

**TROUBLE SHOOTING FOR MARVEL ALL-REFRIGERATOR
AND WINE STORAGE ALL-REFRIGERATOR MODELS**

Models: 61AR, 60AR, 6BAR, 6OBAR, 6RGD, 6ORGD, 61HK, 60HK, 61WC

MARVEL INDUSTRIES			
TROUBLESHOOTING PROCEDURES FOR MODELS 61AR, 60AR, 6BAR, 6OBAR, 6RGD, 6ORGD, 61HK, 60HK, 61WC, 6ADA			
PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
Common items for All-Refrigerator models			
1. Interior too cold or contents freezing.	a. Thermostat setting	1. Thermostat set to too cold a setting for ambient conditions.	1. Adjust thermostat to a warmer setting (lower number on control knob).
	b. The evaporator for the presence of a uniform frost pattern. Is the frost confined to left wing and the left side of the back? NOTE: Compressor should be operation for at least 10 minutes with the door open for at least 5 minutes to perform this check. See introduction to this section for full explanation of the unique problem.	1. Refrigerant leak or low refrigerant charge in the sealed system. Refrigerant volume in the evaporator is not sufficient to cool the region of the evaporator plate where the evaporator plate sensing thermostat's thermobulb mounts. Therefore, the control thermostat never reaches its cut-out temperature and the compressor operates 100% of the time. The remaining evaporator volume is sufficient to cool the air temperature below freezing causing the contents to freeze.	1. Locate and correct the cause of the refrigerant leak. Replace drier, evacuate and recharge the sealed refrigerant system with the proper amount of refrigerant charge as listed on the unit's data plate.
	c. Thermostat (compressor control) thermobulb mounting or routing.	1. Mounting location incorrect. Model 61WC should be on the right wing of the evaporator plate. All other models mount at the rear top center of the evaporator. 2. Thermostat sensing tube (capillary tube) resting on or above compressor dome in mechanical compartment causing false sensing 3. Thermostat thermobulb mounting bracket or thermistor mounting bolt not secure causing false sensing	1. Relocate thermobulb to proper location 2. Reroute sensing tube clear of compressor dome area. 3. Securely tighten thermobulb mounting bracket or thermistor mounting bolt.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
2. Interior too warm	d. Compressor control thermostat.	<p>4. Insufficient thermobulb contact area on evaporator. U-shaped loop with 3-inch long legs required. Bracket should be located at mid-point of each 3-inch leg. Both legs secured under bracket.</p> <p>1. <u>For Electronic Thermostat Models only</u>- Dip switches on electronic control set at incorrect position</p> <p>2. <u>For Electronic Thermostat Model only</u>- Thermistor resistance value incorrect for the evaporator plate temperature present. If low resistance is present in thermistor, control logic believes interior is warm so the control will not shut off compressor.</p>	<p>Adjust thermobulb contact area to achieve sufficient contact. A U-shaped loop with 3-inch long legs is required. The mounting bracket should be located at the mid-point of each 3-inch leg. Both legs secured under bracket.</p> <p>1. Reset dip switches to correct setting as shown on instruction sheet 41006703.</p> <p>Check thermistor resistance value vs. temperature to comply with value shown in Table 5.1 at the end of this procedure. Replace thermistor if values are not as specified.</p>
	e. Placement of glass shelves in cabinet interior.	<p>3. Cut-out temperature too low due to internal failure in the thermostat.</p> <p>1. <u>For models with glass shelves only</u>- If white rubber "shelf bumpers" do not space the glass shelf out away from the molded-in liner shelf supports on the back of the cabinet interior, the cold air from the evaporator can be "trapped" above the shelf resulting in the area above the shelf becoming too cold and below too warm.</p>	<p>3. Replace the thermostat. If it is an electronic thermostat, replace control thermistor and potentiometer.</p> <p>1. Properly place the glass shelves in the unit. White rubber "shelf bumper" must be placed so as to create an air space gap between the rear edge of the glass shelf and the molded shelf supports on the back of the cabinet interior.</p>
	a. Thermostat.	<p>1. Thermostat set to too low (warm) of a setting.</p> <p>2. <u>For Electronic Thermostat Models only</u>- Dip switches on electronic control set at incorrect position.</p>	<p>1. Adjust thermostat to a colder setting (higher number on knob)</p> <p>2. Reset dip switches to correct setting as shown on instruction sheet 41006703</p>

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
		<p>3. <u>For Electronic Thermostat Models only</u>- Thermistor resistance value incorrect for the evaporator plate temperature present. If high resistance is present in thermistor, control logic believes interior is cold so the control will not power compressor.</p> <p>4. Thermostat failed, cutting off compressor too soon. To check this, bypass thermostat with jumper wire to see if compressor and fan operate and cool interior to proper temperatures.</p>	<p>3. Check thermistor resistance values vs. temperature to comply with values shown in table 5.1 at the end of this procedure. Replace thermistor if values are not as specified.</p> <p>4. If compressor and fan operate with jumper wire and cool interior to proper temperature, replace the thermostat. If an electronic thermostat, replace the control thermistor and potentiometer.</p>
	b. The evaporator for the presence of a frost pattern if frost is <u>not</u> present with compressor operating	1. Refrigerant leak	1. Leak check the sealed refrigeration system. Locate and correct the source of the leak. Replace the drier and recharge to proper amount.
	c. High and low side pressures in the sealed system.	<p>1. Compressor valve failure, preventing compressor from developing required refrigerant pressures for system operation.</p> <p>2. Restriction in the sealed refrigerant system causing high compressor discharge pressures and low pressures or vacuum conditions on the suction side. Pressure does not equalize quickly when the compressor is turned off.</p>	<p>1. Replace compressor and drier, evacuate and recharge with refrigerating to the proper amount.</p> <p>2. Locate the restriction and correct the cause. Evacuate, replace drier and recharge the sealed refrigeration system to the proper level.</p>
	d. Interior Light- Does it remain on when the door is closed, adding heat to the interior?	<p>1. Striker plate on bottom of door not present, bent, or not positioned properly to depress light switch in grille area when door is closed. Grille may flex inward instead of light switch being depressed</p> <p>2. Failed light activation switch not turning off light when switch is depressed.</p>	<p>1. Install, replace, or straighten striker plate such that it extends at 90° to door bottom so light switch is depressed when door is closed. Install support behind grille to prevent flexing inward.</p> <p>2. Replace light activation switch.</p>

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
	e. Condenser fan operation.	3. Wiring connection to or from light activation switch improperly wired bypassing switch.	3. Correct improper wiring connection.
		4. Door light activation switch over-ride switch in the "on" position permitting light to remain on with door closed (over-ride switch present on some but not all models)	4. Place over-ride switch in the "door" position. Verify light goes out when door is closed by depressing light activation switch and confirming light goes out.
		1. Condenser fan blade jammed against shroud or otherwise bound.	1. Free condenser fan blade so it rotates freely.
	f. Condenser air flow blocked or restricted	2. Wiring connection to and from fan motor terminal block and thermostat loose or incorrect.	2. Correct loose or incorrect wiring connections.
		3. Condenser fan motor failed.	3. Replace condenser fan assembly.
3. Excessive frost build-up on evaporator (interior temperatures are normal and frost pattern is uniform).	a. Cabinet for proper sealing (absence of air leaks).	1. Condenser air flow blocked by dirt, lint, trash, etc.	Clean condenser to restore air flow.
		2. Air flow in or out of toe space grille restricted.	2. Clear restriction to air flow through the toe space grille. No obstruction to air flow permitted in an area 3 feet out from the grille.
		1. Exterior door of unit not hanging straight, preventing proper gasket sealing.	1. Install door shim kit to correct hang of door.
		2. Door hinges bent.	2. Install new hinge kit to correct hang of door. Door shims may also be required. See hinge and shim installation instructions.
		3. Air leaks at locations where refrigerant line, electrical wiring or thermostat capillary tubes/cable enter cabinet interior	3. Seal around these entry points with refrigeration putty (permagum) to eliminate air leaks.
		4. Air leaks around door gasket due to physical contour of gasket.	4. Reform gasket using heat to achieve a complete seal.
		5. Door Gasket torn or has lost its magnetism.	5. Replace gasket if it is stiff, torn, or has lost its magnetism.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
4. Compressor, fan and interior light do not function.	b. Extended or too frequent door openings.	6. Damage to cabinet front flange (gasket sealing area).	6. Straighten area to permit proper seal. If unable to achieve proper seal, unit is non-repairable.
		7. Bent striker plate on door causing grille to flex inward for a time after door closing and then push the door back open slightly.	7a. Straighten striker plate so it extends at a 90 degree angle from the bottom surface of the door extrusion and properly depresses the light switch. 7b. Install support behind the grille to prevent flexing.
5. Interior light functions but compressor and fan will not run	a. Power supply.	1. Extended or too frequent door openings allow warm moist air to reach the cold evaporator plate causing heavier frost build-up. 1. Unit not plugged in power outlet. 2. Fuse of circuit breaker tripped.	1. Reduce frequency and duration of door openings. 1. Plug unit into power outlet. 2. Replace fuse. Reset circuit breaker. Correct power supply problem.
	b. Power cord and wiring connections within unit from power cord to thermostat and terminal block.	1. Loose or incorrect wiring connections at power cord, thermostat input or terminal block.	1. Correct loose or incorrect wiring connections.
	Compressor control thermostat.	1. <u>For Electronic Thermostat Models Only</u> - Dip switches on electronic control set at incorrect position. 2. <u>For Electronic Thermostat Models Only</u> - Thermistor resistance value incorrect for the evaporator plate temperature present. If high resistance is present in the thermistor, the control logic believes the interior is cold so the control will not power the compressor and fan.	1. Reset dip switches to correct setting as shown on instruction sheet 41006703. 2. Check the thermistor resistance value vs. temperature to comply with the values shown in table 5.1 at the end of this procedure. Replace thermistor if values are not as specified.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
6. Compressor runs; fan does not run.	a. Fan motor and blade assembly.	3. Compressor control thermostat internal failure. Bypass the thermostat with a jumper wire to see if compressor and fan will run. 4. Wiring connections from compressor control thermostat to the terminal block loose or incorrect. 1. Fan blade jammed by shroud, refrigerant line, mount bracket, foreign object etc. 2. Fan motor failed. 3. Connection loose or incorrect on wiring from fan motor to terminal block. 4. <u>For Electronic Thermostat Models Only</u> - Internal failure in the thermostat control allowing it to pass only a limited amount of amperage that is insufficient to power both the compressor and fan motor. Install an insulated jumper wire between the red and black wire to the control and remove the white wire from the control to the terminal block at the terminal block end. Determine if compressor and fan operate normally, if so control block is failed.	3. If compressor and fan operate with the jumper wire in place, replace the compressor control thermostat. If on an electronic thermostat, replace the control, thermistor, and potentiometer. 4. Correct loose or incorrect wiring connections. 1. Free fan blade so it rotates freely. 2. Replace fan motor. 3. Correct loose of incorrect wiring connections. 4. Replace the electronic thermostat control block.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
7. Fan runs but compressor does not run.	a. Thermostat control block	1. <u>For Electronic Thermostat Models Only</u> - Internal failure in the thermostat control allowing it to pass only a limited amount of amperage that is insufficient to power both the compressor and fan motor. Install an insulated jumper wire between the red and black wire to the control and remove the white wire from the control to the terminal block at the terminal block end. Determine if compressor and fan operate normally, if so control block is failed.	1. Replace the electronic thermostat control block.
	b. PTC starter. c. Wiring PTC starter to terminal block. d. Compressor.	1. Failed PTC starter. 1. Loose or incorrect wiring connections at PTC starter or terminal block. 1. Failed motor in compressor. 2. Compressor cycled off on thermal overload protection.	1. Replace PTC starter. 1. Correct loose or incorrect wiring connections. 1. Replace compressor. 2. Unplug unit from electrical supply. Allow compressor to cool 30 -45 minutes. Plug unit into electrical supply again. If compressor starts, locate the cause of the thermal overload. It maybe due to a power interruption, sealed system restriction, high ambient temperature, or blocked fan / condenser.
8. Interior light will not turn off when door is closed.	a. Striker plate on bottom of door	1. Striker plate not present or not positioned properly to depress the light switch when the door is closed 2. Bent striker plate on door causing grille to flex inward but light switch is not being depressed.	1. Replace or reinstall striker plate so light switch is depressed when door is closed. 2a. Straighten striker plate so it extends at a 90 degree angle from the bottom surface of the door extrusion and properly depresses the light switch. 2b. Install support behind grille to prevent flexing.
	b. Light activation switch	1. Failed light activation switch.	1. Replace the light activation switch.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
9. Excessive water in the condensation pan in the mechanical compartment or on the floor under the unit. (See also #3 above Excessive Frost Build-up.)	c. Wiring connections to and from the light activation switch and over-ride switch.	1. Improperly wired activation switch or over-ride switch.	1. Correct improper wiring connections.
	d. Position of door light activation over-ride switch. Is it in the "on" position?	1. If the over-ride switch is in the "on" position instead of the "door" position, the light will remain on with the door closed. This is intended to allow viewing of contents through the glass door with the door closed.	1. Place the over-ride switch in the "door" position. Verify light goes out when door is closed by depressing the light activation switch and confirming that the light goes out.
	e. Over-ride switch operation.	1. Failed over-ride switch.	1. Replace over-ride switch.
	a. Position of the condensation pan. Is it in the proper location?	1. Pan may have become dismantled or displaced due to shipping forces or service.	1. Reinstall the pan in the correct location.
	b. Position of the drain tube. Is it installed in the condensation pan?	1. The drain tube may have become dislodged from the condensation pan allowing water to discharge on to the floor.	1. Reinstall the drain tube in the correct position.
	c. Condition of the striker plate on the door. Is it bent or out of position?	1. Bent striker plate on the door is not properly depressing the light switch and causing the grille to flex inward for a time after the door is closed. The grille is then pushing the door back open slightly as it returns to its normal position. This allows excessive frost to build-up on the evaporator plate, which then melts during the next compressor off cycle. The excessive frost melt generates excessive condensation water which can over fill the condensation pan.	1a. Straighten striker plate so it extends at a 90 degree angle from the bottom surface of the door extrusion and properly depresses the light activation switch without flexing the grille.

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PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
			1b. Install support behind grille to prevent flexing.