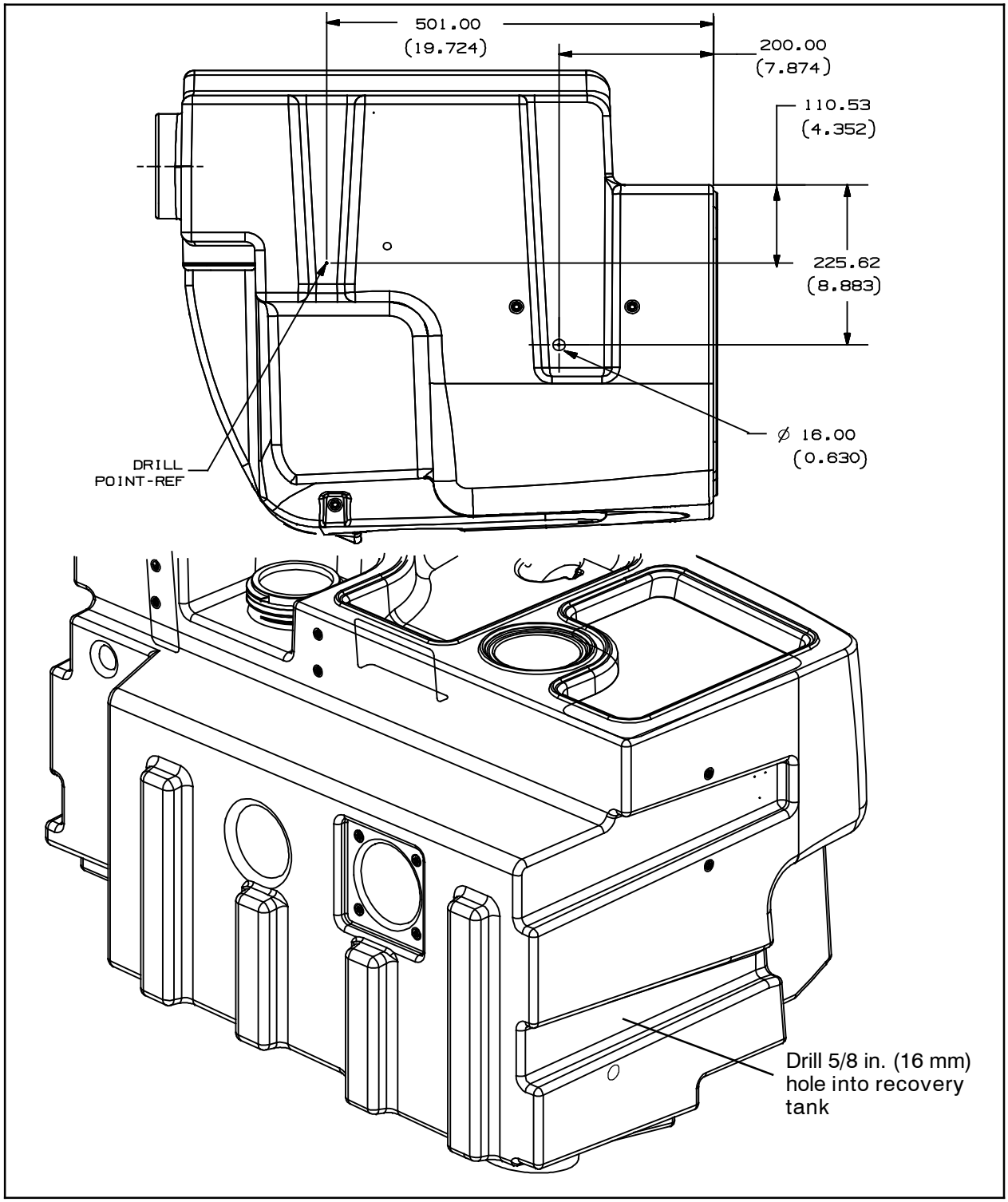


FIG. 6

10. Connect the jumper harness (3) to the wire harness connection previously attached to the old float sensor.

11. Route the wire harness/ jumper cable (3) to the lower float sensor (1) just installed onto the side of the recovery tank and connect the jumper harness to the float sensor.

12. Test the machine. Observe the area where the new liquid level sensors (1) were installed for leaks.

INSTALLATION: T20

1. Open the recovery tank cover.

2. Disconnect the main harness from the existing recovery tank liquid level sensor.

3. Remove the recovery tank drain hose from the storage location on the back of the recovery tank.

4. Remove the float switch shield from the recovery tank. Set the float switch shield and hardware aside. (Fig. 7)

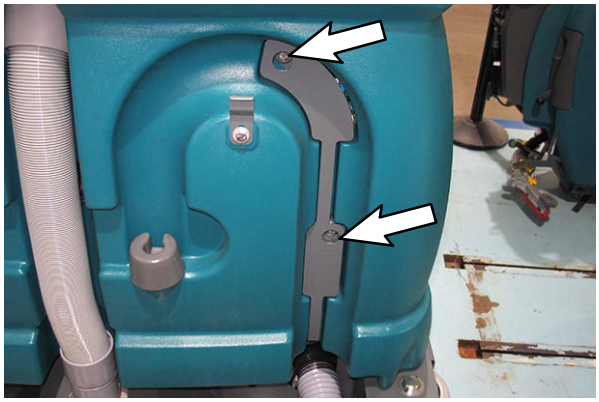


FIG. 7

5. Remove all hardware securing the existing float sensor cable to the back of the recovery tank and disconnect the wire harness from the float sensor. Set all hardware aside. (Fig. 8)

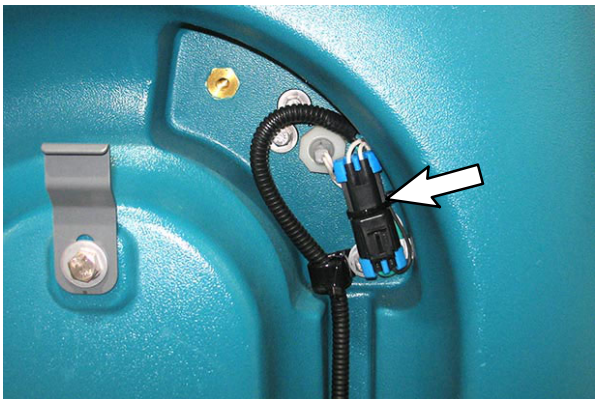


FIG. 8

6. Remove the float sensor from the recovery tank. Discard the float sensor and protector bracket. (Fig. 9)

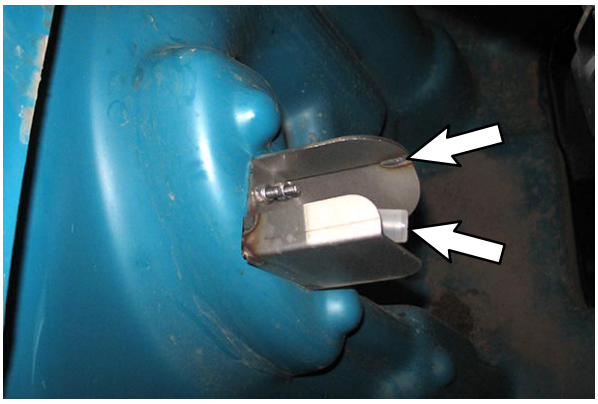


FIG. 9

7. Remove the lock nut and gasket from both new liquid level sensors (1).

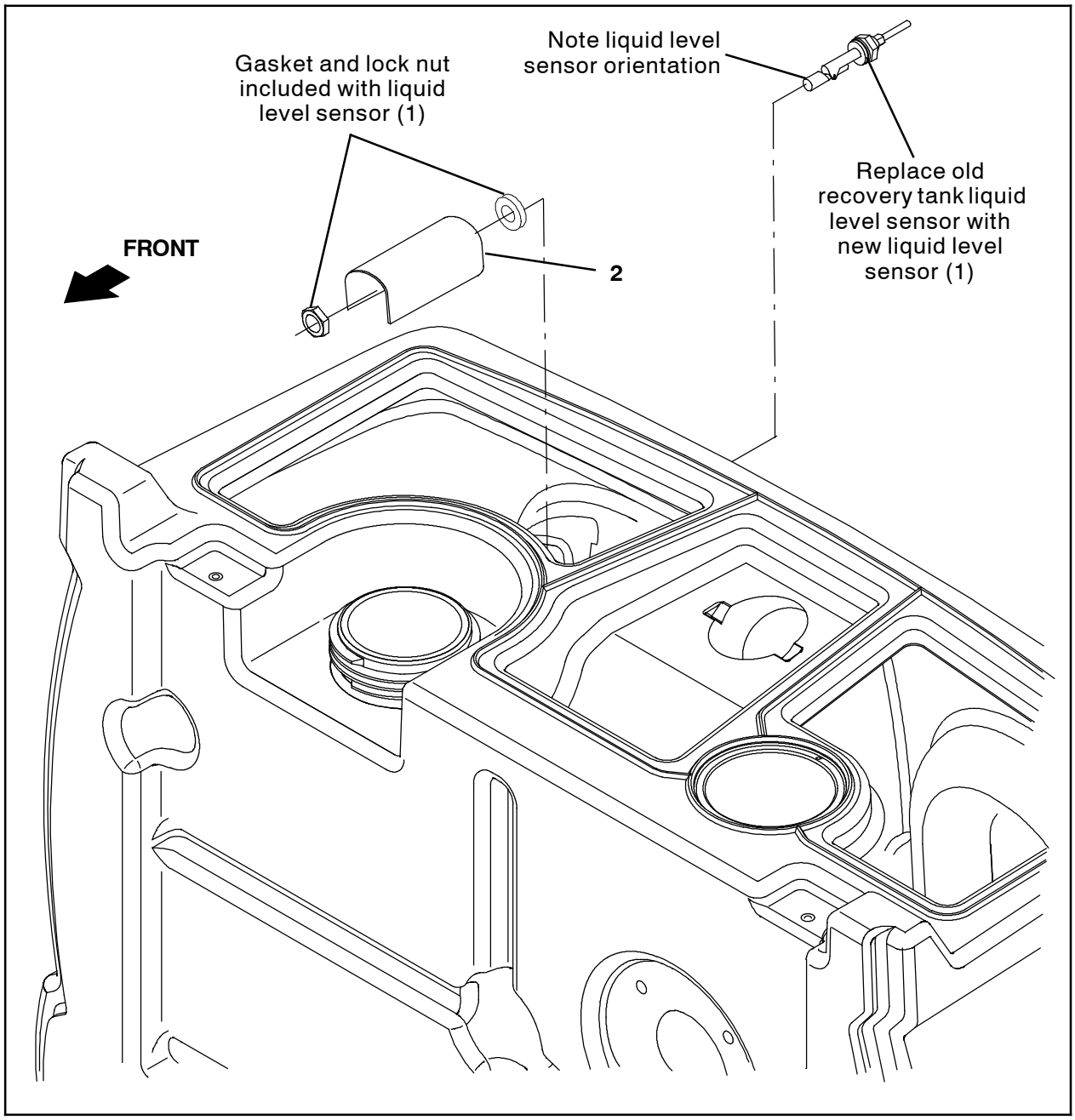


FIG. 10

8. Use the lock nut and gasket to install a new liquid level sensor (1) and float switch protector bracket (2) into the back of the recovery tank where the removed float sensor was previously located. (Fig. 10).

NOTE: Position the liquid level sensor (1) so the narrow end of the float mechanism is oriented as shown in Fig. 10.

9. Connect the wire harness to the liquid level sensor (1) installed in the previous step. (Fig. 10)

10. Measure and mark location for the bottom 5/8 in. (16 mm) hole needed for the additional float switch (1) to be installed onto the back of the recovery tank. Center hole in recessed area of recovery tank and 1 in. (25.4 mm) from bottom edge of recessed area. (Fig. 11)

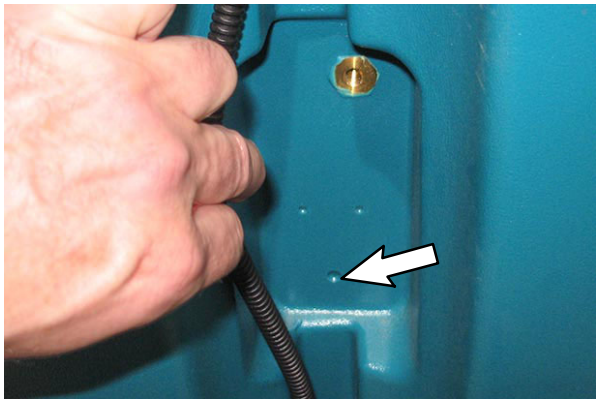


FIG. 11

11. Drill a 5/8 in. (16 mm) hole into the back of the recovery tank marked in the previous step. (Fig. 11)

12. Use the lock nut and gasket to install the remaining new liquid level sensor (1) and float switch protector bracket (2) into the back of the recovery tank where the 5/8 in. (16 mm) hole was drilled in the previous step. (Fig. 11)

13. Connect the jumper harness (3) to the wire harness connection previously attached to the old float sensor.

14. Cut enough of the portion of conduit covering the cable end previously connected to the old sensor away so there is enough cable for the jumper harness (3) to reach the lower float switch (1) installed into the back of the recovery tank.

15. Route the wire harness/ jumper cable (3) to the lower float sensor (1) installed onto the back of the recovery tank and connect the jumper harness to the float sensor.

16. Wrap electric tape around the previously cut portion of the conduit to secure the remaining wires/cable inside the conduit.

17. Test the machine. Observe the area where the new liquid level sensors (1) were installed for leaks.

Bill Of Materials For Sensor Kit Recovery Tank Afmkt ES - 9021419

Ref.	Tennant Part No.	Description	Qty.
1	385685	Sensor, Level, Liq, 14VDC 01A .62- 11	2
2	1019285	Bracket, Protector, Float Switch	2
3	1076766	Harness, Elec, Rec Tank Jumper	1

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