



INSTRUCTION BULLETIN

No. 9013039
Machine: T17 / M17
Published: 07-2016
Rev. 01

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.

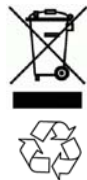
Installation instructions for **kit number 9020300 (T17 machines NA serial numbers 000000-010999 / EU serial numbers 0000-0330) / 9014966 (T17 machines NA serial numbers 011000- / EU serial numbers 0400-) (M17 All machines)**

SYNOPSIS:

This kit contains the parts needed to install the ES (Extended Scrub) system on T17 scrubbers / M17 sweeper-scrubbers not equipped with the Severe Environment system or the Auto-Fill system. (Machines not equipped with ec-H2O only).
Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 7 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:

1. Completely empty the solution and recovery tank. Refer to the Operator Manual for instructions how to empty both tanks.
2. Park the machine on a clean level surface and turn off the machine

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

3. Remove the brushes from the main scrub head. Set the brushes aside.
4. Remove the rear squeegee assembly from the machine. Set the rear squeegee assembly aside.
5. Start the machine, completely lower the scrub head, turn off the machine, set the parking brake, and remove the key.

6. Disconnect the battery cable from the machine.



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

7. Open the battery compartment cover and right shroud.
8. Remove the battery from the machine.

FOR SAFETY: When servicing machine, use a non-conductive battery removal device, use a hoist and adequate assistance when lifting batteries, follow site safety guidelines concerning battery removal, and battery installation must be done by trained personnel.

INSTALLATION:

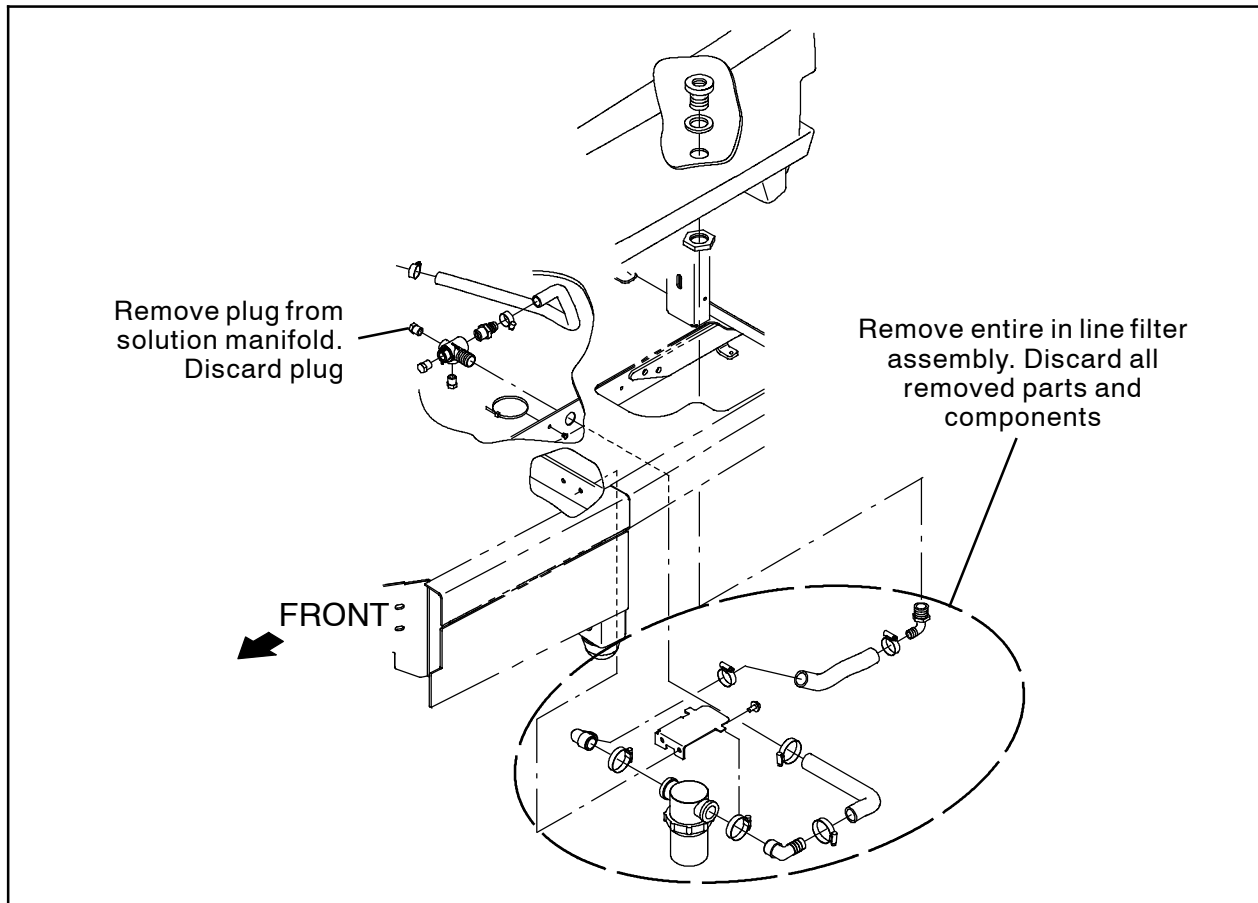


FIG. 1

1. Disconnect the drain hose from the solution tank. Set the hose clamp aside. (Fig. 2)

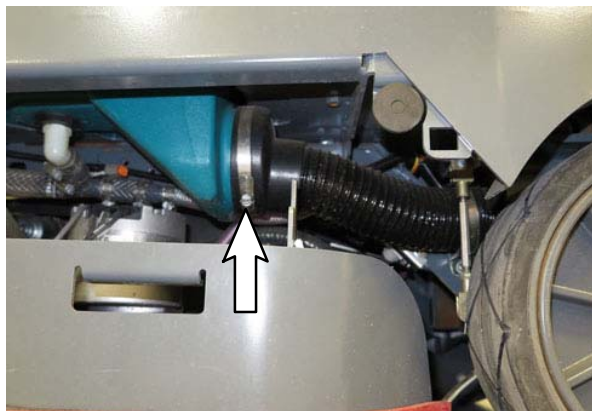


FIG. 2

2. Remove the entire in line filter assembly from the machine. Discard the in line filter assembly, hardware, fittings, hoses, and clamps. (Fig. 1)
3. Remove one plug from the solution manifold. Discard the plug. (Fig. 1)

4. Thread the mesh solution filter (77) into the bulkhead fitting in the solution tank. (Fig. 3)

NOTE: Refer to Step 5 through Step 12 to install fittings / hoses onto T17 machines NA serial numbers (011000-) / EU serial numbers (0400-) / M17 All machines

5. Thread one plastic elbow fitting (60) into the bulkhead fitting in the solution tank. (Fig. 3A)
6. Use a hose clamp (71) to connect a 24 in. (610 mm) PVC hose (70) to the plastic elbow fitting (60) installed into the bulkhead fitting in the previous step. (Fig. 3A)
7. Use a hose clamp (71) to connect a 24 in. (610 mm) PVC hose (70) to the solution manifold. (Fig. 3A)
8. Thread one plastic elbow fitting (60) into the plastic t-fitting (59). (Fig. 3A)
9. Use a hose clamp (71) to connect the 24 in. (610 mm) PVC hose (70) from the solution manifold to the plastic t-fitting (59). (Fig. 3A)

FIG. 3A T17 machines NA serial numbers (011000-) / EU serial numbers (0400-) / M17 All machines

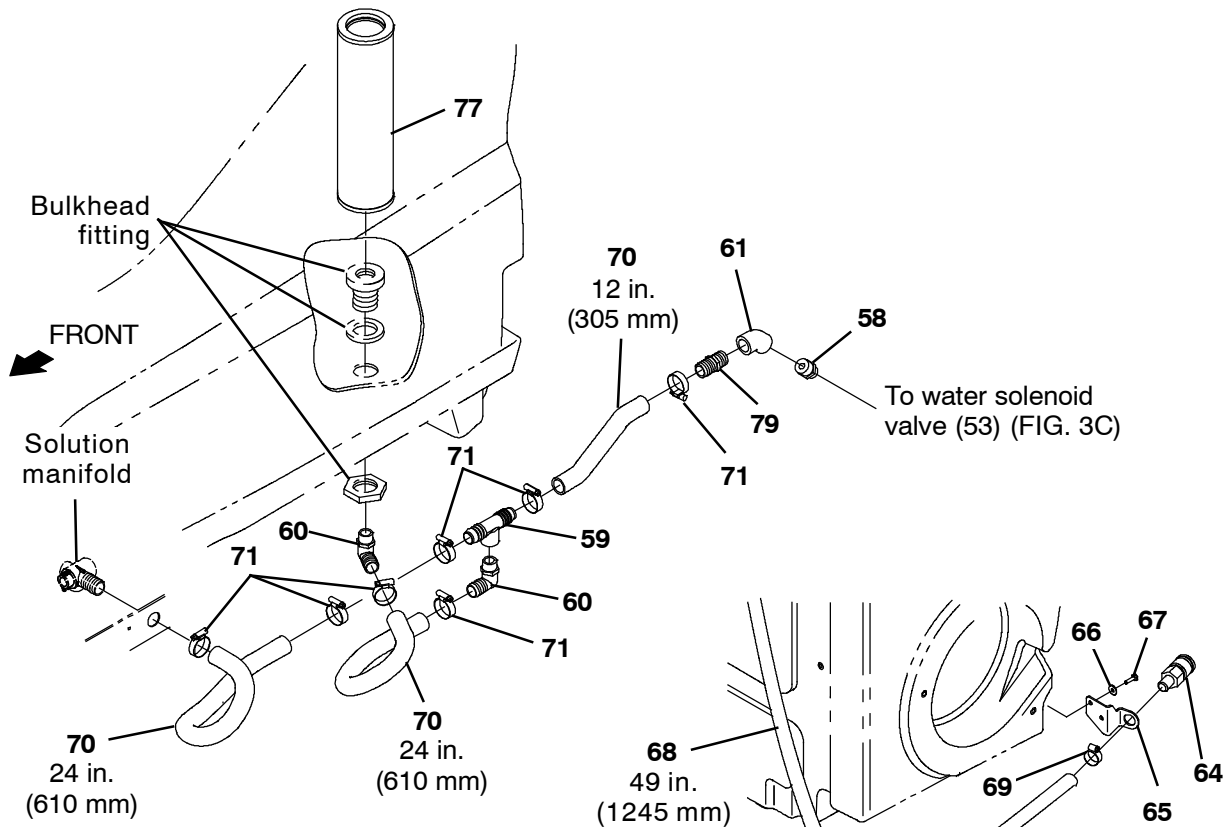


FIG. 3B T17 machines NA serial numbers (000000- 010999) / EU serial numbers (0000- 0330)

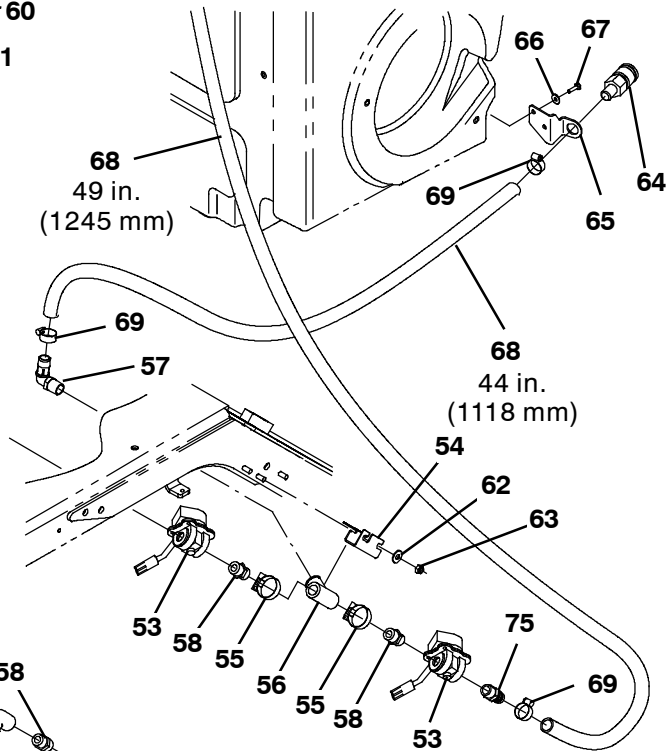
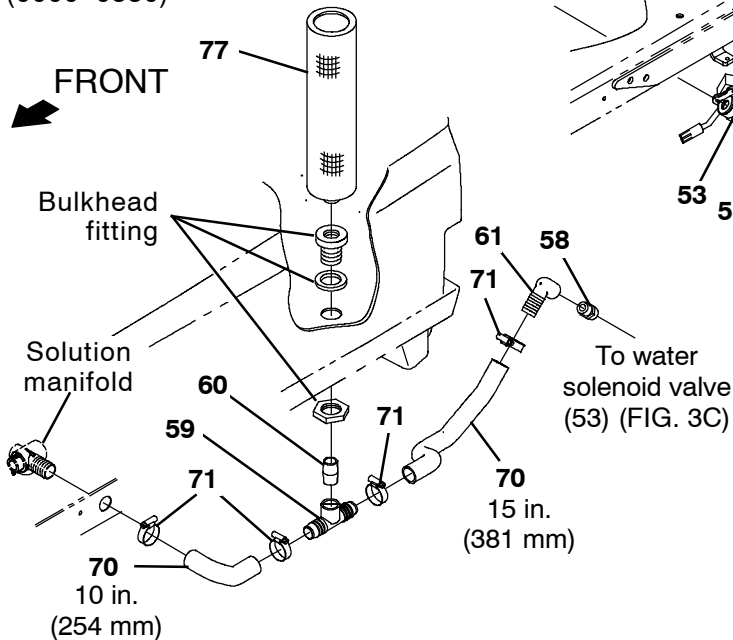


FIG. 3C
(All Machines)

FIG. 3

10. Use a hose clamp (71) to connect the 24 in. (610 mm) PVC hose (70) from the plastic t-fitting (59) connected to the solution manifold to the plastic elbow fitting (60) installed in the plastic t-fitting. (Fig. 3A)
 11. Use a hose clamp (71) to connect the 12 in. (305 mm) PVC hose (70) to the plastic t-fitting (59). (Fig. 3A)
 12. Reconnect the drain hose to the solution tank. (Fig. 2)
- NOTE: Refer to Step 13 through Step 18 to install fittings / hoses onto T17 machines NA serial numbers (000000-010999) / EU serial numbers (0000-0330).*
13. Thread the plastic straight fitting (60) into the plastic t-fitting (59). (Fig. 3B)
 14. Thread the plastic straight fitting (60) / plastic t-fitting (59) into the bulkhead fitting in the solution tank. (Fig. 3B)
 15. Use a hose clamp (71) to connect a 10 in. (254 mm) PVC hose (70) to the t-fitting (59). (Fig. 3B)
 16. Reconnect the drain hose to the solution tank. (Fig. 2)
 17. Route the 10 in. (254 mm) PVC hose (70) to the solution manifold and use a hose clamp (71) to connect the PVC hose to the solution manifold. (Fig. 3B)
 18. Use a hose clamp (71) to connect the 15 in. (381 mm) PVC hose (70) to the t-fitting (59). (Fig. 3B)
 19. Use two M8 hex nuts (63) and two flat washers (62) to install the auto-fill mounting bracket (54) onto the frame of the machine. (Fig. 3C)
 20. Thread two straight fittings (58) and elbow fitting (57) into the plastic t-fitting (56). (Fig. 3C)
 21. Thread a water solenoid valve (53) onto the straight fittings (58) on each end of the plastic t-fitting (56). (Fig. 3C)
 22. Thread a straight fitting (58) into one water solenoid valve (53). (Fig. 3A / Fig. 3B / Fig. 3C)
 23. Thread a 45° fitting (61) into the straight fitting (58) in the water solenoid valve (53). (Fig. 3A / Fig. 3C)
 24. Thread straight fitting (79) into the 45° fitting (61) installed into the water solenoid valve (53) in the previous step. (Fig. 3A / Fig. 3C)
 25. Thread an elbow fitting (61) into the straight fitting (58) in the water solenoid valve (53). (Fig. 3B / Fig. 3C)
 26. Thread a plastic straight fitting (75) into the other water solenoid valve (53). (Fig. 3C)
 27. Use a hose clamp (71) to connect the 12 in. (305 mm) PVC hose (70) connected to the t-fitting (59) to the straight fitting (79) on the assembly assembled in the previous several steps. (Fig. 3A / Fig. 3C)
 28. Use a hose clamp (71) to connect the 15 in. (381 mm) PVC hose (70) connected to the t-fitting (59) to the elbow fitting (61) on the assembly assembled in the previous several steps. (Fig. 3B / Fig. 3C)
 29. Use a hose clamp (69) to connect the 49 in. (1245 mm) PVC hose (68) to the straight fitting (75) connected to the water solenoid valve (53). (Fig. 3C)
 30. Use a hose clamp (69) to connect the 44 in. (1118 mm) PVC hose (68) to the elbow fitting (57) in the plastic t-fitting (56). (Fig. 3C)
 31. Use two hose clamps (55) to secure the plastic t-fitting (56) onto the auto-fill mounting bracket (54). (Fig. 3C)
 32. Connect the main wire harness to both solenoid valves (53). (Fig. 4 / Fig. 12)
 33. Route the 44 in. (1118 mm) PVC hose (68) to the back end of the machine. (Fig. 3C)
 34. Insert the brass fitting (64) into the fitting bracket (65) and use a hose clamp (69) to connect the 44 in. (1118 mm) PVC hose (68) to the brass fitting. (Fig. 3C)
 35. Use two M6 hex screws (67) and two flat washers (66) to install the brass fitting (64) / fitting bracket (65) onto the back of the recovery tank. (Fig. 3C)

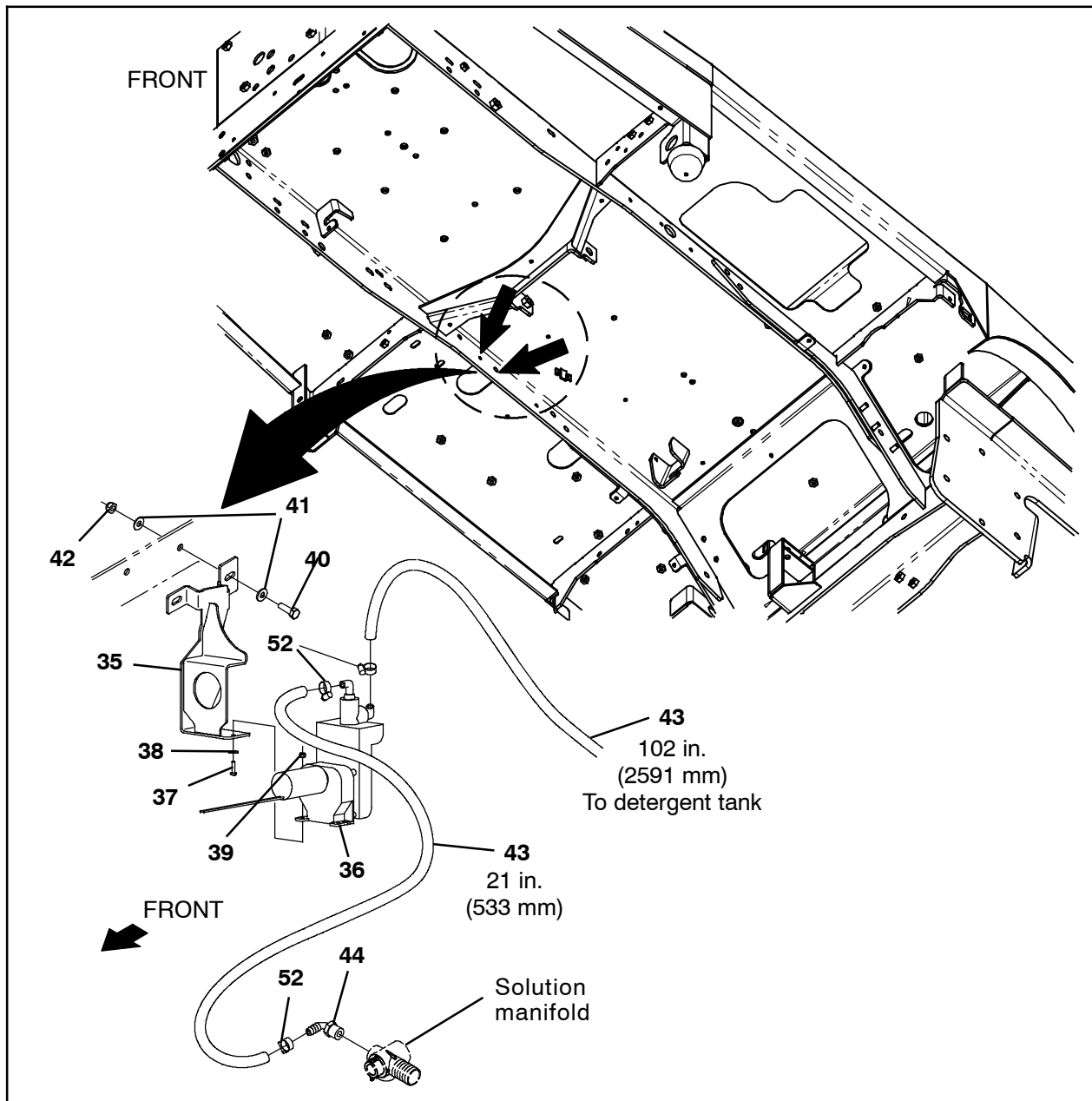


FIG. 4

- 36. Use two M4 pan screws (37) and two flat washers (38), and two M4 lock hex nuts (39) to install the detergent pump (36) onto the pump bracket (35). (Fig. 4)
- 37. Use a hose clamp (52) to connect the 21 in. (533 mm) PVC hose (43) to the detergent pump (36) outlet port. (Fig. 4)
- 38. Use a hose clamp (52) to connect the 102 in. (2591 mm) PVC hose (43) to the detergent pump (36) inlet port. (Fig. 4)
- 39. Thread an plastic elbow fitting (44) into the solution manifold. (Fig. 4)
- 40. Use two M8 hex screws (40) and four flat washers (41), and two M8 lock hex nuts (42) to install the detergent pump (36) / pump bracket (35) onto the frame of the machine. (Fig. 4)
- 41. Connect the main wire harness to the detergent pump (36). (Fig. 4 / Fig. 12)
- 42. Route the 21 in. (533 mm) PVC hose (43) to the solution manifold and use a hose clamp (52) to connect the PVC hose to the solution manifold. (Fig. 4)

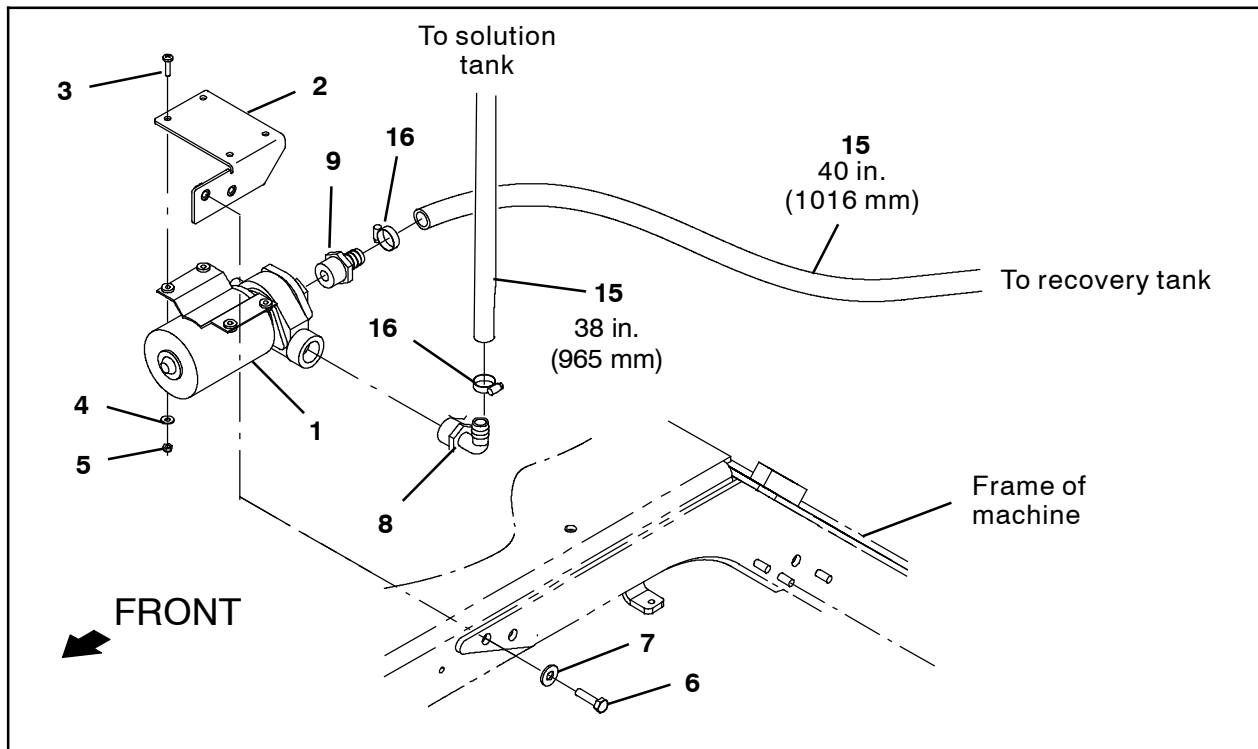


FIG. 5

43. Use four M5 pan screws (3), four flat washers (4), and four M5 hex nuts (5) to install the pump bracket (2) onto the solution pump (1). (Fig. 5)

44. Thread a plastic elbow fitting (8) into the solution pump (1). Note orientation of the plastic elbow fitting. (Fig. 5)

45. Thread a plastic straight fitting (9) into the solution pump (1). (Fig. 5)

46. Use a hose clamp (16) to connect the 40 in. (1016 mm) PVC hose (15) to the plastic straight fitting (9) installed in the solution pump (1). (Fig. 5)

47. Use a hose clamp (16) to connect the 38 in. (965 mm) PVC hose (15) to the plastic elbow fitting (8) installed in the solution pump (1). (Fig. 5)

48. Use two M8 hex screws (6) and two flat washers (7) to install the solution pump assembly onto the frame of the machine. (Fig. 5)

49. Connect the main wire harness to the solution pump (1). (Fig. 5 / Fig. 12)

50. Drill a 0.875 in (22.225 mm) hole and 0.625 in (15.875 mm) hole into the recovery tank. (Fig. 6)

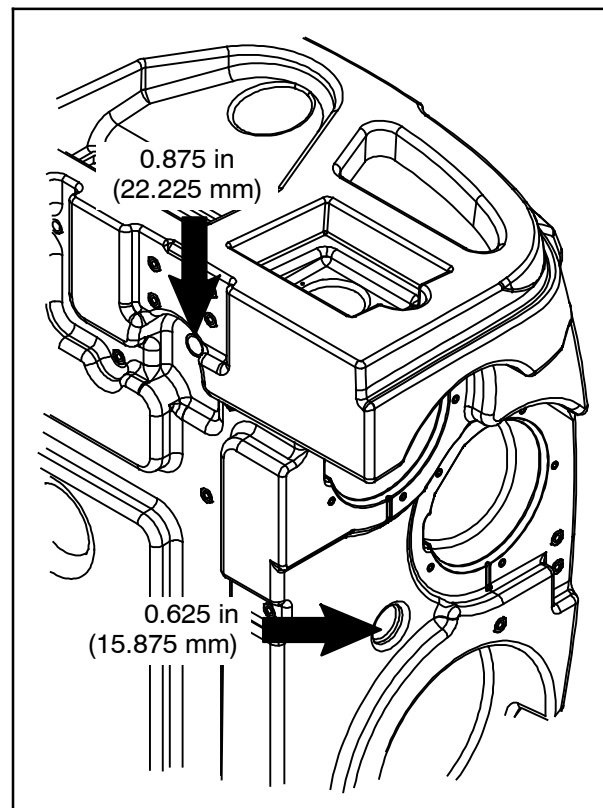


FIG. 6

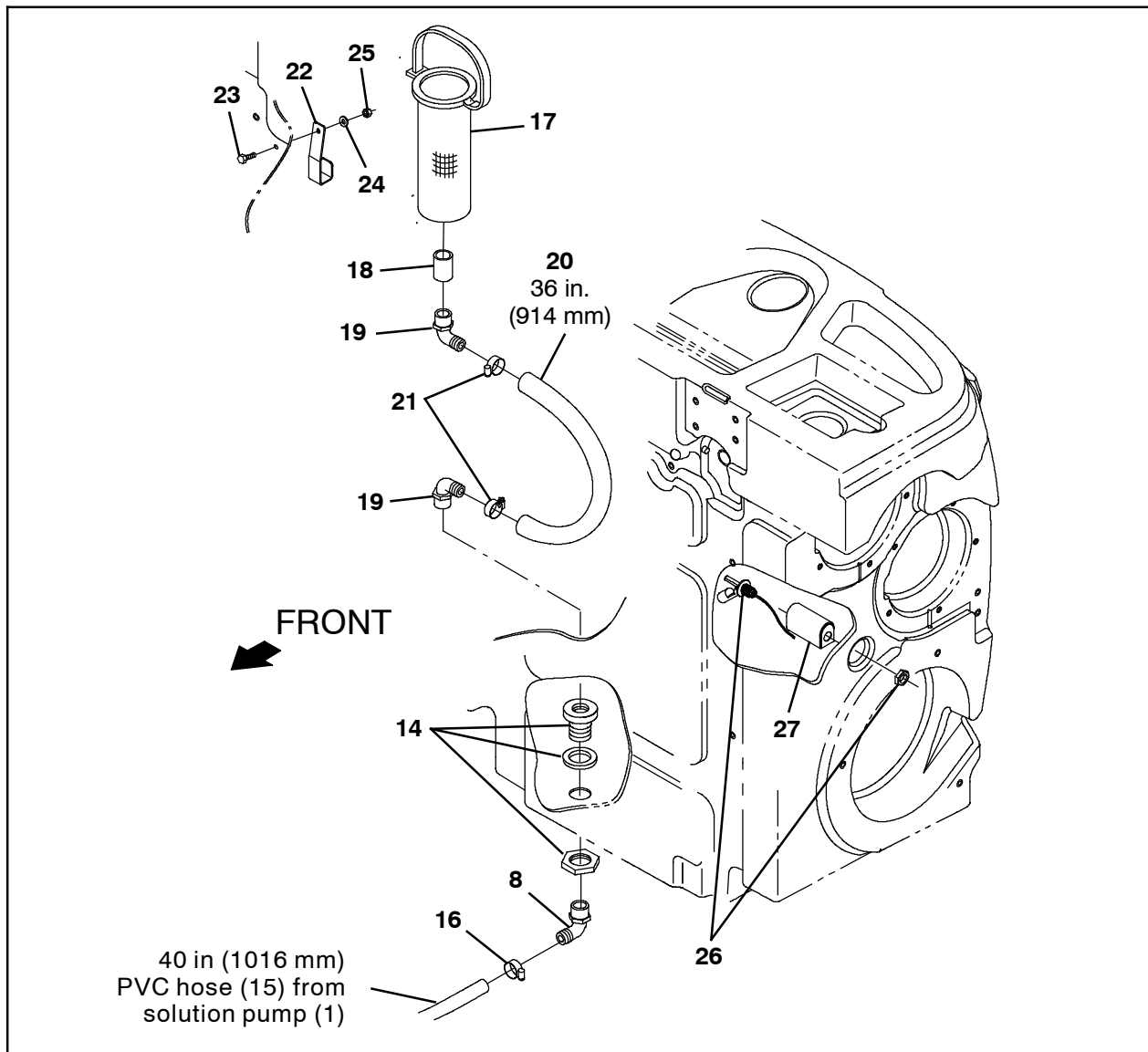


FIG. 7

51. Remove the jam nut from the liquid level sensor (26). (Fig. 7)
52. Route the liquid level sensor (26) cable through the hole in the float switch protector bracket (27) and use the jam nut from the liquid level sensor to secure the liquid level sensor / float switch protector bracket to the solution tank. (Fig. 7)
53. Connect the main wire harness to the liquid level sensor (26). (Fig. 7 / Fig. 12)
54. Thread one plastic elbow fitting (19) into the plastic bulkhead fitting (14). (Fig. 7)
55. Use a hose clamp (21) to connect the 36 in. (914 mm) PVC hose (20) to the plastic elbow fitting (19). (Fig. 7)
56. Thread the plastic straight fitting (18) into the solution strainer (17). (Fig. 7)
57. Thread one plastic elbow fitting (19) into the plastic straight fitting (18) / solution strainer (17). (Fig. 7)
58. Use a hose clamp (21) to connect the 36 in. (914 mm) PVC hose (20) to the plastic elbow fitting (19) on the solution strainer (17). (Fig. 7)
59. Use a M6 hex screw (23), a sealing washer (24), and a M6 hex nut (25) to install the strainer bracket (22) inside the recovery tank. (Fig. 7)
60. Hang the solution strainer (17) on the strainer bracket (22). (Fig. 7)

61. Remove the plug from the back of the solution tank. Discard the plug. (Fig. 8)

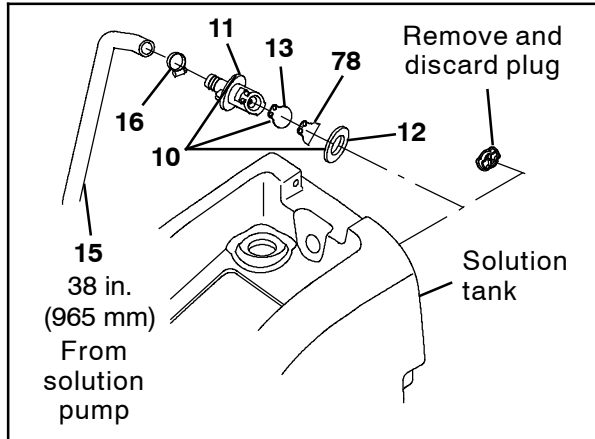


FIG. 8

62. Install the check valve kit (10) / flap restrictor (78) into the back of the solution tank. (Fig. 8)
63. Route the 38 in. (965 mm) PVC hose (15) up along the back of the solution tank / front of battery compartment and to the check valve (10) installed in the previous step. (Fig. 9)

64. Use a hose clamp (16) to connect the 38 in. (965 mm) PVC hose (15) to the check valve (10). (Fig. 9)

65. Thread the straight fitting (47) into the pump screen (48). (Fig. 9)

66. Install the screen assembly assembled in the previous step onto the 28 in. (711 mm) PVC hose (43). (Fig. 9)

67. Install the plastic elbow fitting (45) into the grommet (46) and insert the end of the fitting inside the grommet into the 28 in. (711 mm) PVC hose (43). (Fig. 9)

68. Install the hose assembly assembled in the previous several steps into the detergent tank (28). (Fig. 9)

69. Use one M8 hex screw (31) and one flat washer (33) to install the detergent tank bracket (30) onto the detergent tank (28). (Fig. 9)

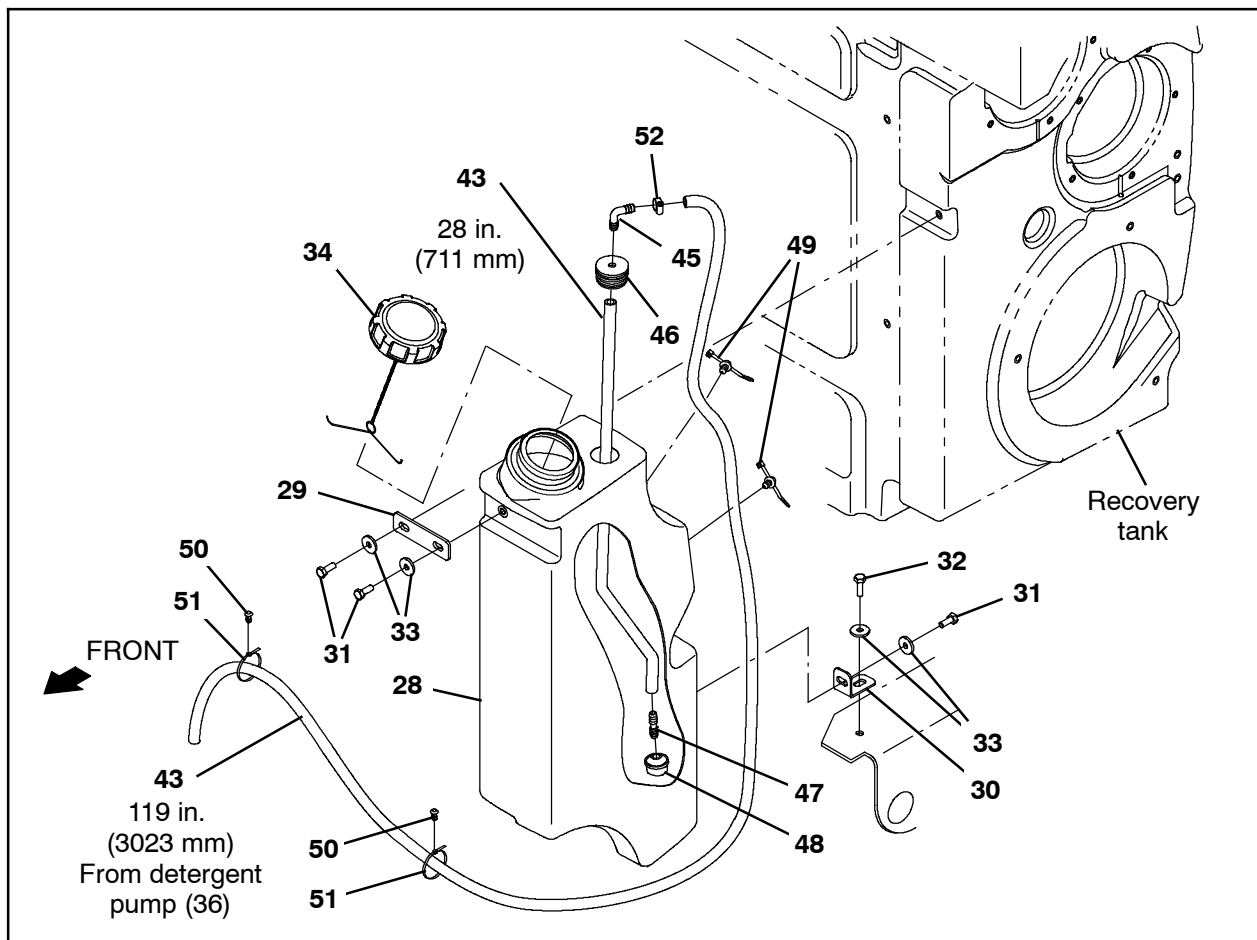


FIG. 9

70. Use one M8 hex screw (31) and one flat washer (33) to install the detergent tank mounting plate (29) onto the detergent tank (28). (Fig. 9)
71. Use one M8 hex screw (32) and one flat washer (33) to install the detergent tank bracket (30) onto the frame of the machine. (Fig. 9)
72. Use one M8 hex screw (31) and one flat washer (33) to secure the detergent tank mounting plate (29) / detergent tank (28) to the recovery tank. (Fig. 9)
73. Use a hose clamp (52) to connect the 119 in. (3023 mm) PVC hose (43) to the elbow fitting (45) installed on the grommet (46) / detergent tank (28). (Fig. 9)
74. Install both wire tie clips (49) onto the detergent tank (28) and use the wire ties to secure the 119 in. (3023 mm) PVC hose (43) to the detergent tank. (Fig. 9)
75. Install the tank cap (34) onto the detergent tank (28). (Fig. 9)
76. Use thread sealant to secure the plastic elbow fitting (76) in the 0.875 in (22.225 mm) hole previously drilled into the front of the recovery tank. (Fig. 10)

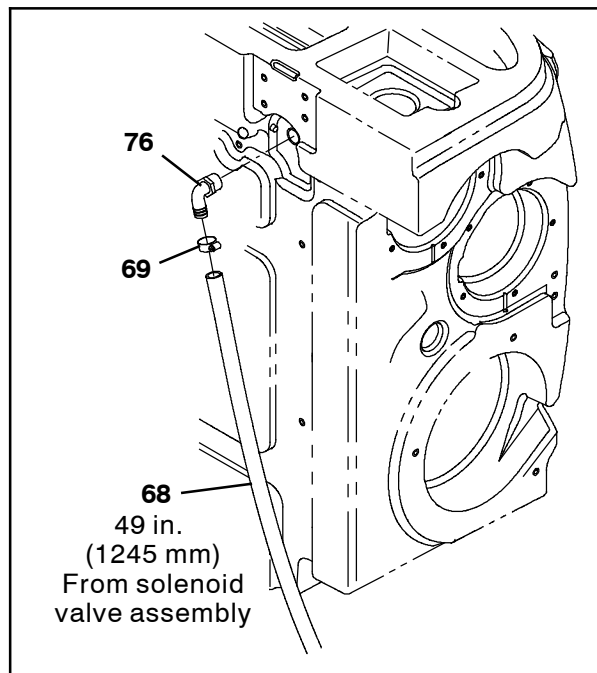


FIG. 10

77. Route the 49 in. (1245 mm) PVC hose (68) from the solenoid valve assembly up into the battery compartment, to the elbow fitting (76), and use a hose clamp (69) to connect the PVC hose to the elbow fitting. (Fig. 10)
78. Use four cable tie clips (51) / cable ties (50) to secure the 119 in. (3023 mm) PVC hose (43) to the frame of the machine. (Fig. 9)
79. Insert the rubber washer (73) into the brass fitting (74) and thread the brass straight fitting (72) into the brass fitting. (Fig. 11)

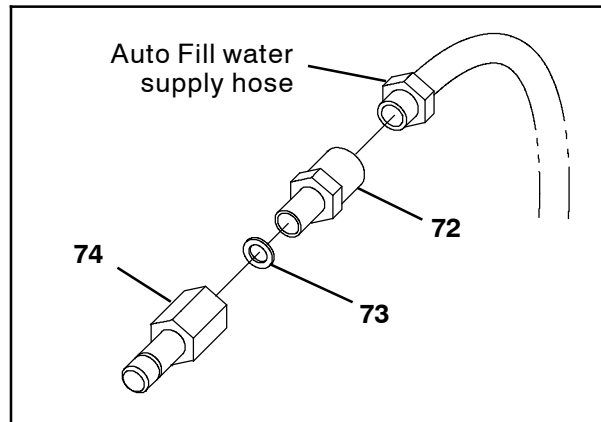


FIG. 11

80. Thread the fitting assembly assembled in the previous step onto the Auto Fill water supply hose. (Fig. 11)
81. Raise the machine from the jack stands, remove the jack stands from under the machine, and lower then machine to the floor.
82. Reconnect the battery cable to the machine.
83. Start the machine and raise the scrub head.
84. Reinstall the brushes into the main scrub head.
85. Reinstall the rear squeegee assembly onto the machine.
86. Start the machine and drive it to an area where the Auto Fill water supply hose is located.
87. Connect the water supply hose to the Auto Fill connection and fill the tanks. Refer to the Operator Manual for instructions how to use the Auto Fill option.
88. Observe all newly installed hoses, connectors, and components for leaks.

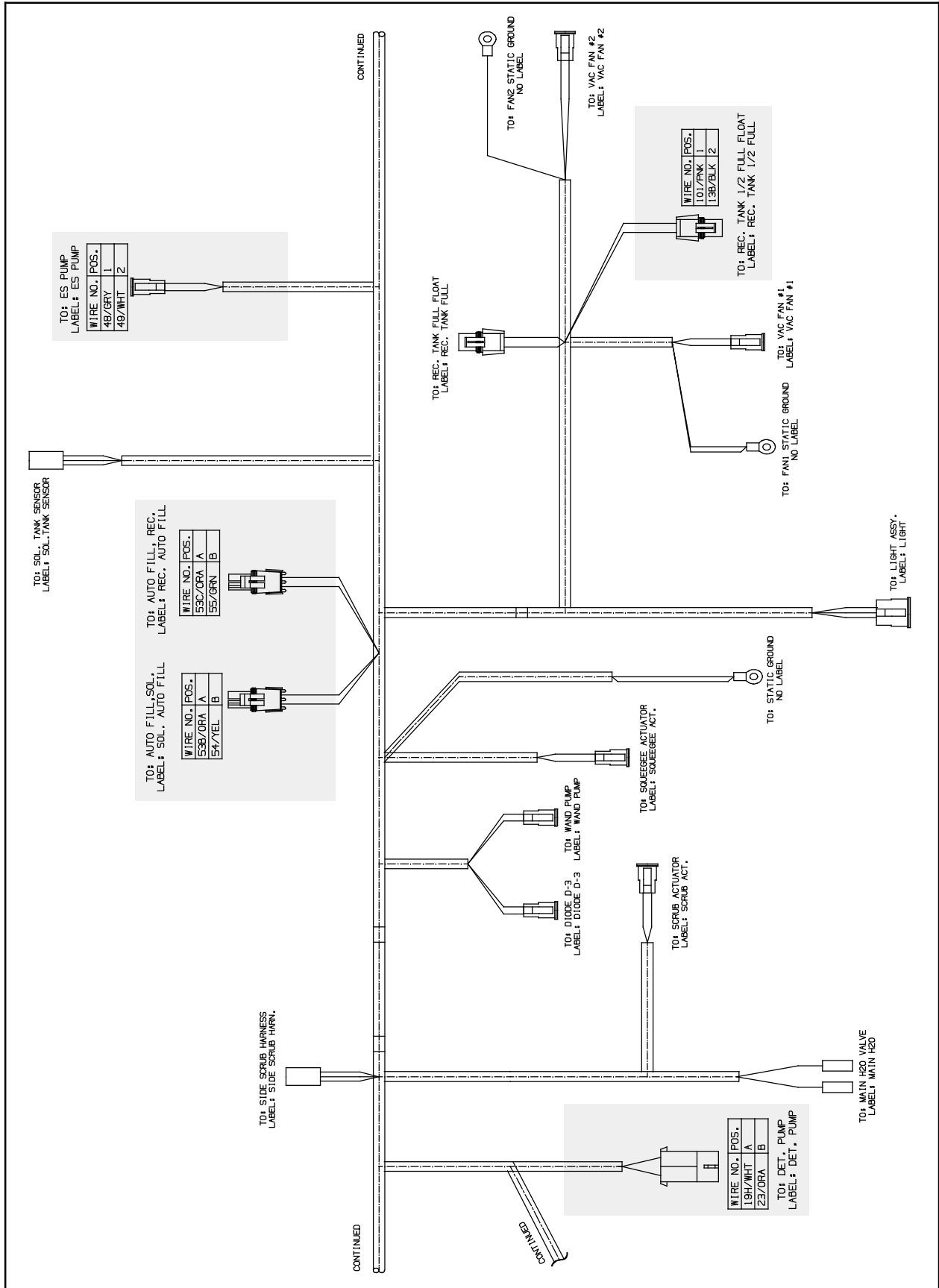


FIG. 12

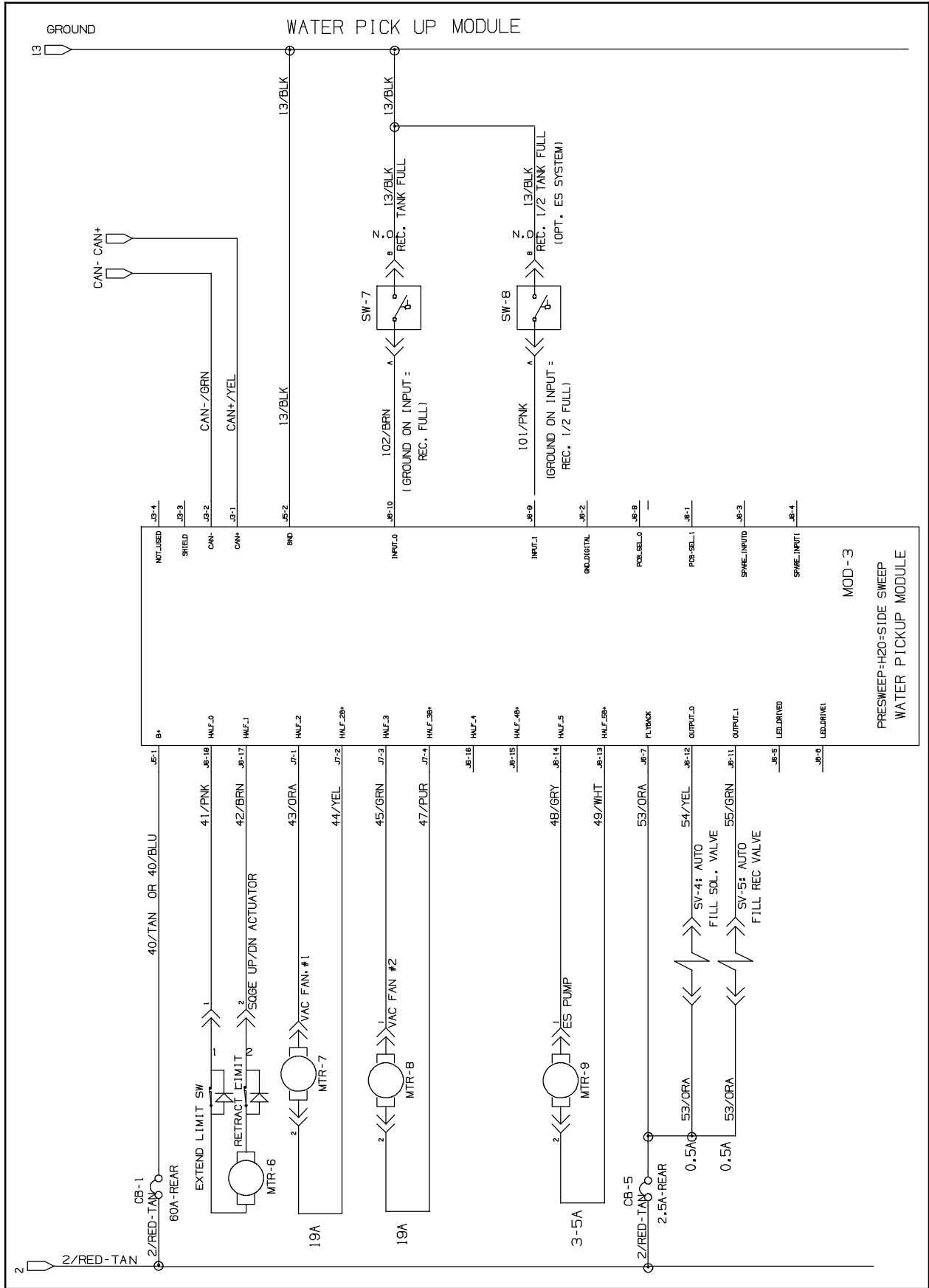


FIG. 13

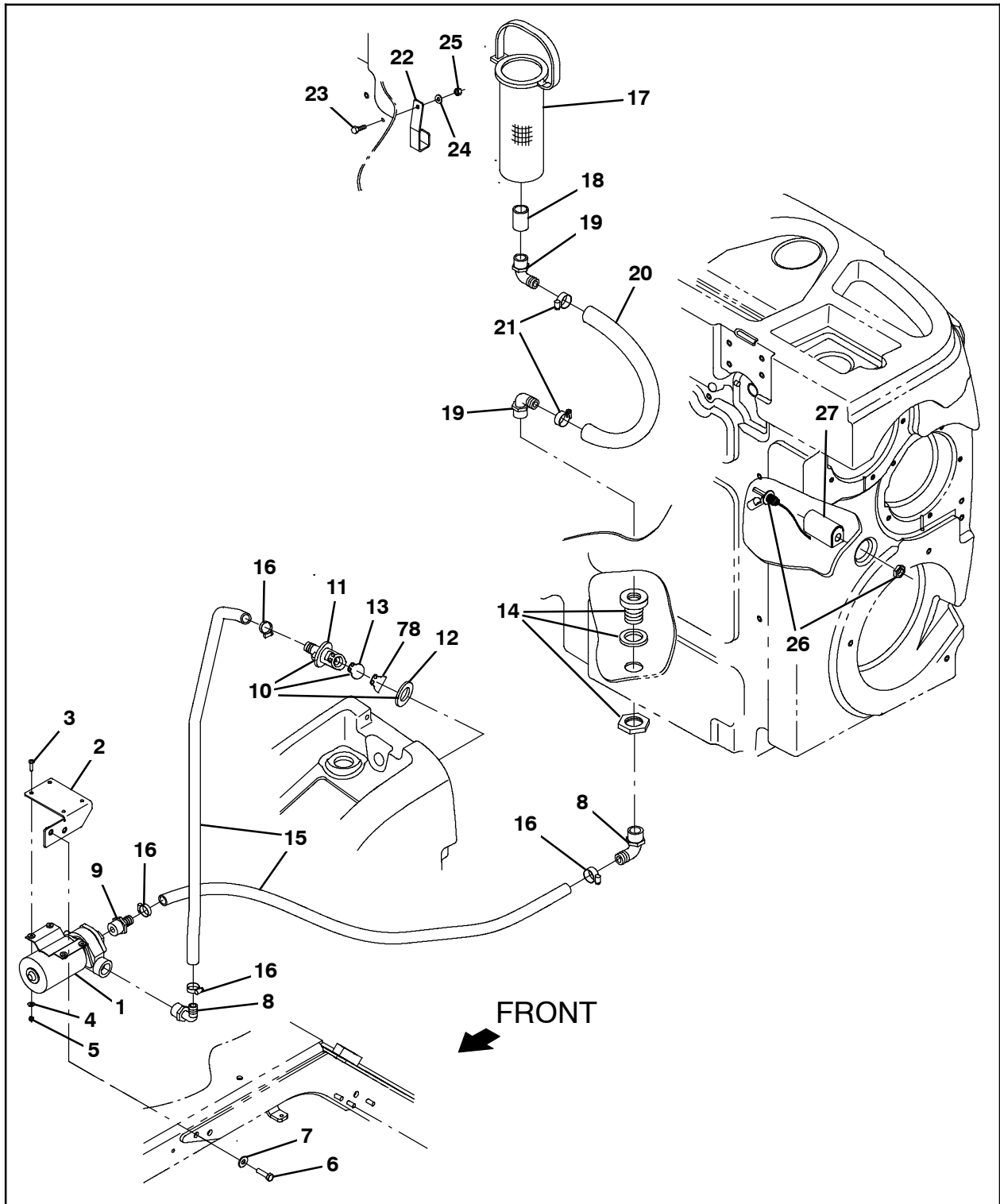


FIG. 14

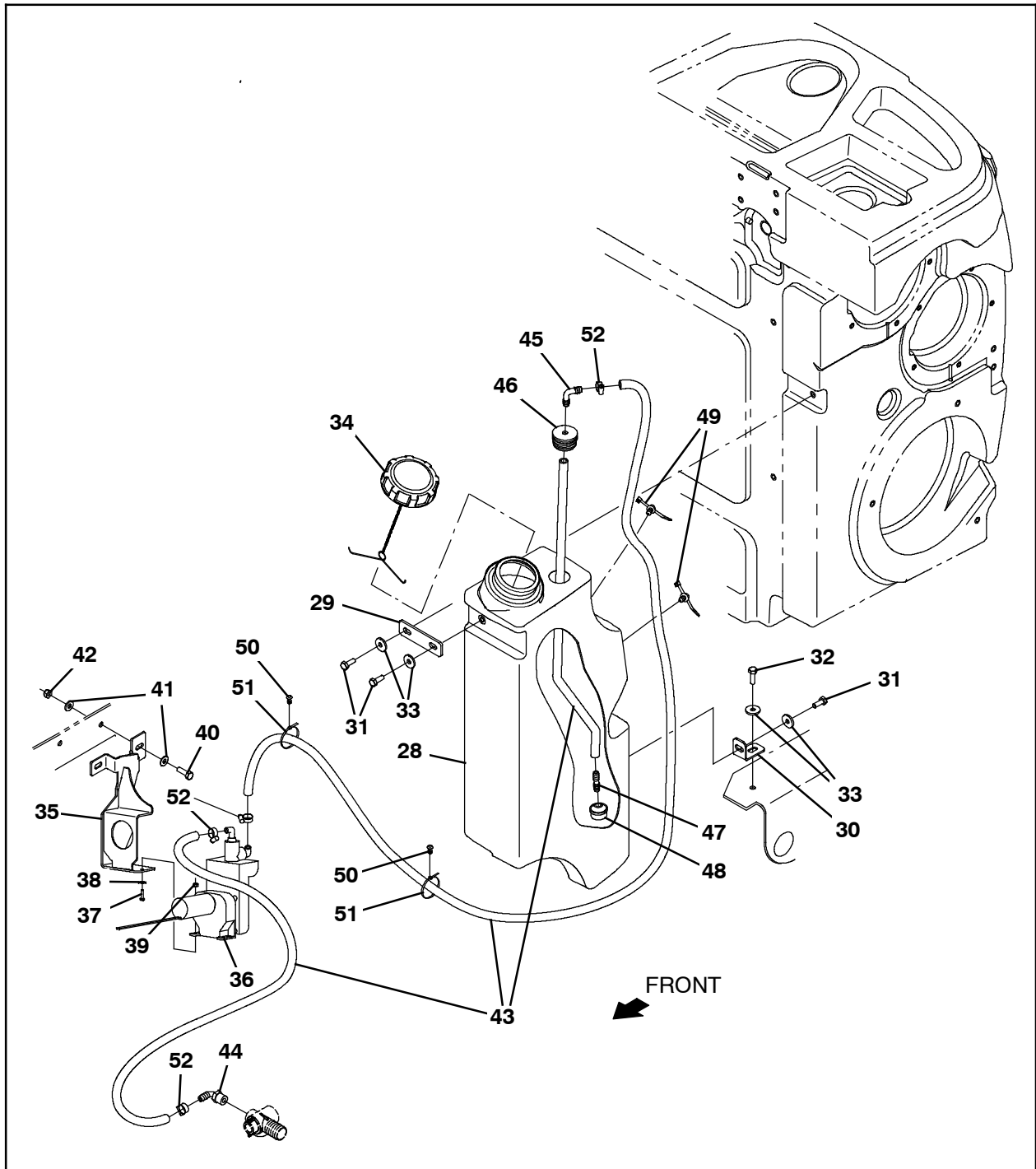


FIG. 15

T17 machines NA serial numbers (011000-) /
EU serial numbers (0400-) M17 All machines

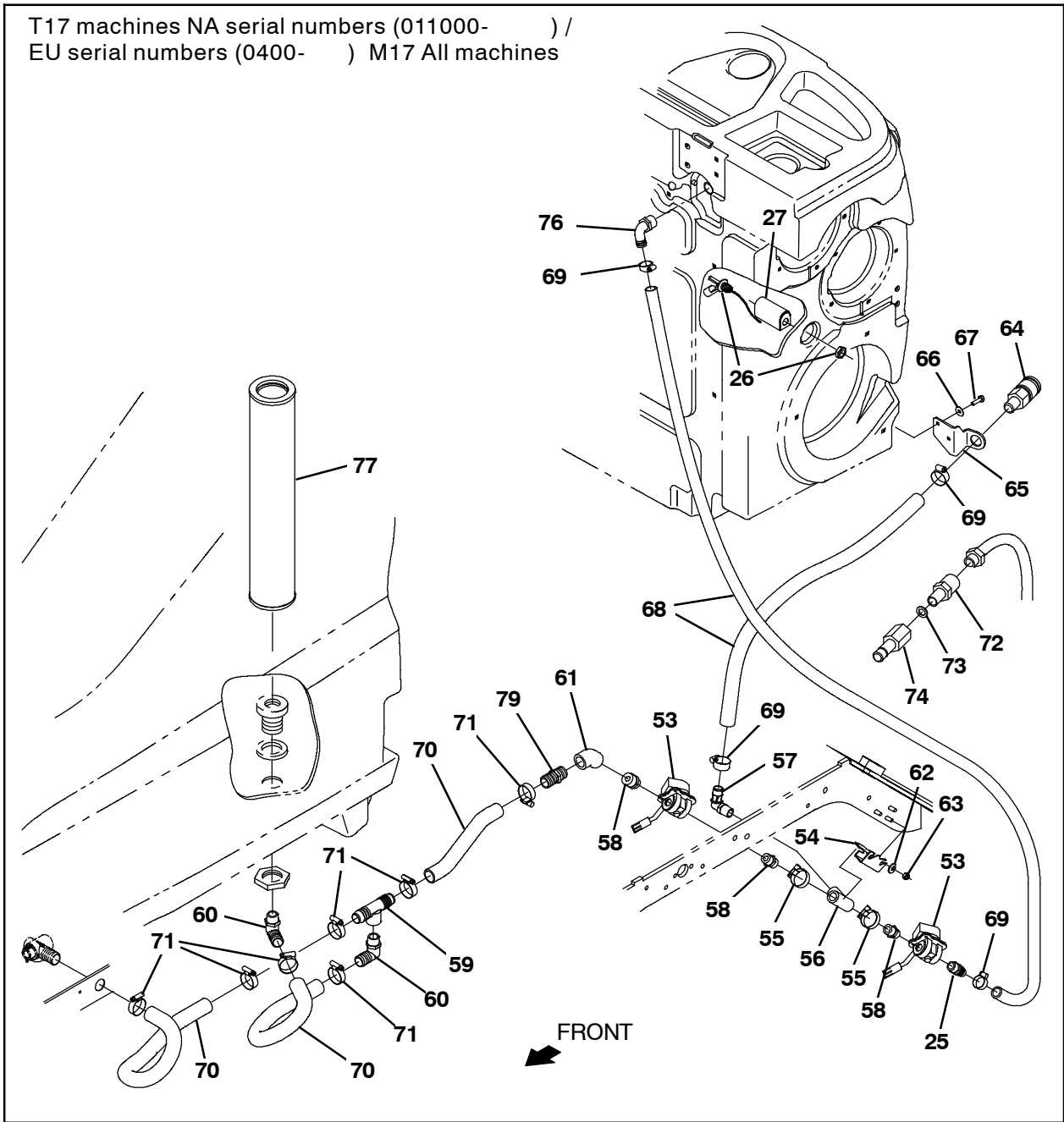


FIG. 16

T17 machines NA serial numbers (000000- 010999) /
EU serial numbers (0000- 0330)

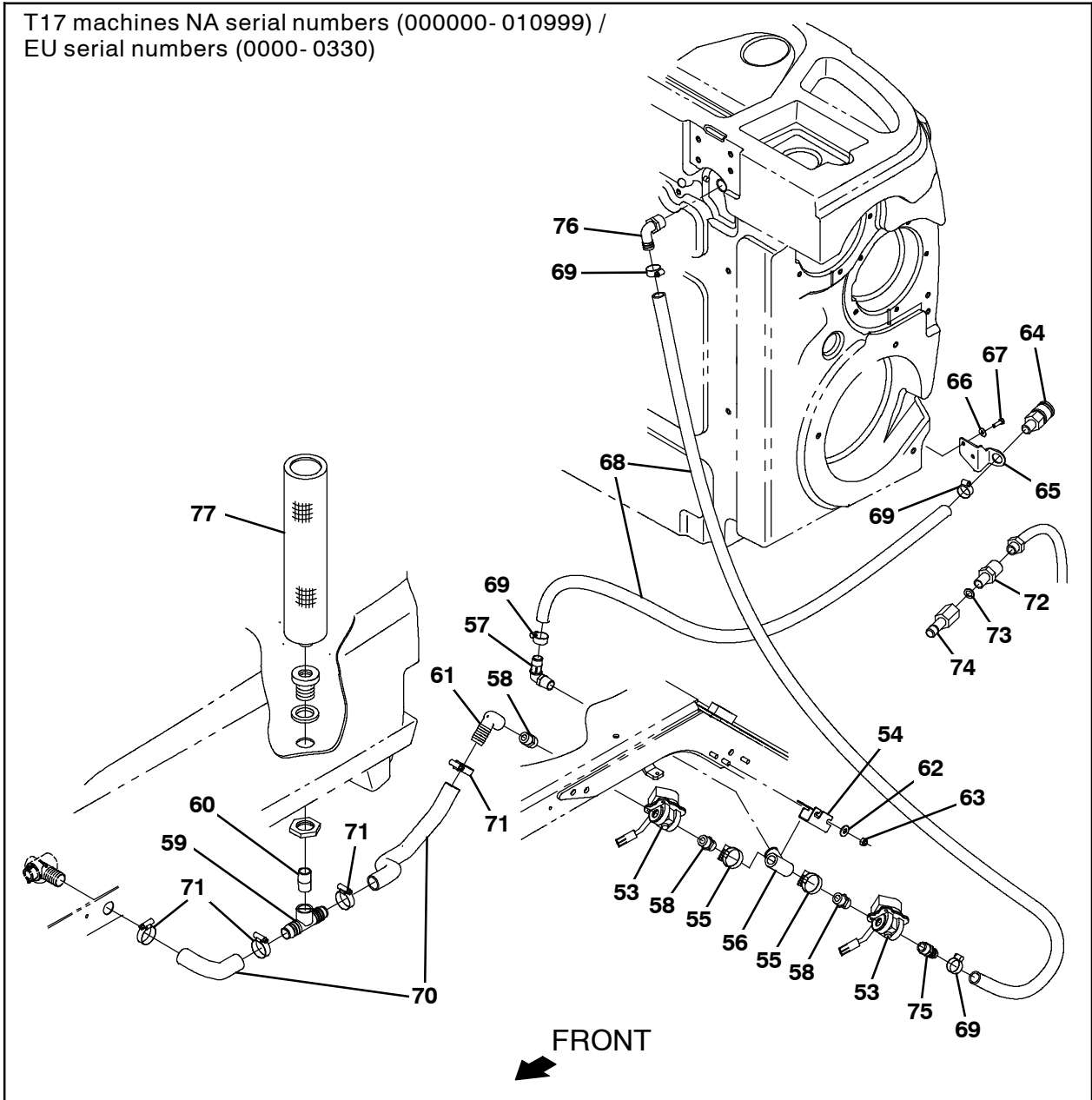


FIG. 17

Bill Of Materials For ES Kit, DI [T17] - 9020300

Ref.	Tennant Part No.	Description	Qty.	
1	1057978	Pump, Soltn, 36vdc, Impeller	1	
2	1207659	Bracket Weldmt, Mtg, Pump	1	
3	24196	Screw, Pan, Phl, M5 X 0.80 X 20, SS	4	
4	01683	Washer, Flat, 10, SS	4	
5	09739	Nut, Hex, Lock, M5 X 0.80, NI, SS	4	
6	09011	Screw, Hex, M8 X 1.25 X 30, SS	2	
7	01685	Washer, Flat, 0.38b 0.88d .08, SS	2	
8	73468	Fitting, Plstc, E90, Bm10/Pm12	2	
9	71628	Fitting, Plstc, Str, Bm10/Pm12 [Nylon]	1	
▽	10	78842	Valve Kit, Check, Pump, Water	1
▲	11	78840	Valve, Check, Pump, Water	1
▲	12	73342	Gasket, .25 1.88d 1.0id [Poron]	1
▲	13	78841	Flapper, Valve, Pump, Water	1
14	377349	Fitting, Plstc, Pf12/Pf12, BH	1	
15	1015032	Hose, Afmkt, PVC, Brd, 0.62id, 08ft, Clr	1	
16	54333	Clamp, Hose, Wormdrive, 0.31- 0.88d, .31w	4	
17	386652	Strainer, Soltn, 20mesh, Cyl, 3.5d 09.5l	1	
18	05134	Fitting, Plstc, Str, Pf12/Pf12	1	
19	14877	Fitting, Plstc, E90, Bm12/Pm12	2	
20	1006410	Hose, Afmkt, PVC, Brd, 0.75id, 03ft, Clr	1	
21	63810	Clamp, Hose, Wormdrive, 0.56- 1.06d, .56w	2	
22	1061954	Bracket, Strainer, Pump, ES	1	
23	09007	Screw, Hex, M6 X 1.00 X 25, SS	1	
24	76426	Washer, Sealing, 0.28b 0.75d SS, Neo	1	
25	08712	Nut, Hex, Lock, M6 X 1.00, NI, SS	1	
26	385685	Sensor, Level, Liq, 14vdc 01a .62- 11	1	
27	1019285	Bracket, Protector, Float Switch	1	
28	1207168	Tank, Detergent, Trimmed [T17]	1	
29	1208732	Plate, Mtg, Tank, Detergent	1	
30	1207750	Bracket, Mtg, Tank, Detergent	1	
31	12273	Screw, Hex, M8 X 1.25 X 20, NI, SS	3	
32	09011	Screw, Hex, M8 X 1.25 X 30, SS	2	
33	1017218	Washer, Flat, 0.32b 1.00d .12, SS	4	
34	1011885	Cap, Tank	1	
35	1213317	Bracket Wldt, Pump (Kit 9020300 Only)	1	
35	1225439	Bracket Wldt, Pump (Kit 9014966 Only)	1	
36	386364	Pump, Detgt, 36vdc	1	
37	24265	Screw, Pan, Phl, M4 X 0.70 X 16, SS	2	
38	01683	Washer, Flat, 10, SS	2	
39	33932	Nut, Hex, Lock, M4 X 0.70, NI, SS	2	
40	09010	Screw, Hex, M8 X 1.25 X 25, SS	2	
41	32490	Washer, Flat, 0.25, Std	4	
42	08713	Nut, Hex, Lock, M8 X 1.25, NI, SS	2	
43	1014981	Hose, Afmkt, PVC, Brd, 0.38id, 20ft, Clr	1	
44	1005630	Fitting, Plstc, E90, Bm06/Pm06, Nyl	1	

Ref.	Tennant Part No.	Description	Qty.
45	20951	Fitting, Plstc, E90, Bm06/Bm06	1
46	20944	Grommet, Pye, 0.37id, F/1.5h, .13 Matl	1
47	20950	Fitting, Plstc, Str, Bm06/Bm06	1
48	20952	Screen, Pump	1
49	1210807	Wire, Tie [W/.25" Fir Tree Clip]	2
50	1071085	Clip, Tie, 0.25d, Plstc	4
51	130773	Tie, Cable, Nyl, 11.0l, .14w, 3.0 Max. D	6
52	43844	Clamp, Hose, Wormdrive, 0.25-0.62d, .31w	4
53	41410	Valve, Water, Solenoid, 36vdc Pf08/Pf08	2
54	1207777	Bracket, Mtg, Ftg, Auto Fill (Kit 9020300 Only)	1
54	1220430	Bracket, Mtg, Ftg, Auto Fill (Kit 9014966 Only)	1
55	11399	Clamp, Hose, Wormdrive, 0.81-1.50d, .50w	2
56	79497	Fitting, Plstc, Tee, Pf08/Pf08/Pf08	1
57	63244-2	Fitting, Plstc, E90, Bm12/Pm08	1
58	86508	Fitting, Plstc, Str, Pm08/Pm08 (Kit 9020300 Only)	3
58	1005218	Fitting, Plstc, Str, Pm08/Pm12, Nyl (Kit 9014966 Only)	1
59	365096	Fitting, Plstc, Tee, Bm16/Pf12/Bm16, Br	1
60	69784	Fitting, Plstc, Str, Pm12/Pm12 Close (Kit 9020300 Only)	1
60	18595	Fitting, Plstc, E90, Bm16/Pm12 (Kit 9014966 Only)	2
61	1210841	Fitting, Plstc, E90, Bm16/Pf8 (Kit 9020300 Only)	1
61	10575	Fitting, Plstc, E45, Pf12/Pf12 (Kit 9014966 Only)	1
62	01685	Washer, Flat, 0.38b 0.88d .08, SS	2
63	08713	Nut, Hex, Lock, M8 X 1.25, NI, SS	2
64	24105	Fitting, Brs, QDC, Bm12/Qf08	1
65	1208043	Bracket, Mtg, Fitting, QDC	1
66	01684	Washer, Flat, 0.27b 0.69d .05, SS	2
67	12277	Screw, Hex, M6 X 1.00 X 20, NI, SS (Kit 9020300 Only)	2
67	11329	Screw, Hex, M6 X 1.00 X 16, NI, SS (Kit 9014966 Only)	2
68	1045034	Hose, Afmkt, PVC, Wir, 0.75id, 08ft, Clr	1
69	63810	Clamp, Hose, Wormdrive, 0.56-1.06d, .56w	4
70	1214095	Hose, Afmkt, PVC, Wir, 1.00id, 03Ft	1
71	11399	Clamp, Hose, Wormdrive, 0.81-1.50d, .50w	2
72	375321	Fitting, Brs, Str, Pm08/Garden Hose	1
73	01316	Washer, Flat, 0.66b 1.00d .12, Rbr	1
74	33295	Fitting, Brs, QDC, Pf08	1
75	78398	Fitting, Plstc, Str, Bm12/Pm08, Nyl	1
76	14877	Fitting, Plstc, E90, Bm12/Pm12	1
77	1208733	Filter, Soltn, 080mesh, Pm12 3.2d 17.5l	1
78	1217187	Flap, Restrictor, Check Valve	1
79	57379	Fitting, Plstc, Str, Bm16/Pm12 (Kit 9014966 Only)	1

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