ATOSA MBF8501GR

EVAPORATOR FAN MOTOR REPLACEMENT GUIDE

Equipment	One-door reach-in freezer
Model	MBF8501GR
Serial number	AUS100318100800C
Motor part	Atosa W0301904
Prepared	July 15, 2026

IMPORTANT STATUS OF THIS GUIDE

This is a field-developed replacement procedure based on Atosa parts diagrams and the Atosa reach-in operation manual. The reviewed Atosa materials identify the motor and surrounding components, but they do not provide a serial-specific service sequence, screw sizes, torque values, connector details, or fan-blade retention method. Confirm the actual construction of the freezer as it is disassembled and stop if the unit differs materially from the diagrams.

Prepared for McKnight Crossings Church - Building/Equipment File

1. Purpose, scope, and repair assessment

This guide describes a practical method for replacing the evaporator fan motor in the referenced Atosa MBF8501GR freezer. The motor is located in the insulated evaporator assembly at the top of the cabinet. The 2018-era exploded diagram identifies the following motor-related parts:

Diagram item	Atosa part number	Description	Role in repair
11	80021501	Evaporator fan bracket	Supports the motor
12	W0301904	Evaporator fan motor	Replacement component
13	W0301059	Evaporator fan blade	Transfers motor rotation to airflow
16	85011206	Evaporator front cover	Interior access cover
17	W0409080	Evaporator fan motor cover/shroud	Guards and directs airflow around the blade

Estimated difficulty: Moderate. **Estimated hands-on time:** 45-90 minutes after the evaporator is fully thawed and accessible. Total elapsed time may be several hours because food transfer, thawing, cleanup, and temperature pull-down are separate from hands-on repair time.

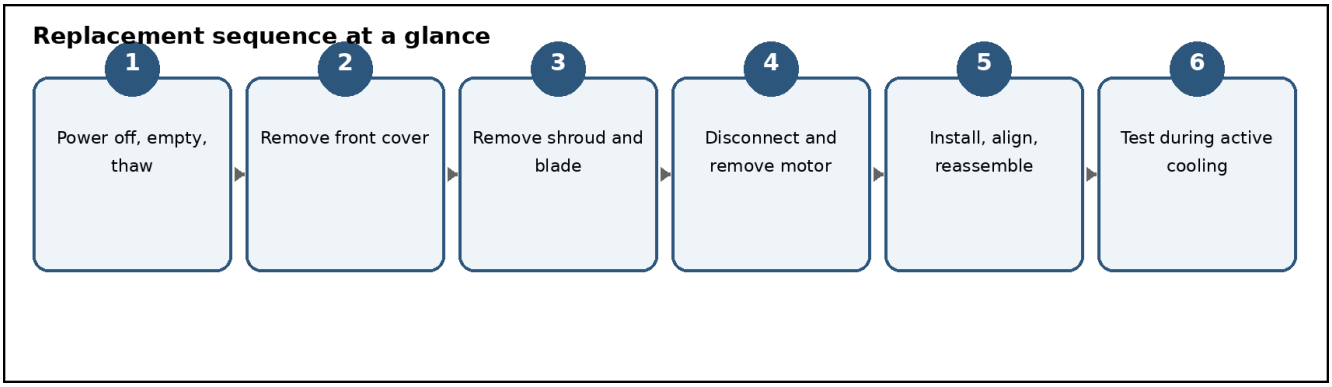


Figure 1. Replacement sequence at a glance.

WHY DIAGNOSIS STILL MATTERS

A non-running evaporator fan does not automatically prove that the motor is defective. Ice blockage, a failed door switch, damaged wiring, the controller, or a defrost condition can also keep the fan off. The service proposal itself states that further diagnosis may be required. Complete the pre-replacement checks below before assuming the new motor will resolve the temperature problem.

2. Safety precautions and stop-work conditions

ELECTRICAL AND MECHANICAL HAZARD

Disconnect the freezer from the wall receptacle before removing any cover or touching wiring. Turning off the front power switch alone is not an acceptable substitute for unplugging the unit. Do not perform live-voltage testing unless you are trained and equipped to do so.

- Transfer all food to another operating freezer before work begins.
- Use lockout/tagout or place a prominent DO NOT PLUG IN tag on the cord while the cabinet is open.
- Allow all ice around the evaporator, blade, shroud, drain pan, and wiring to thaw completely. Do not chip ice with a screwdriver, knife, or other sharp tool.
- Wear cut-resistant gloves and eye protection. Stainless sheet-metal edges and evaporator fins can be sharp.
- Do not bend, pry against, puncture, or place tools on the evaporator tubing. A damaged tube can release refrigerant and turn a motor repair into a sealed-system repair.
- Keep water away from electrical connectors, the controller, lamp components, and the power cord.
- Do not energize the freezer with the fan blade exposed. Reinstall the shroud and front cover before normal testing.

Stop and call a refrigeration technician if any of the following is found:

- oily residue or evidence of a refrigerant leak
- burned or melted wiring
- damaged evaporator tubing
- a motor that is hardwired in a way you cannot safely reproduce
- a blade that will not release without excessive force
- significant corrosion or water damage
- a replacement motor that does not physically and electrically match the original

3. Parts, tools, and supplies

Required or recommended item	Notes
Atosa W0301904 evaporator fan motor	Verify by model and serial number before opening the package.
Screwdriver and nut-driver assortment	Atosa diagrams do not state the fastener sizes; inspect the actual unit.
Small socket set and/or combination wrenches	Useful for bracket and blade hardware if present.
Needle-nose pliers	For insulated connectors or clips; pull on terminals, not wires.
Non-contact voltage tester	For confirming the cord/cabinet is de-energized.
Multimeter	Optional; live testing only by a qualified person.
Phone or camera	Photograph wiring, blade orientation, shaft depth, and hardware.
Masking tape and marker	Label wires and connectors before disconnection.
Small containers or magnetic tray	Keep cover, shroud, bracket, and blade hardware separated.
Towels and shallow pan	Control thaw water and protect the cabinet floor.
Cut-resistant gloves and eye protection	Protect against sharp edges and debris.

Optional related parts: W0301059 fan blade, 80021501 bracket, and W0409080 shroud should be replaced only if inspection shows damage, cracking, bending, or looseness.

4. Pre-replacement checks

1 — Confirm the replacement part

Verify W0301904 against the freezer model, complete serial number, and the motor being removed. Compare lead arrangement, connector, shaft size/length, mounting pattern, and nameplate information.

2 — Confirm the symptom under the correct operating condition

The evaporator fan may be off when the door is open, during defrost, or when the controller is not commanding cooling. Observe the fan only with the door switch closed or manually depressed and while the unit is in an active cooling cycle.

3 — Check for ice obstruction

With power disconnected, inspect the fan opening and blade. If the blade is trapped by ice, fully thaw the evaporator and retest before condemning the motor.

4 — Check free rotation

With power disconnected and the ice removed, rotate the blade by hand. A seized or rough motor supports replacement; a freely rotating blade does not rule out an electrical failure.

5 — Check the door switch and wiring

A failed door switch or disconnected/broken wire can prevent fan operation. If the switch is known defective, correct that problem before the final motor test.

6	**Qualified electrical confirmation, when appropriate** A qualified technician may verify whether the correct supply is present at the motor while the controller is calling for cooling. Do not perform this live test unless trained. If proper power reaches the motor and it does not run, motor failure is strongly indicated.

5. Component location

The Atosa operation manual places the evaporator and evaporator fan motor in the upper insulated section of the reach-in cabinet. The motor is accessed from inside the freezer through the upper evaporator/front-cover area.

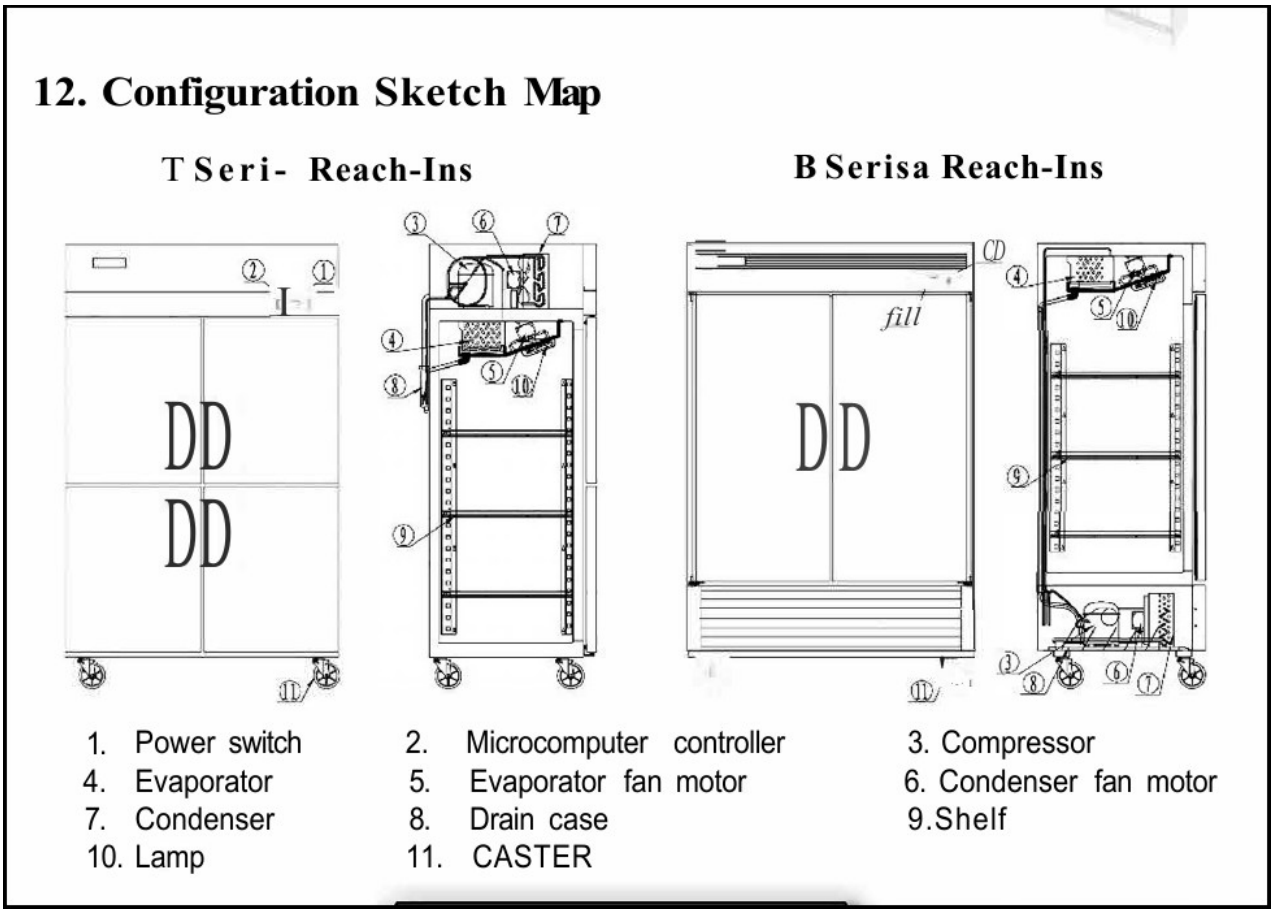


Figure 2. General reach-in configuration. Item 4 is the evaporator; item 5 is the evaporator fan motor. Source: Atosa reach-in operation manual, configuration sketch map.

6. Step-by-step replacement procedure

BEFORE STARTING

Read the full procedure before removing hardware. The diagram shows the component relationship, but the exact retaining hardware may differ by production revision. Photograph each stage and preserve every washer, spacer, clip, isolator, and fastener in order.

1	**Transfer food and protect the work area** Move all product to another functioning freezer. Place towels or a shallow pan inside the cabinet to catch thaw water. Keep the floor dry to prevent slipping.
2	**Record the current condition** Record cabinet temperature, controller setpoint, error codes, fan noise, whether the fan attempts to start, and the position of the door switch. Photograph the model/serial label and the upper interior before disassembly.

3 **Shut down and disconnect power**

Turn the freezer power switch off, unplug the cord from the wall, and tag the cord so no one reconnects it. Verify de-energization with a non-contact tester before touching internal wiring.

4 **Clear the upper cabinet**

Remove shelves and shelf contents that interfere with access to the upper interior evaporator cover. Store shelf clips so they are not lost.

5 **Thaw the evaporator completely**

Leave the door open and allow all ice to melt naturally. Use towels to manage water. Do not use a sharp tool, open flame, or high-heat device near plastic parts, wiring, probes, or evaporator tubing.

6 **Identify the access components**

Locate the stainless evaporator front cover (85011206, item 16) and the circular plastic motor cover/shroud (W0409080, item 17). Compare the actual arrangement with Figure 3 before removing hardware.

7 **Photograph the as-found assembly**

Take close photographs showing the front cover, shroud, screw locations, wiring route, probes, lamp, and any sealant or gasket material. These photographs are the best reassembly reference for the specific unit.

8 **Remove the fan shroud when independently accessible**

Remove the shroud fasteners or clips and set the shroud aside. If the shroud cannot be removed until the front cover is lowered, leave it in place and proceed to the next step. Do not pry against the evaporator coil.

9 **Support and remove the evaporator front cover**

Support the cover with one hand or a helper while removing its fasteners. Lower it slowly. Do not allow the cover, lamp, probes, or fan assembly to hang by wires. Label and disconnect only those connectors that prevent safe access.

10 **Inspect before removing the motor**

Look for ice, a bent blade, a cracked shroud, loose bracket hardware, rubbing marks, burned connectors, pinched wires, or water intrusion. A correctable obstruction may explain the failure without a bad motor.

11 **Mark the fan blade position and orientation**

Photograph the blade from the side and front. Mark the shaft depth with tape or a fine marker and note which face of the blade points into the cabinet. Correct blade orientation and depth are essential for clearance and airflow.

12 **Label and disconnect the motor wiring**

Identify each motor lead and connector before disconnection. Photograph the connections and use tape labels if the wiring is not uniquely keyed. Pull on insulated terminals or connector bodies - never on the wire itself.

13 **Remove the fan blade**

Determine how the blade is retained on the shaft: set screw, nut, clip, or press fit. The Atosa diagram does not specify the method. Use the correct tool and do not assume conventional thread direction. Avoid bending the blade or loading the motor shaft sideways.

14 **Remove the motor/bracket assembly**

Support the motor while removing the fan bracket fasteners. Note the bracket orientation and preserve any rubber isolators, spacers, washers, or grounding hardware.

15 **Separate the old motor from the bracket**

Remove the motor mounting hardware and transfer the bracket only after documenting the original arrangement. Inspect the bracket for bending, cracking, corrosion, or elongated holes.

16 **Compare the new and old motors**

Before installation, compare mounting holes, shaft diameter and length, body dimensions, lead length, connector arrangement, rotation information, and nameplate ratings. Do not install a motor that differs materially from the original.

17 **Install the new motor on the bracket**

Mount the W0301904 motor in the same orientation as the original. Reinstall isolators, spacers, washers, and grounding hardware in their original locations. Tighten securely without crushing plastic or rubber components; no Atosa torque value was found in the reviewed materials.

18 **Reinstall the bracket and route the wiring**

Attach the bracket in the original position. Route leads exactly as photographed, keeping them away from the fan blade, sharp edges, heaters, drain components, and evaporator tubing. Reconnect all terminals fully.

19 **Reinstall the fan blade**

Install the blade in the same orientation and at the same shaft depth recorded before removal. Secure it using the original retention method. Do not overtighten a set screw or nut against a small shaft.

20 **Perform a manual clearance check**

With power still disconnected, rotate the blade by hand for several complete revolutions. Confirm that it does not contact the shroud, front cover, bracket, wires, or evaporator. Correct any rubbing before proceeding.

21 **Reinstall the shroud and front cover**

Reinstall the motor cover/shroud and evaporator front cover. Reconnect any lamp or probe wiring that was removed. Ensure no wire is pinched and all screws return to their original locations.

22 **Restore the cabinet interior**

Remove all tools, loose hardware, towels, and standing water. Reinstall shelves and verify that the drain area is clear.

23 **Restore power**

Close the door, plug the freezer directly into its normal grounded receptacle, and turn on the power switch. Do not alter controller parameters as part of this repair.

24 **Verify fan operation during active cooling**

Allow the controller to call for cooling. Confirm operation with the door closed or the door switch depressed. The fan may not start during defrost or an intentional controller delay, so allow several minutes and verify the unit is actually in a cooling cycle.

25 **Listen and inspect**

Confirm steady airflow and listen for rubbing, ticking, vibration, or an intermittent start. If abnormal sound is present, disconnect power immediately and recheck blade depth, shroud alignment, bracket tightness, and wire clearance.

26	**Monitor temperature pull-down** Monitor cabinet temperature until it returns to its normal operating range. The reviewed Atosa manual lists approximately -8°F to -1°F for frozen-food maintenance. Pull-down time depends on starting temperature, room conditions, and load; do not return food until the cabinet is reliably cold.
27	**Document the completed repair** Record the installation date, part number, observations, final temperature, and any unresolved issue. Retain the old motor until the repair is confirmed and any return or warranty requirement is resolved.

7. Motor assembly detail

The annotated figure below identifies the components most likely to be handled during the replacement. It supports the sequence above but is an exploded-parts illustration rather than an official service instruction.

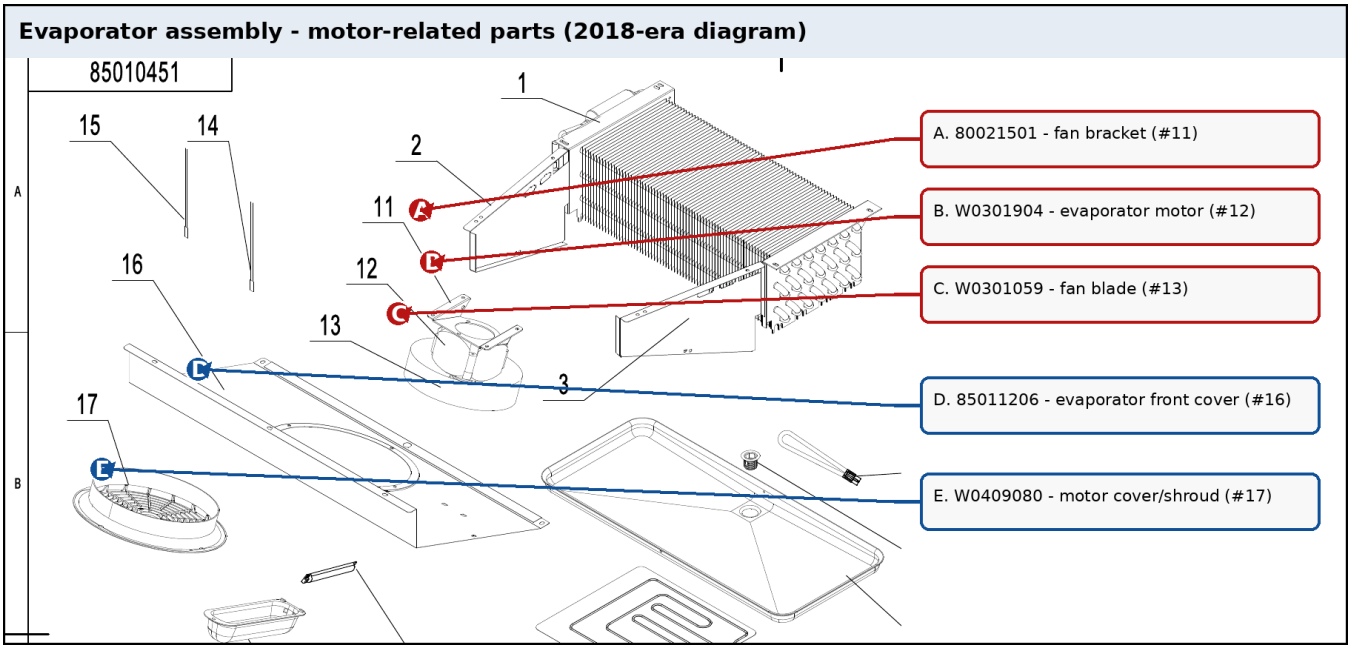


Figure 3. Motor-related components in the 2018-era evaporator assembly: bracket (#11), motor (#12), blade (#13), front cover (#16), and motor cover/shroud (#17).

8. Post-repair troubleshooting

Observed condition	Likely checks	Required response
New motor does not run	Door switch open/defective; unit in defrost; controller not calling for cooling; connector not seated; no supply at motor; incorrect part	Disconnect power. Recheck wiring and operating condition. Have a qualified technician test the control circuit.
Blade rubs or ticks	Blade installed at wrong shaft depth; shroud/front cover misaligned; bent blade; loose bracket	Disconnect power immediately and correct clearance before further operation.
Excess vibration	Loose motor/bracket; missing isolator or washer; bent or cracked blade	Disconnect power, inspect hardware, and replace damaged blade or bracket.
Fan runs but airflow is weak	Blade reversed, wrong depth, ice remaining on evaporator, blocked shroud or cover	Disconnect power and inspect orientation, clearance, and evaporator condition.

Observed condition	Likely checks	Required response
Fan runs but cabinet remains warm	Evaporator iced, defrost failure, temperature probe/control problem, low refrigerant, compressor/valve problem, blocked airflow	Motor replacement did not resolve the full cooling issue; obtain refrigeration diagnosis.
Breaker trips, odor, smoke, or hot wiring	Miswire, short circuit, damaged connector, incompatible motor, grounded component	Disconnect power immediately and do not reconnect until inspected by a qualified technician.

9. Completion checklist

Check	Verification item
☐	Correct W0301904 motor verified against removed motor and freezer serial number
☐	All wires reconnected and routed clear of blade, heaters, sharp edges, and drain components
☐	Grounding hardware restored
☐	Fan blade installed in original orientation and at original shaft depth
☐	Blade rotates freely by hand without contact
☐	Bracket, shroud, and front cover secure
☐	No tools, loose hardware, towels, or water left in cabinet
☐	Fan operates during an active cooling cycle with the door switch closed
☐	No rubbing, abnormal vibration, or overheating
☐	Cabinet temperature returns to normal operating range
☐	Repair date, part number, and final observations recorded

Technician/installer: _____ **Date:** _____

Final cabinet temperature: _____ °F **Time observed:** _____

Notes: _____

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10. Source documents and parts support

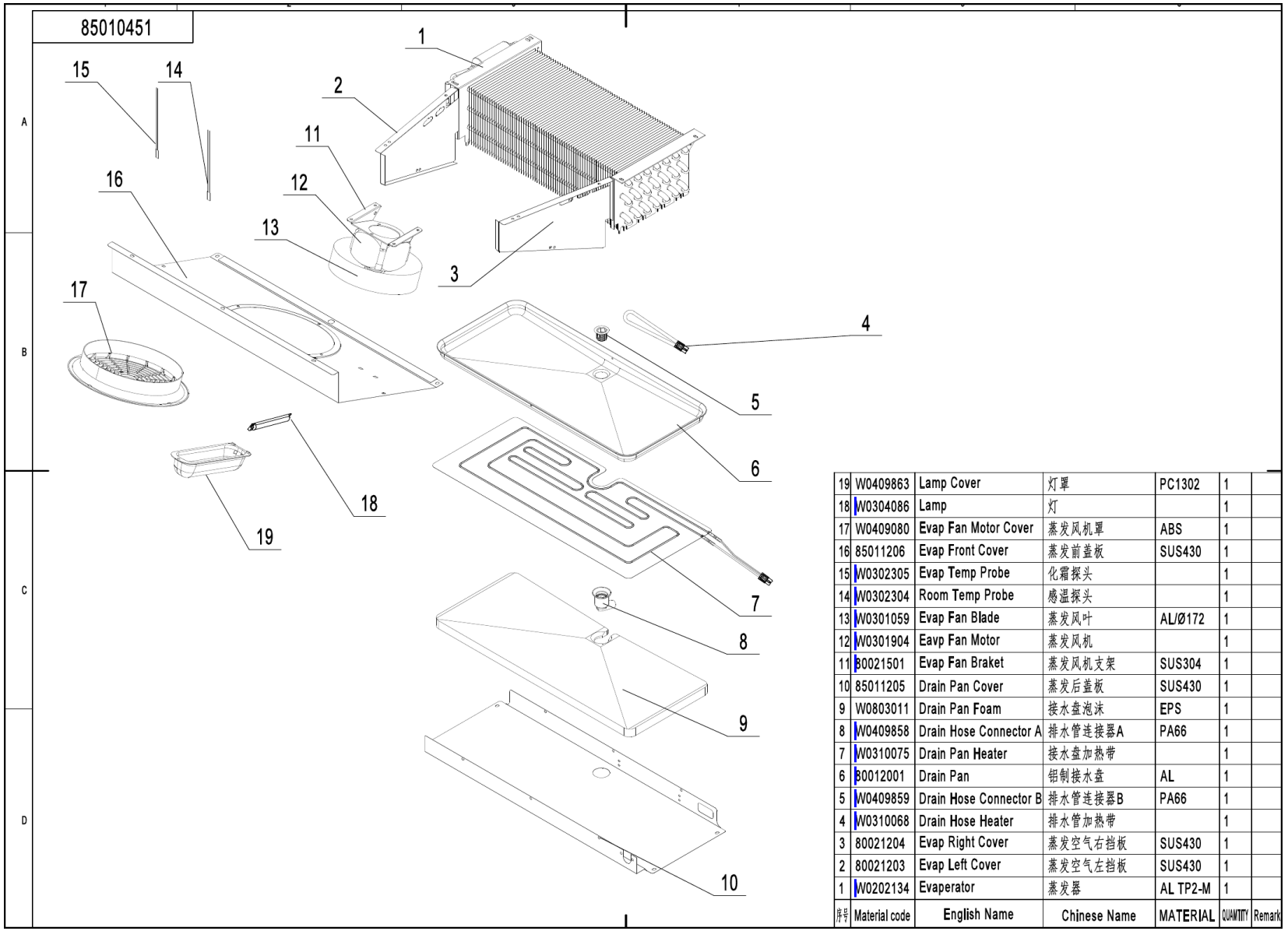
The following sources were reviewed in preparing this guide:

- Official Atosa MBF8501GR Parts Breakdown - Revision 09.2024 - Confirms W0301904 as the evaporator fan motor and shows the evaporator assembly.
- Atosa T-Series/B-Series Reach-In Instruction Manual - Provides general configuration, operation, maintenance, troubleshooting, and a general freezer control-circuit diagram.
- Atosa Parts Page - Directs customers to genuine OEM parts support through Parts Town.
- Parts Town - Atosa W0301904 - OEM retailer listing for the replacement motor.
- 2018-era MBF8501GR Parts Breakdown (archived host) - Matches the approximate production era and identifies the motor, bracket, blade, front cover, and shroud used in this guide.
- Atosa Parts/Technical Support - Serial-specific confirmation and technical support: 800-683-8660; parts@atosausa.com.

SERIAL-SPECIFIC CONFIRMATION

Before ordering or installing the motor, provide Atosa or the OEM retailer with the complete model and serial number: MBF8501GR / AUS100318100800C. Production revisions can change connectors, brackets, covers, and control details even when the model number remains the same.

Appendix A - Complete 2018-era evaporator assembly

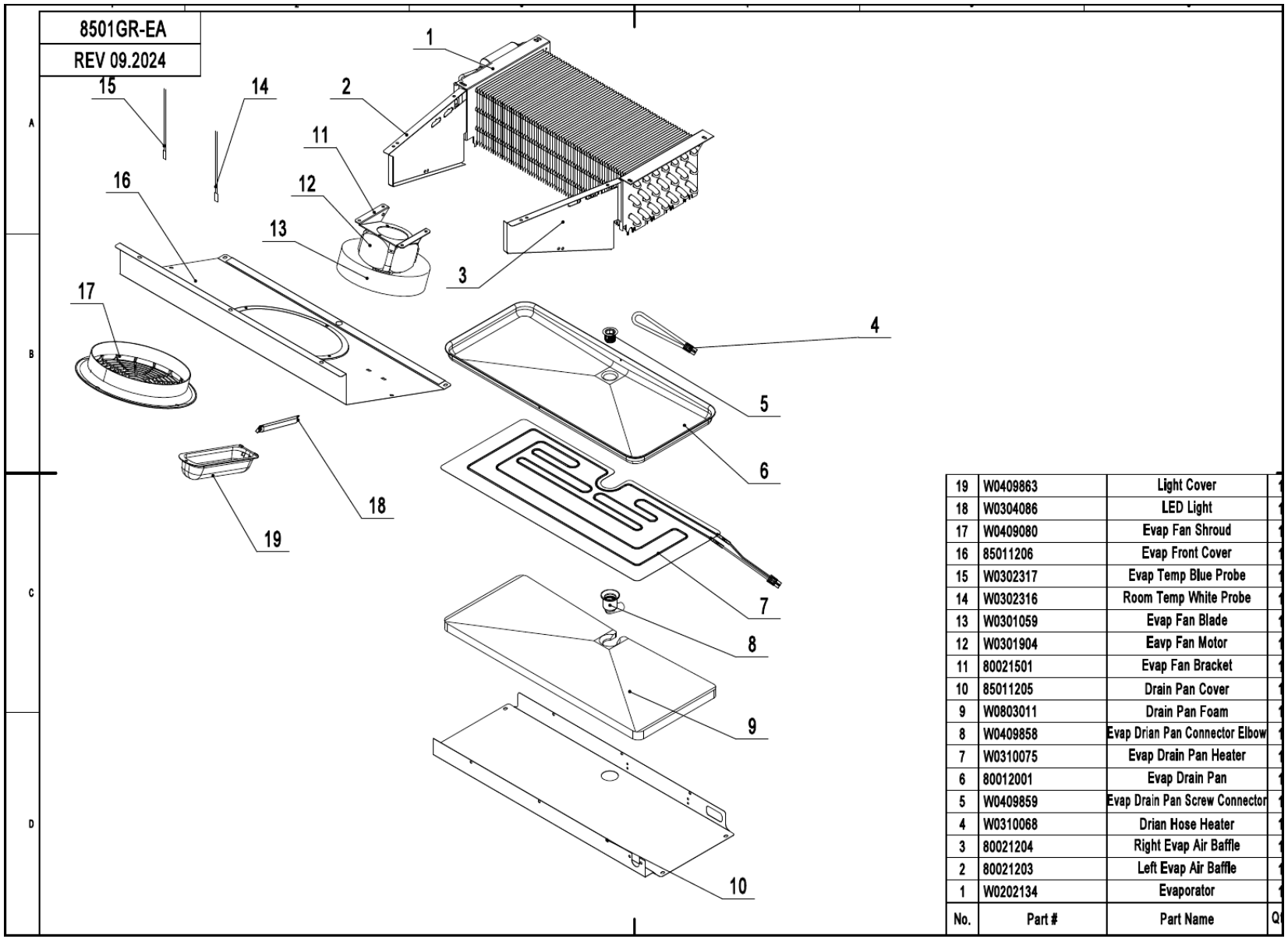


序号	Material code	English Name	Chinese Name	MATERIAL	QUANTITY	Remark
19	W0409863	Lamp Cover	灯罩	PC1302	1	
18	W0304086	Lamp	灯		1	
17	W0409080	Evap Fan Motor Cover	蒸发风机罩	ABS	1	
16	85011206	Evap Front Cover	蒸发前盖板	SUS430	1	
15	W0302305	Evap Temp Probe	化霜探头		1	
14	W0302304	Room Temp Probe	感温探头		1	
13	W0301059	Evap Fan Blade	蒸发风叶	AL/Ø172	1	
12	W0301904	Eavp Fan Motor	蒸发风机		1	
11	80021501	Evap Fan Braket	蒸发风机支架	SUS304	1	
10	85011205	Drain Pan Cover	蒸发后盖板	SUS430	1	
9	W0803011	Drain Pan Foam	接水盘泡沫	EPS	1	
8	W0409858	Drain Hose Connector A	排水管连接器A	PA66	1	
7	W0310075	Drain Pan Heater	接水盘加热带		1	
6	80012001	Drain Pan	铝制接水盘	AL	1	
5	W0409859	Drain Hose Connector B	排水管连接器B	PA66	1	
4	W0310068	Drain Hose Heater	排水管加热带		1	
3	80021204	Evap Right Cover	蒸发空气右挡板	SUS430	1	
2	80021203	Evap Left Cover	蒸发空气左挡板	SUS430	1	
1	W0202134	Evaperator	蒸发器	AL TP2-M	1	

Figure A-1. Complete exploded view of evaporator assembly 85010451. The parts table identifies motor W0301904 as item 12.

Appendix B - Official 2024 evaporator assembly

The official September 2024 diagram also identifies W0301904 as the evaporator fan motor. It is included to cross-check the part number; the 2018-era diagram remains more relevant to the referenced freezer.



No.	Part #	Part Name	Q
19	W0409863	Light Cover	1
18	W0304086	LED Light	1
17	W0409080	Evap Fan Shroud	1
16	85011206	Evap Front Cover	1
15	W0302317	Evap Temp Blue Probe	1
14	W0302316	Room Temp White Probe	1
13	W0301059	Evap Fan Blade	1
12	W0301904	Eavp Fan Motor	1
11	80021501	Evap Fan Bracket	1
10	85011205	Drain Pan Cover	1
9	W0803011	Drain Pan Foam	1
8	W0409858	Evap Drian Pan Connector Elbow	1
7	W0310075	Evap Drain Pan Heater	1
6	80012001	Evap Drain Pan	1
5	W0409859	Evap Drain Pan Screw Connector	1
4	W0310068	Drian Hose Heater	1
3	80021204	Right Evap Air Baffle	1
2	80021203	Left Evap Air Baffle	1
1	W0202134	Evaporator	1

Figure B-1. Official Atosa MBF8501GR evaporator assembly, Rev. 09.2024.

Appendix C - General freezer electrical-control diagram

This is a general Atosa fan-cooling freezer diagram from the operation manual. It is not confirmed as a serial-specific wiring diagram for AUS100318100800C. Use it only for general system understanding; trace and label the actual wiring before disconnection.

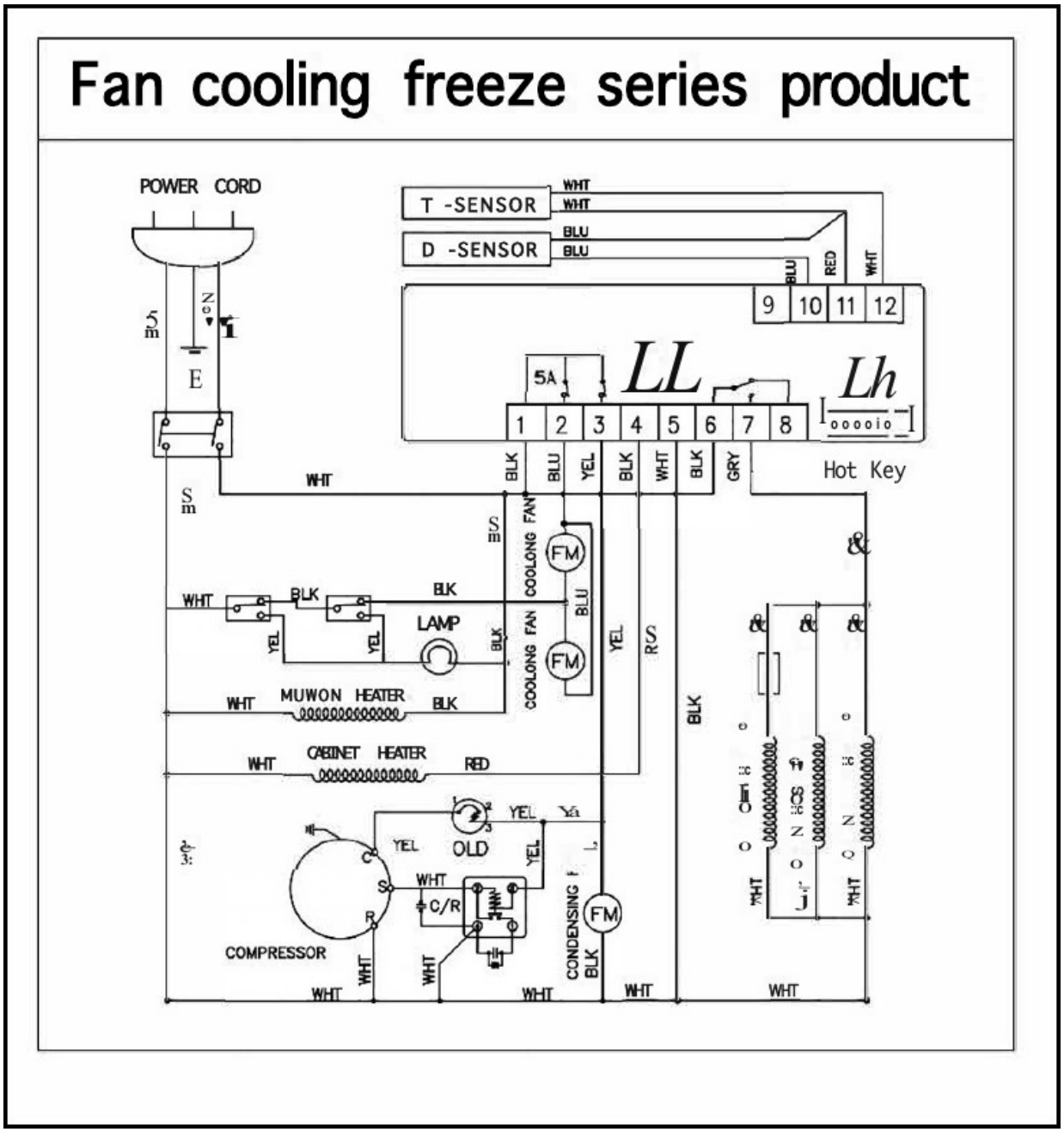


Figure C-1. General fan-cooling freezer control circuit. The diagram shows separate cooling-fan outputs, sensors, controller, compressor, heaters, and condenser fan.