



## Electronic Service Manuals

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**Serving the Cleaning Industry Since 1922**

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# Challenger

The simple and dependable carpet extractor

## Reference Manual

Machine Serial Number:

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# Castex

Castex Industries Inc.  
4240 Blue Star Hwy., Holland, Michigan 49423  
800-253-7871 616-392-6966

# CHALLENGER SERVICE MANUAL

## A. SET UP AND OPERATION: (Numbers refer to part drawings.)

1. Fill the clean water tank with hot water and the proper amount of CASTEX Cleaning Agent. Always mix powder chemicals in the filling bucket - **DO NOT MIX POWDER CHEMICALS IN THE MACHINE!**

### WARNING:

Use a clean bucket to fill the machine. Empty dirty water into another bucket. Always be certain to use **SEPARATE BUCKETS** to fill and to empty machine. Perfectly clean water must be in the clean water tank to avoid fouling the internal system.

2. Be certain the drain valve at the front of the machine #19 is shut and then plug the machine in. **DO NOT OPERATE THE MACHINE WITHOUT A GROUND PIN!** The third prong on the plug is necessary to avoid an electrical hazard.
3. Connect the vacuum hose to the machine at #25 and to the floor tool at #51.
4. Connect the solution hose to the machine at #24 and to the floor tool at #65.
5. In sequence, turn on the solution pump switch then the vacuum switch.

### NOTE:

The solution pump runs only when the floor tool trigger #66 is engaged.

6. To operate, squeeze the floor tool valve handle #66 while drawing the floor tool toward you with the opening held steadily against the carpet.

### NOTE:

When using the optional hand tool the pump will cycle on and off because of the decreased flow of water.

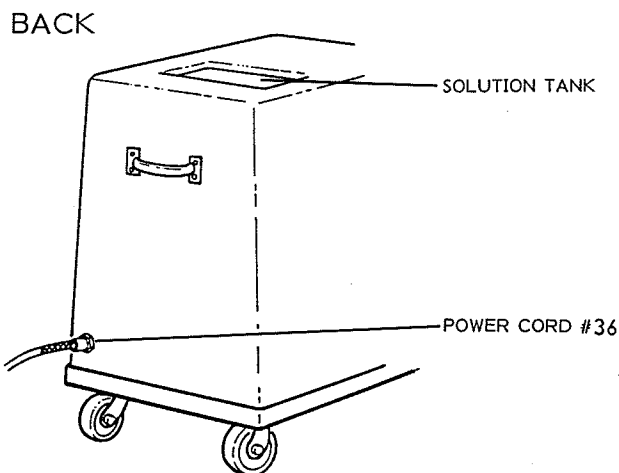
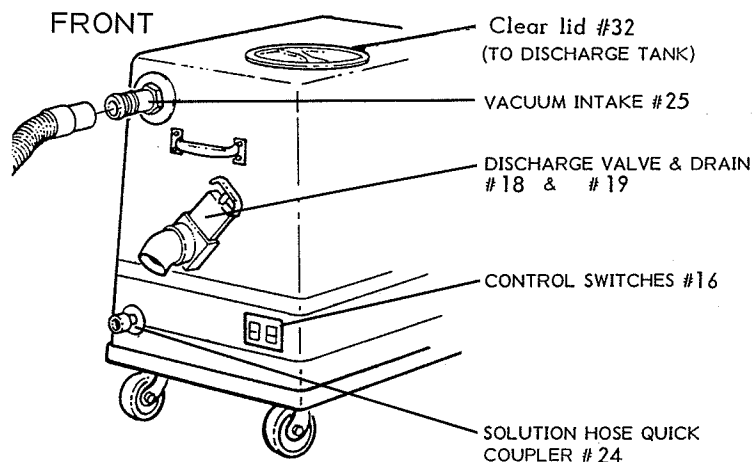
7. As the machine is used, dirty solution will begin to fill the discharge tank. When the tank is full, a float will shut off the flow of air to the vacuum motors at #29 which will stop the vacuum function. The vacuum motor will continue to run but there will be

no suction at the floor tool. Turn the machine off immediately.

### NOTE:

Excessive foaming will not cause this float to shut down the vacuum. Use CASTEX Anti-Foam to control foaming and to protect the vacuum motor.

8. To empty the discharge tank, turn the machine off and then position a discharge bucket under the drain valve down spout #18. Pull the valve T-handle #22 to empty the dirty water. Be certain this valve is closed before continuing operation. To avoid overfilling, empty the recovery tank every time you fill the clean water tank - be sure to use separate buckets!
9. Be certain the standpipe screen at #27 and the clean water filter #39 are kept clean. Just unscrew and rinse to clean the clean water filter. With the machine off, lift vacuum shutoff lid at #29 and clean out lint.



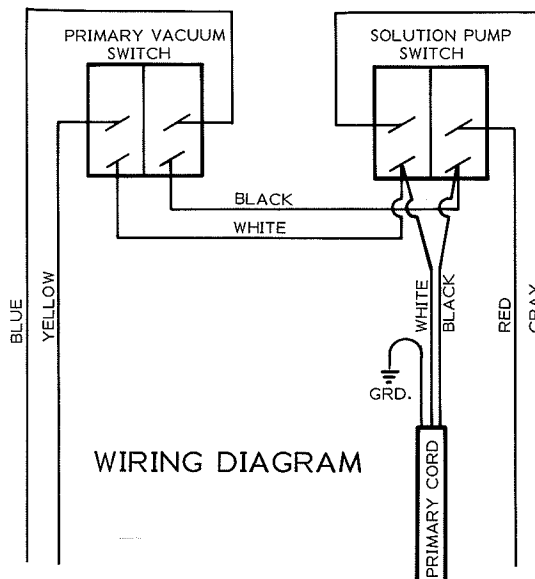
## B. WHEN FINISHED:

1. Turn off all switches.
2. Drain the recovery tank by opening valve #22 and catching the dirty solution in a bucket. Clean drain valve seat by turning on the vacuum, putting one hand over the vacuum hose intake #25 and one over the drain #18 and slowly lifting the hand on the drain. Do this 2 - 3 times. This will significantly extend the life of the drain valve seat. Close the valve.
3. Vacuum unused solution from the clean water tank into the recovery tank.
4. Drain and rinse recovery tank and clean all filters (#25, at #27, at #39 #57). Once again, dry the drain valve seat as described above.
5. Disconnect the solution and the vacuum hoses from the floor tool and from the machine.
6. Drain the floor tool by turning it upside down and pulling the trigger.
4. Polish the fiberglass case with car wax approximately once a month to keep your image clean.
5. It is suggested that you maintain a filter at the vacuum hose intake #25. The filter is actually a ladies knee-high nylon stocking. The band at the top of the stocking fits around the vacuum intake nozzle and the toe of the stocking trails into the recovery tank. The vacuum hose fits right over the nylon's band to hold it all in place. As the machine is used, any large debris pulled up into the vacuum system is caught in the nylon stocking. To change the stocking, turn the machine off, support the full nylon stocking in the recovery tank with your hand and remove the stocking band from the vacuum intake through the access port on top of the machine. A stocking can be rinsed and reused as long as it develops no holes.

DO NOT ALLOW THE MACHINE TO FREEZE! If the machine must be stored in freezing temperatures, be sure that the machine, pump, and floor tool are completely drained and dry.

## C. SUGGESTED MAINTENANCE:

1. Keep all filters and screens clean (#25, #27, at #39, at #57).
2. Every forty (40) hours of operation run Brown-Ex through the pump and tanks. Pour approximately 2 cups of Brown-Ex into the clean water tank. Turn on solution pump and let Brown-Ex run through and sit in the system overnight in above freezing temperatures. This dissolves the normal alkaline accumulations in the system.
3. Thoroughly rinse the recovery tank with a hose through the access port after every use.



### GENERAL SERVICE POLICY:

Whenever ordering parts or requesting any type of service, specify:

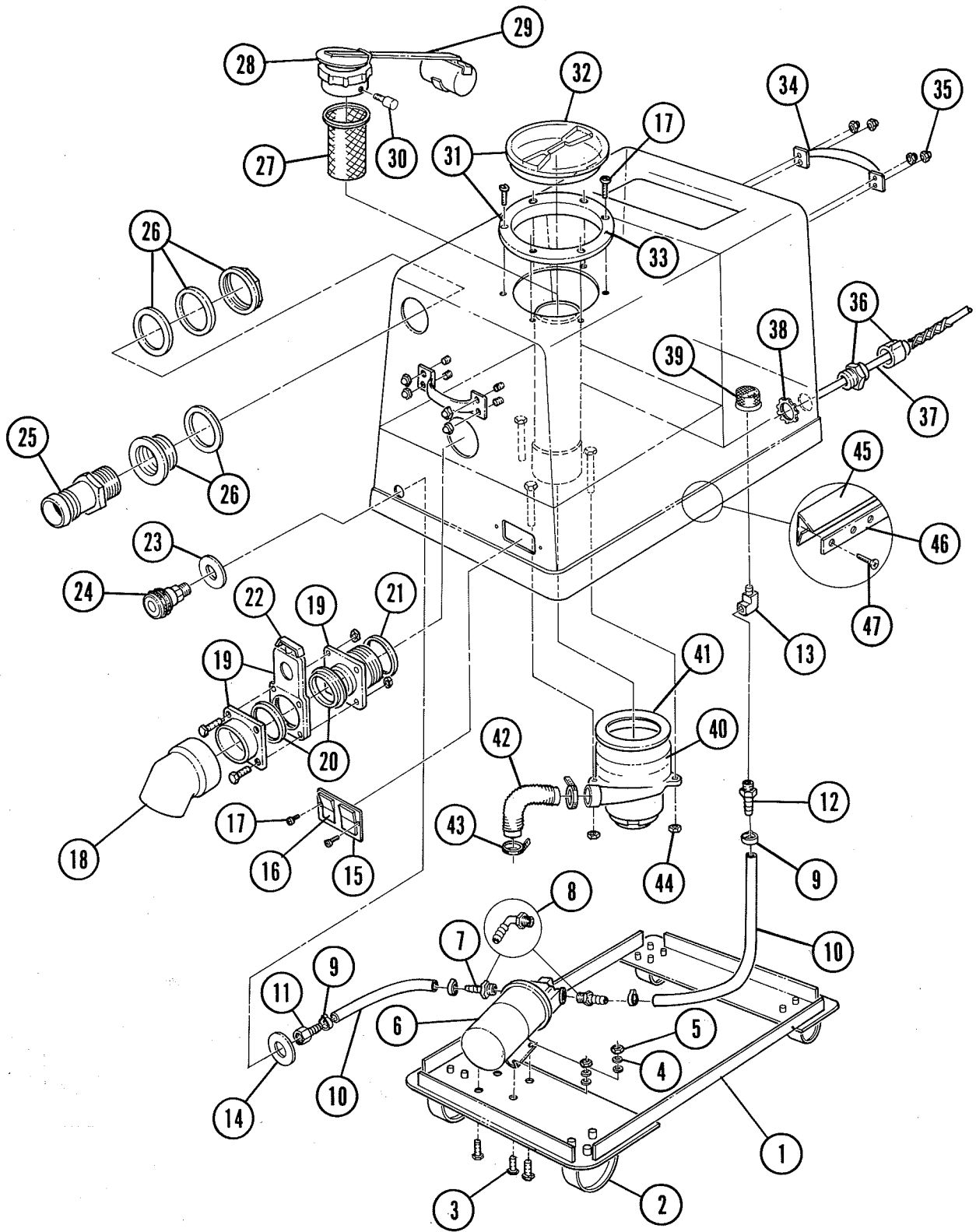
- a. The model of the machine
- b. The serial number of the machine
- c. The size wand you are using

All parts returned to the factory must arrive prepaid with a return authorization number. Always enclose a note indicating the above plus what exactly is wrong with the returned part, your name and your address. Always order parts by part number and description.

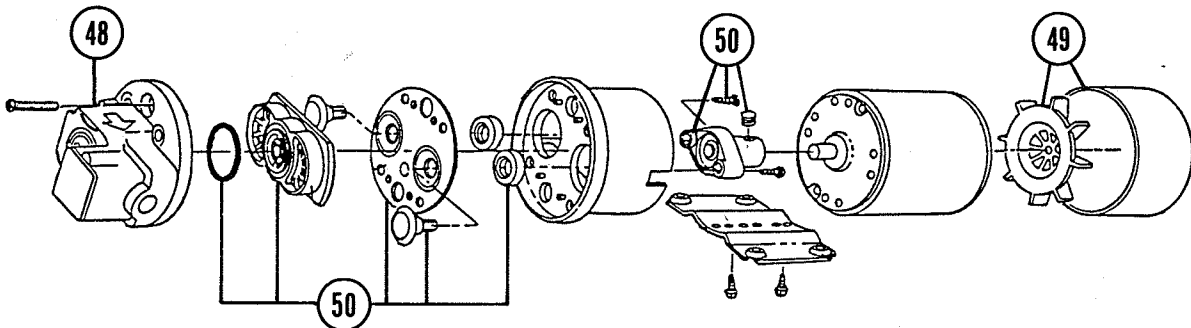
## CHALLENGER PARTS LIST

<u>Code Number</u>	<u>Part Number</u>	<u>Description</u>	<u>Code Number</u>	<u>Part Number</u>	<u>Description</u>
1	100510	#500 frame	27	100024	2" screen w/pvc flange
	100715	#700 frame	28	100003	Gasket 3" vac shut off
	100910	#900 frame	29	100011	3" auto shutoff
	101410	#1400 frame	30	140880	Thumb screw nylon
2	103000	Caster	31	100102	Lid cup (complete)
3	140229	Bolt 5/16" x 5/8"	32	100105	Clear lid
4	140027	5/16" washer	33	100109	Outer ring (black)
5	140513	Lock nut	34	100076	Handle (black)
6	180115	100 psi flojet	35	140502	#10 - 24 acorn (black)
7	150540	1/4" mpt x 3/8" hose barb	36	130121	Cord grip
8	150415	1/4" mp x 3/8" H 90° hose barb	37	130209	14/3 x 18' cord
9	140301	Pinch clamp 170	38	130210	14/3 x 28' cord #1400
10	160503	6 3/4" x 3/8" hose #500, #700, #900	39	140504	Nut 1/2" locking conduit
	160505	7 1/2" x 3/8" hose #1400, #500	40	180625	Clean water filter (ballscreen)
	160502	11 1/2" x 3/8" hose #700, #900	41	130400	2 stage vacuum blower
	160504	14 1/2" x 3/8" hose #1400	42	130404	3 stage vacuum blower
11	150511	1/4" F x 3/8" H hose barb	43	100001	Vacuum gasket
12	150507	1/2" mpt x 3/8" H hose barb	44	100440	Exhaust hose (cut to fit)
13	150405	3/8" x 1/2" st. 90°	45	130041	Wire ties
14	140009	1/2" SAE washer	46	140513	Nut lock nylon
15	130720	Switch plate		100063	70" bumper #500
16	130700	Switch lighted rocker		100064	79" bumper #700
17	140826	#6 x 3/4" screw		100065	77" bumper #900
18	210232	Down spout		100066	95" bumper #1400
19	210231	Drain valve complete		100052	13" bumper rail #500, #700, #900
20	210239	Drain valve gate seal		100053	18" bumper rail #500, #1400
21	210234	Drain valve gasket		100054	21" bumper rail #700, #900
22	210233	Drain valve handle		100055	26" bumper rail #1400
23	140005	1/2" fender washer	47	140857	#10 x 1" wafer screw
24	150920	Quick coupler	48	190406	Upper housing assy.
25	150500	Hose barb 1 1/2"	49	190407	Fan shroud kit
26	150301	Fitting 1 1/2"	50	190405	Service kit H.P. pump

Your CASTEX CHALLENGER is engineered to be easily repaired. Should a problem occur, you should be able to make the proper repairs without an experienced serviceman. If a problem occurs which you cannot solve, contact your distributor or CASTEX Industries.

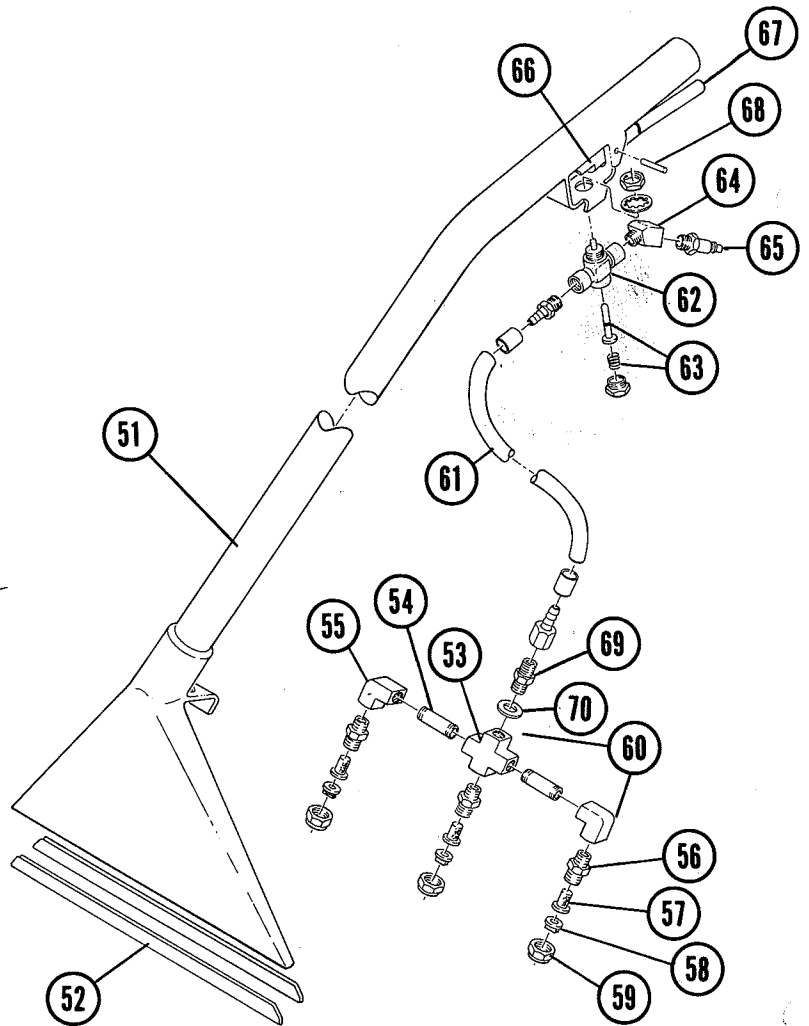


FLOJET PUMP - 100 PSI



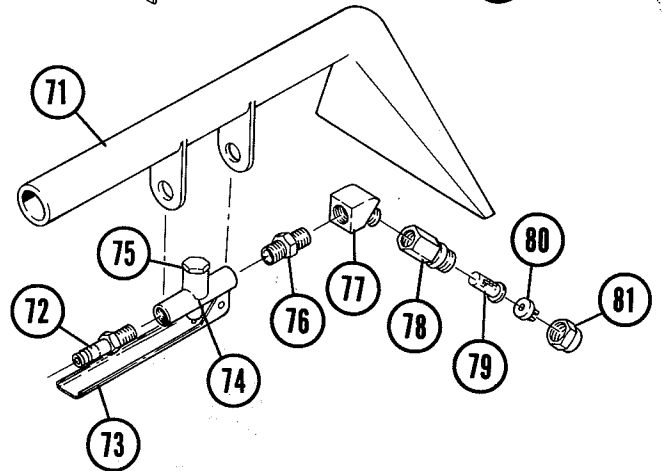
## FLOOR TOOL PARTS LIST

<u>Code Number</u>	<u>Part Number</u>	<u>Description</u>
51	200408	Wand
52	200939	Shoes
53	150700	Cross extruded 1/4"
54	150600	Nipple 1/4" x 2"
55	150401	Elbow 1/4" 90°
56	200993	Spray body, male
57	200996	No drip spray nozzle screen
58	200964	Tip brass #11003
59	200994	Spray body cap
60	200941	Spray bar complete
61	160151	3/8" LP feed hose
62	210150	Flow control valve
63	190603	Valve pin and spring kit
64	150400	Elbow 1/4" 45°
65	150923	Quick coupler plug 1/4" mpt
66	200918	Floor tool trigger
67	200809	Sleeve handle
68	140611	Pin
69	150606	Hex nipple, 1/4"
70	140009	1/2" SAE washer



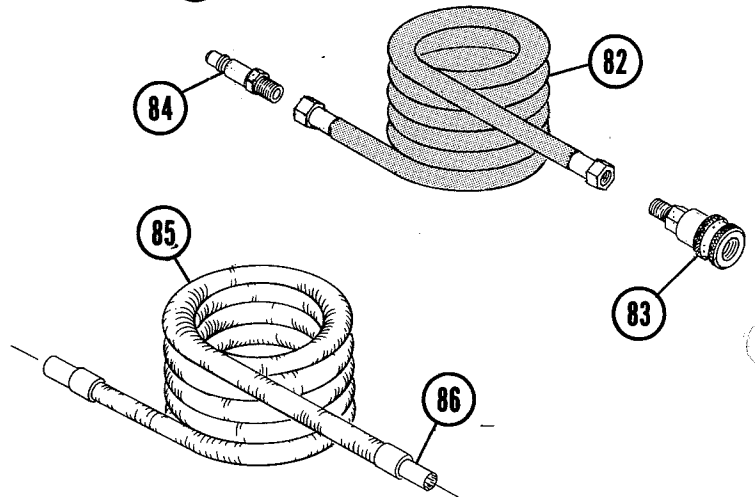
## HAND TOOL PARTS LIST

<u>Code Number</u>	<u>Part Number</u>	<u>Description</u>
71	200430	Hand tool
72	150923	Quick coupler plug 1/4" mpt s.s.
73	200905	Hand tool trigger
74	210210	Flow control valve
75	190600	Valve pin and spring (not shown)
76	150606	Hex nipple, 1/4"
77	150403	Elbow street 1/4" 45'
78	200992	Female spray body 1/4"
79	200996	No drip spray nozzle screen
80	200965	Brass tip #8002
81	200994	Spray body cap



## HOSES

<u>Code Number</u>	<u>Part Number</u>	<u>Description</u>
82	160100	Solution hose 15'
83	150900	Quick coupler 1 1/4" mpt
84	150923	Quick coupler plug 1/4" mpt
85	160400	Vacuum hose complete 15' x 1 1/2"
86	160430	Hose cuff only 1 1/2"



## TROUBLESHOOTING

Problem	Cause	Solution
Uneven or no spray from floor tool	1. Dirty or plugged spray tips	1. Clean or replace tips
	2. Improper size tips or improper degree of spray angle	2. Replace with proper tips
	3. Worn spray tips	3. Replace spray tips
	4. Check valve in spray tip screen faulty	4. Replace spray tip screen
Leaking floor tool	1. Quick coupler on floor tool #65 defective	1. Replace quick coupler
	2. Flow control valve #62 leaking	2. Install valve rebuild kit
	3. Hose split or fittings loose	3. Replace hose and tighten fittings
	4. Quick coupler and plug not fully engaged	4. Reinsert quick coupler
	5. Valve stem worn	5. Replace
Loss of vacuum	1. Drain valve #19 open	1. Close drain valve
	2. Recovery tank full closing vacuum safety shutoff #29	2. Drain recovery tank
	3. Lint on top of stand pipe #27	3. Remove lint trap lid and clean screen
	4. Kinks in vacuum hose	4. Straighten hose
	5. Holes in vacuum hose	5. Replace hose
	6. Excess foam in vacuum recovery tank	6. Use Anti-Foam in discharge tank
	7. Bad vacuum motor	7. Replace motor
	8. Lint trap lid #32 on top of stand pipe won't seal	8. Replace lid

9. Blades let loose in vacuum motor cage - caused by water going through vacuum
9. Replace vacuum motor

Drain valve leaks

- |                                    |                                          |
|------------------------------------|------------------------------------------|
| 1. Drain valve gaskets # 21 worn   | 1. Replace gaskets                       |
| 2. Lint or dirt in drain valve #19 | 2. Remove and clean, may need to replace |

Solution pump will not run

- |                                                                                                |                                   |
|------------------------------------------------------------------------------------------------|-----------------------------------|
| 1. Fuse blown or circuit breaker popped in building (there are no circuit breakers in machine) | 1. Replace fuse or re-set breaker |
| 2. Faulty on/off switch                                                                        | 2. Replace switch                 |
| 3. Faulty pressure switch #48                                                                  | 3. Replace pressure switch        |
| 4. Loose wiring                                                                                | 4. Trace and repair               |
| 5. Solution pump motor faulty                                                                  | 5. Replace solution pump          |

Solution pump runs but no solution comes out of spray nozzles

- |                                                     |                                       |
|-----------------------------------------------------|---------------------------------------|
| 1. Spray tips plugged                               | 1. Remove and clean                   |
| 2. Screen #39 in bottom of clean water tank plugged | 2. Remove and clean                   |
| 3. Pump valves defective                            | 3. Replace pump valves                |
| 4. Quick couplers not attached properly             | 4. Separate quick couplers and rejoin |
| 5. Faulty quick coupler                             | 5. Replace quick coupler              |
| 6. Faulty diaphragm in solution pump                | 6. Replace diaphragm                  |

Solution pump leaks

- |                         |                       |
|-------------------------|-----------------------|
| 1. Faulty seal in pump  | 1. Replace pump seals |
| 2. Faulty diaphragm #50 | 2. Replace diaphragm  |
| 3. Faulty pump          | 3. Replace pump       |