TENNANT INSTRUCTION BULLETIN

No. 340122
Machine: 7200
Published: 6-00/05
System: SCRUBBING

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in your machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save you 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 385626

SYNOPSIS / PROBLEM:

This kit contains the parts needed to replace and relocate the ES pump and solenoid valve on the model 7200 scrubber. Relocating the ES pump will eliminate future pump failures. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: Hand drill, .437 in, .297 in, drill bits, 1.375 inch hole saw. (Estimated time to complete: 6 hours)

PREPARATION:

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

1. Disconnect battery cables from machine.

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

2. Drain the recovery and solution tanks.
3. Remove the rear squeegee frame assembly.
4. Open the tank cover. Un–plug and and remove the vacuum fan assembly.

DISASSEMBLY:
(Refer to FIG. 1 and 2)

1. Disconnect the airflow solenoid valve and the ES™ pump from the main wire harness.
2. Disconnect the hose leading from the top of the ES™ pump to the fitting on the side of the solution tank. Remove and discard the straight fitting. (Refer to FIG. 1 and 2)
3. Disconnect the hose at the bottom of the ES™ pump. Leave the hose connected to the tank fitting. (Refer to FIG. 1 and 2)
4. Disconnect the hose or hoses on the inside of the recovery tank––including the filter strainer. Discard the hoses and filter. Remove and discard the fitting(s) on the inside of the recovery tank. (Refer to FIG. 1 and 2)
5. Remove the ES pump and mount bracket from the machine. Discard the pump and bracket. (Refer to FIG. 1 and 2)

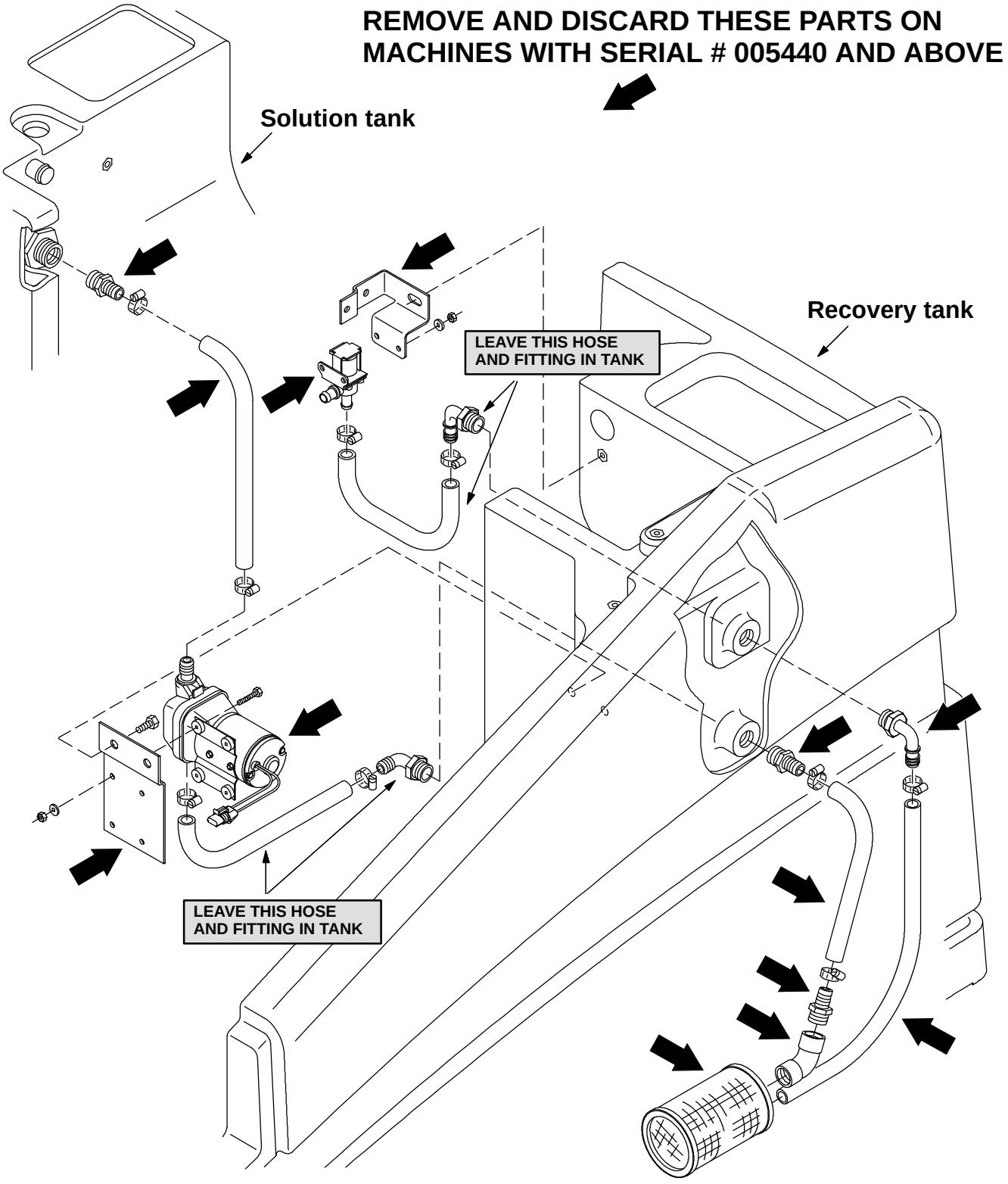

FIG. 1 – ES™ Parts To Remove And Discard (machine serial # 005440 and above)

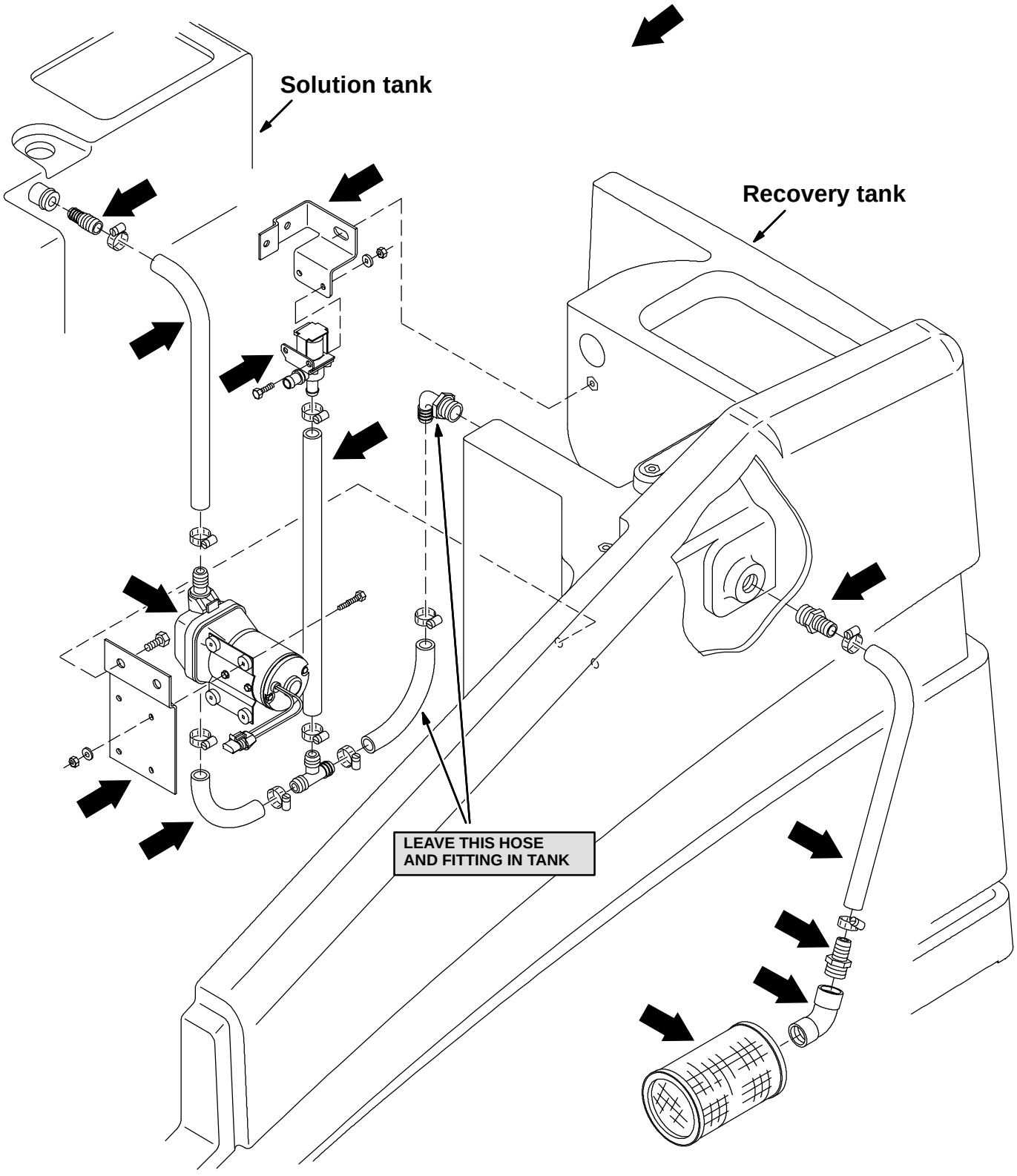

FIG. 2 - ES™ Parts To Remove And Discard (machine serial # 005439 and below)

REASSEMBLY:
(Refer to FIG. 3 thru 7)

1. Use the two plug fittings (4) to plug the bulkhead fittings on the inside of the recovery tank that were left open when the fittings were removed in step 4 of the DISASSEMBLY instructions. (Refer to FIG. 3 and 7)

2. **Machine with serial # 005440 and above:** Install the 90°fitting (3) in the empty bulkhead fitting in the side of the solution tank that was left empty when the fitting was removed in step 2 of the DISASSEMBLY instructions. Make sure the barbed hose end points down. Install the new check valve (31) into the bulkhead fitting inside the solution tank. Make sure the rubber flap on the check valve (31) is facing UP when fitting is tight. (Refer to FIG. 3 and 7)

3. **Machine with serial # 005439 and below:** Install the cap (25) and wormdrive clamp (26) over the spud left open on the side of the solution tank when the fitting was removed in step 2 of the DISASSEMBLY instructions. Use the dimensions in FIG 3 to mark and drill a 1.375 inch hole in the side of the solution tank using a 1.375 inch hole saw. Install a bulkhead fitting (1) in the new hole. Install the 90°fitting (2) in the new bulkhead ftg (1). Make sure the barbed hose end points down. Install the new check valve (31) into the bulkhead fitting inside the solution tank. Make sure the rubber flap on the check valve (31) is facing UP when fitting is tight. (Refer to FIG. 3)

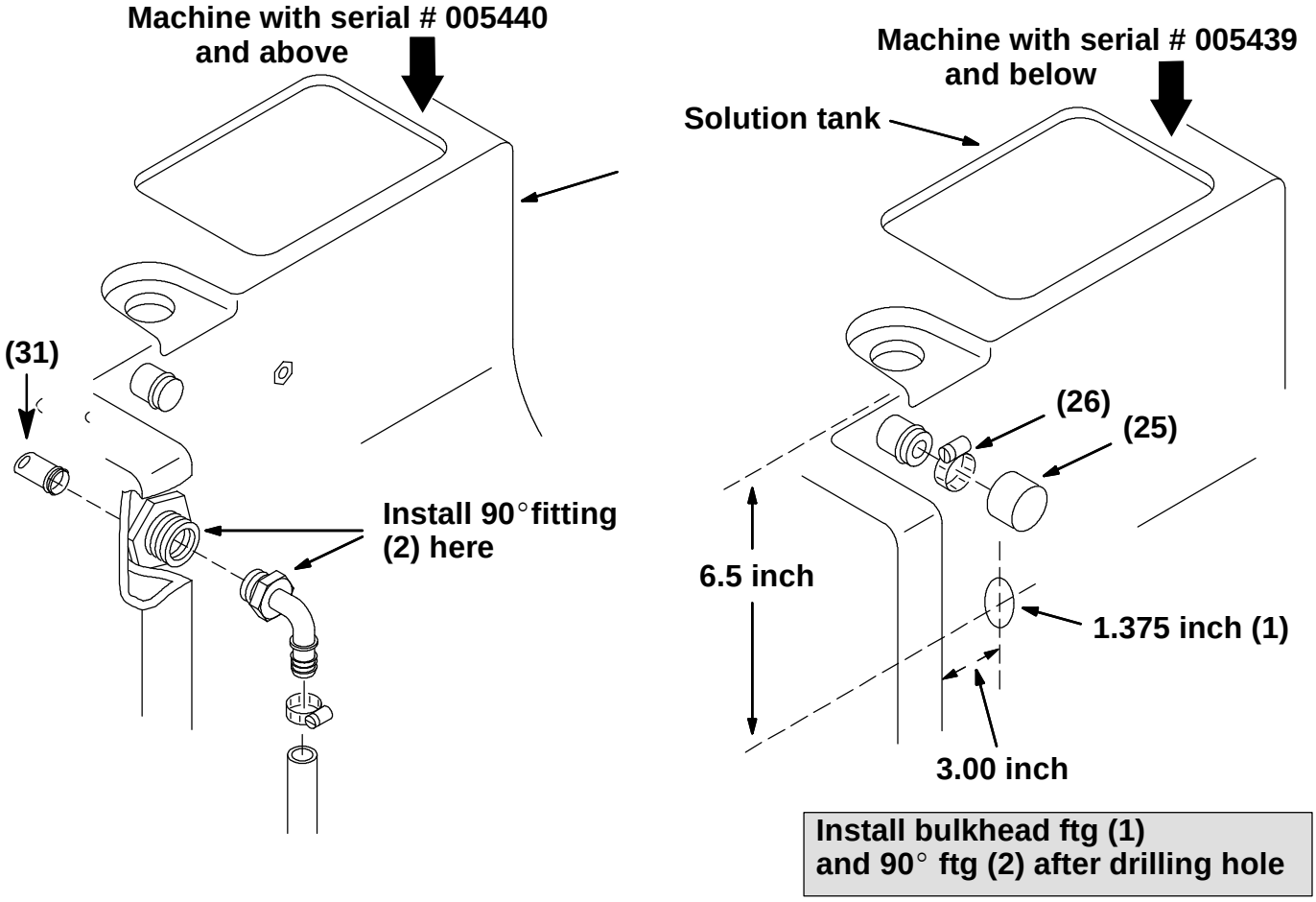

FIG. 3 - Solution Tank Rework

4. If possible--use a floor jack or overhead hoist to lift the machine off the ground--place jackstands under the frame before working on the machine. ***NOTE: Raise the front of the machine first.***

5. Use the dimensions in FIG. 4 to mark and drill the new ES pump (13) mount holes in the rear squeegee mount bracket. Drill the two mount holes .437 inch. (Refer to FIG. 4)

6. Install the new ES pump mount bracket (9) on the back side of the rear squeegee mount bracket (toward the front of the machine). Use the two hex screws (16), washers (17), and nuts (18). Tighten to 37 – 48 Nm (26 – 34 ft lb). (Refer to FIG. 4, 5, and 7)

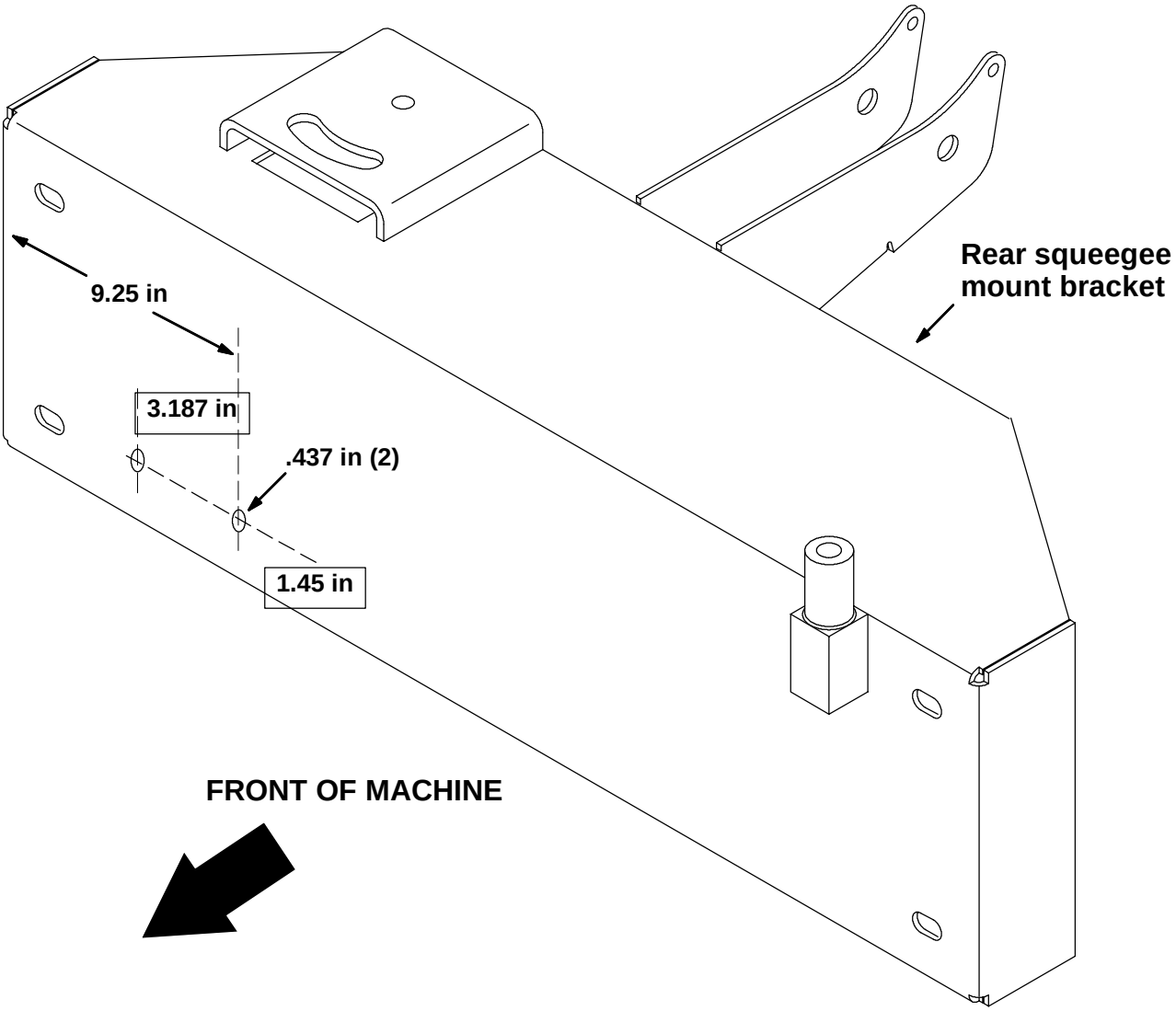

FIG. 4 - Rear Squeegee Frame Rework Dimensions

7. Position the new ES pump (13) in the new mount bracket (9) with the fittings toward the inside of the machine. Make sure the OUT port with the straight fitting is on **top** and the IN port with the 90°fitting should be on the **bottom.** Use the worm drive clamp (10) to secure the pump to the bracket. (Refer to FIG. 5 and 7)

8. Install the airflow solenoid valve (27) onto the new mount bracket (28). Use the hex screws (19), washers (20), and nuts (21). Tighten to 7.6 – 9.9 Nm (5.6 – 7.3 in lb). Water suction end will point down and the air suction end will point to the left side of the machine. (Refer to FIG. 7)

9. Mount the airflow valve and bracket to the side of the recovery tank using the two hex screws (29). Tighten to 7.6 – 9.9 Nm (5.6 – 7.3 in lb). (Refer to FIG. 7)

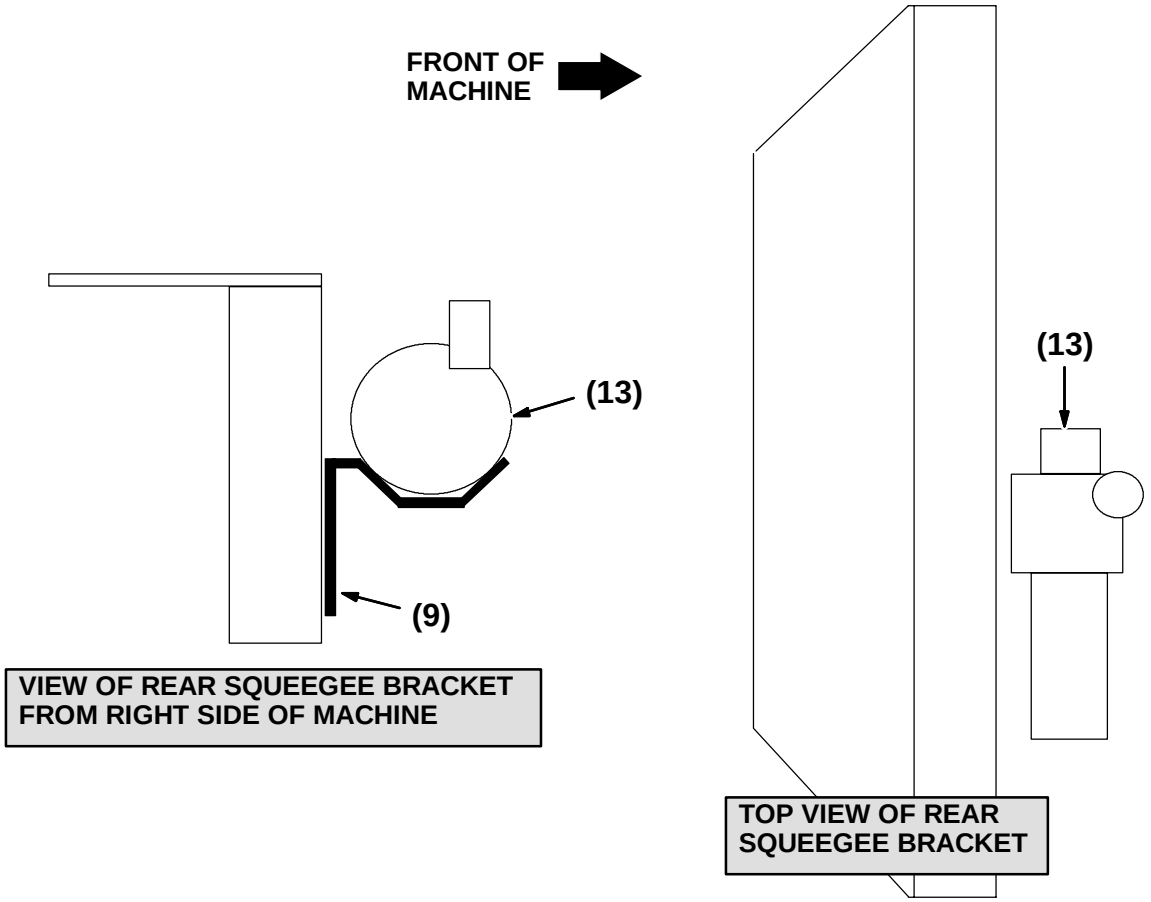

FIG. 5 – New ES™ Parts Assembly

10. Use the dimensions in FIG. 6 to mark and drill a new bulkhead fitting mount hole in the bottom of the recovery tank. Use a 1.375 inch hole saw. Remove the drain cap assembly for better access. Install a new bulkhead fitting (1) in the newly drilled mount hole. (Refer to FIG. 6)

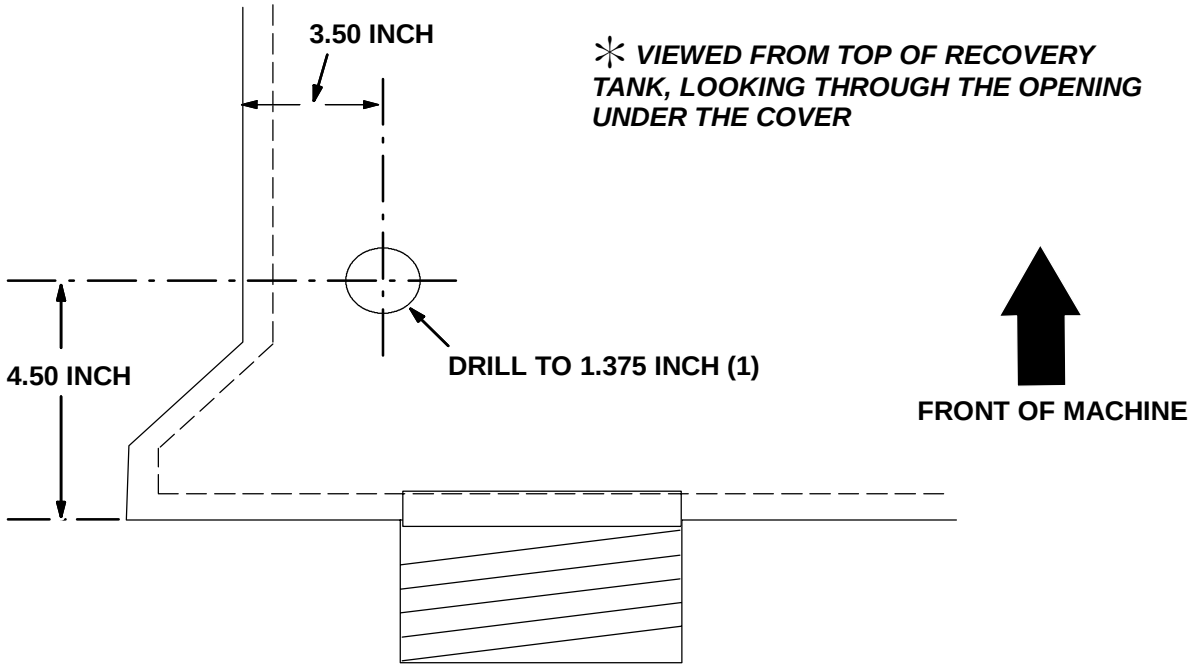

FIG. 6 – Bulkhead Fitting Dimension In Bottom Of Recovery Tank

11. Install a pipe (2) in the new bulkhead fitting (1) on the **inside** of the recovery tank. (Refer to FIG. 7)
12. Install a 90° fitting (3) in the new bulkhead fitting (1) on the **outside** of the recovery tank. Point the 90° fitting (4) toward the front of the machine. (Refer to FIG. 7)
13. Install the new tee (24) onto the new nipple (2). (Refer to FIG. 7)
14. Install the str. ftg. (23) into the horizontal hole on the new tee (24). (Refer to FIG. 7)
15. Install the new strainer (11) onto the new tee (24) I (Refer to FIG. 7)
16. Install a 90° fitting (30) in the bottom threaded hole in the side of the recovery tank. (Refer to FIG. 7)
17. Install the straight fitting (32) in the new ES pump (13) OUTLET port. Install the straight fitting (33) in the new ES pump (13) INLET port.
18. Install the hose (6) between the two new ftgs. (30 and 23) installed in step 14 and 16. (Refer to FIG. 7)
19. Install hose (7) between the 90° fitting (3) in the new bulkhead fitting (1) on the **outside** of the recovery tank and the straight fitting on the ES pump (13) inlet.
20. Connect hose (8) from the kit to the upper straight fitting of the ES pump (13) outlet. Use one worm drive clamp (15). Route this hose up to the 90°fitting (12) on the side of the solution tank. Use one worm drive clamp (15). (Refer to FIG. 7)
21. **THIS COMPLETES THE WATER HOSE CONNECTIONS.**

ELECTRICAL CONNECTIONS:

1. The end of the jumper harness (14) with 3 connections will go to the main machine harness. Connect as follows:
   –Jumper wire 38A/ORA to main harness wire 38/ORA
   –Jumper wire 10K/YEL to main harness wires 10N/YEL and 10J/YEL
2. **Do not** connect the jumper harness to the new airflow solenoid valve (27). Connect the air flow valve (27) to the main harness where the old air flow valve was connected. The connections to the airflow valve (27) can go to either terminal.
3. Route the jumper harness (14) down between the tanks. Wire tie the harness to the main harness.
4. Connect the jumper harness (14) to the new ES pump (13).
5. Reinstall the vacuum fan assembly.
6. Reinstall the rear squeegee frame assembly.

FINAL CHECK:

1. Before lowering the machine, check to make sure the new hoses and wires are not interfering with any moving parts. Remove the jack stands and lower the machine. Reconnect the machine batteries. Fill the solution tank. Operate the scrubbing function and check for proper operation of the ES system.

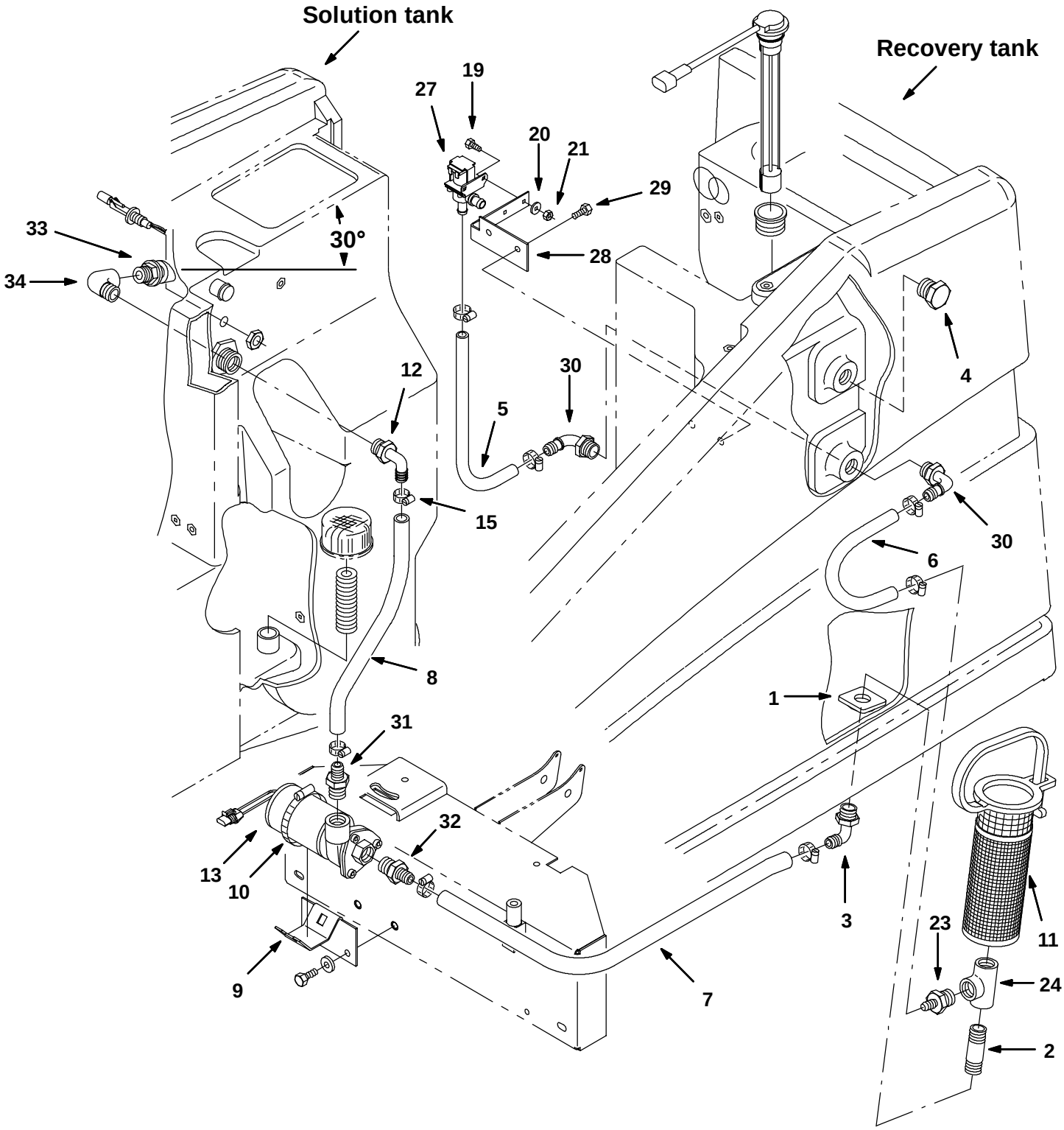

FIG. 7 - ES Pump/Airflow Valve Assembly (new location)

BILL OF MATERIALS FOR ES PUMP REPLACEMENT KIT 385626

Ref.	TENNANT Part No.	Description	Qty.
1	370112	Bulkhead ftg, str	2
2	385665	Nipple, pipe	1
3	14877	90° plastic ftg, 12bm/12pm	1
4	75611	Plastic plug ftg, 12pm	2
5	16361	Vinyl braided hose, 15 in	1
6	49142	Vinyl braided hose, 18.0 in	1
7	385666	Vinyl braided hose, 26 in	1
8	385624	Vinyl braided hose, 35 in	1
9	385618	ES pump mount bracket	1
10	23498	Worm drive clamp, 4.5 in	1
11	364450	Recovery strainer	1
12	73468	Plastic ftg, 90°	1
13	369865	ES pump assembly	1
14	385623	Jumper harness	1
15	63810	Worm drive clamp, 1.06 in	10
16	09291	Hex screw, M10, 20mm	2
17	01686	Flat washer, .375	2
18	08714	M10 nyloc nut	2
19	08716	M6 hex screw, 20mm	2
20	01684	Flat washer, .25 in	2
21	08708	M6 nyloc nut	2
23	79273-1	Plastic ftg, str	1
24	42133A	Ftg. tee	1
25	32790	Cap	1
26	86824	Worm drive clamp	1
27	369313	Airflow solenoid valve	1
28	385649	Airflow valve mount bracket	1
29	49826	Hex screw	2
30	63244-3	90° plastic ftg,	2
31	365095	Fitting, plastic	1
32	79273-2	Fitting, plastic	1
33	369869	Valve, check	1
34	69785	Fitting, elbow	1

TENNANT COMPANY
P. O. Box 1452
Minneapolis, MN 55440-1452