

**Troubleshooting guide**

**ZANUSSI**





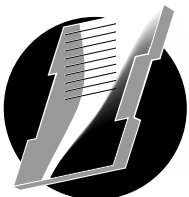
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# CARPET WIZARD

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**To use this trouble shooting guide please read the following.**

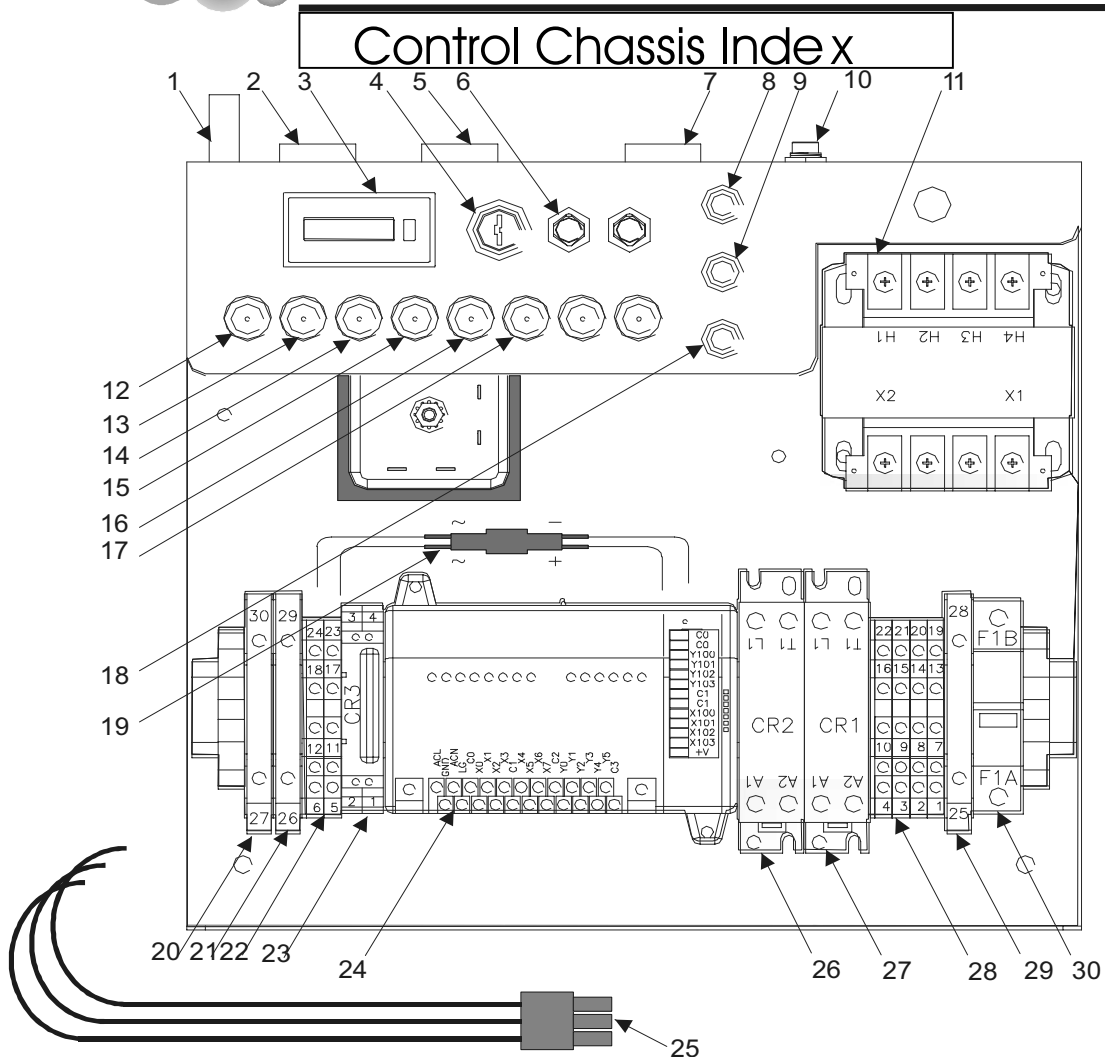
In the table of contents you will find a list of general problems that might affect your unit. Then each general problem has it own table of content. This table let so narrow down the problem you might have. Once you know what page to look at turn there.

Then you will see a statement like "Check for line voltage power to the unit." to the left side of the page. The numbers next to that will be what figure and part you will want to refer to. This helps you locate where you are suppose check. Then there will be a question to ask yourself. Then it is simply a matter of following the flow arrows depending on your answer.

Now lets give a example. Lets say there is a problem with the Pump & Compressor control output. I would look at figure 2 part 24 and find it on the machine. Then once I have located the part I would ask my self , "With the timer counting down and the Shampoo or Spot Remover mode selected and indicated on the door, and does the Y3 status indicator come on?" Now lets say the Y3 indicator does not come on, I would follow the no arrow and read the next box. "There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC." Now I would call the number and tell them the problem and follow there instruction to confirm if the PLC needs to be replaced.

If you have a problem that isn't listed in our guide please call 1-800-968-8227 for assistance.





- | Part | Part Description                  |
|------|-----------------------------------|
| 1    | Motor harness connection          |
| 2    | Timer harness connection          |
| 3    | Coin counter                      |
| 4    | Coin counter reset switch         |
| 5    | VPL harness connection            |
| 6    | Timer reset switch                |
| 7    | Door interface harness connection |
| 8    | Motor 1 circuit breaker           |

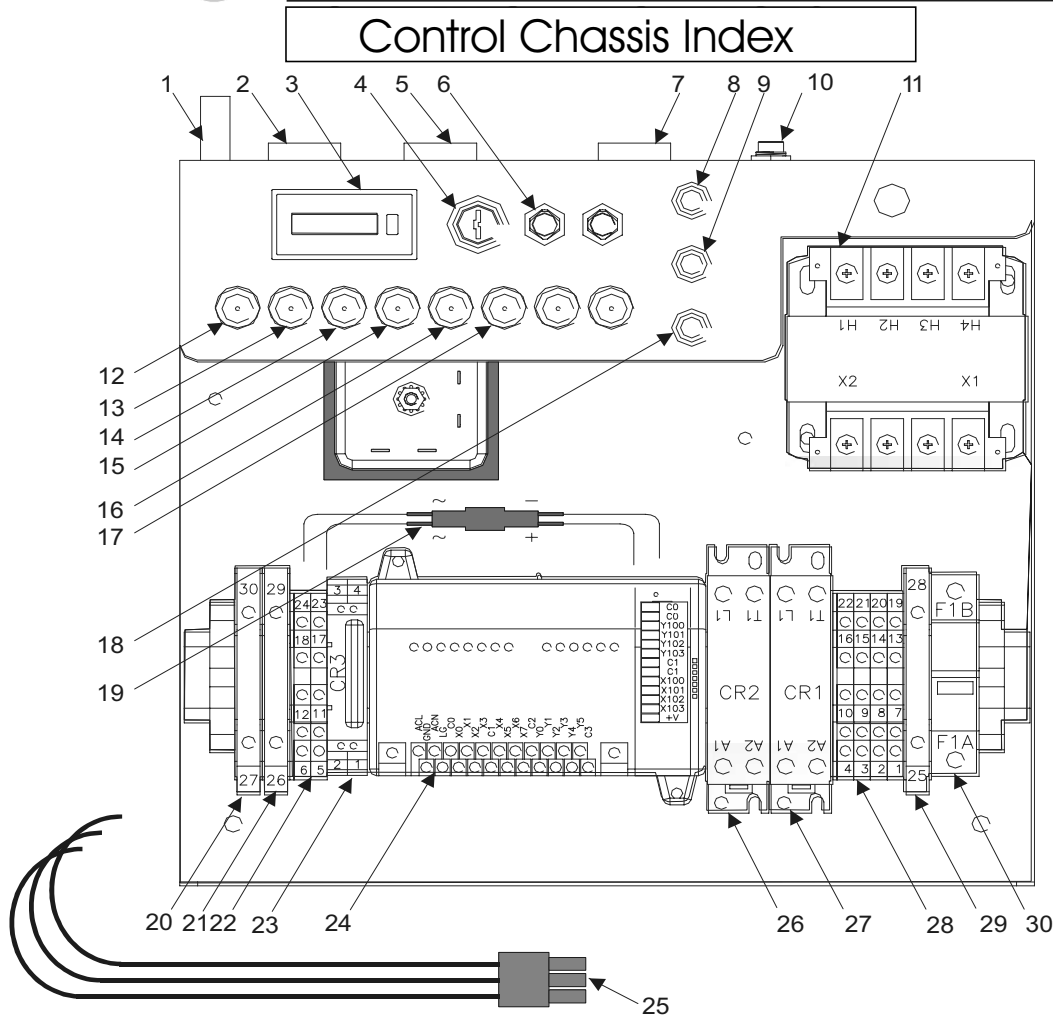
- |    |                                       |
|----|---------------------------------------|
| 9  | Motor 2 circuit breaker               |
| 10 | Primer button                         |
| 11 | Transformer                           |
| 12 | 115 Vac indicator LED (red)           |
| 13 | CR1 output indicator LED (red)        |
| 14 | CR2 output indicator LED (red)        |
| 15 | 24 VAC indicator LED (yellow)         |
| 16 | Timer output indicator LED (yellow)   |
| 17 | Trigger switch indicator LED (yellow) |

Continued on next page



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**Figure 1 Page 4**



- |    | Part Description                  |
|----|-----------------------------------|
| 18 | Pump / Compressor circuit breaker |
| 19 | Diode bridge                      |
| 20 | 24 VAC fuse holder (ABC4)         |
| 21 | Timer fuse holder (ABC2)          |
| 22 | Terminal Blocks-24 VAC            |

- |    | Part Description                                |
|----|---|
| 23 | CR3-Timer signal conditioning solid state relay |
| 24 | PLC   |
| 25 | Main power harness connection                   |
| 26 | CR2-Pump & Compressor solid state relay         |
| 27 | CR1-Vacuum motors solid state relay             |
| 28 | Terminal Blocks-115 VAC                         |
| 29 | PLC fuse holder (ABC2)                          |
| 30 | Main fuse holder (FNQ20)                        |



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**Figure 2 Page 5**



# Electrical Problems

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# **Vacuum Motor Problems**

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# **Shampoo Delivery Problems**

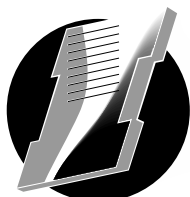
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Fig.	Item			Fig.	Item
		<p><u>Improper or No Shampoo Delivery From Brush</u> (Assumes red 115vac and yellow 24vac indicators on chassis front panel are on, and Fragrance mode is selected and indicated on the door)</p>	<p><u>Do not dilute the shampoo concentrate.</u> The Carpet Wizard uses a 2 part system - water in the large tank and concentrate in the smaller tank. There is no need to premix anything.</p>		<p><i>When "Shampoo" is selected, the PLC directs the pump and valves deliver a ratio of 7 parts water and 1 part concentrate to the foam block. There, the 2 solutions are deposited on a piece of foam generating medium and agitated by the air from the compressor to create the foam..</i> <i>When "Spot Remover" is selected, the PLC directs the pump and valves to deliver only the concentrate to the piece of foam generating medium to be agitated into foam.</i></p>
	Pump and/or Compressor don't run				
		With the correct money deposited, does the timer display count down properly?	No		See Timer Troubleshooting section
		Yes			
1	16	Is the yellow Timer indicator on the chassis front panel on?	No		See Timer Troubleshooting section
		Yes			
2	18	Is there a tripped Pump/Compressor circuit breaker located on the chassis front panel?	Yes		Press to reset. Check for and correct cause of tripped breaker.
		No			
1	14	Is the red CR2 indicator lit on the chassis front panel?	Yes	1 2 1	5 18 14
		No			
2	26	Does the green "relay on" light on the CR2 solid state relay come on?	Yes	2 2	26 28
		No			
					Check VPL harness wiring between chassis and Pump/Compressor and motors for damage. Repair or replace as indicated. If no fault is found, proceed as if there is no CR2 indicator lighted on the chassis front panel.
					Confirm good wiring connections between CR2-L1 and Terminal Block 16 - meter from CR2-L1 to Terminal Block 8 and read 110-125 vac. Repair wiring as needed.
					Yes, wiring is good
				2 2	26 28
					Confirm CR2 output - meter from CR2-T1 to Term Block 8 and read 110-125 vac with counter counting down. If not - Replace Solid State Relay
					Yes, voltage output is good
				2 2	26 18
					Repair wiring between CR2-T1 and Pump/Compressor circuit breaker
2	24	Is the orange "Y3" indicator on the PLC on?	No		See PLC Troubleshooting Section
		Yes			
2	26	Confirm good wiring connections between CR2-A2 and PLC terminal Y3	No		Repair as needed
2	24	Yes, wiring is good			
2	26	Confirm good wiring connections from CR2-A1 to Terminal Block 11	No		Repair as needed
2	22	(CR2-A1 to CR3-A1 then to Terminal Block 11 if 3rd motor equipped)			
		Yes, wiring is good			
2	24	Is the orange "X7" indicator on the PLC on?	No		See Timer Troubleshooting Section
		Yes			
2	26	With the Timer counting down and Shampoo or Spot Remover mode selected and indicated on the door, does a volt meter connected between CR2-A2 and Terminal Block 12 read 24VAC?	Yes		Replace Solid State Relay
2	22	No			
		See PLC Troubleshooting Section			



# CARPET WIZARD

## Compressor and Pump run -

### No or Low Foam delivery

(Do Not Dilute the Shampoo Concentrate.)

The pump delivers a very small volume of solution (Shampoo is about 1-1/4 teaspoon of concentrate and 9-1/2 teaspoons of water per minute - 4-3/4 teaspoons of concentrate alone for Spot Remover ) delivered at nearly 0 psi.

The compressor agitates the solution at low pressure of 10 to 15 psi.

## Plumbing Issues

The smaller tubing is connected by means of push connect fittings. To release the tubing from these fittings, press down on the blue ring and then grasp the tubing and gently pull the tubing from the connector. To install the tubing, do not push on the blue ring - just insert the cleanly cut end of the tubing into the fitting and push firmly until you feel it engage and seat in the fitting.

Pick-up tube sets have 2 tubes - a larger clear tube and a smaller colored or translucent tube. The large clear tube is the pick-up tube, and the other is a pump return line. Both are placed in the tank. Under the dome, the pick-up tube is connected to the pump and the return line is connected to the top of the selector valves.

Perform this test one selection at a time.  
Reconnect tubing after each test.

Perform this test one selection at a time.  
Reconnect tubing after each test.

Perform this test one selection at a time.  
Reconnect tubing after each test.

Is there adequate solution in the tanks?

Yes

Are the weighted pick-up tubes and strainers in the bottom of the tanks?

Yes

Are the pick-up tube strainers obstructed with debris?

No

Are the pick-up tubes pinched or kinked or broken?

No

Pick-up tubes are connected to the front leg of the pump tubing by a check valve, and the check valve is oriented with the sloped end pointed to the pump.

Yes

Check the colored tubing connected to the output side of the pump and the bottom straight fitting of the selector valve.

Yes

Check pump output to the valve by disconnecting the return line from the TOP of the selector valve and pressing the primer button momentarily and observing a very small amount of solution come out of the valve. The brush trigger switch must be off for this test. The fourth valve is the compressor valve and has no return line and no top fitting. When the primer button is pressed, during this test, air should come out of the top of the fourth valve.

Yes, there is proper pump output

Check for proper operation of the selector valve by disconnecting the valve output tubing from the elbow push fitting installed in valve port "1" (There is a "1" stamped on the valve body at the port). With the brush trigger switch in the on position, press the primer button momentarily and observe a small amount of solution come out of the fitting. The uncolored tubing is the compressor line and has no fluid.

Yes, there is proper valve output

Confirm there is proper flow to the delivery hose assembly by disconnecting the union push fittings in the electrical compartment one at a time and observing product flow using the primer button and brush trigger switch as before. The uncolored tubing is the compressor line and has no fluid.

Yes, there is proper flow

Examine the foam block (item 1 pg 32) for clogged outlet. Unscrew the 3 port fitting from the nozzle block & check for internal blockage. The foam generating media is located behind the 3 port fitting.

No blockage.

Check visible portions of the delivery hose tubing for obvious kinks, breaks, or blockages. With the 3 port fitting disconnected from the foam block, test each selection and check for blocked tubing within the delivery hose by observing fluid delivery into the fitting

No

Re-fill tanks and re-prime the system.

No

Position tubes in the bottom of the tanks and re-prime the system.

Yes

Clear the strainers and re-prime the system.

Yes

Correct or replace as indicated and re-prime the system.

No

Correct or repair as indicated and re-prime the system.

No

Correct or repair as indicated and re-prime the system.

No

Verify that the elbow push fitting is installed in the valve port marked "1" and the pump output tubing is connected to the opposite fitting on the valve body. If not, call 1-800-968-8227 for Tech Support.

Yes, the fittings and tubes are correct

Replace the valve.

No

See the "Electrical Issues" portion of this section

No

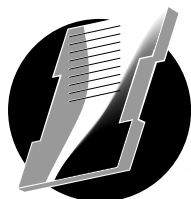
Correct Clogged, pinched, kinked, or broken tubing or fittings

Yes

Correct as indicated.

No flow

Repair or replace delivery hose set.



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## WARNING !

Never connect or disconnect any wire or connector to the PLC with electrical power applied to the Fresh'N Up unless directed to. Doing so **will** damage the PLC.

When Shampoo is selected - the Front valve and the Second valve will open when the brush trigger switch is placed in the ON position

When Spot Remover is selected - the Third valve will open when the brush trigger switch is placed in the ON position

Yes, there is proper flow.  
Reassemble brush and return to service.

## Electrical Issues

When the timer is counting down, and Shampoo or Spot Remover is selected, does the corresponding red door indicator come on?

No

See PLC Troubleshooting Section

Yes

When the timer is counting down, and a fragrance is selected, does the corresponding orange PLC output indicator come on?

No

See PLC Troubleshooting Section

"Y0" = Shampoo selection  
"Y1" = Spot Remover selection

Yes

Confirm good wire connection at PLC terminals  
"Y0" = Shampoo selection  
"Y1" = Spot Remover selection

No

Repair wiring connections as indicated.

Wiring connections are good.

When the brush trigger switch is placed in the ON position, does the yellow "Trigger" indicator come on.

No

See Trigger Switch troubleshooting section below.

Yes

With the timer counting down, check for proper valve actuation (one at a time), by disconnecting the violet common wire from all but the valve(s) being selected.  
Front valve = Shampoo selection water  
Second valve = Shampoo selection concentrate  
Third valve = Spot Remover selection concentrate  
Rear valve = Compressor (should switch with each trigger actuation regardless of selection)

No

Replace valve

Yes, the valve actuates.

If the valve appears to pass both the electrical and plumbing issues, call 1-800-968-8227 for Tech Support

## Trigger Switch Troubleshooting

Is the Brush Trigger Switch wire connector plug in the left side of the electrical controls area connected with no broken wires.

No

Repair as indicated

Yes

Open the brush and check for broken wires attached to the switch.

Yes

Repair as indicated

No

Check trigger switch for continuity

Bad

Replace Switch

Switch checks good.

Check continuity of individual wires in the delivery hose set.

Bad

Replace delivery hose set.

Wires check good.

Check for good connections of violet and brown wires to terminal strip under the dome at right of compressor.

Bad

Repair as indicated

Wires check good.

Check the VPL Harness plug connection at the Chassis. Check pin 9 - Brown wire to terminal strip just checked and Violet wire in the chassis to Terminal Block 12

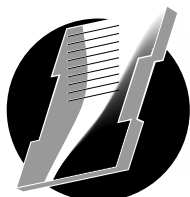
Bad

Repair as indicated

Wires and connections check good.

Call 1-800-968-8227 for Tech Support

Troubleshooting the Brush Trigger Switch is indicated when the Yellow "Trigger" indicator on the chassis front panel fails to light up when the brush trigger switch is placed in the ON position.



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Solution is Delivered to the Gun, but Poor Foam generation or Lack of foam generation.  
(Assumes the compressor and pump turn on and off correctly and there are no outstanding plumbing issues checked above)

## Do not dilute the shampoo concentrate.

The Carpet Wizard uses a 2 part system - water in the large tank and concentrate in the smaller tank. There is no need to premix anything.

When "Shampoo" is selected, the PLC directs the pump and valves deliver a ratio of 7 parts water and 1 part concentrate to the foam block. There, the 2 solutions are deposited on a piece of foam generating medium and agitated by the air from the compressor to create the foam..

When "Spot Remover" is selected, the PLC directs the pump and valves to deliver only the concentrate to the piece of foam generating medium to be agitated into foam.

1	10	Is the system fully primed? Hold the prime switch with the trigger switch in the ON position until there is a constant flow. Full prime can take several minutes. Check individual selections for correct prime using normal operational vend cycle.		
		When using the Prime button, foam generation may be poor due to the volume of fluid being delivered to the foam block. The Prime button delivers both solutions to the nozzle at the same time thereby overloading the foam block. When priming is complete, you can test the foam generation of the individual selections by making a regular vend.	Bad	Reprime the system as indicated.
		System is fully primed.		
		Foam block may be damaged or partially blocked. Open the brush and unscrew the 3 port fitting from the nozzle block. The Foam Generating Media is located behind the 3 port fitting.	Bad	Correct or replace as indicated.
		No damage or blockage.		
		Check visible portions of the delivery hose tubing for obvious kinks, breaks, or blockages.	Bad	Repair or replace the delivery hose set as indicated
		No visible obstruction or damage.		
		Is there positive airflow at the brush foam outlet port?	Yes	Call 1-800-968-8227 for Tech Support
		No		
		Disconnect the union push fitting for the uncolored tubing in the electrical compartment. When the primer button is pressed and brush trigger switch is turned on, is there positive airflow from the uncolored tube?	Yes	The uncolored air flow tubing in the delivery hose is kinked, broken, clogged, or pinched. Repair or replace the delivery hose set as indicated.
Reconnect tubing after test	1	No air flow		
		Disconnect the uncolored tubing from the push fitting elbow installed in the compressor. When the primer button is pressed and brush trigger switch is in the On position, is there positive airflow from the compressor?		
		Yes	No	Replace the compressor
Reconnect tubing after test	1	Yes		
		With the Brush Trigger Switch in the OFF press and hold the primer button. Is there airflow from the top port of the 4th or rear valve? (This valve has no fitting on the top port)		
		Yes, there is proper pump output	No	Verify that the elbow push fitting is installed in the valve port marked "1" and the compressor output tubing is connected to the opposite fitting on the valve body. If not, call 1-800-968-8227 for Tech Support.
				Yes, the fittings and tubes are correct
				Disconnect the violet wire from all but the 4th or rear valve (the compressor valve). With the unit in an idle status, does the valve actuate when the brush trigger switch is turned on? If not see the Trigger Switch Troubleshooting section above.
Reconnect wires after test				Yes the valve actuates.
				Replace valve
		Disconnect the uncolored tubing from the elbow push fitting installed in valve port "1". When the primer button is pressed and brush trigger switch is turned on, is there positive airflow from the valve?		
			No	Replace valve
Reconnect tubing after test	1			





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Yes

Check the uncolored tubing going to the delivery hose tubing connection in the electrical compartment for obstructions.

No obstructions

Call 1-800-968-8227 for Tech Support

Yes

Correct Clogged, pinched, kinked, or broken tubing or fittings



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## Timer Problems

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# CARPET WIZARD

## Timer Troubleshooting

(Assumes red 115vac and yellow 24vac indicators on chassis front panel are on)

### WARNING !

Never connect or disconnect any wire or connector to the PLC with electrical power applied to the Fresh'N Up unless directed to. Doing so **will** damage the PLC.

No Display at all	2	21	Is the Timer (ABC2) fuse holder blown fuse light on?	No	Replace Timer (ABC2) fuse	2	21	
	2	2	Is 6 pin timer harness connector plugged into the controls chassis?	No	Correct problem			
		2	Are there any broken wires, damaged pins on the timer harness plug or is the harness cable damaged?	Yes	Repair as indicated			
	2	2	Open Timer case and look for broken wires to terminal strip P1	No	Replace Timer			
			Repair as indicated					
Timer display is on but does not count down at all			Has correct amount of money been deposited?	Yes	No			
			Is value accumulated on the display correctly for the money deposited?	Yes		Are there any broken wires or damaged pins where the Timer harness is connected to the chassis or is the harness cable damaged? Repair or replace as indicated.	2	2
			Confirm the timer is programmed with the correct number of "Coins To Start" and the correct "Cycle Time". Correct as indicated. (See page 13 - LED Timer Setup)	Yes		Trace the interface cable from the Chassis to the door. Is there a disconnected plug, damaged harness cable, wire connection, broken or bent connector pin? Repair or replaced as indicated.	1	7
			Replace Timer	Programming is Correct		Open Timer case and look for broken wires to terminal strip P1. Repair as indicated.		
						See Coin Mech/Bill Acceptor Troubleshooting.		
Timer counts down but No Vacuum or Shampoo function The Carpet Wizard will always start in the vacuum mode. Shampoo or Spot Remover selection can be made at anytime the timer is counting down. (Also see No Vacuum and No Shampoo Delivery trouble shooting sections.)	1	16	With the Timer counting down, is the yellow "Timer" indicator on the chassis front panel on?	Yes	No	Are there any broken wires, damaged pins on the timer harness plug where it is connected to the chassis, or is the harness cable damaged? Repair or replace as indicated.	2	2
						Harness wiring is Good		
						Confirm good wiring connection at CR3 terminal 4. There should be (2) green wires. Repair wiring as needed.	2	23
						Yes, wiring is good		
						Confirm good wiring connection between CR3-3 and Terminal Block 24. Repair wiring as needed.	2	23
						Yes, wiring is good	2	23
						With the timer counting down, meter between CR3-4 and Terminal Block 18. If you read 24 VAC , replace the chassis front panel "Timer" indicator and re-start this section	2	23
						No 24 vac.	2	22
						Open Timer case and look for broken or loose wires to terminal strip P1. Repair as indicated.	1	16

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				Yes, wiring is good Replace Timer	
2	24	With the Timer counting down, is the orange PLC "X7" indicator on?	No	See PLC Troubleshooting section.	
		Yes			
2	24	With the timer counting down, is the orange PLC "Y4" indicator (if Vacuum selected) or "Y3" (if Shampoo or Spot Remover selected) on?	No	See PLC Troubleshooting section.	
		Yes			
		See "No Vacuum" or "No Fragrance" Troubleshooting sections			
Timer counts down but does not switch to premium time (Assumes the chassis front panel Yellow "Timer" indicator is on.)		With the timer counting down, does the corresponding Red door indicator come on when Shampoo or Spot Remover is selected?	No	Trace the Interface cable from the Chassis to the door. Is there a disconnected plug, damaged harness cable, wire connection, broken or bent connector pin? Repair as indicated.	
		Yes		Harness wiring is Good Confirm wiring connections to door switches and indicator lights. Repair as indicated. Connections are good. Test indicator lights by disconnecting one wire and checking the indicator lamp for continuity. Replace as indicated. Light is good See PLC Troubleshooting section.	
2	24	When a Shampoo or Spot Remover is selected on the front door, and the timer is counting down, is the orange PLC "Y5" indicator on?	No	See PLC Troubleshooting section.	
		Yes			
2	2	Are there any broken wires, damaged pins on the timer harness plug where it is connected to the chassis, or is the harness cable damaged?	Yes	Repair or replace as indicated.	
		Harness wiring is Good			
2	24	Confirm good wiring connection at PLC terminal Y5. Should be white wire going to timer harness.	Bad	Repair or as indicated.	
1	2	Yes, wiring is good			
2	24	Confirm good wiring connections between PLC terminal Y3 and Terminal Block 12.	Bad	Repair or as indicated.	
2	22	Yes, wiring is good			
		Open Timer case and look for broken wires to terminal strip P1. Repair as indicated.	Bad	Repair or as indicated.	
		Yes, wiring is good			
		Replace Timer			





# **Coin/Bill Acceptor Problems**

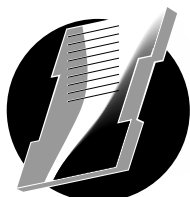
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# CARPET WIZARD

Fig.	Item	Fig.	Item
	<p><u>Coin Mechanism and Bill Validator</u> (Assumes red 115vac and yellow 24vac indicators on chassis front panel are on)</p>		<p><b>WARNING !</b> Never connect or disconnect any wire or connector to the Coin Mechanism or Bill Acceptor with electrical power applied to the Carpet Wizard. Doing so <b>will</b> damage the Coin Mechanism or Bill Acceptor.</p>
	<p><u>Coin Mechanism rejects all coins</u></p>		<p>Trace the Interface cable from the Chassis to the coin mechanism. Is there a disconnected plug, damaged harness cable, wire connection, broken or bent connector pin? Repair as indicated.</p> <p>Harness wiring is Good</p> <p>Meter from pin 1 to pin 2 of the coin mechanism 3 pin plug. Does the meter read 24 VAC? If it does, replace the coin mechanism.</p> <p>No</p> <p>Confirm the chassis interface harness connections to chassis terminal blocks 17 (black wire) and 18 (red wire). Repair as indicated.</p> <p>Connections are good</p> <p>Call 1-800-968-8227 for Tech Support</p>
	<p>Does the coin mechanism indicate that there is power applied to the coin mechanism?</p> <p>Yes</p> <p>Check for coin jams</p> <p>None</p> <p>Check the coin path for damage</p> <p>None</p> <p>Check coin mech programming.</p> <p>Program appears ok</p> <p>Call 1-800-968-8227 for Tech Support</p>		<p>No</p> <p>Yes</p> <p>Yes</p> <p>Bad</p> <p>Clear or repair as indicated</p> <p>Repair or replace as indicated</p> <p>Reprogram as indicated</p>
	<p>Coin Mechanism &amp; Bill Validator accepts coins and/or bills, but Timer does not accumulate value.</p>		<p>Has correct amount of money been deposited?</p> <p>Yes</p> <p>Does the digital coin counter register the money being deposited ( \$1.00 will register as 4 coins ).</p> <p>Yes</p> <p>Are there any broken wires or damaged pins where the Timer harness is connected to the chassis or is the harness cable damaged? Repair or replace as indicated.</p> <p>Wires and connections are good</p> <p>See Timer Troubleshooting section.</p>
	<p>Coin Jams</p>		<p>Check the coin path for obstruction or other damage.</p> <p>No</p> <p>Is the coin drawer full?</p> <p>No</p> <p>Is there an obstruction between the coin mechanism and coin box?</p> <p>No</p> <p>Call 1-800-968-8227 for Tech Support</p>
	<p>Bill Validator has a high bill rejection rate</p>		<p><b>WARNING !</b> Never connect or disconnect any wire or connector to the Coin Mechanism or Bill Acceptor with electrical power applied to the Carpet Wizard. Doing so <b>will</b> damage the Coin Mechanism or Bill Acceptor.</p> <p><b>TIP -</b> Don't try the same rejected bill more than 3 consecutive times. Doing so may temporarily "teach" the validator that the bill is a bad bill. This will make further troubleshooting more difficult.</p>

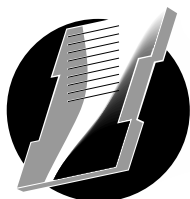
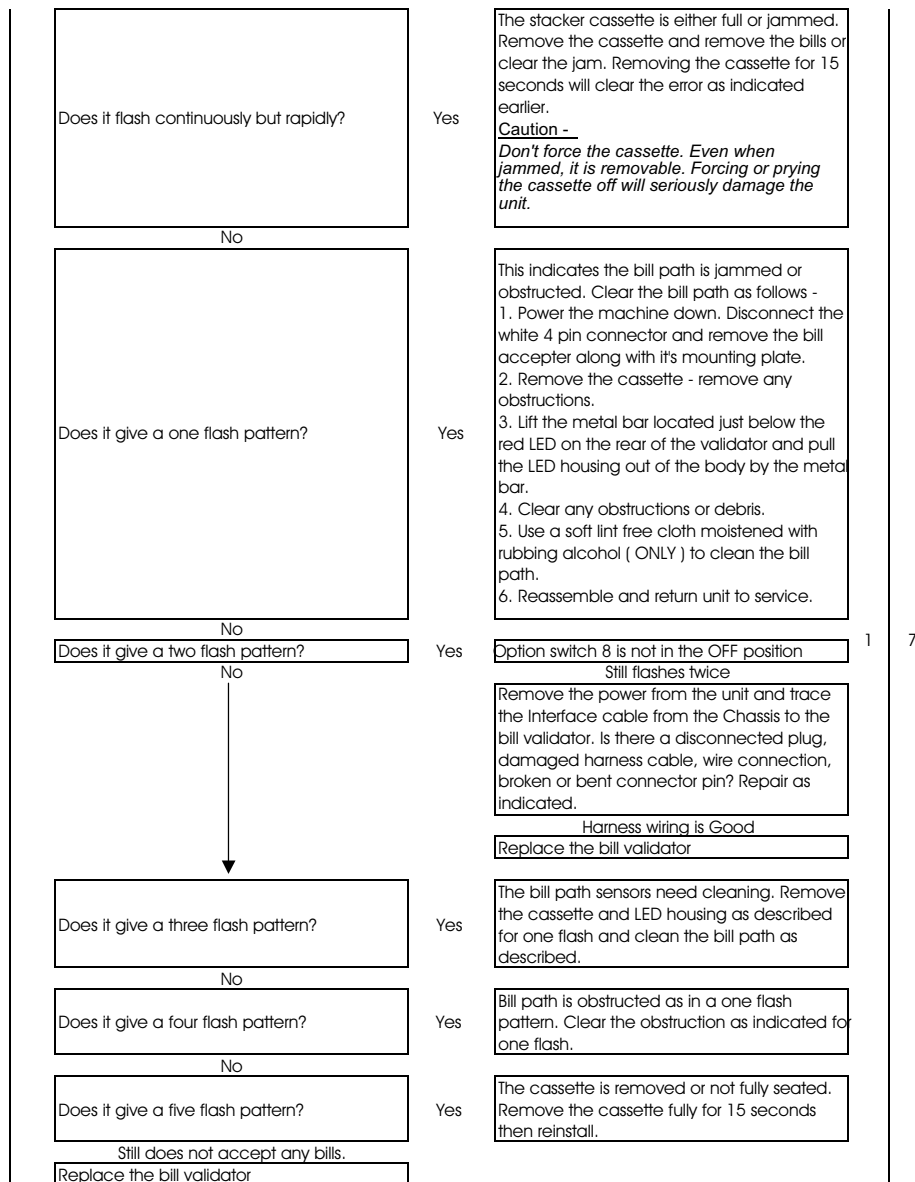


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	Are any of the option switches in the ON position?	Yes	Return all option switches to the OFF position and reprogram the validator with the coupon as instructed on pages 10-11. NOTE- If you choose to turn one switch on to override the coupon programming, you must set all of the switches to the desired function (switch 7 must be on and switch 8 must be off).	
	No			
	Is the validator programmed for 1 or 2 way acceptance and/or High Security? These settings can give the appearance of a high rejection rate.	Yes	Reprogram the acceptor for 4 way acceptance. If your area doesn't suggest High Security is required, consider reprogramming for High Acceptance rather than High Security.	
	No			
	The sensor optics may need cleaning. Does the red LED on the back of the validator give a three flash pattern?	Yes	Clean the bill path and optics lenses as follows - 1. Power the machine down. Disconnect the white 4 pin connector and remove the bill acceptor along with its mounting plate. 2. Remove the cassette 3. Lift the metal bar located just below the red LED on the rear of the validator and pull the LED housing out of the body by the metal bar. 4. Use a soft lint free cloth moistened with rubbing alcohol ( ONLY ) to clean the bill path and optics lenses. 5. Reassemble and return unit to service.	
	No			
	Call 1-800-968-8227 for Tech Support			
<p>Bill Validator doesn't accept any bills</p> <p><b>WARNING !</b> Never connect or disconnect any wire or connector to the Coin Mechanism or Bill Acceptor with electrical power applied to the Carpet Wizard. Doing so will damage the Coin Mechanism or Bill Acceptor.</p>	Is the red LED indicator on the back of the validator on or off?	Off	Trace the Interface cable from the Chassis to the bill validator. Is there a disconnected plug, damaged harness cable, wire connection, broken or bent connector pin? Repair as indicated.	1 7
	On		Harness wiring is Good	
			Meter from pin 1 to pin 2 of the white 4 pin bill validator harness in the bill validator compartment. Does the meter read 24 VAC? If it does, confirm the wiring is good. If it is, replace the bill validator.	
			No 24 vac	
			Confirm the chassis interface harness connections to chassis terminal blocks 17 (black wire) and 18 (red wire). Repair as indicated.	1 7
			Connections are good	2 22
			Call 1-800-968-8227 for Tech Support	
	While the unit is powered up, remove the bill cassette from the bill validator for 15 seconds and reinstall it. Wait 30 seconds. Was the problem cleared?	Yes	Return the unit to service	
	No			
	Does the red LED indicator on the back of the validator flash?	No	Are any of the option switches in the ON position? If not, call 1-800-968-8227 for Tech Support	
	Yes		Yes, one or more option switches are ON. Return all option switches to the OFF position and reprogram the validator with the coupon as instructed on pages 10-11. NOTE- If you choose to turn one switch on to override the coupon programming, you must set all of the switches to the desired function (switch 7 must be on and switch 8 must be off).	
	Does it flash continuously but slowly?	Yes	Replace the Bill Validator	
	No			



# CARPET WIZARD

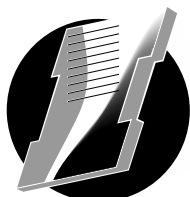






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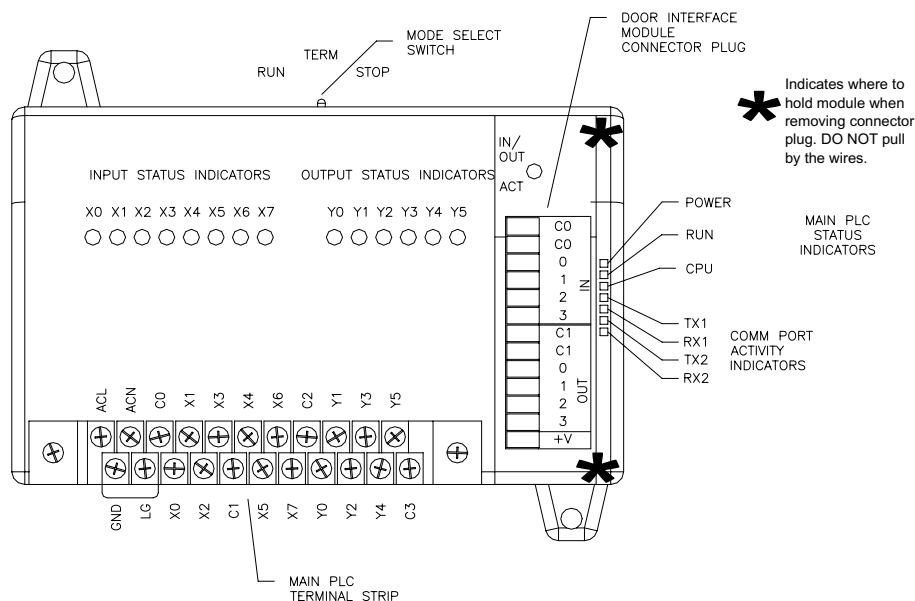


# CARPET WIZARD

## WARNING !

Never connect or disconnect any wire or connector to the PLC with electrical power applied to the Carpet Wizard unless directed to. Doing so **will** damage the PLC.

## PLC Trouble Shooting



\* Indicates where to hold module when removing connector plug. DO NOT pull by the wires.

(Square indicators on right side of PLC)   
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## Output Status Indicators (Round orange indicators)

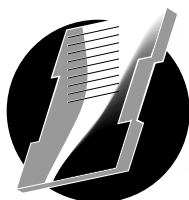
These indicators turn on when the CPU has given an instruction for an output to be supplied by the corresponding PLC output terminal. These are similar to a relay coil status indicator - they only indicate that the control circuit has activated.

	X4		Not used in the field at this time.
	X5		Not used in the field at this time.
	X6	On	Primer button input of 120VAC is applied to PLC terminal X6 (Connected to one primer button terminal).
	X7	On	Input from the Timer is converted to 120VAC by CR3 and applied to PLC Terminal X7 (Connected to CR3-2).
<b>Shampoo Mode</b>	Y0	On	24VAC signal should be supplied to PLC Terminal Y0 (Selection Valves #1 and #2 - Shampoo selection). Voltage source is applied to the PLC main terminal C2 (connects to terminal block 5).
	Y1	On	24VAC signal should be supplied to PLC Terminal Y1 (Selection Valve #3 - Spot Remover selection). Voltage source is applied to the PLC main terminal C2 (connects to terminal block 5).
	Y2		Only used on a Fresh'N Up Fragrance unit
<b>Compressor &amp; Pump</b>	Y3	On	Switches CR2-A2 to 24VAC neutral. Connect PLC Terminal Y3 to terminal block 12 via PLC Terminal C3 (Compressor and Pump - Shampoo or Spot Remover mode).
<b>Vac Motors</b>	Y4	On	Switches CR1-A2 to 24VAC neutral. Connect PLC Terminal Y3 to terminal block 12 via PLC Terminal C3. (Vac Motors - Vac mode)
	Y5	On	Switches the Timer "2-Timer" leg to 24VAC neutral. Connect PLC Terminal Y5 to terminal block 12 via PLC Terminal C3.

## Door Interface Module

Connects the door selector switches and door selection indicators to the PLC. There are no individual status indicators for the door interface module.

Module C0 and C0 (internally connected) (also jumpered to module C1)	-24VDC (sinking) common for the door selector switches. Connected to diode bridge (-) by blue wire.
Module Input 0	Input from Vacuum selector switch on the door.
Module Input 1	Input from Shampoo selector switch on the door.
Module Input 2	Input from Spot Remover selector switch on the door.
Module Input 3	Only used on a Fresh'N Up Fragrance unit
Module C1 and C1 (internally connected) (also jumpered to module C0)	-24VDC (sinking) common for the door selector indicators. Connected to diode bridge (-) or blue wire via jumper to module C0.
Module Output 0	Output for Vacuum selector indicator light on the door.
Module Output 1	Output for Shampoo selector indicator light on the door.
Module Output 2	Output for Spot Remover selector indicator light on the door.
Module Output 3	Only used on a Fresh'N Up Fragrance unit
+V	+24VDC power supply for module. Connected to diode bridge (+) by green wire. Yellow wire at this position provides +24VDC to door selection switches and indicator lamps.



# CARPET WIZARD

Fig.	Item		Fig.	Item	
<p><b>NOTICE -</b> The following troubleshooting steps assume you have been directed to this section by another troubleshooting step, and have eliminated other potential faults such as power faults.</p> <p><b>Begin all PLC troubleshooting with these steps</b></p>			<p><b>WARNING !</b> <i>Never connect or disconnect any wire or connector to the PLC with electrical power applied to the Carpet Wizard unless directed to. Doing so <b>will</b> damage the PLC.</i></p>		
	<div>Is the Main Status "Power" LED on?</div> <div>Yes</div>	No	<div>There is no 120VAC applied to the PLC. Confirm good wiring connections between PLC TerminalACL and ABC-2 Fuse terminal 28, also Between PLC TerminalACN and terminal block 1.</div>	2 24 2 29 2 28	
	<div>Is the "In/Out ACT" LED on?</div> <div>Yes</div>	No	<div>Indicates a hardware failure. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC</div>		
	<div>Is the Main Status "CPU" LED on?</div> <div>No</div>	Yes	<div>There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.</div>		
	<div>Is the Main Status "RUN" LED on?</div>	No	<div>The Mode Select Switch is not in the "RUN" position.</div>		
<p><b>No Door Selection Indicator Lights</b> The Carpet Wizard will always start in the vacuum mode. Shampoo and Spot Remover mode can only be selected with the Timer counting down.</p>					
1	7	<div>Test indicator lights by disconnecting one wire and checking the indicator lamp for continuity.</div> <div>Light is good</div> <div>Confirm wiring connections to door switches and indicator lights.</div> <div>Connections are good.</div> <div>Trace the Interface cable from the Door Interface Module to the door. Is there a disconnected plug, damaged harness cable, wire connection, broken or bent connector pin?</div> <div>Harness wiring is Good</div> <div>Power down the unit. Check the Door Interface Module plug for loose or broken wires.</div> <div>Wiring is good.</div> <div>Disconnect power to the unit and unplug the Door Interface Module connector as indicated above. Apply power to the unit and connect a voltmeter set to read DC Voltage to the "+V" and "C1" terminals of the Door Interface Module plug making sure to observe the polarity given above. Does the voltmeter read 23 to 25 VDC?</div> <div>Yes</div> <div>There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.</div>	Lamp is bad  Wiring is bad  Wiring is bad  Wiring is bad  No	<div>Replace as indicated.</div> <div>Repair as indicated.</div> <div>Repair as indicated.</div> <div>1. Hold Module where indicated above &amp; gently work the green connector plug loose, and remove from the module. 2. Make sure the wires are inserted into the connector plug and tighten the terminal screws firmly with a properly sized screwdriver. 3. Reconnect the plug, seating it fully.</div> <div>Replace the diode bridge. Observing the wire connections and polarity given above.</div>	2 19
2	24	<div>With the timer counting down, is the "X7" Input status indicator on?</div> <div>No</div>	Yes	<div>If a voltmeter connected to PLC Terminals X7 and ACN reads 120VAC with the timer counting down, see the Vacuum Motor and Pump and Compressor Troubleshooting sections below.</div>	
<p>The timer is counting down, but no vacuum, shampoo or spot remover function.</p>					



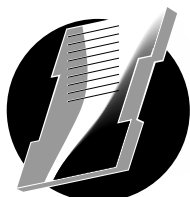
# CARPET WIZARD

2	24	Are the wiring connections at PLC Main Terminals X7, C1, and ACN and terminal block 1 good?	No	Repair as indicated.		
		Yes				
	24	Does a voltmeter connected to PLC Main Terminals C1 and ACL read 120VAC?	No	Repair faulty wiring between PLC-C1, ACN, and/or terminal block 1.	2	24
		Yes			2	28
	24	With the timer counting down, does a voltmeter connected to PLC Terminals X7 and ACN read 120VAC?	Yes	See the Vacuum Motor and Fragrance Output Troubleshooting sections below.		
2		No				
	23	Are all 4 wiring connections to CR3 good? CR3-1 connects to PLC-ACL and fuse 28. CR3-2 connects to PLC-X7. CR3-3 connects to terminal block 24. CR3-4 connects to the timer harness pin 6.	No	Repair as indicated.		
2		Yes				
	23	With the timer counting down, does a voltmeter connected to CR3-4 and terminal block 24 read 24VAC?	Yes	Replace CR3	2	23
2		No				
	22	See Timer Troubleshooting Section				
<b>Vacuum Motor control output Troubleshooting</b> (Assumes X7 Input Status indicator is on)		With the timer counting down and Vacuum mode selected and indicated on the door, does the "Y4" status indicator come on?	Yes	Does a voltmeter connected to PLC Main Terminal C3 and Terminal Block 11 read 24VAC? If it does, repair wiring between PLC terminal C3 and Terminal Block 12. Wiring is good.	2	24
		No		With the timer counting down and Vacuum mode selected and indicated, does a voltmeter connected to PLC Main Terminal Y4 and Terminal Block 11 read 24VAC? If it does, see Vacuum Motor Troubleshooting section.	2	22
				No	2	22
				There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.		
<b>Pump &amp; Compressor control output Troubleshooting</b> (Assumes X7 Input Status indicator is on)		With the timer counting down and Shampoo or Spot Remover mode selected and indicated on the door, does the "Y3" status indicator come on?	Yes	Does a voltmeter connected to PLC Main Terminal C3 and Terminal Block 11 read 24VAC? If it does, repair wiring between PLC terminal C3 and Terminal Block 12. Wiring is good.	2	24
		No		With the timer counting down and Shampoo or Spot Remover mode selected and indicated, does a voltmeter connected to PLC Main Terminal Y3 and Terminal Block 11 read 24VAC? If it does, see Shampoo Delivery Troubleshooting section.	2	24
				No	2	22
				There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.		



# CARPET WIZARD

<b>Timer will not shift to premium time value</b> (Assumes the Timer Troubleshooting Section has been completed and assumes X7 Input Status indicator is on)	2	24	With the timer counting down and Shampoo or Spot Remover mode selected and indicated on the door, does the "Y5" status indicator come on?	Yes	Does a voltmeter connected to PLC Main Terminal C3 and Terminal Block 11 read 24VAC? If it does, repair wiring between PLC terminal C3 and Terminal Block 12.	2	24
			No		Wiring is good. With the timer counting down and Shampoo or Spot Remover mode selected and indicated, does a voltmeter connected to PLC Main Terminal Y5 and Terminal Block 11 read 24VAC? If it does, see Shampoo Delivery Troubleshooting section.	2	24
					No There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.		
			↓		There is an internal hardware or software failure in the PLC. Call 1-800-968-8227 for Tech Support to confirm. Replace the PLC.		





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## Notes



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