



# INSTRUCTION BULLETIN

No. 340169  
Machine: 6100E,  
Nobles Rascal  
Published: 7-03  
Rev. 02

**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 numbers 83231 and 83437

## **SYNOPSIS / PROBLEM:**

This kit contains the parts needed to install a vacuum wand kit on the model 6100E sweeper. Please follow step-by-step instructions.

## **SPECIAL TOOLS / CONSIDERATIONS: NONE**

(Estimated time to complete: 1 hour)

## **PREPARATION:**

(Refer to FIG. 1 thru 13)

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

1. Lift the operator's seat and locate the battery compartment.
2. Disconnect battery cables from machine.
3. Remove the left side cover panel and locate the side mounted circuit breakers.



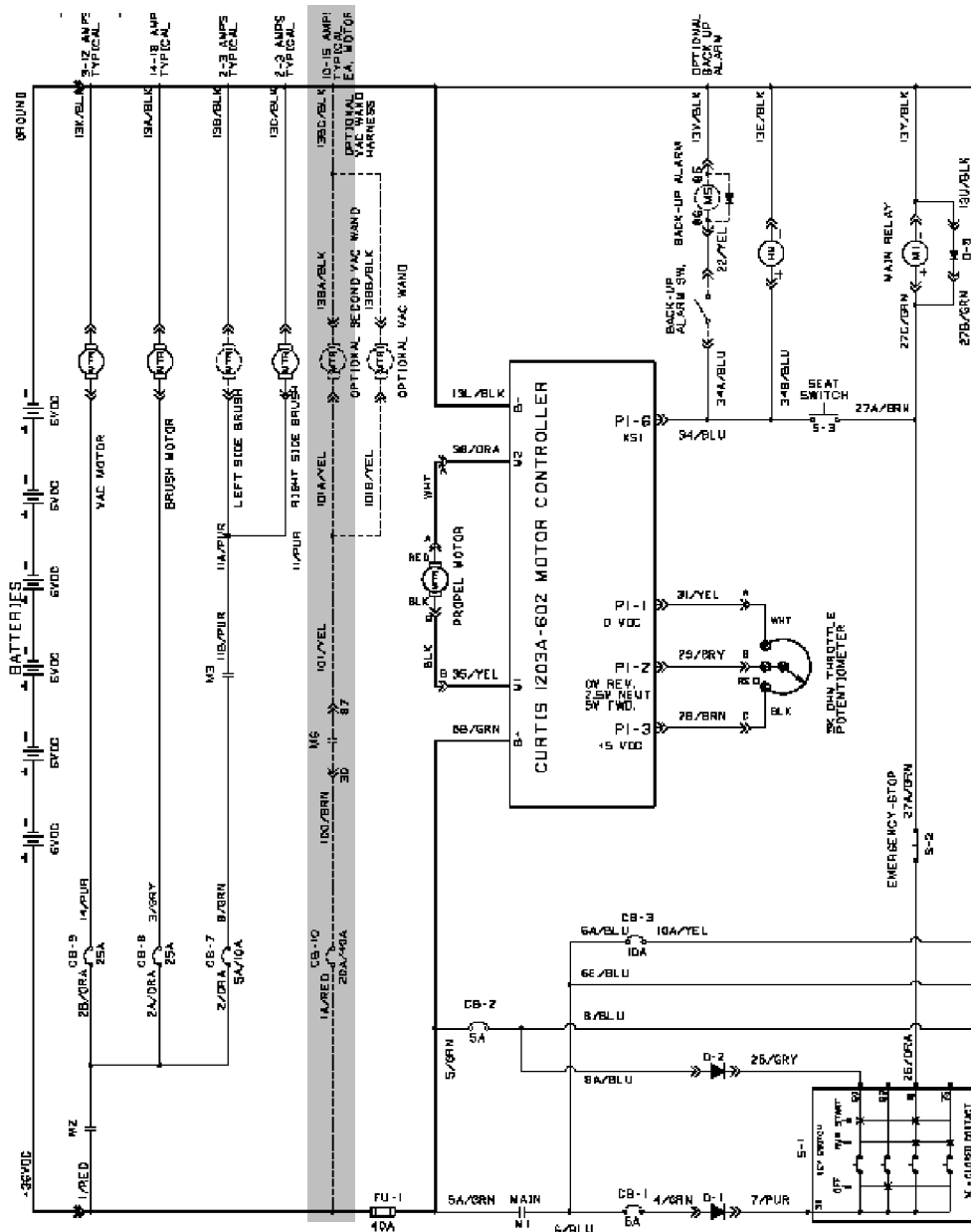
**WARNING: Always disconnect battery cables from machine before working on electrical components.**

## **INSTALLATION:**

(Refer to FIG. 1 thru 13)

1. Install the contactor and 20AMP or 40AMP circuit breaker (37) in the left side control panel, depending on which kit you are installing. The 40AMP circuit breaker is for the dual fan vacuum wand kit. (Refer to FIG. 1,2,3,4 and 10)
2. Install the grommet (36) and vacuum wand wire harness (35) according to the electrical schematic. Connect the relay and circuit breaker to the wire harness. (Refer to FIG.1,2,3,4 and 10)
3. Place vacuum wand box (1) on the rear of the machine, so that the vacuum motors (7) are accessible to the back side of the machine. (Refer to FIG. 7, 11 and 12)
4. Connect the electrical wires from the motor (7) to the wire harness under the vacuum box. (Refer to FIG. 1,2,3,4 and 7)
5. Connect the wiring from the limit switch (48) to the electrical harness of the machine. (Refer to FIG.9)

6. Mount the vacuum wand box (1) to the machine with four hex screws (32), washers (33) and flange nuts (34). (Refer to FIG. 6,11 and 12)
7. Assemble the hose cuff (25), flex hose (26), vac wand nozzle (27), vac wand coupling (28), vac wand tube (29), and the last vac wand coupling (30). Connect the hose assembly to the vacuum box, and hang the tube on the vac rod weldment (58). (Refer to FIG.13)
8. Mount the frame bracket (31) to the machine frame with two hex screws (32), flat washers (33) and flange nuts (34). Mount vacuum box screen (68), with four hex bolts (69) and washers (70). (Refer to FIG. 8,11 through 13)
9. Connect the batteries to the machine. Replace side panel and lower the seat.
10. Start the machine and check the vacuum wand for proper operation.



**FIG. 1 - Electrical Schematic for Wiring Vacuum Wand**

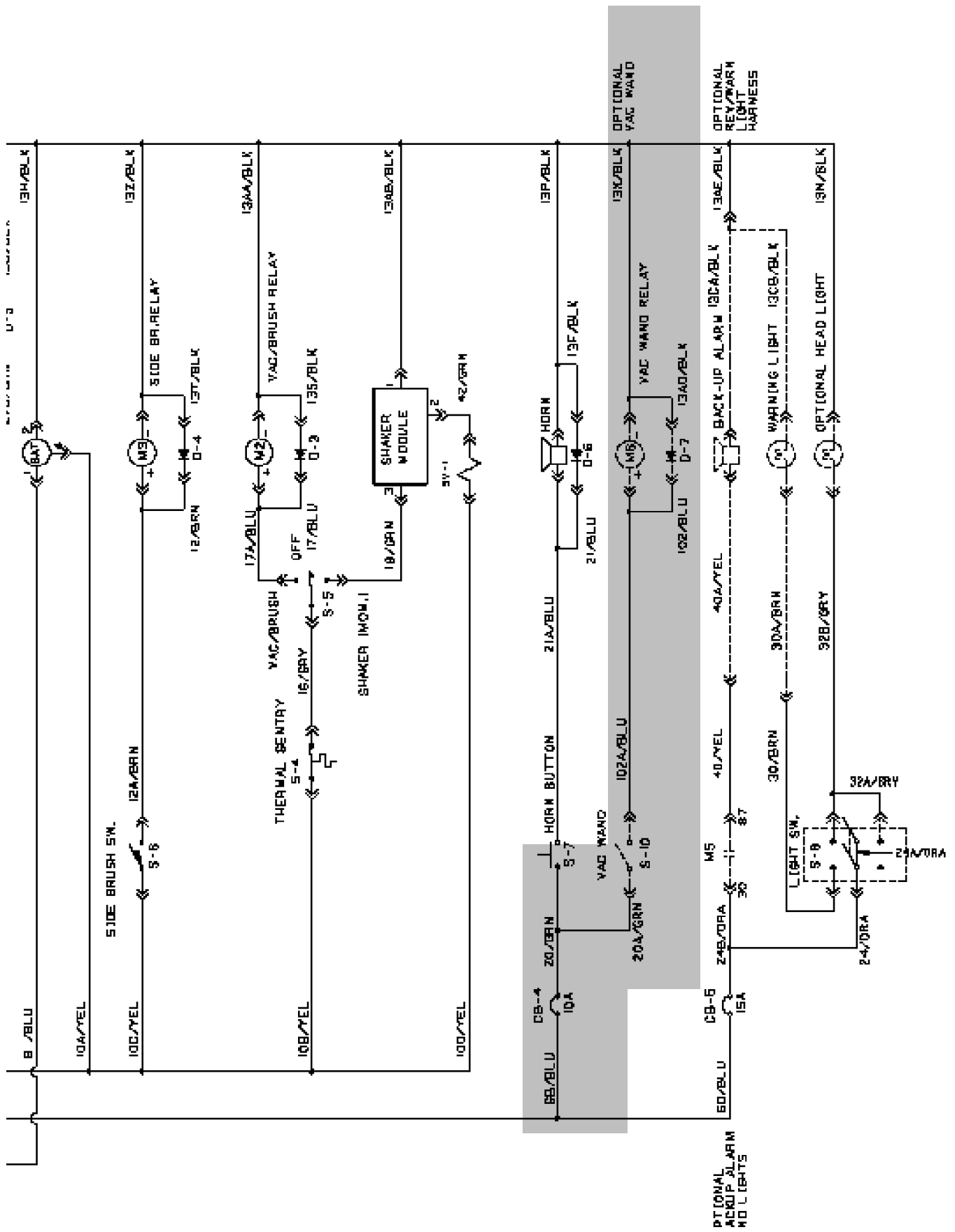


FIG. 2 - Electrical Schematic for Wiring Vacuum Wand

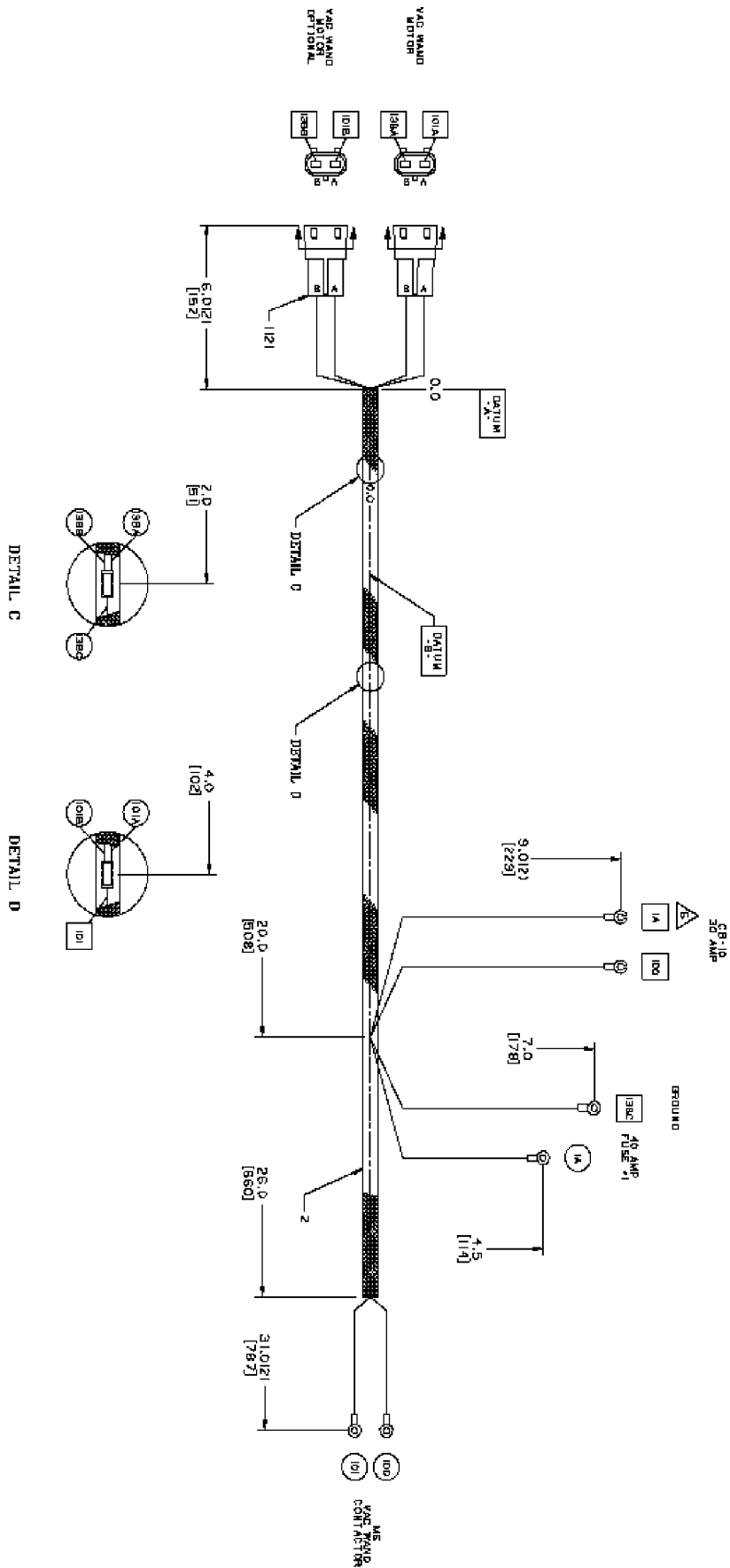
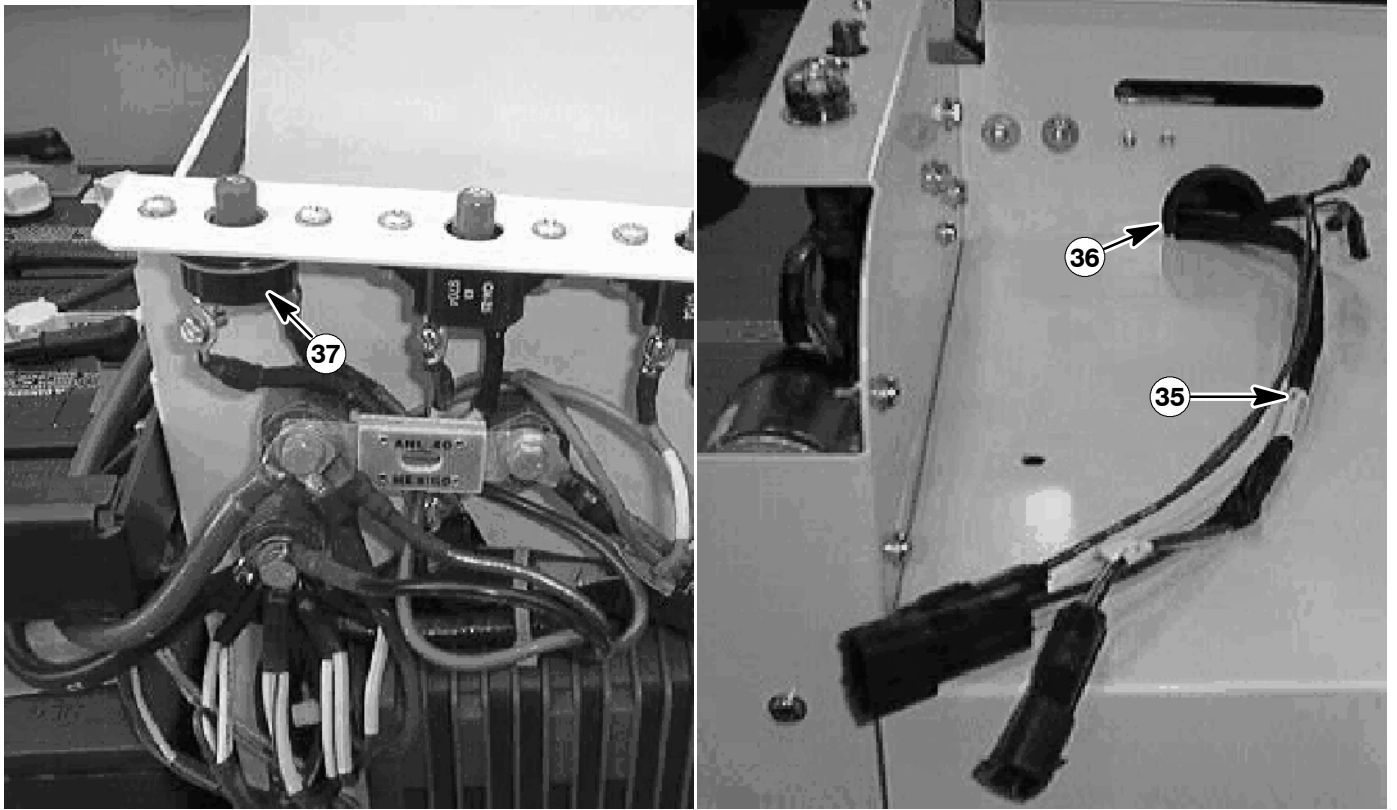
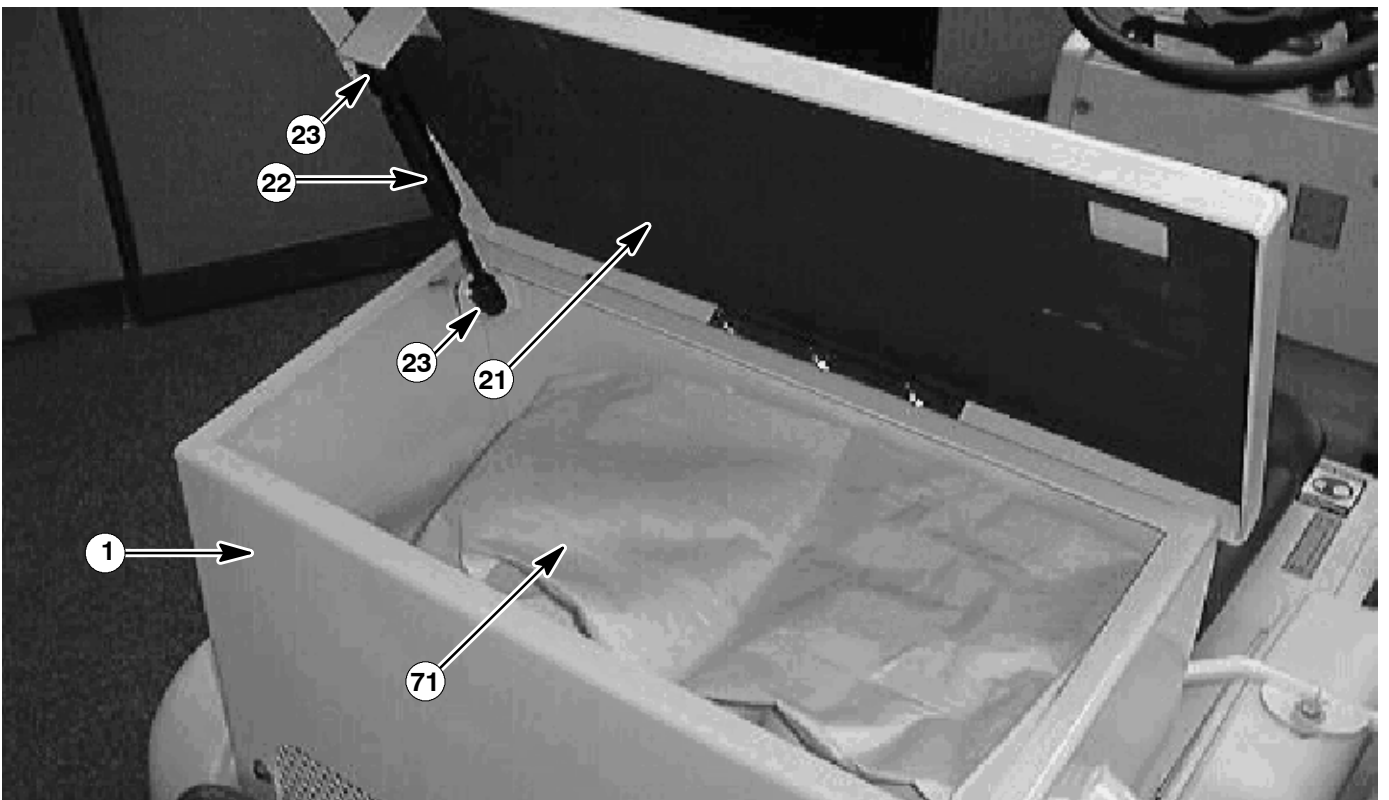


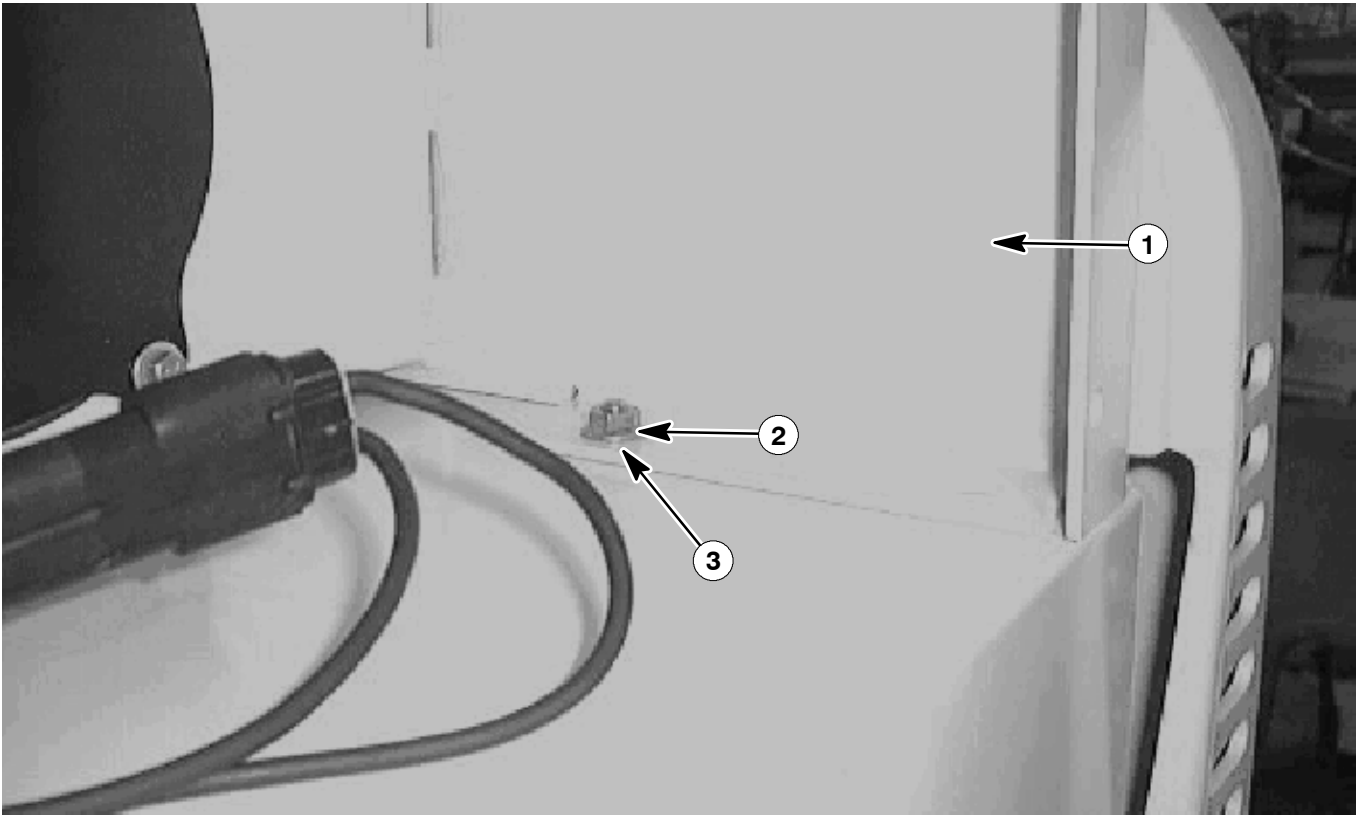
FIG. 3 - Vacuum Wand Wiring Harness



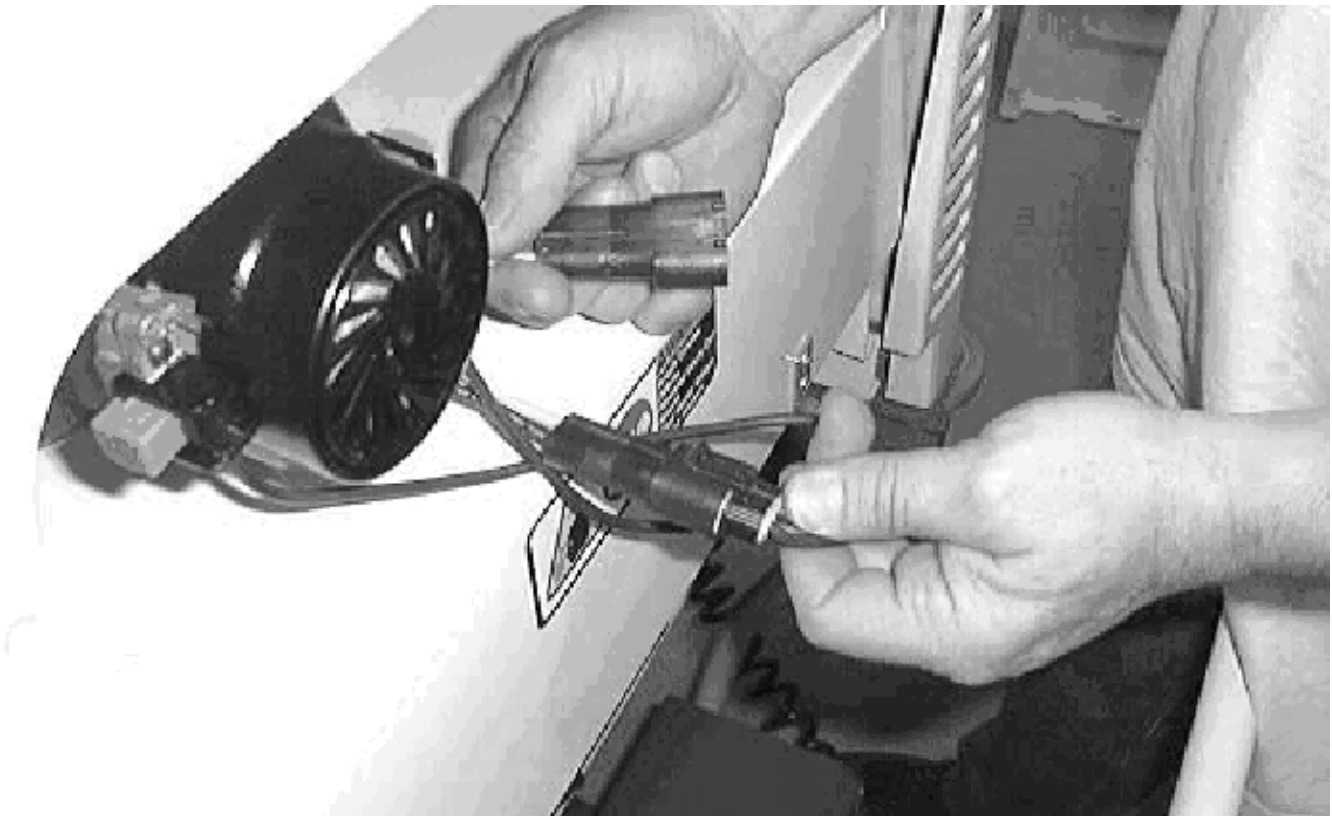
**FIG. 4 - Circuit Breaker and Electrical Harness Installation**



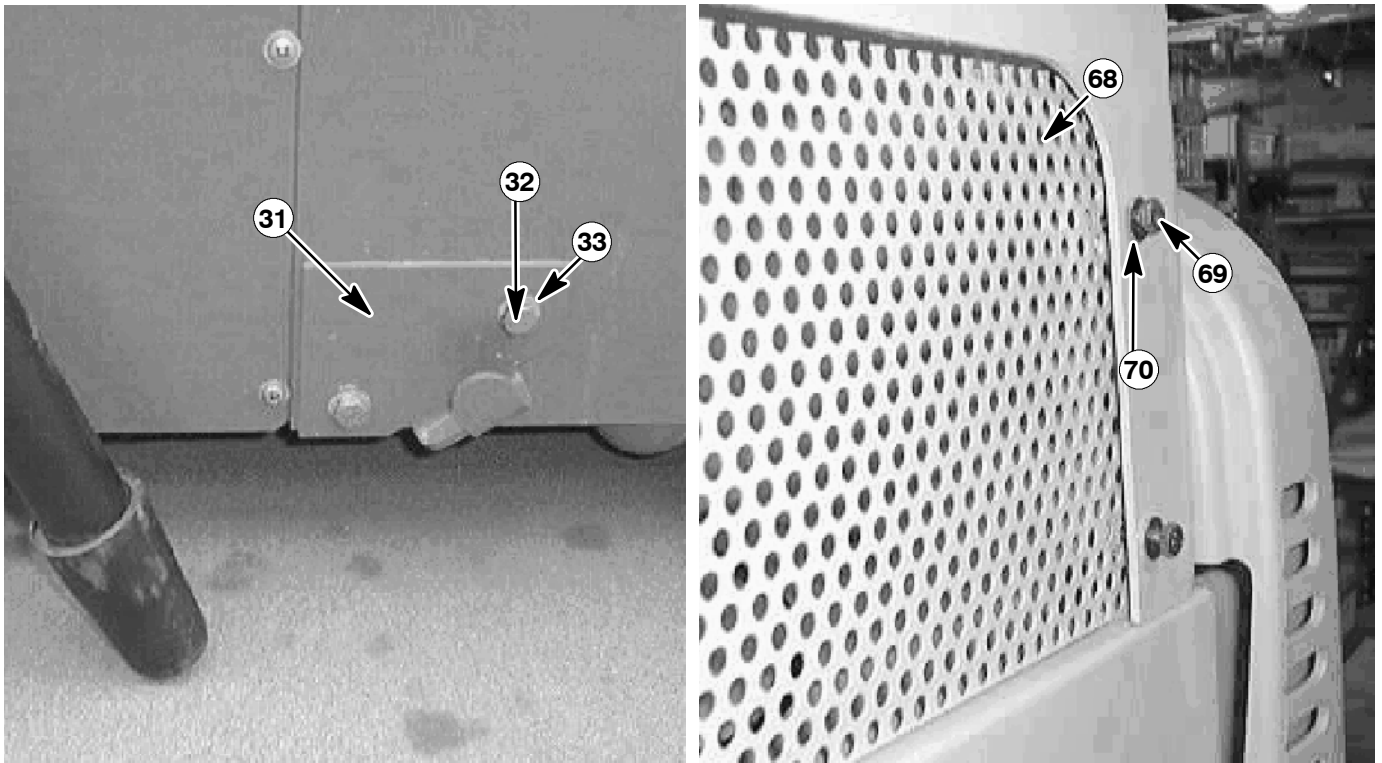
**FIG. 5 Gas Spring and Vacuum Bag Installation**



**FIG. 6 Vacuum Wand Box Installation**



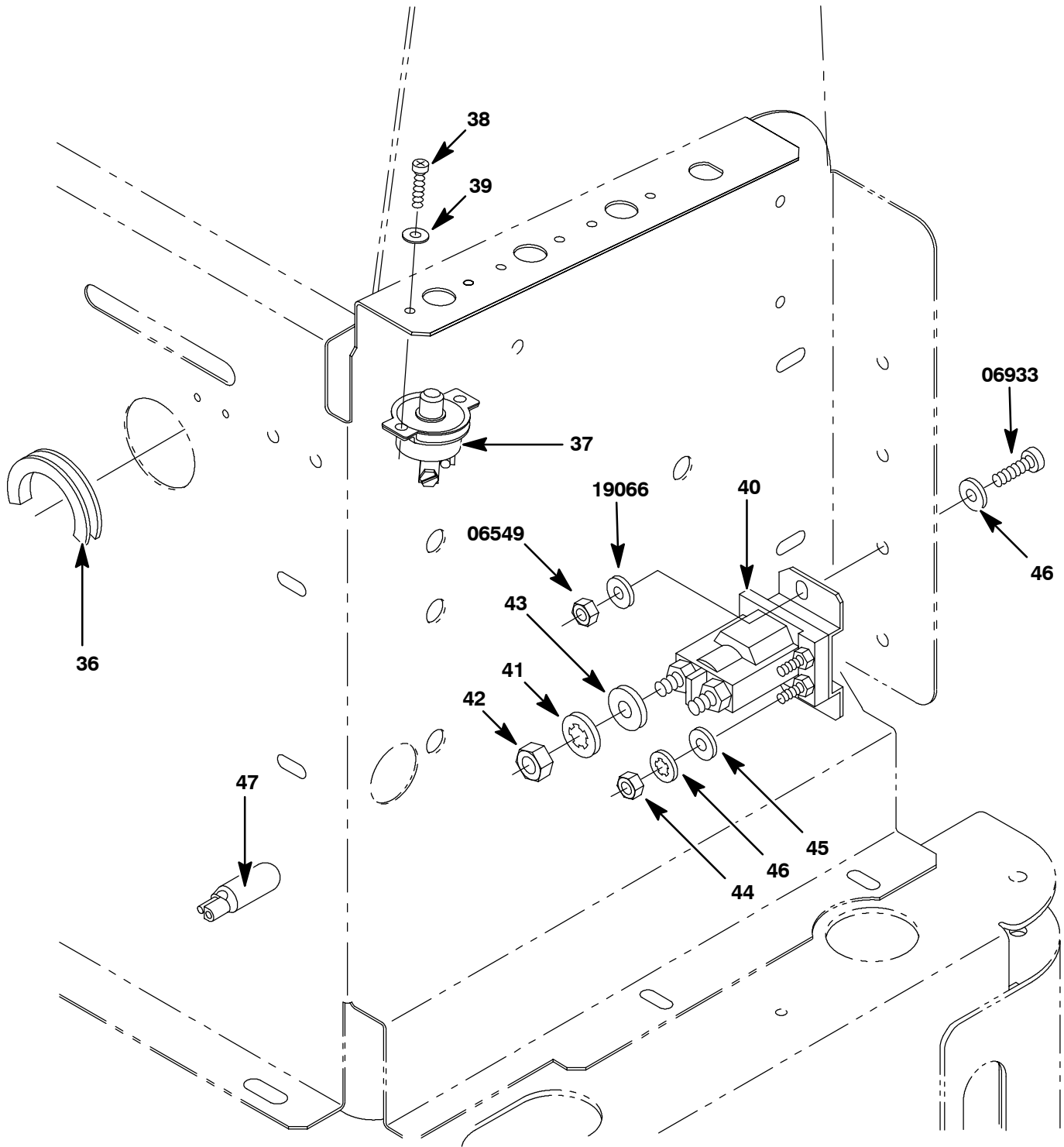
**FIG. 7 Vacuum Motor Electrical Connections**



**FIG. 8 Frame Bracket and Vacuum Box Screen Installation**



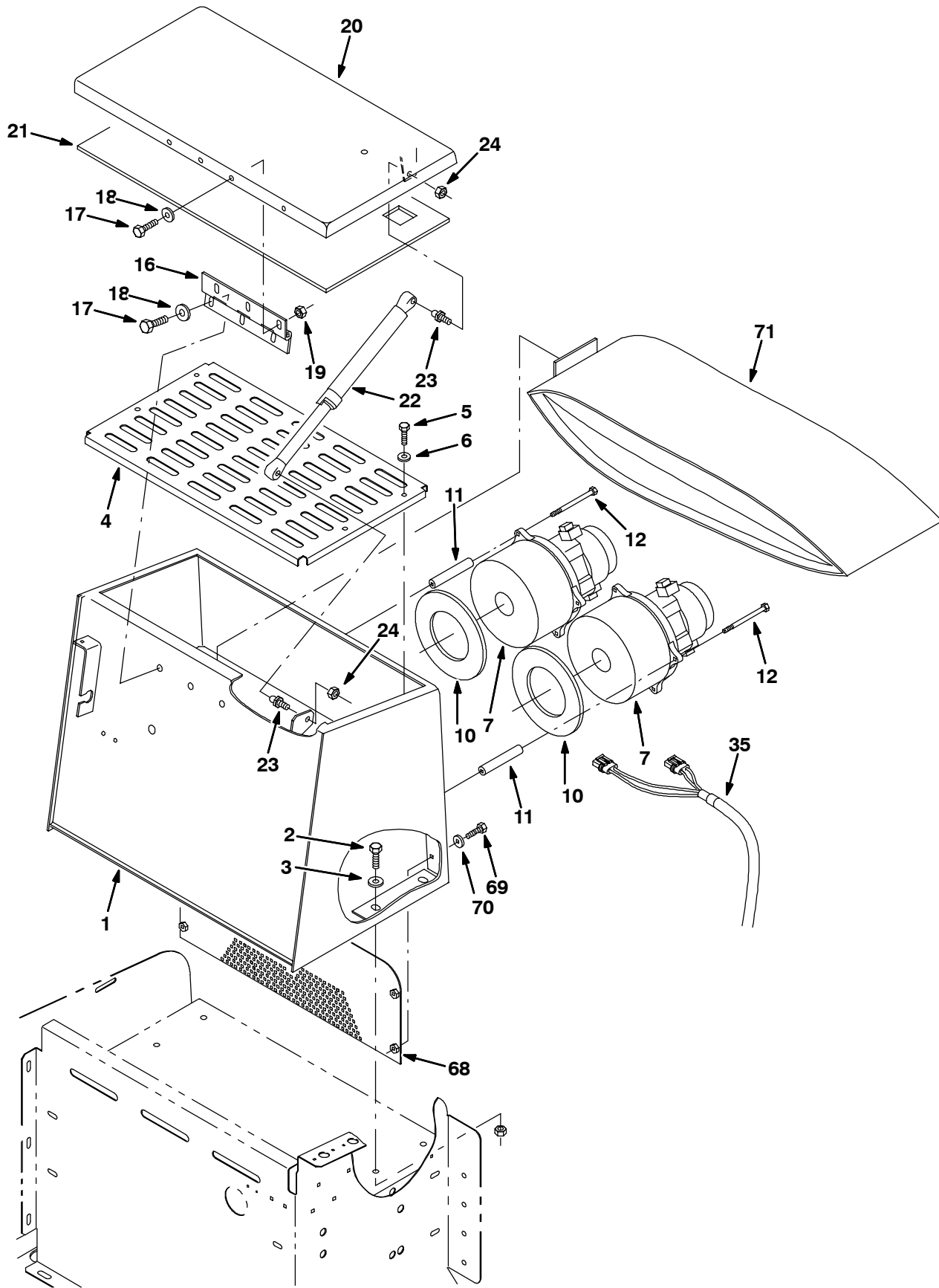
**FIG. 9 Electrical Limit Switch Connection**



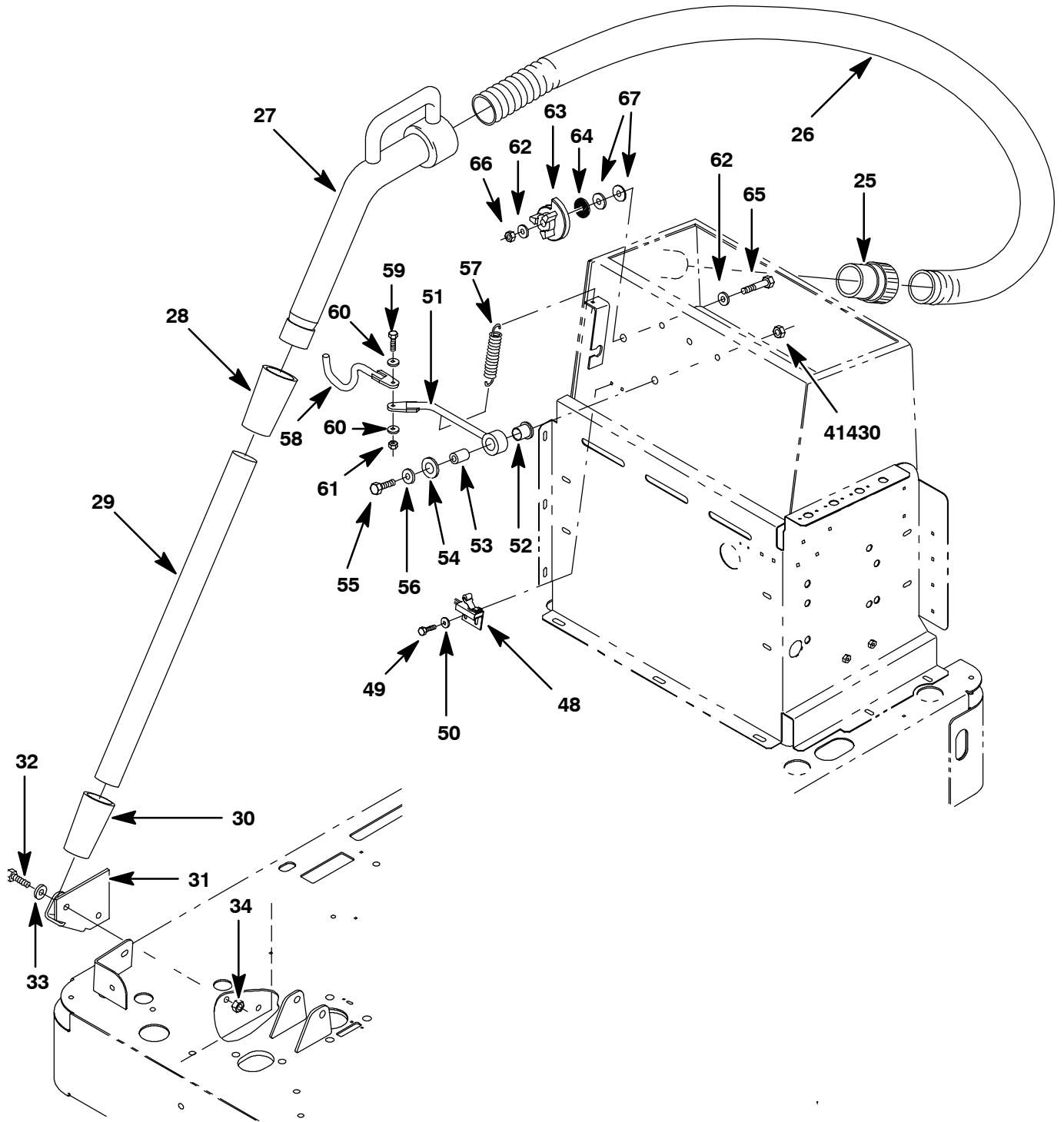
**FIG. 10 Vacuum Wand Electrical Installation**







**FIG. 12 Dual Fan Vacuum Wand Box Kit 83437**



**FIG. 13 Vacuum Hose and Wand Installation**

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

**BILL OF MATERIALS FOR VACUUM WAND KIT 83231**

<b>Ref.</b>	<b>TENNANT Part No.</b>	<b>Description</b>	<b>Qty.</b>
1	83268	Box assy, vac wand	1
2	39283	Hex screw, M10x1.5	4
3	32492	Flat washer, .38 hard	4
4	83273	Screen, vac wand	1
5	06945	Hex screw, M6x1.0	4
6	32490	Flat washer, .25 hard	4
7	398521	Fan, vac 36v 5.7" 3stg	1
8	10925	Connector, 2conductor	2
9	10926	Terminal, metripk630 fem	2
10	223264	Seal, fan	2
11	18811	Tube, 0.52d 0.25b 3.2l Stl. Pnt.	3
12	09773	Hex screw, 6x1	3
13	83277	Plate,cover	1
14	06943	Hex screw, M6x1.0	3
15	32490	Flat washer, .25 hard	3
16	86430	Reverse hinge, 2.50w	1
17	87308	Hex screw, M6 x1.0 x 12, 8.8	6
18	32483	Flat washer, 0.25 SAE	6
19	07790	Nut, hex, flng, M06 x 1.0	3
20	83279	Door wldt, Vac wand	1
21	83282	Door gasket	1
22	83278	Gas spring	1
23	58494	Gas spring ball stud	2
24	87435	Hxflexloc nut, .31-18 reg	2
25	83285	Hose cuff	1
26	83289	Flex hose, 2.0Dx24.0 LG	1
27	83286	Vac wand nozzle	1
28	83287	Vac wand coupling	1
29	83288	Vac wand tube	1
30	80299	Vac wand coupling	1
31	83296	Frame bracket	1
32	39283	Hex screw, M10x1.5	2
33	32492	Flat washer, .38 hard	2
34	07792	Hex flange nut, M10x1.5	2
35	81929	Vac wand wire harness	1

**BILL OF MATERIALS FOR VACUUM WAND KIT 83231**

<b>Ref.</b>	<b>TENNANT Part No.</b>	<b>Description</b>	<b>Qty.</b>
36	47080	Rubber grommet, 1.36ID	1
37	222296	Circuit breaker, 20AMP	1
38	25006	Pan screw, 08-32x0.88	2
39	19065	Flat washer, 08	2
40	386810	Relay, 36VDC, 100A, SP N/O	1
41	32984	Int loc washer, .31	2
42	20170	Jam Hex nut, .31-24	2
43	39349	Flat washer, .31	2
44	01713	Std Hex nut, 10-32	2
45	19324	Flat washer 10, sae	2
46	32980	Int loc washer, 10	2
47	222290	Elec. diode plug	1
48	59962	Roller switch assembly	1
49	09244	Hex screw, M5x0.8	2
50	19066	Flat washer, 10	2
51	83298	Vac wand rod wldt.	1
52	72763	Flange bearing, .750bore, .75L	1
53	73370	Sleeve, .414B, .74D, 1.06STL	1
54	04846	Thrust washer	2
55	06962	Hex screw, M10x1.5	1
56	32492	Flat washer, .38 hard	1
57	25737	Tension spring, .75ODX .07wire	1
58	83309	Vac wand rod wldt	1
59	06943	Hex screw, M6x1.0	1
60	32490	Flat washer, .25 hard	2
61	08708	Hxlocnylon nut	1
62	32491	Washer, flat, 0.31 STD	2
63	222244	Cam, adj, sqge	1
64	222268	Washer, 0.38B 1.25D 0.12, NEO	1
65	39278	Screw, hex, M8 X 1.25 NL	1
66	08709	Nut, hex, lock, M8 X 1.25 NL	1
67	64153	Washer, 0.34D 1.12D stl, pl	2
68	385663	Vac wand screen	1
69	06942	Hex screw, M6x1.0	4
70	32490	Flat washer, .25 hard	4
71	83269	Vac wand bag	1

**BILL OF MATERIALS FOR [DUAL VAC FAN] VACUUM WAND KIT 83437**

<b>Ref.</b>	<b>TENNANT Part No.</b>	<b>Description</b>	<b>Qty.</b>
1	83268	Box assy, vac wand	1
2	39283	Hex screw, M10x1.5	4
3	32492	Flat washer, .38 hard	4
4	83273	Screen, vac wand	1
5	06945	Hex screw, M6x1.0	4
6	32490	Flat washer, .25 hard	4
7	398521	Fan, vac 36v 5.7" 3stg	2
8	10925	Connector, 2conductor	3
9	10926	Terminal, metripk630 fem	4
10	223264	Seal, fan	2
11	18811	Tube, 0.52d 0.25b 3.2l Stl. Pnt.	6
12	09773	Hex screw, 6x1	6
13	83277	Plate,cover	1
14	06943	Hex screw, M6x1.0	6
15	32490	Flat washer, .25 hard	3
16	86430	Reverse hinge, 2.50w	1
17	87308	Hex screw, M6 x1.0 x 12, 8.8	6
18	32483	Flat washer, 0.25 SAE	6
19	07790	Nut, hex, flng, M06 x 1.0	3
20	83279	Door wldt, Vac wand	1
21	83282	Door gasket	1
22	83278	Gas spring	1
23	58494	Gas spring ball stud	2
24	87435	Hxflexloc nut, .31-18 reg	2
25	83285	Hose cuff	1
26	83289	Flex hose, 2.0Dx24.0 LG	1
27	83286	Vac wand nozzle	1
28	83287	Vac wand coupling	1
29	83288	Vac wand tube	1
30	80299	Vac wand coupling	1
31	83296	Frame bracket	1
32	39283	Hex screw, M10x1.5	2
33	32492	Flat washer, .38 hard	2
34	07792	Hex flange nut, M10x1.5	2
35	81929	Vac wand wire harness	1

**BILL OF MATERIALS FOR VACUUM WAND KITS 83437**

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36	47080	Rubber grommet, 1.36ID	1
37	222296	Circuit breaker, 20AMP	2
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46	32980	Int loc washer, 10	2
47	222290	Elec. diode plug	1
48	59962	Roller switch assembly	1
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50	19066	Flat washer, 10	2
51	83298	Vac wand rod wldt.	1
52	72763	Flange bearing, .750bore, .75L	1
53	73370	Sleeve, .414B, .74D, 1.06STL	1
54	04846	Thrust washer	2
55	06962	Hex screw, M10x1.5	1
56	32492	Flat washer, .38 hard	1
57	25737	Tension spring, .75ODX .07wire	1
58	83309	Vac wand rod wldt	1
59	06943	Hex screw, M6x1.0	1
60	32490	Flat washer, .25 hard	2
61	08708	Hxlocnylon nut	1
62	32491	Washer, flat, 0.31 STD	2
63	222244	Cam, adj, sqge	1
64	222268	Washer, 0.38B 1.25D 0.12, NEO	1
65	39278	Screw, hex, M8 X 1.25 NL	1
66	08709	Nut, hex, lock, M8 X 1.25 NL	1
67	64153	Washer, 0.34D 1.12D stl, pl	2
68	385663	Vac wand screen	1
69	06942	Hex screw, M6x1.0	4
70	32490	Flat washer, .25 hard	7
71	83269	Vac wand bag	1
72	222283	Circuit breaker, 40AMP	1