

Owner's Manual

Manual de Operación



CAUTION

SAVE AND READ THESE IMPORTANT INSTRUCTIONS

Read all instructions carefully before setting up and operating this unit. This manual was designed to provide you with important information needed to setup, operate, maintain, and troubleshoot your cooler. Failure to follow these instructions may damage and/or impair its operation and void the warranty.



PRECAUCIÓN

LEA Y CONSERVE ESTE MANUAL

Lea todas las instrucciones cuidadosamente antes de montar y operar esta unidad. Este manual fue diseñado para proveerle importante información necesaria para instalar, operar, mantener y detectar problemas en su enfriador. La falla en seguir estas instrucciones puede dañar y/o afectar la operación del enfriador y anular la garantía.

Models: MS/MD48E • MS/MD68E
HS/HD48E • HS/HD68E

impco

email: customerservice@impcolc.com, Website: www.impcolc.com

INTRODUCTION

Evaporative cooling works on the principle of heat absorption by moisture evaporation. Simply put, heat is removed from the air as water evaporates. You feel this principle in action when you step out of a swimming pool or shower; you feel immediately cooler as water evaporates from the surface of your skin.

Your evaporative cooler works on the same principle. Hot outside air is pulled through water-saturated pads, where the air is cooled by evaporation and then discharged from the cooler.



WARNINGS AND SAFETY RULES

WARNING...

To reduce the risk of electric shock, fire or injury:

- Read instructions and labels carefully.
- Always disconnect the electric power to your cooler before working on it.
- Your cooler will run on 120 Volt AC, 60 Hz (cycle) current only.
- Plug into three-prong grounded GFCI protected electrical receptacle only.
- Do not operate if plug or cord are damaged in any way.
- Do not step on or roll over power cord with heavy or sharp objects.
- Do not operate unit unless all panels are securely in place.
- Test the GFCI receptacle or breaker monthly to ensure it is functioning properly.
- Do not operate near open containers of flammable liquids or gases.
- Never wash your cooler cabinet with a garden hose; water may harm the motor and pump.
- If the unit is damaged or it malfunctions, do not continue to operate it. Refer to the warranty or troubleshooting section at www.impcollc.com

Other Mobile Products by Symphony





INSTALLATION

Mounting. The blower module and the media module can be separated before mounting by removing four bolts and one shipping screw as shown in Figure 1.

Placement and Securing. The duct opening for the 5500/6500 CFM, models should be about 20" x 20". The cooler discharge opening for these models is 19-3/4" x 19-3/4".

The duct opening for the 4500/4800 CFM models should be 18" x 18". The cooler discharge opening for these models is 17-3/4" x 17-3/4".

If the cooler is to be mounted on the roof, separately purchase or construct a suitable roof stand to support the entire weight of the cooler. The roof jack or ducting should not be used to support any weight of the unit.

Place the cooler over the roof jack and position it so that it is level. Carefully seal the space between the roof jack and the bottom of the cooler with caulking compound, silicone, asphalt or industrial sealing tape to prevent air leakage. Then carefully seal the roof jack to the roof with asphalt or caulking compound to prevent air leakage from the cooler or rain from leaking into roof. There should be 24" clearance on all sides of the cooler for maintenance.

For maximum cooling performance and even water distribution, the cooler must be level. The base of the cooler at the drain fitting should have at least 4" clearance to allow drain installation.

Electrical Connections. For electrical connections to a rotary wall switch, use the following instructions: Locate the junction box installed in the dry module. Junction box is to be installed with the receptacles facing away from the pad. Make certain all electrical cords are clear of the belt, water, pulleys and blower wheel. Note that there are two plug-ins - one for the motor and one for the pump. The building power supply must be connected to this junction box to provide power to the motor and pump. The wiring diagram in figure 2 shows how the junction box receptacle should be connected to the power supply. Make sure control switch and circuit breaker are in the OFF position.

CAUTION: Turn off all electrical power to the cooler before attempting to install, open, or service your cooler.

Grounding. Install a ground wire to suitable ground according to local codes.

TOOLS REQUIRED

- 5/32" hex key allen wrench
- Channel locks
- Pliers
- Adjustable wrenches
- Tubing cutter
- Screwdrivers
- Hammer
- 1/4" socket wrench
- 7/8" socket wrench

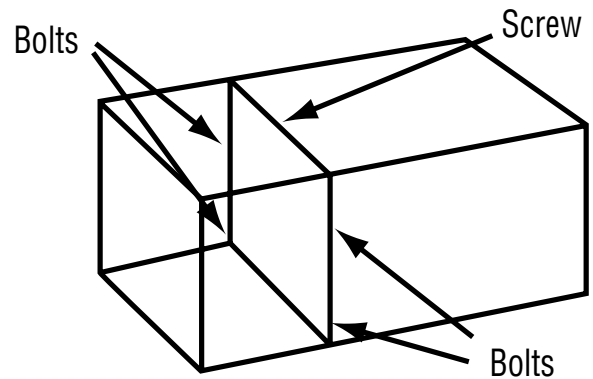
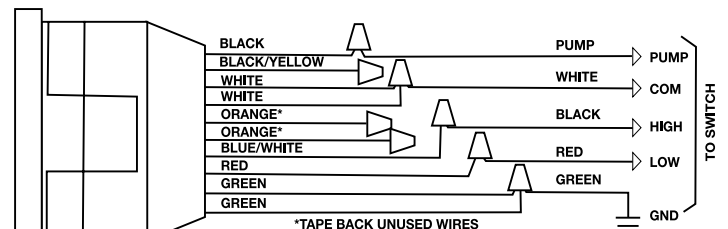
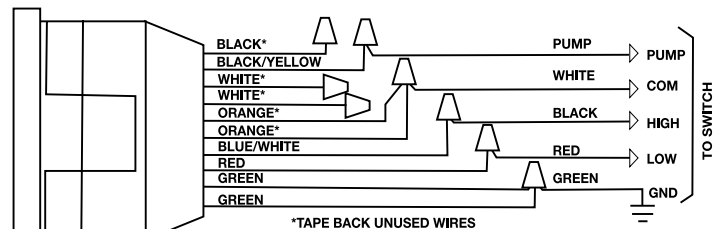


FIGURE 1

FIGURE 2



120 VOLT INSTALLATION



230 VOLT INSTALLATION



INSTALLATION

Install Motor. (For USA only)

NOTE: Symphony motors are specially engineered to meet our high performance standards, and come with a special motor cord and plug configuration. Install the motor as follows:

- Adjust motor cradle spacing to align with the spacing of the resilient rings on each end of the motor.
- Place motor in cradle (see Figure 3), check alignment, and assure that the adjustable cradle has been tightened securely with the cradles perpendicular to the base.
- Place motor straps over each end, connect to cradle and tighten to secure.
- Align sheave (motor pulley) with blower pulley by moving sheave in and out on motor shaft until visual alignment is achieved. Do not adjust to the point where the motor sheave comes in contact with the motor face plate.

CAUTION: Disconnect all electrical power to the cooler and insure that belt is not rotating before adjusting belt tension. Do not adjust belt tension by changing diameter of adjustable sheave. Adjust belt tension only by adjusting motor bracket.

- Belt tension should be adjusted so the belt will deflect 1/2" to 3/4" at the center of the span Figure 4. Re-adjust belt tension after any pulley adjustment. Replace worn or damaged belts.
- Rotate blower wheel by hand to see that it moves freely without rubbing against housing.
- Check motor mounting to be sure all screws and nuts are tightened down.

A qualified serviceman is required to adjust motor before start-up. If cooler is connected to ductwork, air delivery and motor amperage will be decreased due to increased duct resistance. To compensate for this, the motor pulley is adjusted out or in, using an ammeter to check motor amperage. For maximum air flow check motor amperage with all service panels in place. To prevent overloading of the motor, check amperage with all windows and doors open and all relief systems operating.

CAUTION: Do not exceed maximum amperage output as stated on the motor specification plate or motor can overload. Only qualified persons with proper electrical equipment and knowledge should adjust variable pitch sheaves. Do not allow water to get on the motor, as it will short out the windings.

Note on multi-speed switches: A switch with separate terminals for the pump is recommended.

Install Overflow Standpipe and Drain Line: Install overflow drain bushing in bottom of wet section. See Figure 5. Screw plastic overflow standpipe into the drain bushing and tighten snugly. Slide rubber washer over drain bushing, push through bottom of cooler, and tighten nut. Connect a permanent drain (copper, pvc, garden hose, etc.) to the drain bushing for draining the unit and overflow protection. Drain should be in accordance with local plumbing codes.

Connect Water Supply: Connect water line to cooler as follows (See Figure 6):

- A water valve should be installed at a convenient location, to allow the water supply to be turned on and off. 1/4" tubing

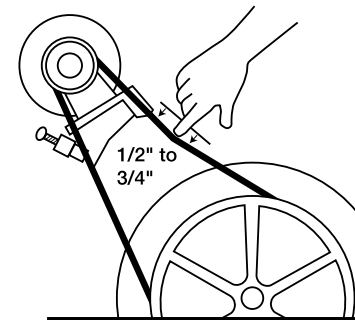
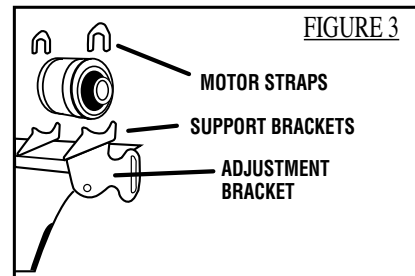
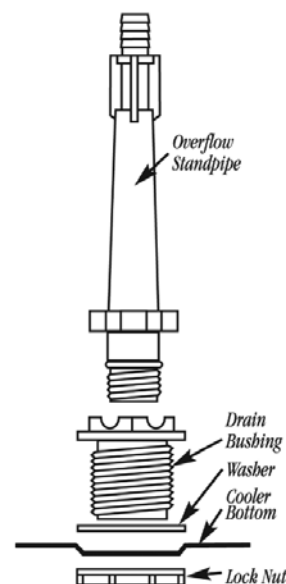


FIGURE 4





INSTALLATION

is used to provide water to the cooler. A water connector kit, available from your dealer, provides the necessary items.

- Install float valve in the side panel of the wet section opposite the pump.
- Place tube nut and ferrule over end of tubing.
- Insert tube into float valve and tighten to secure. Note: Soft water equipment should not be attached to any water lines going to a cooler. "Soft Water" may cause corrosion and decrease effective life of cooler.
- Fasten 1/4" water supply line to cooler stand using tubing clamp and self-drilling screw. Locate tubing clamp 18" or less from water supply line entry into cooler cabinet (See Figure 7).

Faucet Use: Connect water line to water supply as follows (See Figure 8):

Install a sillcock and water valve on faucet as shown. Place tubing nut and ferrule on tube end and insert in valve. Tighten nuts on valve and tube.

If faucet is not to be used for water supply, install valve on water line to be used. Follow instructions above for securing tubing to valve.

Adjusting Water Level And Float Valve: Fill reservoir as follows:

- Turn water supply on. Check for good pressure and flow from float valve.
- When float valve shuts off, check water level. Water level should be from 1/2" to 1" below top edge of overflow stand-pipe. It may be necessary to adjust float valve by bending the rod (See Figure 6).
- Check reservoir and all connections for leaks.

Install Float Shield: Install shield over float valve as shown in Figure 6.

Required Exhaust Openings: Using industry standard CFM ratings, a common method of determining how much to open doors or windows for proper exchange is: 2 square feet per 1000 CFM. Relief exhaust canal so be supplied through vents or automatic dampers in the walls or ceiling, making sure to meet all local and national codes.

Electrical Connections.

CAUTION: Turn off all electrical power to the cooler before attempting to install, open, or service your cooler. The MasterCool control box is factory wired and installed. Do not remove the control box from the inside leg of the cooler. Inside of the control box requires no wiring by the installer.

1. Locate the following parts that are included in a parts bag or parts box inside of the cooler.

CAUTION: Water inlet pressure should be limited to a maximum of 105 PSI or an inline pressure regulator should be installed !

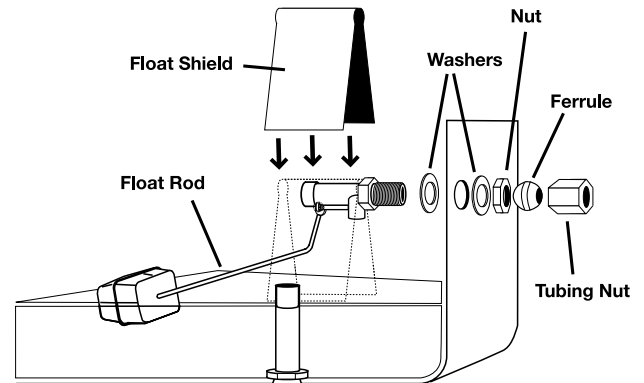


FIGURE 6

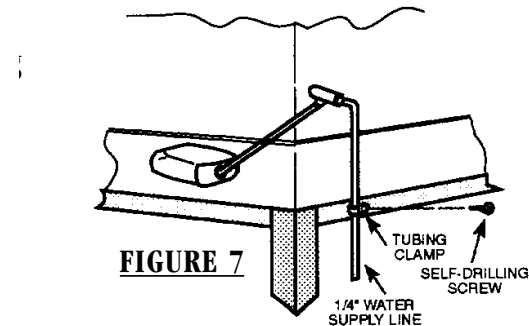


FIGURE 7

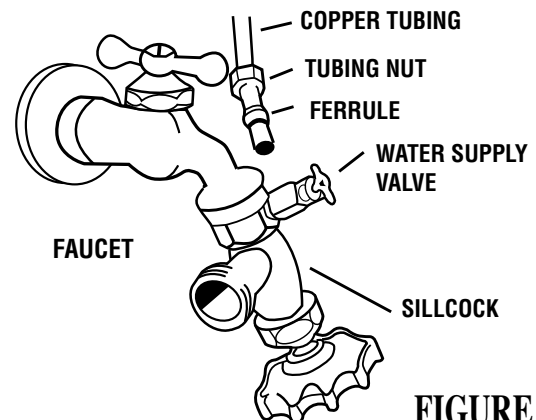


FIGURE 8



CLEANING & MAINTENANCE

Pre-start-up Inspection. Assure that:

- Cooler mounting is level and duct is sealed.
- Cabinet is securely fastened to mounting.
- Cooler cabinet is grounded and electrical connections are safe and secure.
- Motor, pump and float are installed and motor and pump are plugged into receptacle box.
- Water line is connected securely, is turned on, and is without leaks.
- Float arm is adjusted for proper water level.
- Blower, shaft, collar and pulley set bolts are snug (do not over tighten pulley bolt).
- Pulley alignment and belt tension are okay.
- Blower bearings are lubricated. Fill oil cup with a good grade SAE 20W or 30W oil.
- Pads are pre-soaked. Check to see that pump starts and pad is evenly wet.
- Windows or vents in house are open.

CAUTION: Never operate unit with service panels, pad or inlet louver panel removed. This will result in an overloaded condition and may damage the blower motor.

Periodic Inspection. In addition to the planned maintenance schedule, regular inspection of your cooler will help assure long trouble-free service life. Periodically check the following:

Checklist:

- Check for leaks.
- Check the water level and adjust the float as needed.
- Make sure the cooler remains level.
- Check for dry spots on the pads. Occasional cleaning of the water distribution pipe and cover may be needed to assure optimum water distribution to the pads.
- Make sure blower turns freely.
- Remove any debris from the water pan and clean the pan as needed.
- Make sure all bolts, nuts and set screws are snug.
- Check pulley alignment and make sure belt has proper tension.

Cabinet Cleaning and Touch-up. The cabinet and all internal parts except blower and drives are finished with a hard, appliance-type Polybond coating. This surface is highly resistant to scale and corrosion. A soft cloth, warm water, and a mild cleanser will bring all surfaces back to like new appearance. Avoid steel wool or sand paper in normal cleaning of the cabinet.

Scratches and Bare Metal. In the unlikely event that scratches or bare metal areas occur, sand or rub the area with steel wool to prepare the finish. Paint with standard paint or touch-up paint available through your dealer.

Changing Pad. This should be done after 5 years or if passages are clogged.

NOTE: Hosing off inlet face of pad can unclog passages of dust and minerals accumulated there. Light scrapings of the intake edges of the pad will not harm the openings and will remove more stubborn scale. Avoid splashing water on blower motor.

CAUTION: Do not hose off the pad while it is installed in the cooler. Remove the pad before attempting to clean it.

To change the pad:

- Remove wet section top.
- Remove water distributor assembly, disconnecting hose.
- Lift out used pad sections.
- Replace with identical pads only – see your dealer.

Start of Season Maintenance

- Change pad if passages are clogged or at beginning of 6th year.
- Clean the water pump.
- Lubricate the bearings.
- Adjust the belt tension.
- Snug down all hardware.
- Adjust bleed-off.
- Check water lines and water level.

End of Season Maintenance

- Drain all water lines to and from the cooler to prevent freezing.
- Wash down pad and lightly brush mineral deposits that have accumulated on the face of the pad.
- Clean and touch-up cabinet as needed.
- Clean the water pump. Do not undercoat the water reservoir. Your cooler's water reservoir is finished with a Polybond appliance type finish and a special sealant. Undercoat will not stick to it and will break free and clog the pump and the water distributor.

CAUTION: Do not use cooler cleaners, cooler treatments, or any other additives in this evaporative cooler. The use of any of these products will void your warranty and may impair the life of your cooler.



CLEANING & MAINTENANCE

Checklist: Disassemble and clean water pump as follows:

- Disconnect pump from electrical box.
- Disconnect hose to water distributor and bleed-off tubing.
- Remove pump from cabinet.
- CAREFULLY release the snap-out tabs (See Figure 9) and lift impeller base plate from the pump body.
- Use a mild detergent solution and wash all deposits from inside around impeller and from impeller base.
- Spin impeller to dislodge any foreign material(See Figure 10).
- Rinse and reinstall impeller base.
- Reinstall pump, water distributor hose and bleed-off tubing.

CAUTION: Do not allow pump to fall over and become submerged. Water will damage the pump motor.



FIGURE 9

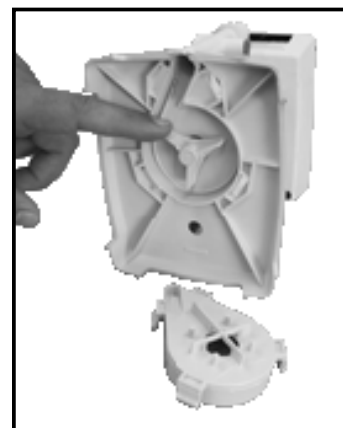


FIGURE 10



PARTS REPLACEMENT

When replacing any parts, purchase only original Symphony replacement parts and follow the instructions supplied with them. Use of parts of than original Symphony replacement sparts will void your warranty.



TROUBLESHOOTING

The following troubleshooting guide is intended to address the most common symptoms and is by no means exhaustive. If symptoms persist, call a qualified service provider. Only a certified electrician should complete electrical work. Turn off all power to the cooler before attempting to troubleshoot any of the following symptoms.

SYMPTOM	POSSIBLE CAUSES	REMEDY
Unit fails to start or deliver air	<ol style="list-style-type: none"> 1. No electrical power to unit <ol style="list-style-type: none"> a. Fuse blown b. Circuit breaker tripped 2. Cord(s) damaged or unplugged 3. Belt too loose or too tight 4. Motor overheated and frozen <ol style="list-style-type: none"> a. Belt too tight or broken b. Blower wheel bearings dry c. Motor overloaded d. Faulty wiring or shorts 	<ol style="list-style-type: none"> 1. Check power <ol style="list-style-type: none"> a. Replace fuse* b. Reset breaker* *If condition persists, call electrician 2. Plug in cord or replace 3. Adjust belt tension 4. Replace motor <ol style="list-style-type: none"> a. Adjust belt tension or replace b. Lubricate blower bearings c. Using ammeter, adjust motor to full load nameplate amps d. Call electrician
Unit starts but air delivery inadequate	<ol style="list-style-type: none"> 1. Lack of sufficient air exhaust 2. Motor underloaded 3. Belt too loose 4. Pad plugged 	<ol style="list-style-type: none"> 1. Open windows or doors to increase ventilation 2. Using ammeter, adjust motor to full amps per nameplate 3. Adjust belt tension or replace 4. Rinse or replace pad
Inadequate cooling	<ol style="list-style-type: none"> 1. Inadequate exhaust in house 2. Air registers improperly positioned 3. Insufficient water / pad not wet <ol style="list-style-type: none"> a. Pad plugged b. Distribution holes clogged c. Pump not working d. Loose connection in water system e. Pump basket clogged 	<ol style="list-style-type: none"> 1. Open windows or doors to increase ventilation 2. Adjust to direct air as desired 3. Check water distribution system <ol style="list-style-type: none"> a. Rinse or replace pad b. Clear holes c. Unplug pump. Clean impeller housing of foreign matter d. Check for leaks and correct e. Clean basket
Motor cycles on and off	<ol style="list-style-type: none"> 1. Excessive belt tension <ol style="list-style-type: none"> a. Blower shaft tight or frozen 2. Motor overloaded 3. Incorrect sheave adjustment 4. Pulleys misaligned 5. Service panels, pad or inlet panels are removed 	<ol style="list-style-type: none"> 1. Adjust belt tension <ol style="list-style-type: none"> a. Lubricate blower bearings and rotate shaft by hand (power off) 2. Correct – do not exceed motor nameplate amps 3. Serviceman should correct 4. Correct alignment 5. Never operate unit with service panels, pad or inlet panel removed. This will result in an overloaded condition and may damage the motor.
Water draining from overflow standpipe	<ol style="list-style-type: none"> 1. Float arm improperly adjusted 2. Seat in float valve leaking 3. Standpipe not tight 	<ol style="list-style-type: none"> 1. Adjust float 2. Replace float valve 3. Tighten standpipe
Knocking or banging sound	<ol style="list-style-type: none"> 1. Bearings dry <ol style="list-style-type: none"> a. Wheel rubbing blower housing or rotating off-balance 	<ol style="list-style-type: none"> 1. Lubricate blower bearings <ol style="list-style-type: none"> a. Inspect blower shaft, collars, belt and pulley alignment and motor mounting
Blower shakes or rattles	<ol style="list-style-type: none"> 1. Belt or pulley loose 	<ol style="list-style-type: none"> 1. Inspect belt and adjust if needed. Adjust belt or replace pulley.
Excessive humidity in house	<ol style="list-style-type: none"> 1. Inadequate exhaust 	<ol style="list-style-type: none"> 1. Open doors or windows to increase ventilation
Musty or unpleasant odor	<ol style="list-style-type: none"> 1. Stale or stagnant water in reservoir <ol style="list-style-type: none"> a. wPad mildewed or clogged b. Pad not completely wet before cooler is turned on c. New media (pad) 	<ol style="list-style-type: none"> 1. Drain, flush and clean reservoir <ol style="list-style-type: none"> a. Check drain pump b. Turn on water before starting unit c. <i>Note: There will be a slight odor noticed on initial startup. The odor will disappear within the first few days of operation when drain pump is used.</i>

NOTE: Do not use cooler cleaners, cooler treatments, or other additives in this evaporative cooler. The use of any of these products will void your warranty and may impair the life of your evaporative cooler.



WARRANTY

Symphony Premium 10-YEAR LIMITED WARRANTY

Impco extends this limited warranty to the original purchaser of a Symphony Evaporative Cooler installed and used under normal conditions within the continental United States.

- I. Ten Year Coverage applies to wet section cabinet only in residential applications (5-year coverage for commercial / industrial applications). At our option, we will exchange or repair the wet section bottom pan assembly should any water leakage occur through the base assembly due to rust out during the first ten years after date of initial purchase.
- II. Five Year Coverage applies to the structural integrity of the pad. We will exchange the pad should it fail as a result of original material or workmanship during the first five years from the date of initial purchase.
- III. One Year Coverage applies to original pumps and motors from Symphony motor kits only. We will exchange these parts should they fail as a result of original material or workmanship during the first two years from the date of initial purchase.
- IV. One Year Coverage applies to all other components and accessories furnished by. At our option, we will exchange or repair any part which fails as a result of original material or workmanship during the first year from the date of initial purchase.
- V. **What this warranty does not cover:**
 - a. This warranty does not cover any failure, damage or defect that results from unauthorized modification or service; or from the use of products or replacement parts other than those from Impco; including but not limited to, motors and pumps.
 - b. This warranty does not cover any damage or malfunction unless caused by a defect in material or workmanship. Damage or malfunction which is not covered by this warranty includes, but is not limited to, water damage to the motor, abuse, misuse, alteration, improper installation / maintenance / operation, or transportation damage.
 - c. Mineral accumulations and dirt and dust on the pad are not defects and are excluded from this warranty.
 - d. This warranty does not cover the cost of a service call at the site of installation to diagnose cause of trouble, the cost of labor to install the part, or mileage allowance to or from the site. Impco does not pay freight or postage on any exchange.
 - e. This warranty does not cover evaporative coolers installed and operated outside the continental United States.

- VI. **Do not use cooler cleaners, cooler treatments, or other additives in this evaporative cooler. The use of any of these products will void your warranty and may impair the life of your evaporative cooler.**
- VII. To obtain service under this warranty, contact the dealer where you purchased your evaporative cooler. As a final step or if you cannot locate your dealer, contact Customer Service at www.impcollc.com
- VIII. In case of unsatisfactory warranty service please write Customer Service at Impco. Include your name, address and ZIP code; the servicing dealer involved; the model number of your evaporative cooler; date of installation; and a description of your problem.

Impco

www.impcollc.com

This warranty is the only warranty extended by Impco to suppliers and / or purchasers of this evaporative cooler. Impco disclaims all other warranties, express or implied, that arise by the operation of the law, except that implied warranties of merchantability or fitness for a particular purpose are limited to the duration of the warranty period. Impco shall not be liable for any incidental or consequential damage which may have resulted from any alleged breach of warranty.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the limitations or exclusions stated above may not apply to you.

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Note: There will be a slight odor that may be noticed during the initial start-up. The odor will disappear within the first few days of operation if the drain system supplied with the cooler is properly installed and used. Since Impco follows a policy of continuous product improvement, it reserves the right to change design and specifications without prior notice or liability.