



Model REC EVAPORATIVE COOLING MODULE

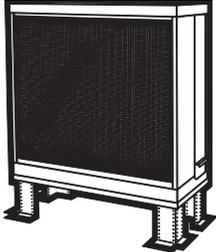
INSTALLATION/OPERATION/MAINTENANCE
FORM RZ-NA 408 (Version A)
Obsoletes Form RGM 408-2



APPLIES TO: **Model REC**

General

Reznor® Model REC Evaporative Cooling Module is designed as a free standing module with duct flanges for connection **upstream** from an air moving device. The Model REC cooling module may be connected to a Reznor® indirect-fired makeup air system, a Reznor® Model ADF, ADFH, or RDF direct-fired makeup air system, a Reznor® blower cabinet, or to some other type of indirect-fired system or blower cabinet within the allowable CFM range. Model REC is not recommended for connection to direct-fired makeup air systems other than Reznor® Models ADF, ADFH, or RDF.



Model REC

For warranty information, refer to the warranty form included in the “Owner’s Envelope”.

IMPORTANT: Do not connect a Model REC to a blow-through system.

NOTE: This product and these instructions are designed for use in an outdoor installation. The module may be adapted to an indoor makeup air application.

1. Installation Preparation Check List:

- Make certain the installation complies with all local, utility and federal building and safety codes and regulations.
- Check module for shipping damage. If damage is found, document the damage with the transporting agency and immediately contact your Reznor Distributor.
- Check base package against parts list below:

Description	Qty	40	50	60	70	80	90	180
Side Support	2	107227	107227	107227	107227	107227	107227	107227
Front & Rear Support	2	106086	106087	106088	106089	106090	107235	107235
Support Leg	8	107236	107236	107236	107236	107236	107236	107236
Duct Connection Angle	1	106095	106096	106097	106098	106099	106100	111501
1/4-20 x 3/4" Lg Cap Screw	10	16246	16246	16246	16246	16246	16246	16246
1/4-20 Hex Nut	10	10650	10650	10650	10650	10650	10650	10650

In addition, the following parts for making electrical and water connections are shipped in the bottom pan of the evaporative cooling module.

Qty	P/N	Description
1	105945	1/4" Hose I.D. x 1/2" N.P.T. Bleed Line Fitting (not used with optional timed metering AquaSaver® system)
2	16835	Bushings, Heyco #SR-7W-2 (Size 180 only)

- If optional equipment will be field installed (Drain and Fill Kit for all sizes and/or Moisture Elimination Pads for Size 180), these will be shipped separately. Check to be sure that options have arrived and are available for installation.
- If the REC evaporative cooling module is being “added”, make certain that the system has sufficient motor capacity for the increased static pressure. (See Paragraph 7.)
- Make certain the roof is capable of handling the additional load of a cooling module with a full reservoir.

Weights of Evaporative Cooling Module with Wet Media and Full Reservoir (lbs)

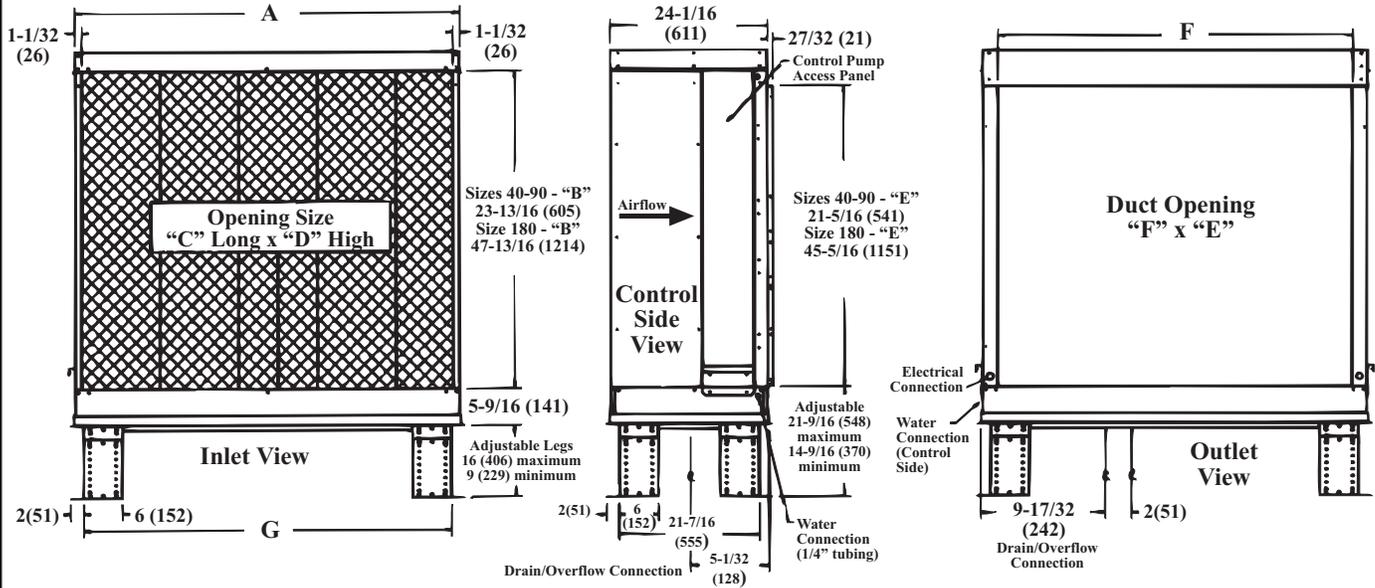
Size and Type of Media	40	50	60	70	80	90	180
with 6” rigid cellulose	173	197	218	249	271	292	379
with 12” rigid cellulose	184	212	237	270	295	318	431
with 6” rigid glass fiber	181	206	230	262	285	308	420
with 12” rigid glass fiber	201	230	261	296	305	350	514

- Make certain the roof is level and free of debris where cooling module will be mounted.
- Do not mount directly on soft tar roofs where the legs could sink and tilt the cooler. Provide a level, weather-resistant, solid wood or metal base under the cooling module support legs.
- Make certain that there will be adequate clearance between the bottom of the reservoir and the roof or platform to allow for drain and overflow pipe connections.

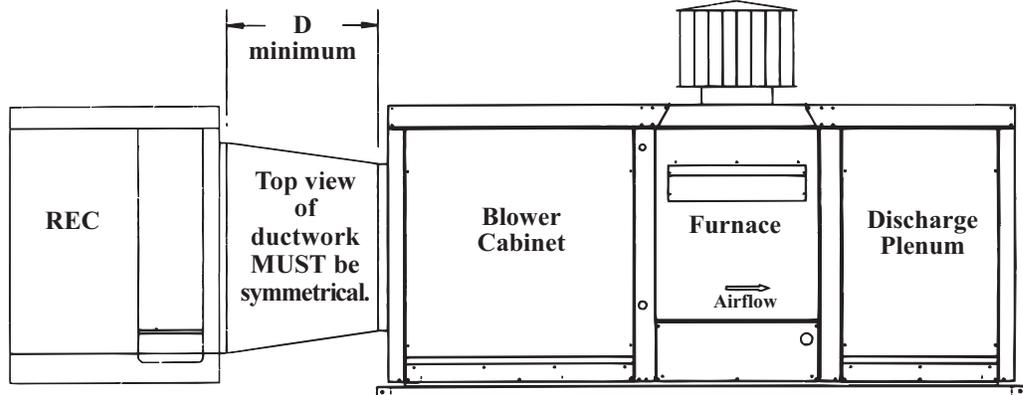
WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

2. Dimensions - inches (mm)

Size	A	C	D	F	G
40	28-9/16 (725)	26-1/2 (673)	24 (610)	23-13/16 (605)	26-1/16 (662)
50	34-1/16 (865)	32 (813)	24 (610)	29-5/16 (745)	31-9/16 (802)
60	39-3/16 (995)	37-1/2 (953)	24 (610)	34-13/16 (884)	37-1/16 (941)
70	47-13/16 (1214)	45-3/4 (1162)	24 (610)	43-1/16 (1094)	45-5/16 (1145)
80	53-5/16 (1354)	51-1/4 (1302)	24 (610)	48-9/16 (1233)	50-13/16 (1291)
90	58-13/16 (1494)	56-3/4 (1441)	24 (610)	54-1/16 (1373)	56-5/16 (1430)
180	58-13/16 (1494)	56-3/4 (1441)	48 (1219)	54-1/16 (1373)	56-5/16 (1430)



DIMENSION – Minimum Length of Transition Duct for Connection to Indirect Fired System

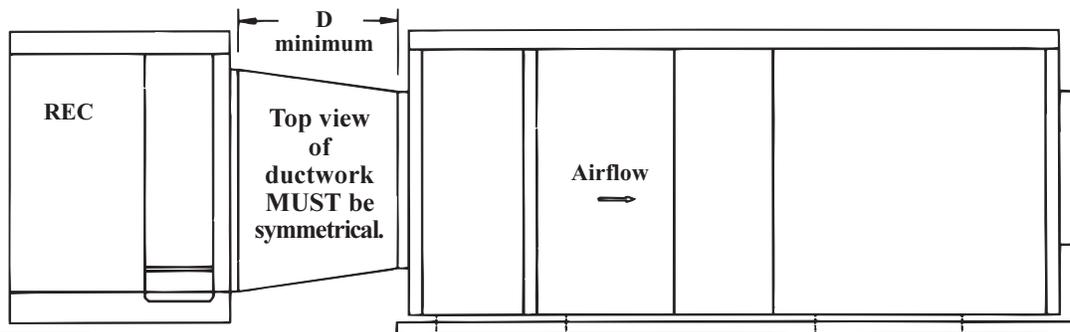


Ductwork Length

REC	D
40-90	24" (610mm)
180	30" (762mm)

Existing Reznor Indirect-Fired Makeup Air Heater or Existing Air Handler (Example: Reznor Model Series RXE, REB, RPVE, RPBE, RPAK, RGB, RPB, RGLB, RPBL, BF, RBA, RBL SSCBL, PGBL)

DIMENSION – Minimum Length of Transition Duct for Connection to a Reznor® Direct-Fired Makeup Air System



Ductwork Length

RDF	D
1 & 2	38" (965mm)
3	42" (1067mm)

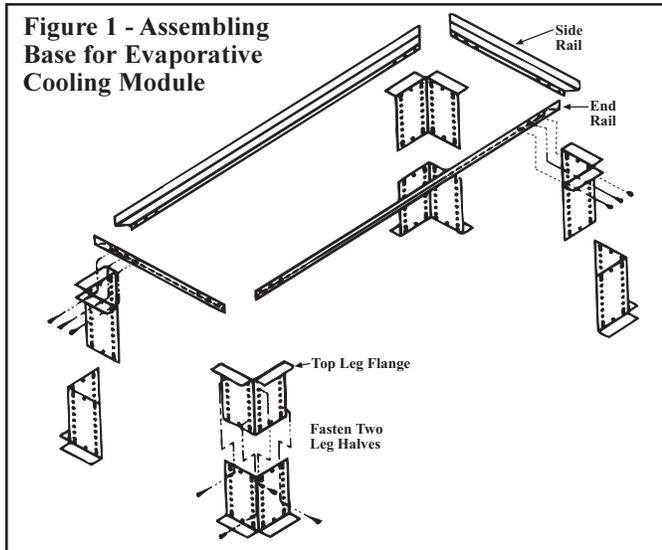
ADF/ADFH	D
300 & 500	24" (610mm)
700 & 1200	30" (762mm)

Reznor Direct-Fired Makeup Air System (Reznor Model Series RDF, ADF, ADFH)

3. Assembly Instructions

Be sure all preparations have been made. Review Preparation Check List in Paragraph 1.

Base and Cooling Module - Using four bolts and nuts per leg, fasten two “halves” together. Leg will have a top and bottom flange. Repeat for all four legs. (See Figures 1 and 2.) Adjust legs to proper height and tighten bolts securely.



Position the four assembled legs in a rectangular pattern corresponding to the size of the cooling module (see dimensions, page 2). Consider minimum length of transition duct (page 2) when positioning the cooling module base. Depending on the



type of roof, it may be necessary to set the legs on a weather-resistant, solid wood or metal base. Module must be level. Place rail sides on the **inside** of the top flange of the leg assemblies. Using the bolts and nuts provided, bolt the side rail to the top three holes located on the legs just below the top flange. Repeat on the remaining three legs. Tighten nuts securely.

Place the rail ends on the **inside** of the top flange of the leg assemblies. Bolt the end rail to the top three holes located on the legs just below the top flange. Repeat on the remaining three legs. Tighten nuts securely.

Carefully lift the pre-assembled evaporative cooling module from both ends and place into the center of the base assembly. Cooling module must be level and all bolts must be secure.

Connect the evaporative cooling module to the blower by means of a transition duct. See Paragraph 2 for minimum length of field-supplied ductwork. From a top view, the transition duct must be symmetrical to the evaporative cooling module. The evaporative cooling module is equipped with duct flanges for connection of ductwork.

Installation Instructions for Optional Moisture Elimination Pad, Option ASA1 - Model REC 180 only

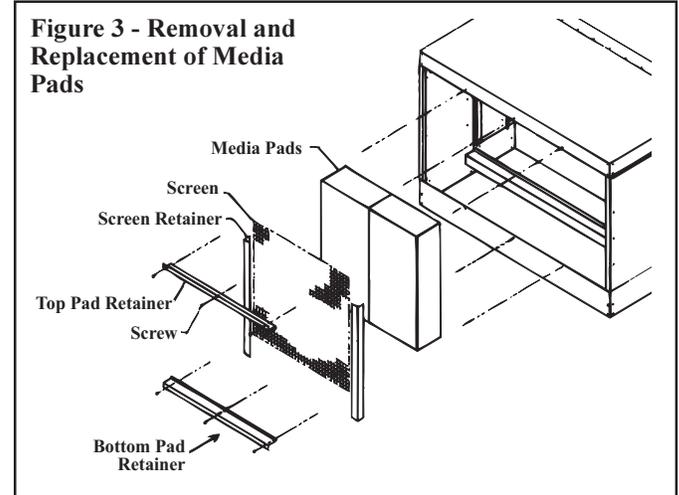
If optional moisture elimination pads are included, they will be factory installed on Sizes 40-90. On Size 180, the op-

tional moisture elimination pads are shipped separately for field installation. Follow these installation instructions. If not field installing this option, continue to Paragraph 4.

Media pads must be removed to install the moisture elimination pads. Figure 4 illustrates installation of the moisture elimination pads.

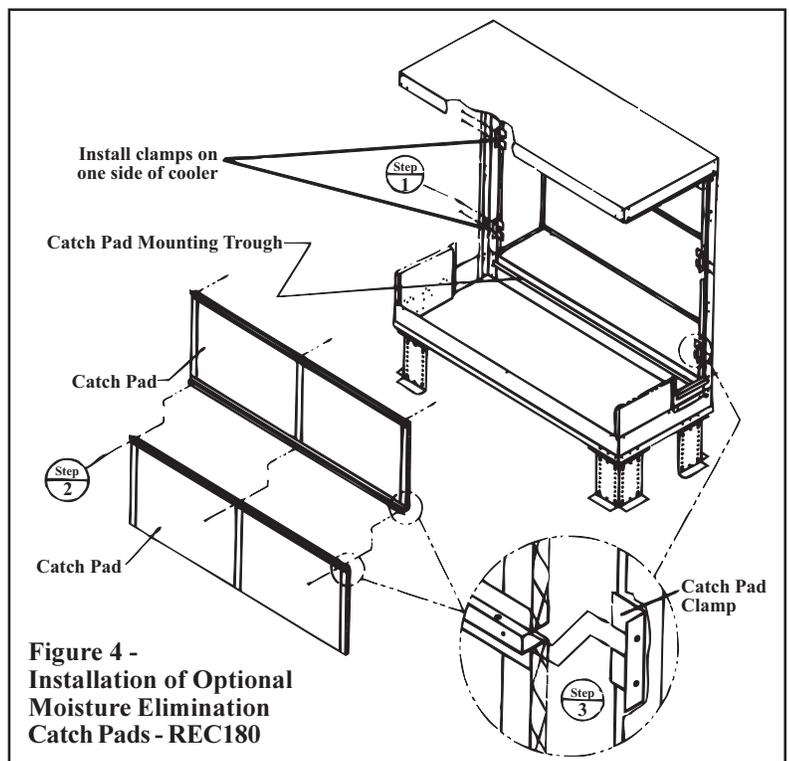
A. Remove Media Pads (See Figure 3)

- 1) Remove the three sheetmetal screws that hold the top pad retainer.
- 2) Release the top pad retainer from the cooling module.
- 3) Remove the three sheetmetal screws that hold the bottom pad retainer. Release the bottom pad retainer from the cooling module.
- 4) Disengage the screen retainers from the sides of the media.
- 5) Disengage the inlet screen from the media pads and remove from the cooling module.
- 6) Slide all media pads horizontally away from cooling module until clear of bottom reservoir pan.



B. Install Moisture Elimination Pads (See Figure 4)

- 1) Prepare module by attaching two catch pad clamps to one side of the cooler’s front legs. Screw through the legs into the clamp with four of the #10 x 1/2" long sheetmetal screws provided.
- 2) Prepare catch pads by assembling them together. Use three of the #10 x 1/2" long sheetmetal screws provided.



3. Assembly Instructions (cont'd)

Install Moisture Elimination Pads (cont'd) - Figure 4, page 3

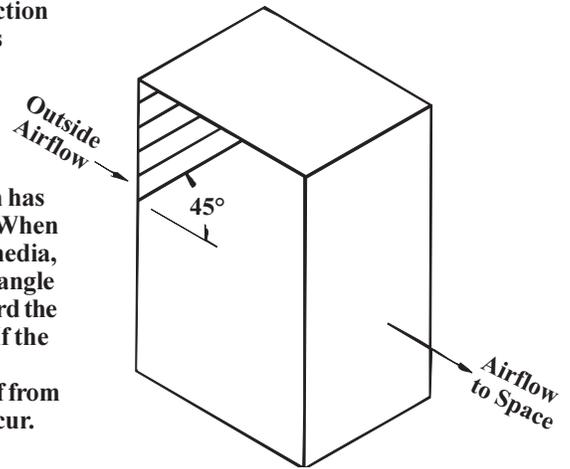
- 3) Guide the catch pad assembly through the inlet of the cooling module and place the bottom of the lower pad into the catch pad mounting trough. The screen part of the catch pad assembly should always be facing the attached air mover. Slip the catch pad assembly into the two slots located in the catch pad clamps installed in Step (1).
- 4) With the pads in place, complete the assembly by sliding one of the two remaining clamps over the middle seam where the assembled catch pads meet. Slip the other clamp over the top catch pad frame and fasten both clamps to the cooling module leg using sheetmetal screws provided.

C. Replace Media Pads (See Figures 3 and 5)

Reverse Steps A, 1-5 to replace the media. Media must be installed as shown in Figure 5.

Figure 5 - Airflow Direction through the Media Pads

IMPORTANT: Cooling media is made up of two different sheets of cooling material. Each has its own unique angle. When replacing the cooling media, **BE CERTAIN** the 45° angle slopes downward toward the incoming outside air. If the media is not installed properly, water blowoff from the media pads will occur.



4. Electrical Connections

All electrical wiring and connections, including electrical grounding, must be made in accordance with the National Electric Code ANSI/NFPA No. 70 (latest edition) or, in Canada, with the Canadian Electrical Code, Part I-CSA Standard C22.1. In addition, compliance must be made with any local ordinances and any electric or gas company requirements that might apply. Consult with local authorities having jurisdiction to verify local codes and installation procedures.

The wiring diagrams below illustrate the factory-wired connections in the cooling module junction box.

Use the two electrical snap bushings provided to protect the tubing-encased wires when making connections to the field-supplied air moving equipment.

Diagram of Evaporative Cooling Module Factory-Installed Wiring - Systems with 115/230/1/60 or 230/460/575/3/60

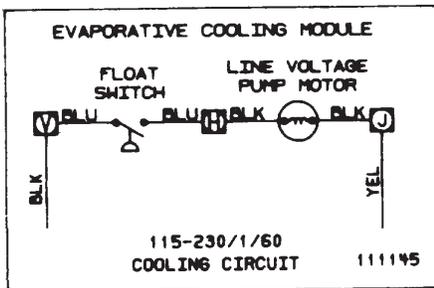
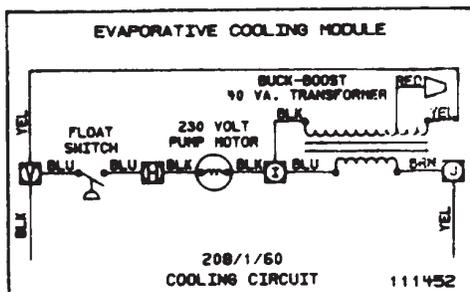


Diagram of Evaporative Cooling Module Factory-Installed Wiring - 208/1-3/60



5. Pump and Water Connections (See Dimensions, page 2)

Re-position Pump Assembly (Does not apply to module with optional timed metering system) – To avoid shipping damage, the pump/junction box assembly is attached to the top of the side panel for shipment. Support the pump and remove the four screws that hold the assembly in position. Re-position the assembly as shown in Figure 6, and attach using the same screws.

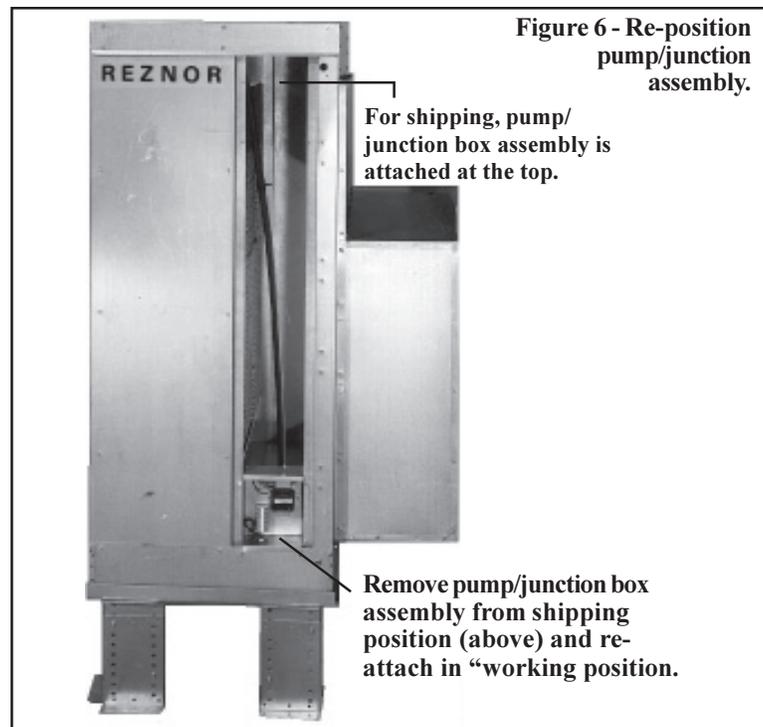


Figure 6 - Re-position pump/junction assembly.

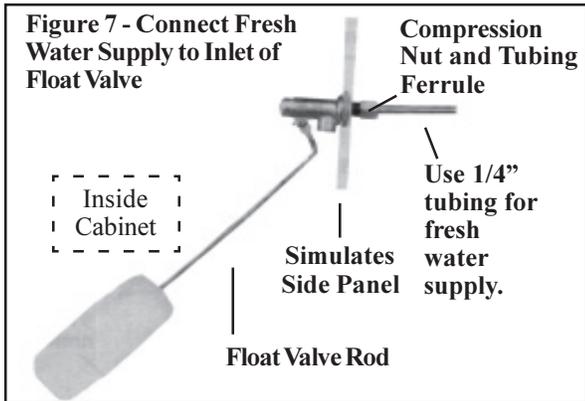
Water Connections

WARNINGS: Water reservoir (outdoor systems) must be drained and pump motor turned off when outside temperature falls below 32°F. Pump must never be operated without water in the reservoir.

Supply and Drain Water Connections

Float Valve (Figure 7) - In a module with pump and float controls, a float valve maintains the appropriate water level in the reservoir.

Use a field-supplied 1/4" diameter tubing with a compression nut and tubing ferrule to connect the fresh water supply to the inlet of the float valve. See Figure



7. Place nut and ferrule over tubing and insert tubing into the float valve stem. Tighten nut securely.

AquaSaver® Timed Metering Control System - If the cooling module is equipped with an optional timed metering system, connect a 1/2" water line to the fitting on the side of the cooling module.

Due to various water pressures and installation conditions, the water supply line may bang abruptly when the solenoid valve in the AquaSaver® system closes. This banging can be minimized by installing an optional water hammer arrestor in the supply line. If installing an optional water hammer arrestor, select an indoor (above 32°F) location, either horizontal or vertical, in line with and as close to the solenoid valve as possible. Follow the manufacturer's instructions to install and maintain the water hammer arrestor.

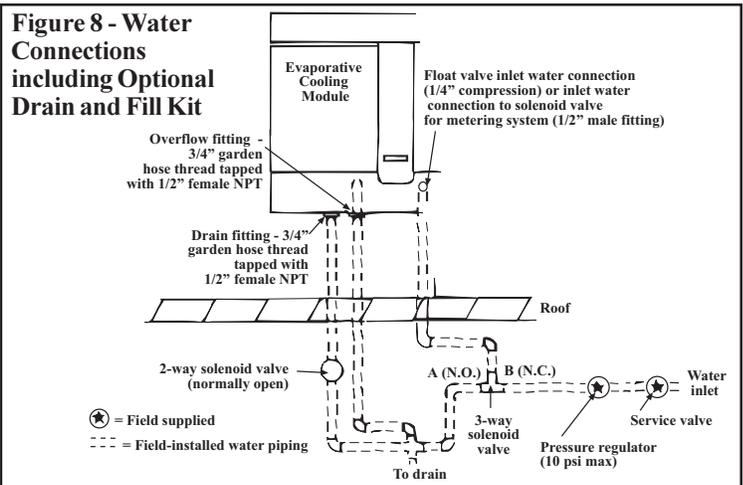
All Cooling Modules - A manual water shutoff should be installed upstream of the inlet, at a convenient non-freezing location, to allow the water supply to be turned on and off. If necessary, install a bleed line between the manual valve and the cooling module inlet to allow drainage of the line between the shutoff valve and the cooling module.

All cooling modules are equipped with an overflow and drain fitting. The fittings are in the cabinet bottom and come complete with a locknut and a sealing gasket. Check these fittings for tightness before installing the overflow and drain piping. The drain and overflow fitting will accommodate a 3/4" garden hose thread and is tapped with a 1/2" female pipe thread for iron pipe.

An optional automatic fill and drain kit will automatically release supply water to the cooling module when a call for cooling is made and will drain all water from the reservoir when the cooling switch is deactivated or a cooling thermostat is satisfied. If installing an optional fill and drain kit, see Figure 8 and follow the instructions that apply. Consult the wiring diagram for electrical connections. NOTE: The drain and fill kit (illustrated) is for a valve and pump control system. A freeze protection kit with only a drain valve is available for a module with an optional AquaSaver® system.

Bleed Line Connection (module equipped with pump and float controls only; does not apply to module with optional AquaSaver® controls) – Using the 1/4" I.D. x 1/2" N.P.T. nylon bleed line fitting (shipped in evaporative cooler bottom pan), thread the fitting into the female adapter on the distribution pipe. The hose barb will protrude from the side of the cabinet (See Figure 9). Attach a 1/4" I.D. hose to the barb and run to the nearest drain.

Discharging a quantity of water by “bleed off” will limit the concentration of undesirable minerals in the water being circulated through the cooling module. Minerals buildup because evaporation only releases “pure water vapor” causing the concentration of contaminants in the water to increase as the evaporation process continues to occur. The minerals accumulate on



Instructions for Installing Optional Fill & Drain Kit

NOTE: Follow instructions included in the valve packages for attaching valves to the water line only. The remainder of the installation instructions with the valves do not apply to this type of application.

Water Line Connections (See Figure 8):

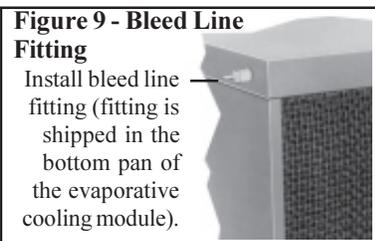
Supply (3-Way Valve) Connections - Connect the water supply line to "B" (normally closed). Connect the water drain line to "A" (normally open). Connect the middle outlet to supply the water to the cooling module reservoir.

Drain (2-Way Valve) Connections - Connect the drain pipe from the reservoir to "A". Connect the outlet side to "B" and connect into drain lines from the cooling reservoir and the supply valve.

Electrical Connections (requires black and white 14-gauge wire) - Refer to wiring diagram provided with the furnace:

WARNING: Risk of electrical shock. Disconnect the power.

1. Refer to the wiring diagram for terminal connections. (NOTE: If kit is not ordered with the system, connections will not be shown on the diagram. Terminal connections are specific to each system. Contact the factory for terminal connections. Be prepared to provide all model information.)
2. Run field-supplied black wire from the electrical compartment (terminal on the wiring diagram) of the evaporative cooling module and connect to the black wire on both the 3-way and the 2-way valve.
3. Run field-supplied white wire from the electrical compartment (terminal on the wiring diagram) of the evaporative cooling module and connect to the white wire on both the 3-way and the 2-way valve.



Install bleed line fitting (fitting is shipped in the bottom pan of the evaporative cooling module).

the media, in the water lines, on the pump, and in the reservoir. Adequate bleed off is important to maintaining an efficiently operating evaporative cooling system.

Filling and Adjusting the Water Level in the Reservoir (module equipped with pump and float controls only; does not apply to module

with optional AquaSaver® controls) – Turn on the water supply. Check for a good flow.

When the float valve (Figure 7) shuts off the water supply, measure the water depth. The depth of the water should be approximately 3". It may be necessary to adjust the float valve to obtain the proper water level or to free the float valve from obstructions. To adjust the float valve, simply bend the float valve rod upward to raise the water level or downward to decrease the water level.

While the reservoir is full, check for any water leaks. The reservoir was tested, but if any small leaks are present, drain the reservoir and apply a waterproof silicone sealer around corners and welds.

6. Adjust Water Flow Over Pads

Proper Water flow over the evaporative cooling media is critical to extend the life and maintain the efficiency of the pads.

WARNING: Adjust ball valve only when power is disconnected from the unit. Failure to do so can cause electrical shock, personal injury or death.

6. Adjust Water Flow Over Pads (cont'd)

Figure 10 - Disconnect the power and use ball valve to adjust water flow



Using the ball valve, located in the middle of the length of hose running from the pump to the distribution pipe inlet, adjust the valve to allow the flow to completely dampen the media pads from top to bottom. Operate the unit watching the water flow. After 15 minutes with the blower in operation, the water should have completely dampened the pads but should not be flowing off the entering side of the media.

If water is flowing off the entering side of the media, turn the unit off, disconnect the power, and reduce the entering water flow.

CAUTION: Do not flood the media pads with extreme quantities of water for long periods as this will cause premature breakdown of the media. An even flow from top to bottom of the media with the least amount of water is all that is required to assure maximum efficiency and media life span. More water does not provide more evaporation or more cooling.

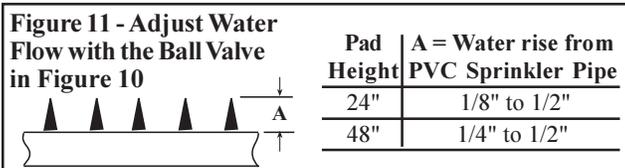
WARNING: Adjust ball valve only when the power is disconnected from the system. Failure to do so can cause electrical shock, personal injury or death.

Float and Pump Control System - Using the ball valve, located in the middle of the length of hose running from the pump to the distribution line inlet (Figure 10), adjust the valve handle to allow the flow to completely dampen the media pads from top to bottom. Operate the unit watching the water flow. After 15 minutes with the blower in operation, the water should have completely dampened the pads but should not be flowing off the entering side of the media. If water is flowing off the entering side of the media, turn the system off, disconnect the power, and reduce the entering water flow.

AquaSaver® Timed Metering Control System - NOTE: Water flow and pad wetting time should be adjusted at maximum air flow and wet bulb depression to assure complete wetting of the media at the extreme operating conditions.

In addition to adjusting water flow, the timing of the water on/off cycle can be adjusted. Adjustments are correct when 1) the water rises from the holes in the sprinkler pipe (See Figure 11) consistently along the entire pipe length, 2) the media pads wet evenly after a few "ON" cycles (no dry spots or dry streaks), and 3) a slight amount of excess water collects at the drain at the completion of the "ON" cycle.

1) AquaSaver® Water Flow Adjustment - Using the ball valve illustrated in Figure 10, adjust the water flow depending on the pad height. See Figure 11.



2) AquaSaver® Timer Adjustment - At any given temperature, the media pads should completely wet from top to bottom during the ON cycle. If the ON time is less than 45 seconds or greater than 90 seconds at 80°F, adjust the timer. Remove the junction box cover to access the timer adjustment screw (See Figure 12).

Through the use of a bimetallic strip, the timer is temperature sensitive and automatically increases the ON time approximately one

Figure 12 - Junction Box with AquaSaver® Controls



- To **increase** the ON time, turn the adjustment screw **clockwise**; one complete turn will increase ON cycle by 12 to 14 seconds.
- To **decrease** the ON time, turn the adjustment screw **counterclockwise**; one complete turn will decrease ON cycle by 12 to 14 seconds.

second for each 1°F rise above the 80°F factory setting. The ON time will equal the setting for 80°F plus a second for each degree above 80°F.

Let the unit cycle a few times to verify that the water flow is correct and the soaker hose is operating properly to wet the media pads completely from top to bottom during the ON cycle.

All Modules - Check the reservoir for any water leaks. The reservoir was water tested, but if any small leaks are present, drain the reservoir and apply a waterproof silicone sealer around corners and welds.

7. Model REC Pressure Drop Table

REC	CFM	Pressure Drop			
		Media		Moisture Elimination Pad*	
		6"	12"		
40	575	0.01	0.02	N/A	
	1000	0.03	0.06	N/A	
	1500	0.06	0.12	N/A	
	2000	0.10	0.20	0.11	
	2500	0.16	0.32	0.17	
	3000	0.22	0.44	0.25	
	3500	0.30	0.60	0.34	
	4000	0.40	0.80	0.44	
	50	1175	0.02	0.04	N/A
		1500	0.04	0.08	N/A
2000		0.06	0.12	0.08	
2500		0.10	0.20	0.12	
3000		0.14	0.28	0.17	
3500		0.20	0.40	0.24	
4000		0.26	0.52	0.31	
4500		0.32	0.64	0.39	
5000		0.40	0.80	0.48	
60		1550	0.03	0.06	N/A
	2000	0.04	0.08	0.05	
	2500	0.07	0.14	0.08	
	3000	0.10	0.20	0.12	
	3500	0.13	0.26	0.16	
	4000	0.18	0.36	0.21	
	4500	0.23	0.46	0.27	
	5000	0.28	0.56	0.33	
	5500	0.34	0.68	0.40	
	5800	0.37	0.74	0.48	
70	1950	0.03	0.06	0.04	
	2500	0.05	0.10	0.06	
	3000	0.07	0.14	0.09	
	3500	0.10	0.20	0.12	
	4000	0.13	0.26	0.18	
	4500	0.18	0.36	0.20	
	5000	0.20	0.40	0.25	
	5500	0.25	0.50	0.30	
	6000	0.29	0.58	0.35	
	6500	0.34	0.68	0.41	
80	2750	0.05	0.10	0.06	
	3500	0.08	0.16	0.09	
	4000	0.10	0.20	0.12	
	4500	0.13	0.26	0.15	
	5000	0.16	0.32	0.19	
	5500	0.19	0.38	0.23	
	6000	0.22	0.44	0.27	
	6500	0.26	0.52	0.32	
	7000	0.31	0.62	0.37	
	7500	0.35	0.70	0.42	
90	8000	0.40	0.80	0.48	
	3100	0.05	0.10	0.05	
	3500	0.06	0.12	0.07	
	4000	0.08	0.16	0.10	
	4500	0.10	0.20	0.12	
	5000	0.12	0.24	0.15	
	5500	0.15	0.30	0.18	
	6000	0.18	0.36	0.21	
	6500	0.21	0.42	0.25	
	7000	0.24	0.48	0.29	
180	7500	0.28	0.56	0.33	
	8000	0.32	0.64	0.38	
	8500	0.36	0.72	0.43	
	8800	0.38	0.76	0.48	
	3100	0.01	0.02	0.01	
	4000	0.02	0.04	0.02	
	5000	0.03	0.06	0.04	
	6000	0.04	0.08	0.05	
	7000	0.05	0.10	0.07	
	8000	0.07	0.14	0.10	
180	9000	0.09	0.18	0.12	
	10000	0.11	0.22	0.15	
	11000	0.13	0.26	0.18	
	12000	0.15	0.30	0.21	
	13000	0.18	0.36	0.25	
	14000	0.21	0.42	0.29	
	15000	0.25	0.50	0.33	
	16000	0.28	0.56	0.38	
	17000	0.32	0.64	0.43	
	18000	0.36	0.72	0.48	

* Moisture elimination catch pad (Option ASA1) is required above 600 FPM. 600 FPM = Model 40 - 2600 CFM; 50 - 3200 CFM; 60 - 3700; 70 - 4500 CFM; 80 - 5200 CFM; 90 - 5600 CFM; and 180 - 11200 CFM.

8. Maintenance

WARNING: Disconnect all power to the unit before doing any maintenance. Failure to do so may cause electrical shock, personal injury or death.

Media - Over time, excessive amounts of mineral deposits will begin to build up on the media. Annually, scale and dirt should be washed off the entering surface of the media. Remove the pad retainers and screen. Clean the media using a garden hose, mild soap, and a soft bristled brush. When the media becomes too clogged with mineral deposits and dirt that it cannot be cleaned, the pads should be replaced. The average pad life is approximately three cooling seasons.

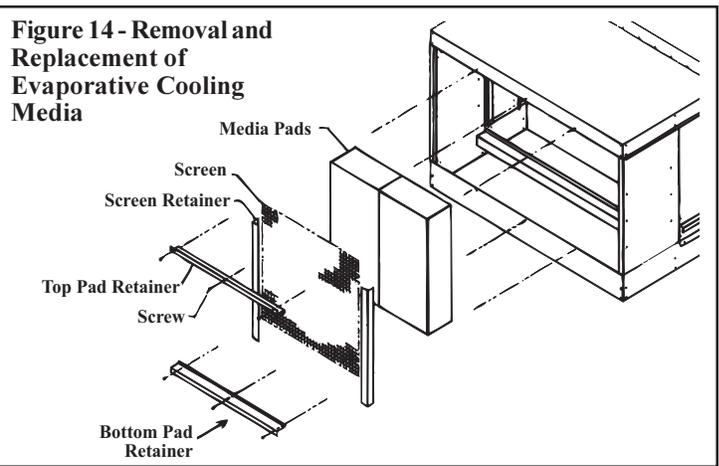
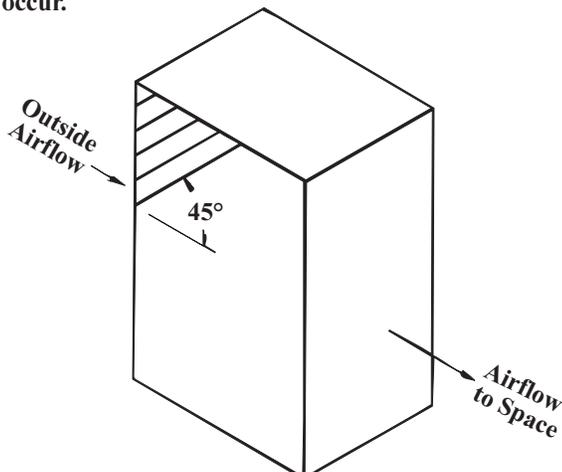
Select the correct replacement part numbers and order replacement media pads from your Reznor Distributor. Follow the instructions below and remove and replace pads as shown in Figures 13 and 14.

Evaporative Cooling Module Media Pads

REC Size	Media Pad Sizes	Qty	Replacement Part No.			
			Cellulose		Glass Fiber	
			6"	12"	6"	12"
40	24x12	2	105985	106021	106037	106029
	24x2-3/8	1	105986	106022	106038	106030
50	24x12	2	105985	106021	106037	106029
	24x7-7/8	1	105987	106023	106039	106031
60	24x12	3	105985	106021	106037	106029
	24x1-3/8	1	105988	106024	106040	106032
70	24x12	3	105985	106021	106037	106029
	24x9-5/8	1	105989	106025	106041	106033
80	24x12	4	105985	106021	106037	106029
	24x2-7/8	1	105990	106026	106042	106034
90	24x12	4	105985	106021	106037	106029
	24x8-5/8	1	105991	106027	106043	106035
180	48x12	4	107190	107194	107199	107201
	48x8-5/8	1	107191	107195	107200	107202

Figure 13 - Airflow Direction through Media Pad

IMPORTANT: Cooling media is made up of two different sheets of cooling material. Each has its own unique angle. When replacing the cooling media, BE CERTAIN the 45° angle slopes downward toward the incoming outside air. If the media is not installed properly, water blowoff from the media pads will occur.



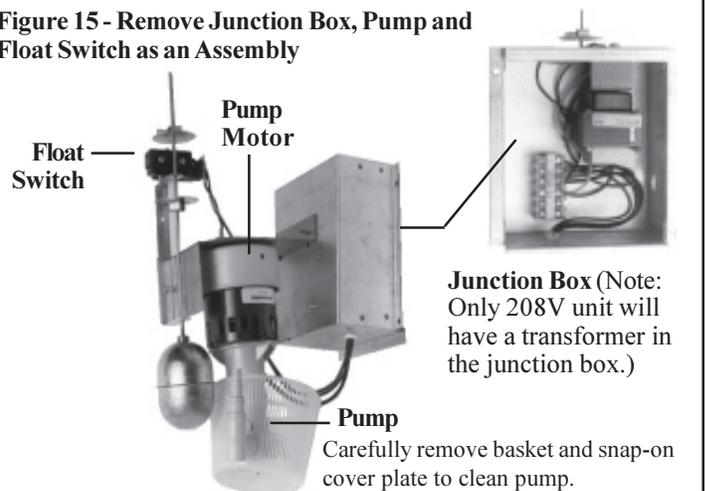
Instructions for Replacing Evaporative Cooling Media Pads

1. Remove the three sheetmetal screws that hold the top pad retainer in place. Release the top pad retainer from the cooling module.
2. Remove the three sheetmetal screws that hold the bottom pad retainer in place. Release the bottom pad retainer from the cooling module.
3. Disengage the screen retainers from the sides of the media.
4. Disengage the inlet screen from the media pads and remove from the cooling module.
5. Slide all media pads horizontally away from the cooling module until clear of bottom reservoir pan. Dispose of properly.
6. Replace media by sliding media pads over both support rails until back stop is encountered. Media MUST be placed with air flow as shown in Figure 13.
7. Center screen on the incoming air side of the media.
8. Replace the two side screen retainers by fitting them between the side of the media pad and the side of the cooling module. The retainers should fit snugly, pinching the screen against the media pads.
9. Replace the bottom pad retainer by securing the retainer between the pad and the reservoir pan. Fasten with the three sheetmetal screws removed in Step 2.
10. Replace the top pad retainer by securing the retainer between the pad and the top of the cooling module. Fasten with the three sheetmetal screws removed in Step 1.

Water Feed Line and PVC Distribution Piping – Annually, the water supply line and the PVC water distribution pipe should be flushed of debris and contaminants. Remove the media pads following the instructions above. Remove the water feed line from the downstream side of the ball valve and unscrew the water bleed line barbed hose fitting. Force a fresh water supply up through the water inlet hose and thoroughly flush the distribution pipe.

Water Pump and Inlet Basket Screen – Annually, the pump and inlet basket should be removed, disassembled and cleaned. Follow instructions on page 8

Figure 15 - Remove Junction Box, Pump and Float Switch as an Assembly



8. Maintenance (cont'd)

WARNING: Do not expose pump motor or any part of the electrical box to water. Evaporative cooling pump is NOT submersible.

1. Disconnect the power supply to the unit.
2. Remove the junction box door and disconnect the two power supply wires from the terminal block inside the junction box.
3. Disconnect the water feed line hose from the upstream side of the ball valve.

4. Unscrew the four sheetmetal screws holding the junction box to the cooling module. Remove the junction box-pump-float switch assembly.
5. Dislodge the inlet basket screen from the pump and clean any build-up of debris and dirt. Carefully remove the base cover plate from the bottom of the pump. Using a mild soap solution, wash all deposits from the inside of the pump and remove all debris from the impeller.
6. Reassemble the pump. Replace the parts in exact reverse order, being careful that everything is returned to its proper position.

SERVICE – Troubleshooting Chart

WARNING: Disconnect the power before servicing the cooling module. Failure to do so can cause electrical shock, personal injury or death.

PROBLEM	PROBABLE CAUSE	REMEDY
Pump doesn't run – Unit is calling for cooling (i.e. console control switch is in cool or summer position) and reservoir is full (pump & float system).	<ol style="list-style-type: none"> 1. Electrical connections (low voltage) 2. Electric float switch o pump 3. Dirty pump. 4. Defective pump. 	<ol style="list-style-type: none"> 1. Verify all electrical connections. Verify correct voltage at pump terminals H & J in REC Junction Box. See wiring diagram and Paragraph 4. 2. Check position of the actuators on the electric float switch. 3. Clean pump. See Paragraph 8. 4. Replace pump.
Required water level (3") not being maintained (pump & float control system)	<ol style="list-style-type: none"> 1. Float valve 2. Optional drain and fill valves 3. Incorrect overflow pipe nipple (should be 3-1/2"). 4. Drain leaking. 	<ol style="list-style-type: none"> 1. Adjust float valve. See Paragraph 5. 2. Check valves for proper operation. See Paragraph 5. 3. Replace pipe nipple. 4. Tighten drain fittings
Water running off of media pads	<ol style="list-style-type: none"> 1. Excessive water flow 2. Media pads need cleaned or replaced 	<ol style="list-style-type: none"> 1. Adjust ball valve in distribution line. See Paragraph 6. 2. Clean or replace media pads. See Paragraph 8.
Water not distributing evenly	<ol style="list-style-type: none"> 1. Distribution line clogged. 2. Holes in distribution line turned 3. Pump not running on correct voltage. 	<ol style="list-style-type: none"> 1. Flush distribution line. See Paragraph 8. 2. Check position of distribution line. Holes should be spraying upward toward diffuser. If not positioned with holes toward top, adjust position of line. 3. Check voltage at pump terminal in cooling module junction box
Media pads becoming clogged and discolored quickly (scale and salt deposits)	<ol style="list-style-type: none"> 1. Bleedoff line clogged or inadequate bleedoff (pump & float control system) 2. Excessive water flow. 	<ol style="list-style-type: none"> 1. Clean bleed line. See Paragraph 5. A uniform buildup of minerals on the entering air face of the media indicates insufficient bleedoff. Increase the rate until the mineral deposits dissipate. 2. Reduce flow by adjusting ball valve in distribution line. See Paragraph 6
Water blowoff from media pads or water being pulled from reservoir.	<ol style="list-style-type: none"> 1. Media pads installed incorrectly. 2. Requires moisture elimination pad (over 600 FPM). 3. Water level not 3" (pump & float system). 	<ol style="list-style-type: none"> 1. Install media pads correctly. See Paragraph 8. 2. Install moisture elimination pad. Follow instructions, page 3. 3. See second problem listed (Required water level not being maintained)

FOR SERVICE OR REPAIR, FOLLOW THESE STEPS IN ORDER:

FIRST:	Contact the installer.
Name	_____
Address	_____

Phone	_____
SECOND:	Contact the nearest distributor (See Yellow Pages). If no listing, contact Authorized Factory Representative, 1-800-695-1901 (Press 1).
THIRD:	Contact: REZNOR®/Thomas & Betts Corporation 150 McKinley Avenue Mercer, PA 16137 Phone: (724) 662-4400
Model No.	_____
Unit Serial No.	_____
Date of Installation	_____



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