

READ AND SAVE THESE INSTRUCTIONS

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LEA Y GUARDE ESTAS INSTRUCCIONES



**EXCEPTIONALLY
ENGINEERED**

COLD FRONT 300

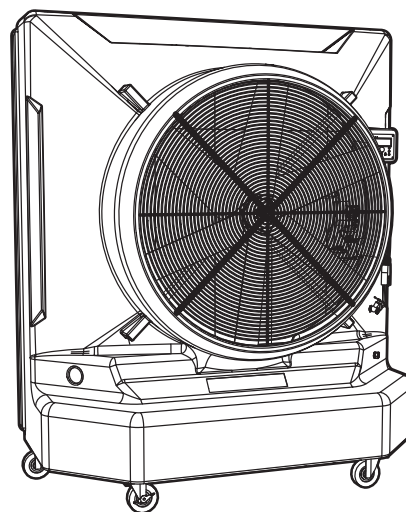
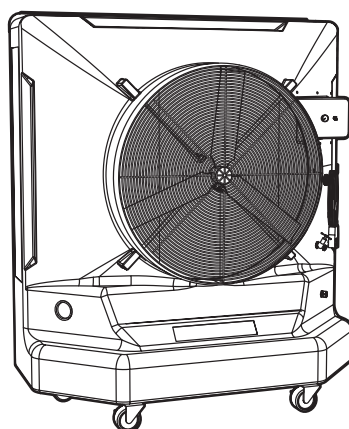
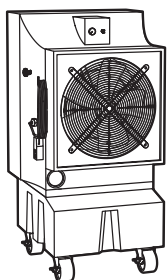
COLD FRONT 400

COLD FRONT 500

Operation and Maintenance Manual

Manuel de fonctionnement et d'entretien




Manual de operación y mantenimiento



F-EV1-1801
F-EV1-1802
F-EV1-3601
F-EV1-3602
F-EV1-5001
F-EV1-5002

READ AND SAVE THESE INSTRUCTIONS



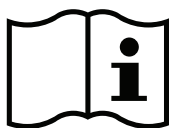
 DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.
 WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.
 CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.
IMPORTANT	IMPORTANT indicates a potentially hazardous situation which, if not avoided, MAY result in property damage.

IMPORTANT SAFETY INSTRUCTIONS

The appliance is not to be used by children or persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

Children being supervised should be instructed not to play with the appliance.

Maximum altitude: < 1000 m



Installation Guide
Rev. E
02/01/2021



Original English Instructions

www.bigassfans.com/support

Improper installation, delivery, or maintenance, including, but not limited to, any of the following actions by the customer or agent of the customer will constitute a breach of and will void all warranties:

- Failure to follow the required installation procedures specified in this Installation Guide and in all other documentation supplied with the fans and related equipment including documentation provided by the manufacturers of the individual fan and control components;
- Failure to follow all relevant codes and ordinances, including, but not limited to, the National Electrical Code (United States), applicable national and local electrical codes, and state and local building codes;
- Failure to follow electrical engineering industry standards regarding the approved method of installing solid-state electrical equipment having the characteristics of the fans, the fan controls, and their related components, even if such standards are not specifically referenced in any instructions or literature supplied by Big Ass Fans or provided by manufacturers.

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Patent: www.bigassfans.com/patents • www.bigassfans.com/product-warranties

CHECKLIST

DO

- ✓ Read the Operation and Maintenance Manual.
- ✓ Check all hose connections.
- ✓ Use a 12 gauge cord if the cord is under 50 ft (15 m) or a 10 gauge cord if the cord is over 50 ft (15 m).
- ✓ Provide fresh air intake for the cooler and maintain a minimum clearance of 3 ft (0.9 m) behind the cooler.
- ✓ Flush new cooling media.
 1. Fill the cooler with water.
 2. Switch on the pump.
 3. Run the cooler without the fan running for 5 hours.
- ✓ Make sure the cooling media is being evenly saturated by using the control valve to adjust the water flow.
- ✓ Drain and clean the cooler weekly. Remove the cooling media and wash with a garden hose.
- ✓ Use Refresh™ tablets (algae killer) and/or CTT-EC™ cooler treatment tablets (mineral treatment). One algae killer tablet is provided in the cooler's reservoir. Additional water treatment tablets are available at bigassfans.com.

DO NOT

- ✗ DO NOT forget to dry out the cooling media before shutting down the cooler. Turn off the pump and leave the fan running for 10 to 15 minutes.
- ✗ DO NOT run the pump without filling the reservoir with water first.
- ✗ DO NOT completely open the water valve. This may flood the cooling media.
- ✗ DO NOT use a water source with more than 120 PSI (8 bar/827 kPa) of water pressure.
- ✗ DO NOT operate the cooler in a sealed room. Allow for fresh air intake and exhaust.

ASSEMBLY AND SETUP

IMPORTANT

Carefully examine the carton for damage before opening. If the carton is damaged, notify the shipping company immediately.

Install Casters (Cold Front 300 only):

1. Locate the package of four (4) casters and sixteen (16) bolts and remove from box.
2. Lay box on its side and carefully open bottom of box. DO NOT STAND BOX UPSIDE DOWN.
3. Install the four casters using the bolts.
4. Stand cooler up on casters and remove box.

The cooler has been factory tested and is ready to use. Place the cooler on level ground with the casters locked to prevent inadvertent movement.

Connecting the water supply

The cooler comes equipped with a garden hose water source connection. Use a standard garden hose (not provided) to connect the water supply to the cooler.

⚠ CAUTION

Do not connect to any water source where water pressure exceeds 120 PSI (8 bar/827 kPa). This will cause permanent damage to the cooler.

Connecting the electrical supply

IMPORTANT

The cooler should be plugged into a fused or breaker-protected circuit. Refer to the table for circuit size requirements. Cold Front 500 models cannot be connected to a GFCI outlet.

Amperage and Circuit Requirements

Model	Volts +/- 10%	Frequency	Min. Circuit Size	Running Amps
Cold Front 300	120 V	60 Hz	15 A	4.1 A
	220/230 V	50/60 Hz	10 A	1.8 A
Cold Front 400	120 V	60 Hz	15 A	8.0 A
	220/230 V	50/60 Hz	10 A	5.0 A
Cold Front 500	120 V	60 Hz	25 A	16.5 A
	220/230 V	50/60 Hz	15 A	8.6 A

⚠ CAUTION

Do not exceed the amperage ratings of the extension cord. Undersized extension cords create excessive drops in voltage, causing the electric motor to generate excess heat. This results in inefficient motor operation and premature motor failure and will void the warranty.

Three-Conductor Heavy Duty Extension Cord Requirements (120 V)

Cord Length	Cord Size			
	16 GA	14 GA	12 GA	10 GA
0–50 ft (0–15 m)	13 A	18 A	25 A	30 A
50–100 ft (15–30 m)	10 A	13 A	18 A	25 A

Three-Conductor Heavy Duty Extension Cord Requirements (220/230 V)

Cord Length	Cord Size			
	1.5 mm ²	2.5 mm ²	4 mm ²	5 mm ²
6 m	13 A	15 A	15 A	15 A
16 m	13 A	14 A	15 A	15 A
32 m	10 A	12 A	13 A	15 A

OPERATION

The cooler must be placed on level ground to operate correctly. Evaporative coolers create an oval-shaped air pattern. Obstacles such as racks and workbenches may interfere with airflow. Position the cooler so that interruption of the air pattern is minimized. Multiple coolers may be required to cover larger areas.

There are three major factors to consider when determining where to place the cooler.

- 1. Fresh Air Supply.** The inlet side of the cooler (pad side) requires a constant, uninterrupted supply of fresh air for maximum performance. A distance of 3 ft (0.9 m) of clear space to any obstructions at the rear or inlet side of the cooler is recommended.
- 2. Discharge Airflow.** The cool air discharged from the cooler should be free from obstruction to promote air circulation in order to maximize the cooling zone.
- 3. Ventilation.** Adequate ventilation is needed ensure the cooler does not recirculate air that has already been through the evaporative cooling process.

Filling the cooler with water

Once the cooler has been connected to a water source, turn the water supply valve on and the cooler will fill with water. The float valve will shut off the water flow when the sump is full.

Starting the fan

Set the fan switch to the ON position and adjust the speed to your preferred setting.

Starting the pump and adjusting the water flow

The cooling media in your new cooler will take a few hours to become fully saturated, and the media may initially produce an odor. Flush the cooling pads for 5 hours with the flow control valve fully opened to ensure the best efficiency of your cooler. During this time, the odor should also dissipate. For best results, change the water in the reservoir frequently.

Once the cooling pads are fully flushed:

1. Fill reservoir with water.
2. Turn on fan.
3. Adjust water flow with flow control valve until water streams over pads.

Do not flood the pads with water. You should see several 1" to 2" (25 to 51 mm) wide dry streaks on the face of the pads. If dry streaks grow wider, adjust flow to allow more water.

CAUTION

Prolonged use of hard water without proper water treatment will create mineral deposit buildup. This will cause the pump to fail and is NOT COVERED BY WARRANTY.

IMPORTANT

Pump is equipped with a low water cutoff that may take up to five (5) minutes to reset each time.

Operation (Cold Front 500)

Power Indicator

Red light: Power connected

Green light: Power on

Low Water Indicator

Remote Sensor

REM

Fan On/Off

Turns fan on and off in Manual mode.

Pump On/Off

Turns pump on and off in Manual mode.

Pad Dry

Puts cooler into shutdown mode.

- When pressed, the pump shuts off and the fan will continue to run for 15 minutes and then shut down.
- Works in Auto and Manual mode.

Auto/Manual Mode

Switches cooler between Auto and Manual mode.

In Auto mode:

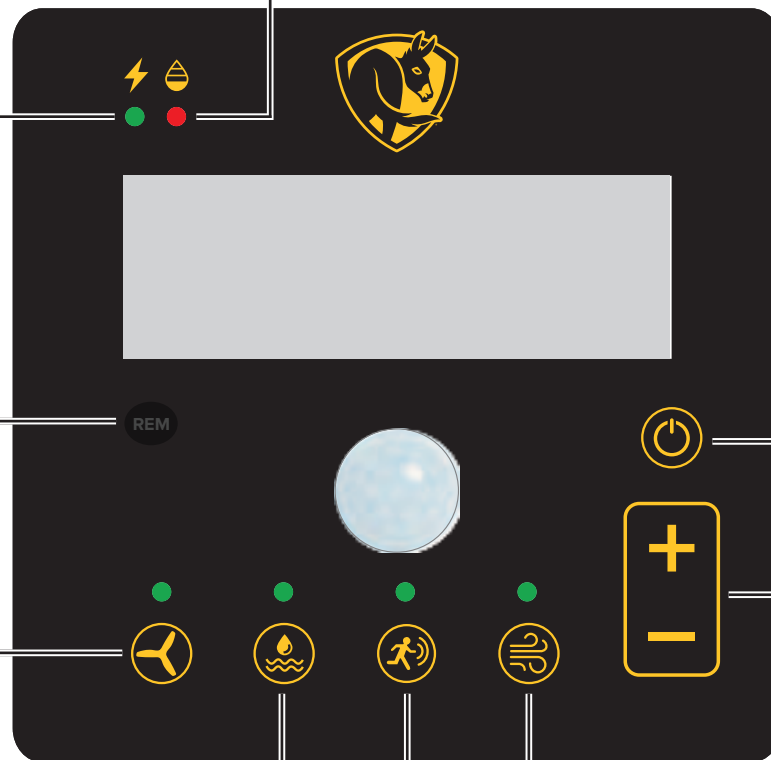
- Indicator light will be on.
- Cooler will run when motion is detected.
- When no motion is detected, cooler will run for 10 minutes and then shut down.

Power On/Off

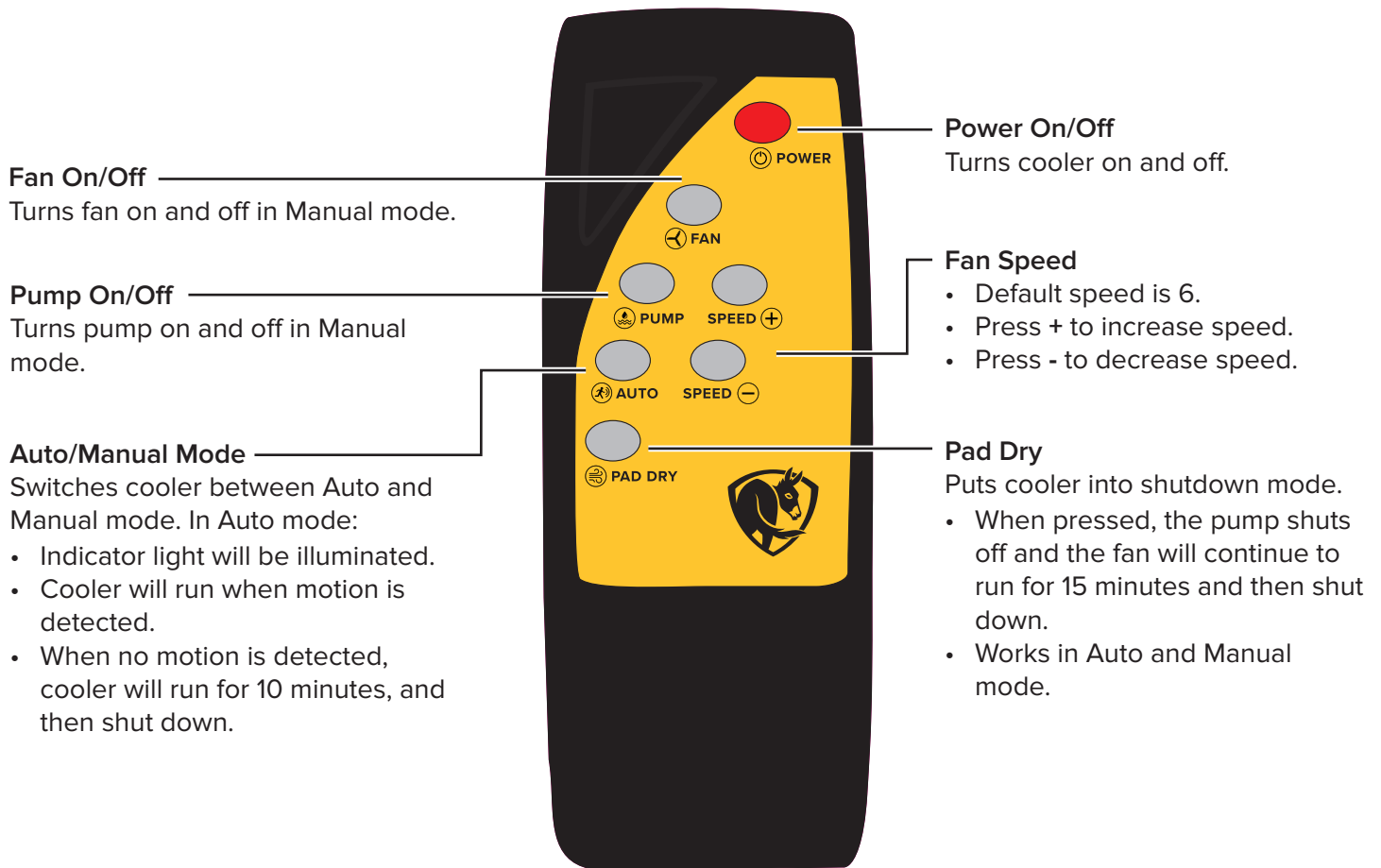
Turns cooler on and off.

Fan Speed

- Default speed is 6.
- Press + to increase speed.
- Press - to decrease speed.



Remote control operation (Cold Front 500)



MAINTENANCE AND STORAGE

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect the power supply before performing any service or maintenance.
Failure to do so may result in serious injury or death.

Removing the cooling media

Remove the cooling pads to access the inside of the cooler.

1. Remove the bolts connecting the pad retainer bar (pad side) from the housing.
2. Cold Front 400 and 500 models: Remove top pads.
3. Starting with the center pad(s), tilt pads from the top and lift out of the cooler.

NOTE: Reinstall pads correctly according to the markings on the pads.

Daily maintenance

After each use, turn off the pump about 15 minutes before the fan is turned off to allow the pads to drain and dry out. This controls mildew and bacteria growth for a long and efficient pad life. Drain the water from the cooler if it will be unused for a prolonged period of time.

Periodic maintenance

Shut down the cooler and drain the water sump regularly. Depending on how often you operate the cooler, drain the sump anywhere from every week (heavy use) to monthly (light use). The cooling pads act as a filter to remove dust and other particles from the incoming air stream. Collected particles and any water impurities will flow into the sump and collect there. To keep the cooler operating at peak efficiency, keep the cooling media and sump clear of debris. Water treatment tablets are available at bigassfans.com.

Draining the water sump

1. Close water flow valve and open drain valve or remove drain plug located at bottom of reservoir.
2. Run pump until sump is dry, and then immediately shut off pump.
3. Turn cooler off and disconnect the power supply.
4. Remove cooling pads.
5. Clean out reservoir with either a towel or wet/dry vacuum.
6. Remove the water spray bar and its plug. Ensure holes are free of debris.
7. Reinstall pads and pad retainer.

Ensure the cooling pads are kept clean and dust-free. Dust and other particles have an adverse effect on the pads' ability to introduce water into the air stream. If the pad surface is dirty, clean with a soft brush and water. Never use bleach.

Storage

1. Remove cooling pads and clean with a soft brush and water to remove dust and debris.
2. Drain sump and wipe dry.
3. Store cooler in a dry area and cover to prevent dust buildup.

TROUBLESHOOTING AND REPAIR

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect the power supply before performing any service or maintenance.
Failure to do so may result in serious injury or death.

CAUTION

Please use caution when troubleshooting or repairing all electrical components. Ensure all power is disconnected from the cooler before the cooling pads or fan guard are removed to gain access to the fan.

Tools needed

- Screwdrivers
- Pliers
- Adjustable wrenches
- Volt/Ohm meter (electrical troubleshooting)

Additional tools may be required.

General troubleshooting

The cooler consists of three systems:

- Pump
- Water distribution system
- Fan system

Use the troubleshooting tables on the following pages to determine which system(s) require servicing.

Error codes (Cold Front 500 only)

Error	Solution(s)
E1 - Voltage Self-Inspection Error	<ul style="list-style-type: none"> Try a different circuit. Replace the panel.
E2 - Overcurrent Protection	Current draw is too high. <ul style="list-style-type: none"> Check extension cord size. Check that motor spins freely. Check that airflow is not obstructed.
E3 - Under Voltage Protection	Supply voltage is too low (< 100 V). <ul style="list-style-type: none"> Try a different circuit. Install a voltage regulator.
E4 - Over Voltage Protection	Supply voltage is too high (> 130 V). <ul style="list-style-type: none"> Try a different circuit. Install a voltage regulator.
E5 - Overload Protection	Motor is running too hot. <ul style="list-style-type: none"> Check that airflow is not obstructed. Check extension cord size.
E6 - Overheat Protection	<ul style="list-style-type: none"> Check that airflow is not obstructed. Check for mineral buildup on the motor. Check extension cord size.
E7 - Panel with Motor Communication Error	<ul style="list-style-type: none"> Check for a broken or loose wire.
E8 - Panel Internal Error	<ul style="list-style-type: none"> Replace the panel.
E9 - Motor No Response	<ul style="list-style-type: none"> Check for a broken or loose wire. Replace the motor.
F6 - Panel Communication Error	<ul style="list-style-type: none"> Check for a broken or loose wire.

Water distribution system troubleshooting

The water distribution system consists of two assemblies:

- Water inlet assembly
 - Brass bulkhead fitting
 - Float valve assembly
- Hose and valve assembly
 - Spray bar assembly
 - Valve assembly
 - Connection hose

Issue	Solution(s)
Floor at side of cooler is wet.	Water inlet hose is loose at supply hose or inlet hose is loose at bulkhead fitting. Tighten connections and/or replace hose washers.
Water overflows from reservoir or is spitting through fan.	Float valve hose is loose at bulkhead fitting or at float valve. Tighten connections and/or replace hose washers. Water pressure is too high to allow float valve to shut off (120 PSI/8 bar/827 kPa max). Reduce water pressure by adding an inline reducer. Float valve is not properly seated. Check all hoses for leaks.
Water is spitting from the cooler.	Check the hose and valve assembly. <ul style="list-style-type: none">• Reduce flow control setting.• Replace cracked hose and valve assembly.• Tighten hose connections.• Adjust spray bar.• Ensure pads are installed correctly.
Water is leaking from the drain valve.	Check for worn washer or stem or open drain valve. <ul style="list-style-type: none">• Replace washer.• Replace drain valve.
There are too many dry streaks on the pads.	Check for blocked holes in the spray bar or adjust water flow. <ul style="list-style-type: none">• Remove spray bar and plug and clean the tube and holes.• Open water flow control valve.

Fan system troubleshooting

Issue	Solution(s)
Fan will not run and makes no sound.	Check power cord, extension cord, switches, and circuit breaker. <ul style="list-style-type: none"> • Reconnect power or extension cord. • Reset breaker.
Fan will not run and makes humming sound.	Blade is in contact with shroud. Re-center blade hub. Motor stall (will not turn by hand). Replace motor.
Breaker trips or fuse blows when fan starts.	Motor stall. Replace motor. Check power source. Refer to page 1 for electrical requirements. Upgrade power supply. Extension cord gauge is too small. Replace with heavier cord.
Motor overheats, shuts off, and restarts several minutes later.	Extension cord gauge is too small. Replace with heavier cord. Inlet air is obstructed or too close to wall. Provide minimum 3 ft (0.9 m) inlet clearance. Faulty motor. Replace motor.
Fan motor will not run and switch makes soft clicking sound.	Ensure switch is making good contact. Replace switch if needed.
Fan blade does not turn and cooler makes squealing sound.	Motor stall (will not turn by hand). Replace motor.
Fan will not reach speed but turns and makes humming sound.	Check capacitor (where visible) and motor electrical connections. Replace capacitor or motor. Extension cord gauge is too small. Replace with heavier cord.

Fan repair procedures

CAUTION

Repairs should be performed by a qualified technician!

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect the power supply before performing any service or maintenance.
Failure to do so may result in serious injury or death.

Fan motor replacement for Cold Front 300

1. Remove cooling pads.
2. Remove black motor wiring plate and disconnect motor wires. Mark each wire with a marker or marker tape for easy matching when installing new motor.
3. Remove the four (4) nuts and bolts securing the motor, fan, and support braces (complete fan assembly).
4. Replace with new fan assembly.
5. Secure with four (4) nuts and bolts.
6. Replace any wire ties that were removed when uninstalling the old fan assembly.
7. Replace black motor wiring plate.
8. Reinstall pads and connect power.

Fan motor replacement for Cold Front 400 and 500

1. Remove cap from bottom of motor. Disconnect wires and clip wire ties.
2. Remove the four (4) fan mounting bolts from front. Support fan to ensure it does not fall.
3. Pull the fan out of the cooler.
4. Remove blade mounting nut and blade.
5. Remove mounting arms by loosening the eight (8) bolts securing the arms to the motor. Note the positions of the arms for re-installation.
6. Install arms and blade on new motor.
7. Install fan in opening and secure with mounting bolts.
8. Reconnect wires. Attach cord to motor arm with wire ties so that wires are clear of fan blades.

Pump troubleshooting

Issue	Solution(s)
Pump motor will not run when switch is turned on.	<p>Turn fan on to check for power.</p> <ul style="list-style-type: none"> If fan does not start, check breaker and make sure cord is plugged in. If fan starts, check for power to and through pump switch (when turned on). <p>Ensure water level is high enough to make the low water cutoff circuit. Fill water reservoir.</p>
Pump motor hums when switch is turned on but does not pump water.	<p>Obstruction in impeller. Remove object(s).</p> <p>Pump motor failure. Replace pump.</p>
Breaker trips or fuse blows when switch is turned on.	<p>Check power cord length and breaker rating. Refer page 1 for cooler amperage draw and to determine required cord gauge and circuit size.</p> <p>Check for locked up pump. Replace pump.</p>
Pump runs but does not pump water.	<p>Air lock in outlet side of pump. Turn off and on to bleed.</p> <p>Ensure the impeller is turning in pump. If not, replace pump.</p>

Pump repair procedures

⚠ CAUTION
Repairs should be performed by a qualified technician!
⚠ WARNING
<p>ELECTRICAL SHOCK HAZARD</p> <p>Disconnect the power supply before performing any service or maintenance.</p> <p>Failure to do so may result in serious injury or death.</p>

Pump replacement for Cold Front 300, 400, and 500

1. Unscrew fitting from pump.
2. Unplug cord from top of pump by removing the two (2) screws.
3. Remove pump from water sump and install new pump.
4. Perform the steps above in reverse to reconnect the wiring, lift the pump bracket, and reconnect the hose.
5. Secure wires to fan frame with wire ties so that wires are clear of fan blades. Ensure plug is positioned correctly.
6. Reinstall cooling pads and guards.
7. Reconnect power and test pump.

MAINTENANCE

Spring cleaning

- ☑ Remove the cooling media and clean out any debris in the water pan at the bottom of the cooler.
- ☑ Remove the distribution tube from the mounting clips. Remove the plug at the end of the tube and flush out. Clean the distribution holes with a small brush and flush with water to verify all holes are clear.
- ☑ If the cooling media is heavily stained with minerals or is damaged, replace the media. Replacement cooling media is available at bigassfans.com. Verify the media is installed correctly with the arrows on the side.
- ☑ Connect the water line and turn on the water supply. Check the float valve and make sure it is operating properly. Verify that the float valve is shutting the water off before walking away.
- ☑ Switch on the fan motor and pump. Make sure the cooling media is being evenly saturated with water by using the flow control valve to adjust the water flow. Small dry streaks are acceptable.

Mid-summer checkup

- ☑ Make sure the float valve is working properly. If the valve sticks, the water will run continuously and flood the reservoir. If this occurs, install a new float valve or contact Customer Service.
- ☑ Check all other working parts for cracks or damage, including the pump, fan motor, and fan belt.
- ☑ Check the condition of the cooling media. The cooler runs most efficiently when the media is clean. If the media has a heavy accumulation of mineral deposits, replace it.
- ☑ Use the drain valve to empty the reservoir. Remove any debris.

Winterize

- ☑ Clean the minerals from the reservoir. Vinegar can be used to dissolve buildup. Flush out the reservoir through the drain plug.
- ☑ Inspect the water distribution tube for clogged holes. Clean as necessary.
- ☑ To prevent freezing in the cooler's water line, disconnect the water supply, and then open both valves on the side of the cooler to dry out the reservoir.
- ☑ Use a storage cover to protect your cooler and keep it clean.

CONTACT US

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Accessories and Replacement Parts

www.bigassfans.com



www.bigassfans.com/support