Electronic Service Manuals

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Serving the Cleaning Industry Since 1922

CYCLOMATIC 1700

REFERENCE MANUAL

Operating Instructions • Parts List • Troubleshooting

Machine Serial Number _____

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

WARNING: TO AVOID ELECTRICAL SHOCK, DO NOT EXPOSE TO RAIN. STORE INDOORS.

USE ONLY CASTEX CHEMICALS - OTHERS COULD DAMAGE THE MACHINE!

AUTOMATIC FILL AND DISCHARGE SET UP AND OPERATION:

(Numbers refer to the code numbers for the diagram on page 2 and to the parts drawing on pages 4 to 6.)

1. Hook the machine to a hot water supply. Attach the automatic fill hose to machine at #5 simply by pushing—the quick coupler automatically locks on. Attach the other end to the hot water source. An optional faucet ring adapter set is available for various types of hook-ups. Do not turn water on yet.

2. Inside the machine, lift float #4 by chain and remove float pin #19 and lower float **gently**. DO NOT LET FLOAT DROP! If float drops, it can cause damage to the inlet valve on the automatic fill system. For the same reason, ALWAYS HAVE THE FLOAT PIN IN PLACE WHILE TRANSPORTING THE MACHINE.

3. To connect the chemical bottle, place a gallon bottle of CASTEX Cleaning Agent in the holder #12. Insert chemical feed line #28 so that it touches the bottom of the bottle.

4. Fill the Anti-Foam bottle #31 and replace the top making sure the injection hose is at the bottom of the bottle. Open the T-valve #30 approximately ¼ turn to allow Anti-Foam into the discharge tank.

5. Turn on the hot water supply. The clean water tank will fill to approximately 6 inches and as it fills the chemical is injected. Chemicals are injected at the proportioner valve #6 only when the machine is filling.

6. Check the flow meter #37. Adjust the ball for the correct amount of chemical to be injected by opening the needle valve at the bottom of the meter. Number 1 on the flow meter is approximately one ounce per gallon of water. Due to changes in the water pressure and volume the ball on the meter will vary from time to time. The ball will move only when the machine is filling and chemical is being injected.

7. To connect the discharge system, remove the cap on the automatic discharge valve #21 and connect a ¾" garden hose (½" hose or larger, ¾" preferred). Put the other end of the hose into a disposal drain (janitor's closet, toilet, drain, outside, etc.). Open the automatic discharge valve (open when handle is in line with the valve).

8. Be certain the drain valve at the front of the machine #40 is shut and then plug machine into two **separate grounded** circuits. One circuit must be at least **20 amps.** The cord to be plugged into the 20 amp circuit is marked on the machine body. Normal household current allows 15 amps per circuit. Most kitchens are on a separate circuit from the rest of the house and the kitchen circuit generally provides 20 amps. Most institutions and manufacturing facilities have 20 amp circuits. DO NOT OPERATE THE MACHINE WITHOUT A GROUND PIN! The third prong on the plug is necessary to avoid an electrical hazard.

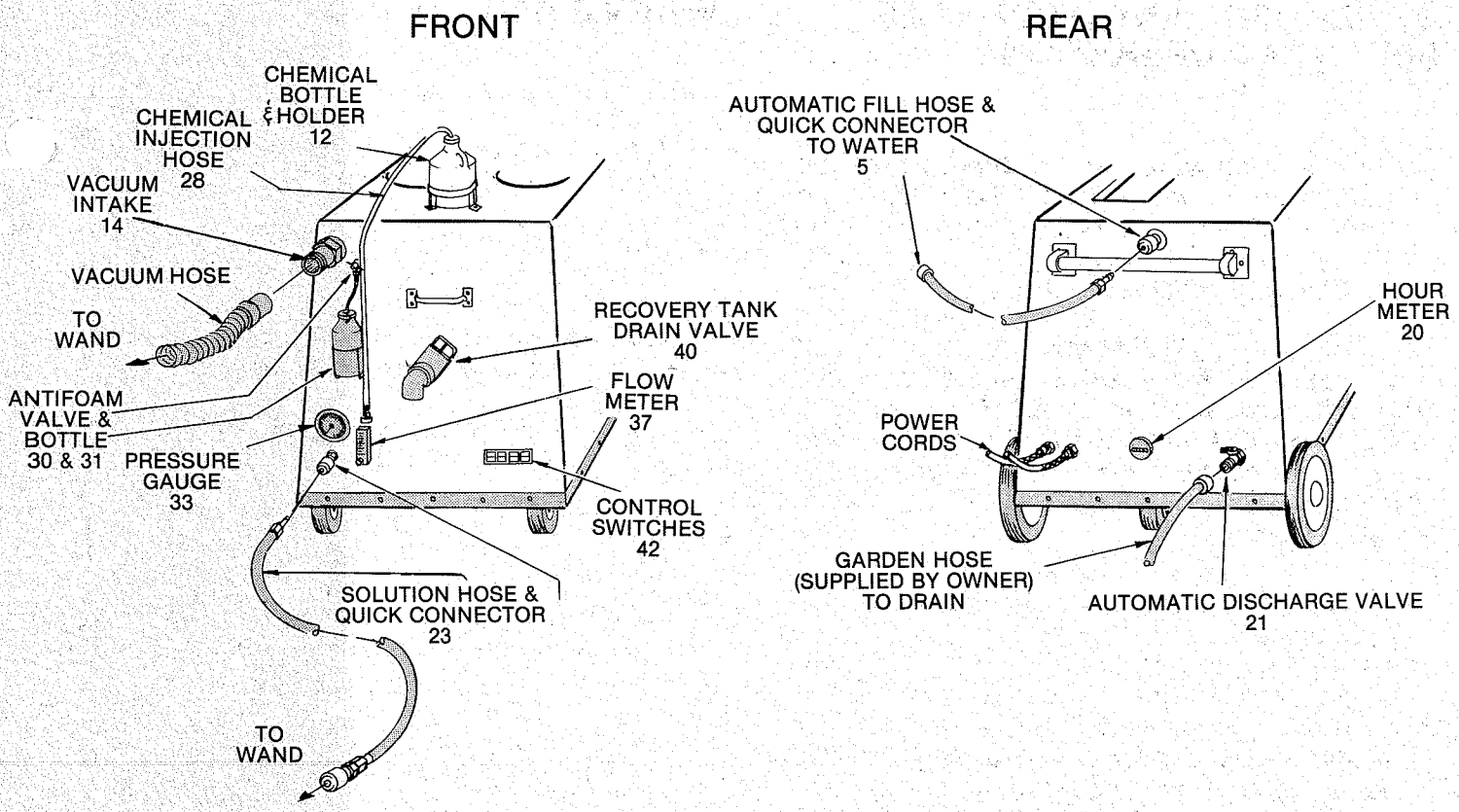
9. Prime the solution pump any time the machine is run out of water. Insert the bleeder hose into the solution hose quick coupler #23. Put the other end of the bleeder hose into the vacuum intake #14. Turn the solution pump switch on and let the pump run until you see no air bubbles in the solution. Kink off the hose for approximately 1 second so that the solution pushes all air out of the pump and regulator. Turn the solution pump switch off. Remove bleeder hose. FOR A NEW MACHINE: Run approximately one gallon of water out of the bleeder hose to flush antifreeze out of the pump system into the recovery tank or other container. A new machine has antifreeze to protect it while it is being shipped.

10. Connect vacuum hose to machine at #14 and to floor tool at #124.

11. Connect solution hose to machine at #23 and to floor tool at #108.

12. In sequence, turn on the solution pump switch, primary vacuum switch, and secondary vacuum switch. (If all switches are turned on at once, the initial power demand could overload the circuit.) BOTH vacuums must be on for the machine to operate properly.

13. Turn on the discharge pump switch. The discharge pump turns on and off automatically and it will NOT run until the recovery tank has reached a certain level. The pump will NOT pump the recovery tank completely dry. Approximately 4 inches will be left when the discharge pump shuts itself off.



14. To operate, squeeze the floor tool valve handle #106 while drawing the floor tool toward you with the opening held steadily against the carpet. NOTE: The hour meter runs only when the solution pump is running.

15. You may wish to adjust the solution pressure. The pressure is factory set at 300 pounds per square inch (psi) at the floor tool tips WHEN THE TRIGGER IS ACTIVATED. Pressure may be approximately 50 psi higher when the machine is running but the floor tool trigger is NOT engaged. To adjust the pressure, twist the knurled knob on the pressure relief valve #51 under the machine. Turn the knob counterclockwise to increase pressure to a maximum of 450 psi with the floor tool activated. Turn the knob clockwise to decrease the pressure.

16. To change the chemical bottle, first turn the machine off, then replace the bottle and insert the chemical suction line so that the end is touching the bottom of the bottle.

7. Be certain the discharge screen #32, the clean water filter #7 and the pipe stand screen at #11 are kept clean.

18. Maintain a filter at the vacuum hose intake #14. The filter is actually a ladies knee-high 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 access port on top of the machine. A stocking can be rinsed and reused as long as it develops no holes.

19. Should the automatic discharge system fail for any reason and the dirty water level rises too high in the tank, a float will shut off the flow of air to the vacuum motors at #11 which will stop the vacuum function. The vacuum motors will continue to run but there will be no suction at the floor tool. Turn machine off immediately and empty the recovery tank.

MANUAL FILL AND DISCHARGE SET UP AND OPERATION:

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. Follow steps 8 through 12 under "Automatic Fill and Discharge Set Up and Operation."

3. 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 which will stop the vacuum function. The vacuum motors will continue to run but there will be no suction at the floor tool. Turn the machine off immediately. CAUTION: Excess foam will not shut off vacuums.

4. To empty the discharge tank, turn the machine off and then position a discharge bucket under the drain valve down spout #38. Pull valve T-handle 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!

5. Follow steps 14, 15, 17, and 18 under "Automatic Fill and Discharge Set Up and Operation."

NOTE: It is possible to use either the automatic fill OR the automatic discharge system ALONE. Simply follow the instructions pertaining to the automatic system you wish to use.

WHEN FINISHED:

1. Turn off all switches.

2. Turn off water supply, chemical flow meter #37, and Anit-Foam valve #30.

3. Drain recovery tank by opening valve #40 and catching dirty solution in a bucket.

4. Vacuum unused solution from the clean water tank into the recovery tank.

5. Drain and rinse recovery tank and clean all filters (#7, #32, at #14, at #11 and floor tool screens). Turn on both vacuums, put one hand over vacuum hose intake #14 and one hand over drain #38 and slowly lift hand on drain. Do this 2-3 times. This cleans and drys the drain valve seat and will significantly extend its useful life. Close valve and unplug the machine.

6. Disconnect solution and vacuum hoses from floor tool and from machine.

7. Pick float #4 up by the chain and insert float support pin #19. Gently lower float so that it rests on the pin.

8. Disconnect garden hose, drain and replace automatic discharge cap.

9. Disconnect water intake system.

DO NOT ALLOW THE MACHINE TO FREEZE!

10. If machine will be subject to freezing temperatures, pump all the water out of the system by placing the bleeder hose into solution hose quick connector and running the pump until it is dry. Pour an antifreeze solution (such as windshield washer fluid) into the solution tank and pump until you can see it coming out of the bleeder hose. Be sure the chemical injection system is dry. Antifreeze can be pumped back into the bottle when you are ready to use the machine again.

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 freight prepaid with a return authorization number issued by CASTEX. Always enclose a note indicating the above plus exactly what is wrong with the returned part, your name and address.

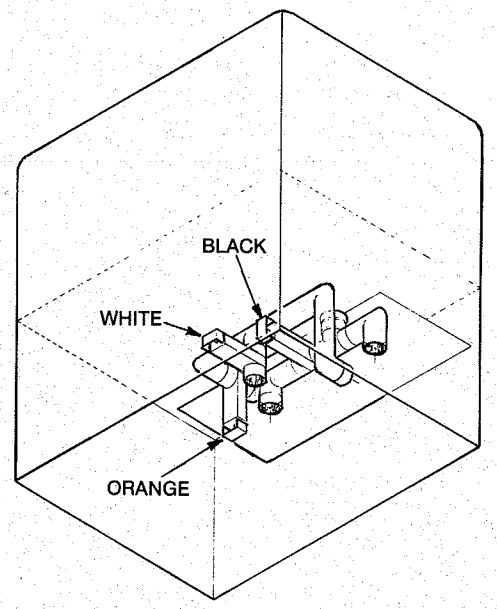
Always order parts by part number and description.

THE AIR TRANSFER CHAMBER

The air transfer chamber provides you with several vacuum/air flow adjustments so you can tailor the machine to the particular job you are working.

Most of the time, you will be cleaning carpets and trying to leave them as dry as possible. On the vast majority of jobs this is accomplished by increasing air flow. Maximum suction is usually necessary only when you are cleaning or extracting 10 feet or more below the level of the machine or extracting standing water.

To extend the life of the vacuum motors, it is recommended that you run your machine at the maximum air flow.



FOR MAXIMUM AIR FLOW:
Black open
White open
Orange closed

FOR MAXIMUM SUCTION:
Black closed
White closed
Orange open

TO OPERATE THE PRIMARY VACUUM ONLY:
Black closed
White opened
Orange closed

SUGGESTED MAINTENANCE:

1. Keep all filters and screens clean (#32, #7, #120, #116, at #11, and at #14). An in-line filter screen #121 is a recommended option. Be certain that this filter screen #122 is kept clean as well.

2. Every forty (40) hours of operation run Brown-Ex through the complete chemical system and through the pump and tanks. Use a gallon jug containing Brown-Ex in place of the normal cleaning agent. Run 2-3 ounces through the system and leave 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.

4. Polish the fiberglass case with car wax approximately once a month to keep your image clean.

5. Every fifty (50) hours of operation grease the solution pump as follows:

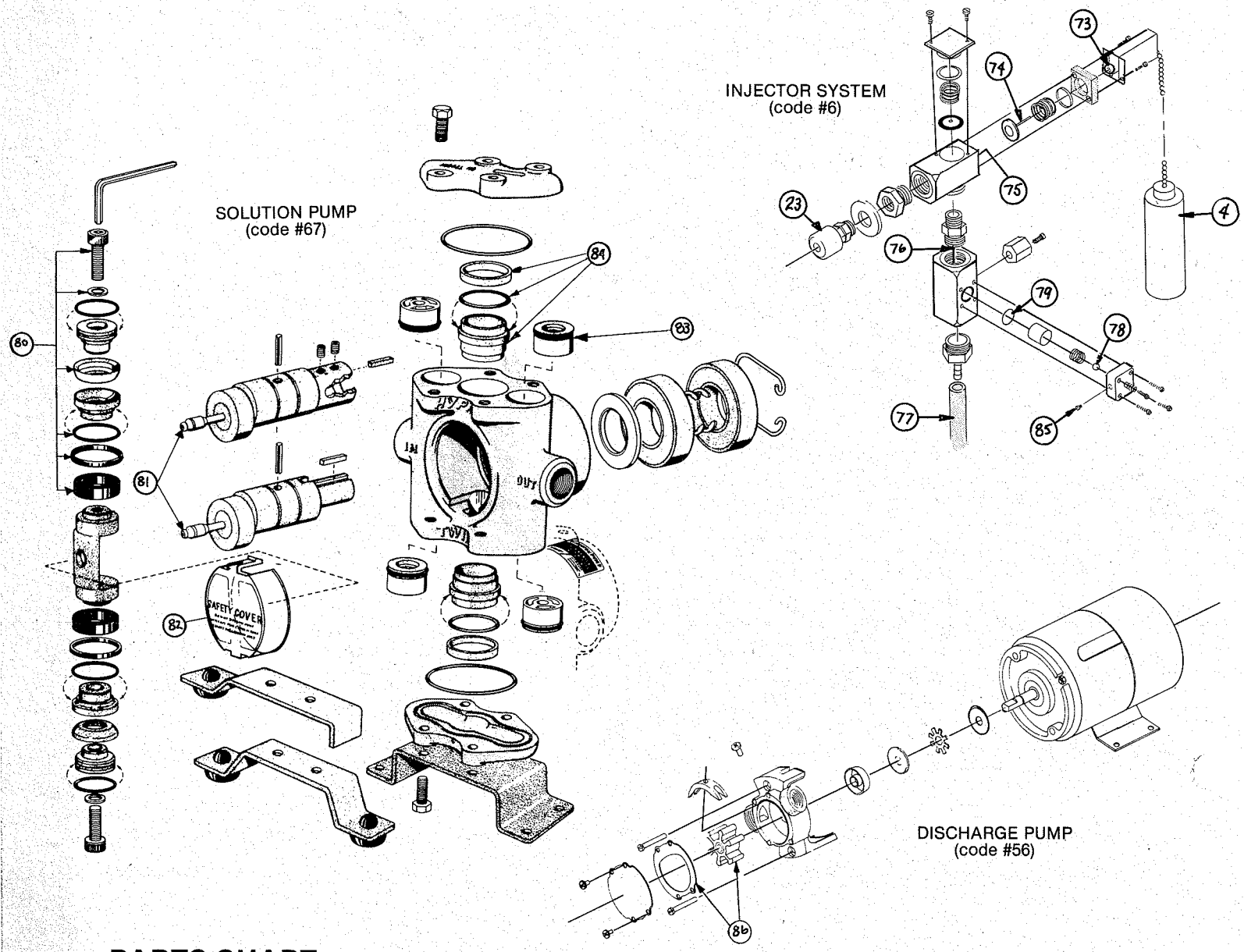
   a. Unplug and drain the machine.

   b. Remove safety cover #82 on the solution pump by carefully squeezing the two side tabs.

   c. Use a high temperature waterproof grease. Use a low pressure plunger-type grease gun with flexible hose. Never use a pneumatic gun as the pressure is much too high.

   d. Fit the grease gun on the grease fitting #81. Use very little grease as too much grease or too much pressure can ruin a nearby delicate seal. With a hand grease gun, use no more than 1" travel on the handle.

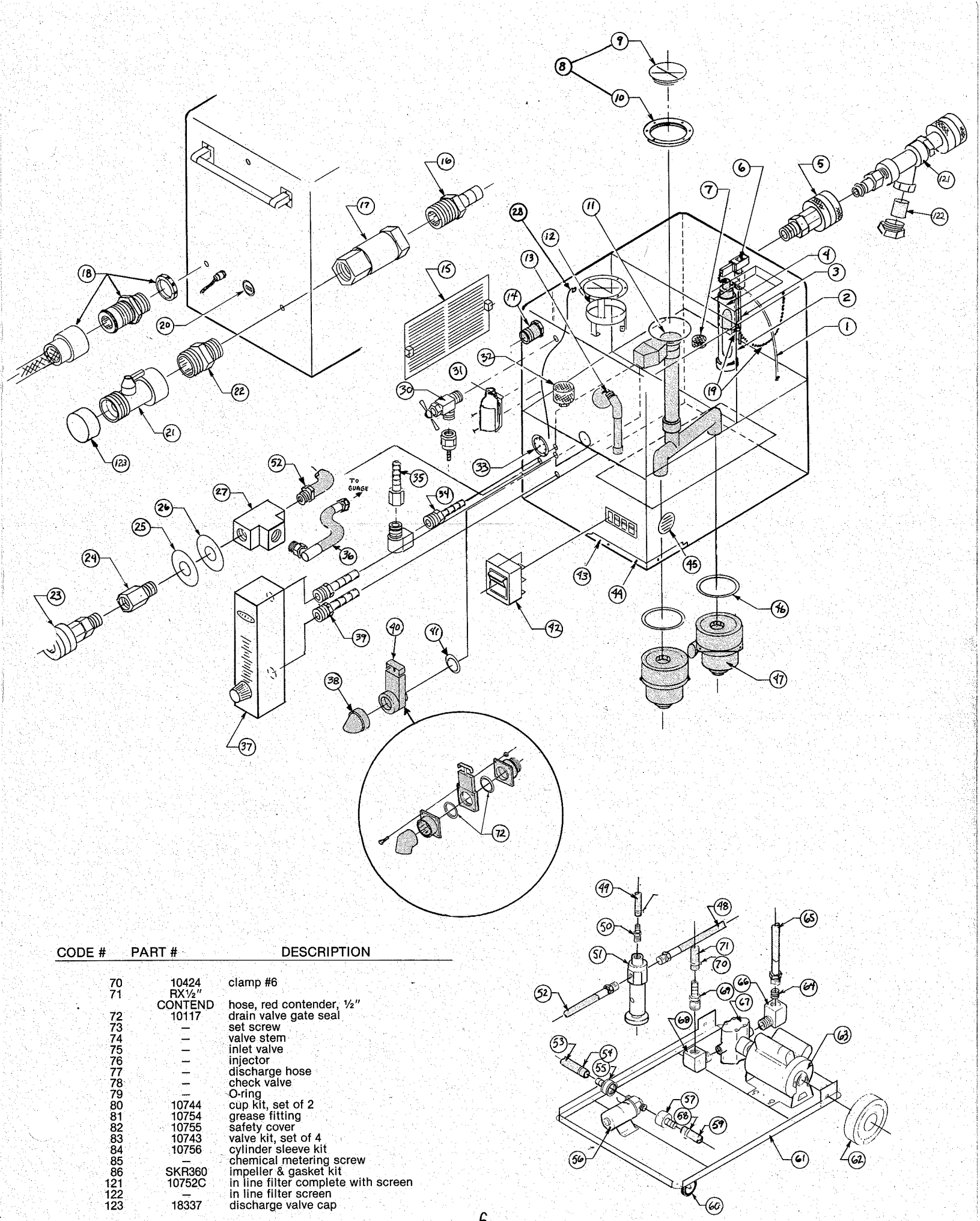
   e. Replace the safety cover by gently squeezing the tabs and fitting it so that one tab is pointing toward the bottom of the frame and one toward the bottom of the recovery tank.



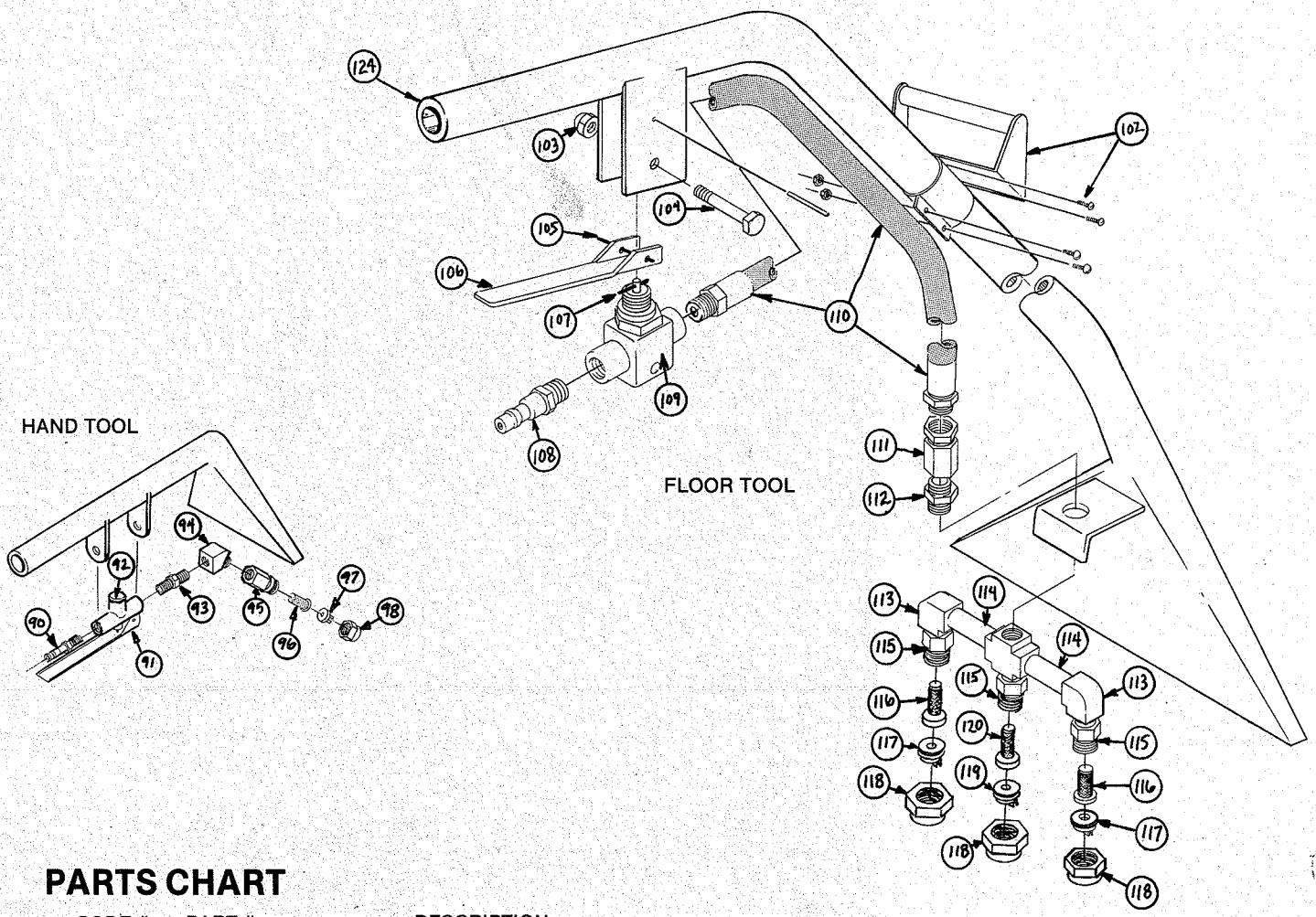
PARTS CHART

CODE #	PART #	DESCRIPTION
1	17013	hose, ⅜ OD x ¼ ID
2	—	guide tube
3	RX3600-06 gray	hose, gray
4	—	float (part of code #19)
5	10420	quick coupler,
6	10750	Dema-matic with injector complete
7	10110	filter, clean water tank
8	10105	lint trap lid complete
9	10107	lint trap lid outer ring
10	10106	lint trap lid, clear
11	10506	automatic shut-off, 2″
12	10757	bottle rack
13	10636	ball float switch
14	10116	hose barb, 2″ nylon
15	17048	grill, painted
16	10496	hose barb, ½ x ½
17	10661	ball check valve, ½
18	10623	cord grip with lock nut
19	10736	float support pin assembly
20	10617	hour meter
21	17023	discharge shut off valve
22	10480	adapter, ¾ MGH x ¾ MP
23	10420	quick coupler, ¼ MPT
24	10419	adapter, ¼ M x ¼ F, brass
25	10316	washer, fender painted
26	10317	washer, fender plain
27	10731	tee, ¼″
28	17013	chemical feed line
30	17022	needle valve
31	17017	Anti-foam bottle with holder
32	10109	discharge filter
33	17011	pressure gauge
34	17008	hose barb, ⅛ MP x ¼ hose
35	17007	hose barb ⅛ FP x ¼ hose

CODE #	PART #	DESCRIPTION
36	17081	hose, hp pressure gauge complete
37	17009	chemical flow meter
38	10113	drain valve down spout
39	17008	hose barb, ⅛ MP x ¼ hose
40	10112	drain valve
41	10111	drain valve gasket
42	10612	rocker switch, lighted
43	10122	bumper
44	10121	rivet for bumper
46	10501	vacuum/blower gasket
47	10504	vacuum/blower, 2½ HP, 3-stage
48	17082-C	hose, hp pump to reg. complete
49	RX⅜″ CONTEND	hose, ⅜ contender black
50	10421	hose barb ¼ x ⅜ hose
51	17049	pressure regulator
52	17082D	hose, hp reg. to gauge complete
53	RX½″ CONTEND	hose, red contender, ½″
54	10424	clamp #6
55	10494	adapter, ¾ FGH x ½ pipe
56	10728	discharge pump, 1700
57	10494	adapter, ¾ FGH x ½
58	10424	clamp #6
59	RX½″ CONTEND	hose, red contender, ½″
60	10201	caster, 3″ heavy duty
61	10217	frame #1700
62	17078	wheel, 10″ with cap
63	17040	¾ hp motor
64	10761	bushing ½ x ¼
66	10437	street elbow, ½″ EXT
67	17047	twin piston pump, 1700
68	10761	bushing, ½ x ¼
69	10427	hose barb, ½ x ½

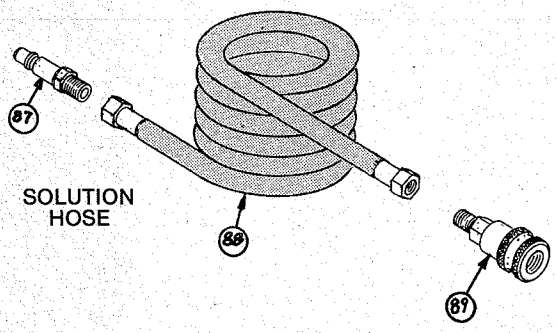


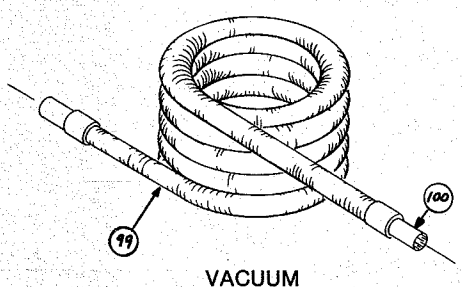
CODE #	PART #	DESCRIPTION
70	10424	clamp #6
71	RX½"	
	CONTEND	hose, red contender, ½"
72	10117	drain valve gate seal
73	—	set screw
74	—	valve stem
75	—	inlet valve
76	—	injector
77	—	discharge hose
78	—	check valve
79	—	O-ring
80	10744	cup kit, set of 2
81	10754	grease fitting
82	10755	safety cover
83	10743	valve kit, set of 4
84	10756	cylinder sleeve kit
85	—	chemical metering screw
86	SKR360	impeller & gasket kit
121	10752C	in line filter complete with screen
122	—	in line filter screen
123	18337	discharge valve cap



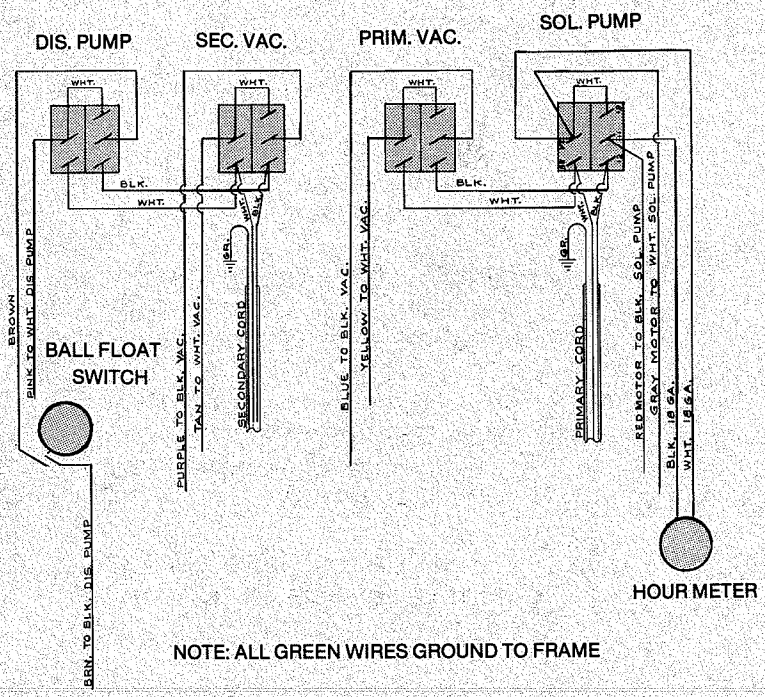
PARTS CHART

CODE #	PART #	DESCRIPTION
87	10420	quick coupler plug, ¼ MPT
88	10319	25′ x ¼″ solution hose, complete
89	10315	quick coupler, ¼″ MPT
90	10420	quick coupler plug, ¼″ MPT
91	10470	hand tool handle
92	10410	flow control valve
93	10452	hex nipple, ¼″
94	10453	street elbow 14″, 45°
95	10454	female spray body, ¼″
96	10431	regular spray nozzle screen
97	10446	brass tip #8002
98	10432	spray body cap
99	10520	vacuum hose complete, 25′ x 2″
100	10523	hose cuff only, 2″
102	10401	hand grip with screws and nuts
103	20619	acorn nut, ¼ x 20
104	20301	hex bolt, ¼ x 1½
105	20541	tension pin, 3/16
106	10470	valve handle, "K"
107	20542	tension pin, 3/32
108	10420	quick coupler plug
109	10488	valve, whitey
110	10414	h.p. wand feed hose, complete
111	10331	swivel fitting
112	10452	hex nipple
113	10468	90° elbow
114	10464	nipple, ¼ x 2″
115	10436	spray body, male
116	10435	spray nozzle screen, no drip
117	10449	spray tip, outer #9502
118	10432	spray body cap
119	10450	spray tip, inner #11002
120	10431	spray nozzle screen, regular
124	–	vacuum hose hook-up





WIRING



NOTE: ALL GREEN WIRES GROUND TO FRAME

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Low solution pressure	1. Pump airlocked	1. Prime pump (see operating instructions)
	2. Weak pressure relief valve (#51)	2. Replace valve
	3. Dirt in pressure relief valve (#51)	3. Twist pressure relief valve all the way out, then with pump running, and with trigger pulled on floor tool, twist valve in until the desired pressure is reached
	4. Restricted inlet line (#71)	4. Clear out and check for kinks
	5. Clean water tank filter dirty (#7)	5. Clean screen
	6. Restricted or worn solution pump valves (#83)	6. Dismantle and clean or replace
	7. Worn solution pump piston cups (#80)	7. Replace piston cups
	8. Worn solution pump cam bearing	8. Replace pump

TROUBLESHOOTING (continued)

PROBLEM	CAUSE	SOLUTION
Chemical not injecting or very little chemical getting into system, but water is flowing into solution tank	1. Water not on or low water pressure	1. Increase water flow
	2. Injector hole plugged (#76)	2. Clean out and install filter screen on automatic fill line
	3. Metering screw on injector turned in (#85)	3. Turn screw so it is flush with black injector manifold
	4. Check valve stuck in injector manifold (#78) – prevent with regular use of Brown-Ex	4. Clean check valve by soaking in Brown-Ex
	5. Air leak in chemical feed line (#28) – continuous bubbles in chemical suction line or in flow meter	5. Check for defective hose and replace, check for loose clamps or fittings and tighten or replace
	6. Screen on foot valve blocked (foot valve rests on bottom of chemical bottle)	6. Clear screen
	7. Hose on discharge side of injector missing or shorter than 10 inches (#77)	7. Replace hose
	8. Flo-meter valve is plugged (#37) – ball won't move in valve	8. Soak in Brown-Ex
Large pressure drop when valve on floor tool is engaged (up to 50 psi drop is normal)	1. Foreign matter in solution pump valves (#83)	1. Clean or replace valve
	2. Worn valve in solution pump (#83)	2. Replace valve
	3. Worn solution pump piston cups (#80)	3. Rebuild pump
	4. Improper tips in floor tool	4. Replace with proper tips
Solution tank will not fill with water	1. Water supply not turned on	1. Turn water on at source
	2. Dema-Matic set screw (#73) loose on valve ball which controls water – caused by transporting machine without float supported by support pin	2. Loosen set screw and slide ball tight to main body and retighten set screw
	3. Dema-Matic valve stem (#74) damaged – caused by transporting machine without float supported by support pin	3. Replace
	4. Dema-Matic inlet valve plugged (#75) with lime or rust	4. Clean out and install filter (#121) on water inlet valve

TROUBLESHOOTING (continued)

PROBLEM	CAUSE	SOLUTION
Solution pump motor will not run	1. Fuse blown or circuit breaker popped (there are no fuses or circuit breakers in the machine)	1. Replace fuse or reset breaker
	2. Faulty switch	2. Replace switch
	3. Switch not on	3. Turn switch on
	4. Thermal overload activated — motor is too hot and will automatically shut down until cool	4. Let motor cool and check to see what caused it to overheat. Pressure may be set too high, Air intake may be blocked with lint, Extension cord may be too thin (use 10 gauge), Excessively hot water in tank can also activate thermal overload
	5. Faulty motor	5. Replace motor
	6. Solution pump bearing freezes up — caused by not greasing	6. Repair or replace
Solution tank overfills or won't shut off	1. Dirt in Dema-Matic inlet valve (#75)	1. Clean out and install filter (#121) on water inlet valve
	2. Float movement restricted (#4)	2. Clean out float guide tube (#2)
Discharge system fails to operate	1. Unit not plugged in	1. Plug in
	2. Switch not on	2. Turn switch on
	3. Not enough water in recovery tank to activate discharge system	3. Will automatically turn on when there is sufficient water in tank
	4. Large foreign body in discharge pump impeller (#86)	4. Remove face plate on pump and clean. You may need to replace impeller.
	5. Faulty float switch (#13)	5. Replace float switch
	6. Defective discharge pump motor	6. Replace motor
	7. Discharge filter in waste tank plugged (#32)	7. Clean filter
Drain valve leaks	1. Lint or dirt in drain valve gasket (#72)	1. Clean gaskets and, if leak continues, replace gaskets

TROUBLESHOOTING (continued)

PROBLEM	CAUSE	SOLUTION
Discharge motor system runs, but not discharging	1. Discharge valve (#40) closed	1. Open valve
	2. Filter screen plugged (#32)	2. Clean screen
	3. Discharge lines plugged or kinked	3. Clean or straighten
	4. Worn or damaged pump impeller (#86)	4. Replace impeller
	5. Check valve (#17) plugged	5. Clean check valve
Loss of vacuum (be certain **both** vacuums are on)	1. Drain valve open (#40)	1. Close drain valve
	2. Recovery tank full, closing vacuum safety shutoff	2. Drain recovery tank
	3. Lint on top of stand pipe (#11)	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 hose or recovery tank	6. Use Anti-Foam in discharge tank
	7. Bad vacuum motor	7. Replace motor
	8. Blades let loose in vacuum cage—caused by water going through vacuum	8. Replace motor
	9. Lint trap lid on top of stand pipe (#11) won't seal	9. Replace lid
	10. Air transfer chamber valves not in the correct positions	10. Set valves as shown on page 4
	11. Not enough amperage	11. Use 10 gauge extension cords; also check machine cords to be sure 20 amp cord is in a 20 amp circuit and that both cords are on separate circuits
Uneven spray or no spray	1. Dirty or plugged spray tips	1. Clean or replace
	2. Improper size tips or improper degree of spray angle	2. Replace with proper tips
	3. Worn spray tips	3. Replace spray tips

TROUBLESHOOTING (continued)

PROBLEM	CAUSE	SOLUTION
Leaking floor tool	1. Quick coupler on hose or on floor tool defective	1. Replace quick coupler
	2. Flow control valve (#109) 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
Loss of power	1. Fuse blown or circuit breaker popped (there are no fuses or circuit breakers in the machine)	1. Replace fuse or reset breaker, check to be certain that 20 amp cord is in a 20 amp circuit and that both cords are on separate circuits; also, be sure to use a 10 gauge extension cord*
	2. Thermal overload activated - motor is too hot and will automatically shut down until it is cool	2. Let motor cool and check to see what caused it to overheat: Pressure may be set too high, Air intake may be blocked with lint, Extension cord may be too thin (use a 10 gauge cord), Excessively hot water in tank can also activate thermal overload

*If correct amperage is not available, reduce the operating pressure of the solution pump as described on page 2 as the lower the pressure, the less amperage required.

(Numbers refer to diagram on page 15)

GENERATOR

Complete installation instructions, maintenance suggestions, and replacement part numbers are included with the generator #39. Be certain to install the star washers #30 provided with the generator as this creates the necessary ground. (When bolting the generator to the floor of the van, use a star washer between the head of the bolt and the generator base and one under the van floor against the truck body.) It is recommended that you install your generator behind the driver's seat of a van. Every make of van is different, but generally this location is fairly clear of gas lines, brake lines, wires for rear lights, etc. and you should have room for the muffler.

BE CERTAIN TO FILL THE CRANK CASE #28 WITH OIL BEFORE STARTING THE GENERATOR!

ELECTRICAL

1. Determine the place you will mount the remote control panel #8. The rear door pillar on the driver's side of a van is recommended. Before mounting, wire the remote control panel as follows:
2. Run the brown 5 strand cord #1 on the remote control to the generator. Install the remote start plug #40 (packed with the generator muffler) on the end of the brown cord #1. The numbers on the plug connect with the colors on the brown remote start wire as follows: #1 = yellow, #2 = blue, #3 = green, #5 = red, #6 = white. Use a crimp connector, wire nuts or solder (not included). Plug into the side of the generator at #34 (plugs in only one way so do not force).
3. To activate the hour meter #4 and switches #3A and #3B on the remote control, connect the yellow 18/3 power cord #18 from the remote control to the duplex outlets #25. The white wire attaches to an unusued **silver** screw on the duplex outlet. The black wire attaches to an unused **brass** screw. The green wire attaches to the green ground screw with another wire already in place on the ground screw.
4. Generally the top toggle switch #3A is used to activate the remote control for the water pump #23. The bottom switch #3B can be used as you please for lights, etc. To connect the top switch to the water pump #23, connect the black wire on the water pump to the black wire on the top of the switch. The white wire from the pump must be connected to the white wire on the remote control switch and the green wire from the pump must be connected to the green wire on the remote control switch. (The power cord to connect the remote control to the water pump is **not** included. Use an 18/3 cord #19.) After all wiring is completed on the back of the remote control, mount on the rear door pillar.
5. To connect the duplex outlets (plugs) #25 to the generator, run the prewired 10/3 black power cord #38 from the duplex outlets to the generator. Remove the generator cover #35 by removing the two mounting screws. Strip the black wire covering back approximately 4" on the black power cord #38 and then strip the end of each individual wire back approximately ½". Remove the large circular knockout at #36 located on the side of the generator electrical box and install the ¾" romex connector #37 through the hole left by the knockout at #36. Run the black 10/3 wire through the romex connector into the generator. Inside the generator, connect these wires using the wire nuts packed loose inside the electrical box. Connect the black wire to the black pigtail in the generator, the white wire connects to the white pigtail, the green wire connects to the green grounding screw. Tighten the screws on the romex connector to hold the cord securely in place.

WATER SYSTEM

The flow of water begins in the water drum #21. The water is pumped from the water drum into the extractor through the automatic fill hose #20. Chemicals are injected at this time and the cleaning solution is pumped out of the quick coupler through the hose #16 connected to the water heater (hose is included with the purchase of a water heater). The solution is heated and comes out at the mixing valve where the solution hose from the floor tool is connected.

If you do not use the water drum, connect the water supply to the automatic fill hose at #22.

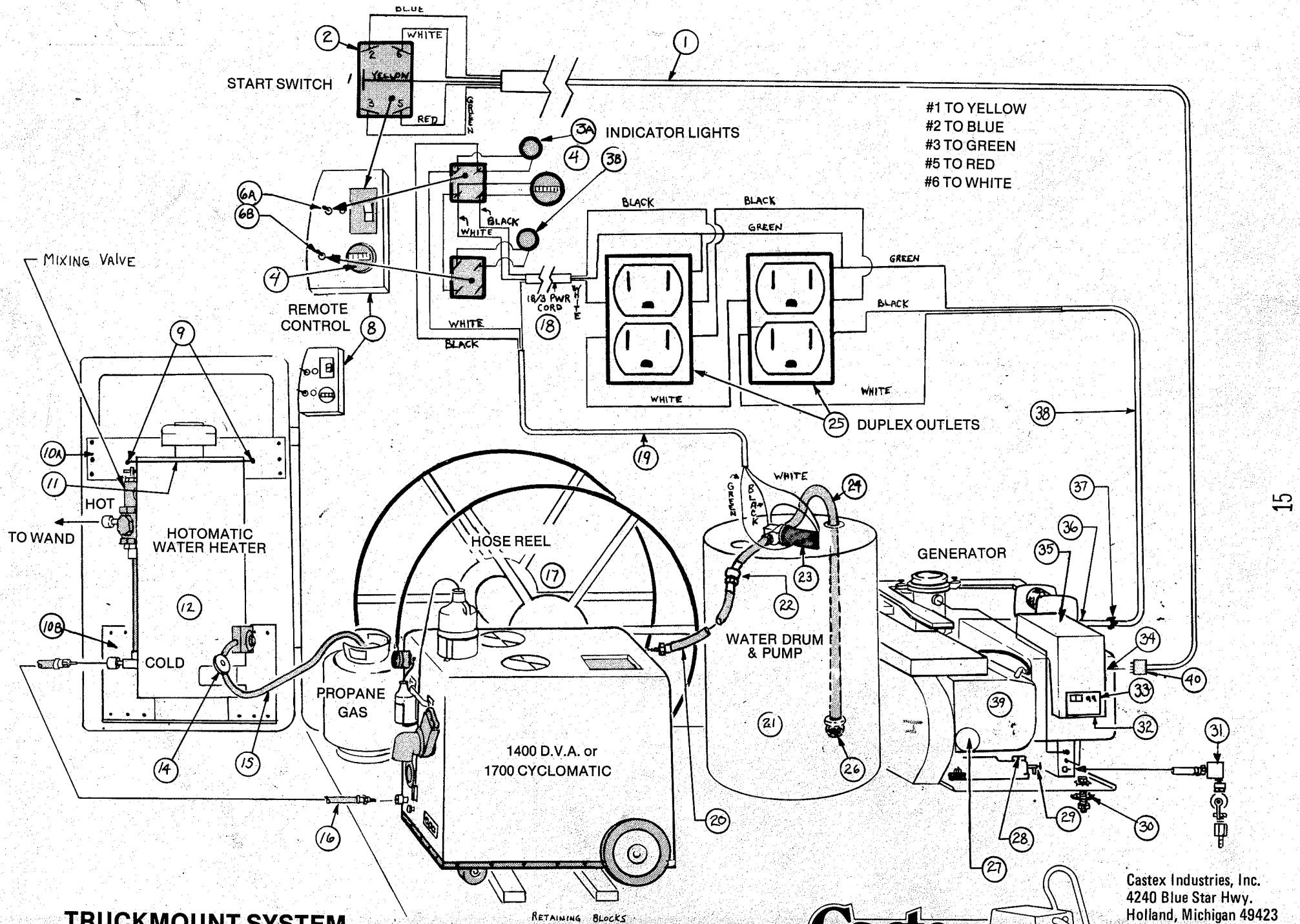
WATER HEATER

All operating instructions and replacement part numbers are included with the purchase of a water heater #12. The heater can be mounted on the back door of any van using the optional mounting brackets #10A and #10B. Install the mounting brackets on a van as follows:

1. Install the lower bracket #10B on the driver's side rear door. Position the bracket so that it just clears the van floor when the door is closed and leave extra clearance if you will later be installing carpeting on the van floor. Fasten the bottom bracket to the door using at least 12 sheet metal screws (not included) as this bears the entire weight of the heater.
2. Position the water heater #12 on the lower bracket with the hot and cold outlets pointing toward the **inside** of the van when the van door is open 90 degrees. (The heater is pictured with the hot and cold outlets pointed to the outside of the van so that all components could be shown.) The propane gas hook-ups should be kept as far from the van interior as possible.
3. The top bracket #10A is installed so that it bridges the window and is fastened with sheet metal screws to the frame of the rear window. On the top bracket two full thread carriage bolts #9 should be positioned to snugly hold the curved metal band #11 against the heater to prevent it from tipping off of the lower bracket. Secure the curved metal band to the carriage bolts with the lock nuts provided.

PARTS CHART

CODE #	PART #	DESCRIPTION
1	20715	5-strand brown extension cord
2	10253	start switch for generator
3A	10622	indicator light (top)
3B	10622	indicator light (bottom)
4	10617	hour meter
6A	10613	toggle switch (top)
6B	10613	toggle switch (bottom)
8	17054	remote control panel
9	20311	full thread carriage bolt
10A	17067LG	heater door bracket (top)
10B	17067LG	heater door bracket (bottom)
11	17069-A	metal band to secure heater to bracket
12	17062LG-1	Hotomatic water heater
14	17075	gas regulator
15	17031-A	gas hose complete
16	17089	cold water intake hose
17	17068	hose reel
18	20713	power cord, 18/3 (connects toggle switches to duplex outlets))
19	20713	power cord, 18/3 (connects switch to water pump)
20	17038	automatic fill hose
21	17055	water drum & pump
22	10491	adapter, ¾ MGH x ⅜ hose
23	10202	water pump
24	RX3600-06	hose, yellow
25	20712	duplex outlets
26	10110	water drum filter
27	—	oil filter
28	—	oil fill
29	—	oil drain
30	—	star washers to ground generator
31	10483	gas shut off
32	—	positive battery cable entrance
33	—	generator controls
34	—	plug to activate remote start switch
35	—	generator electical box
36	—	knockout to connect duplex outlets to generator
37	—	romex connector
38	20714	power cord, 10/3 running from duplex outlets to generator
39	17050-0	Onan generator



TRUCKMOUNT SYSTEM

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