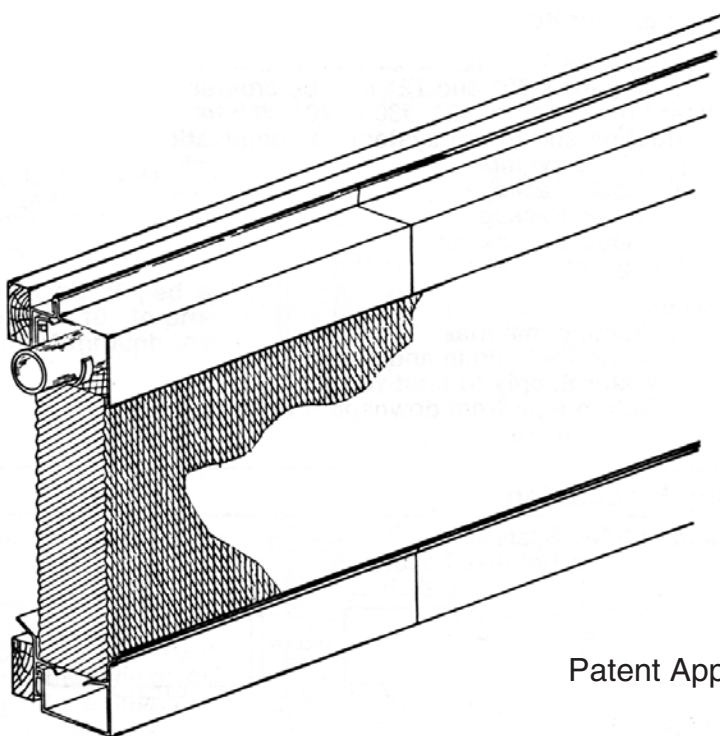


Owner's Manual And Installation Instructions For The ACME



Aluminum Cooling System (4" and 6" Systems)



Patent Applied For



ENVIRONMENTAL CONTROL PRODUCTS
ACME ENGINEERING & MFG. CORP.
CLIMATE CONTROL MARKETS

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FORM 610046
July 2006

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I. Components

A. Packaging: The Kool-Cel system consists of four major components:

1. 4" System: Kool-Cel pads 4" or 6" X 12, 24, 36, 48, 60 & 72 (10.16 X 15.24, 30.48, 60.96, 91.44, 121.92, 152.40, 182.88 cm). Two pads are used for 84" & 96" (213.36 & 234.84 cm) high pad installations. Note: 4" (10.16 cm) pads over 48" (121.92 cm) high require tall pad supports installed between every other pad.
2. Water Pump - 4" (10.16 cm) System: #15 to 40' (12.2 m), #30 to 70' (21.35 m), #60 to 100' (30.5 m); 6" (15.24 cm) System: #15 to 35' (88.90 cm); #30 to 55' (139.7 cm) and #60 to 80' (203.2 cm)
3. Distribution and return system - a combination of the following packages for the length of the system
 - a. 5' Basic Package
 - b. 10' Basic Package
 - c. 10' Regular Package
4. Plumbing Kit

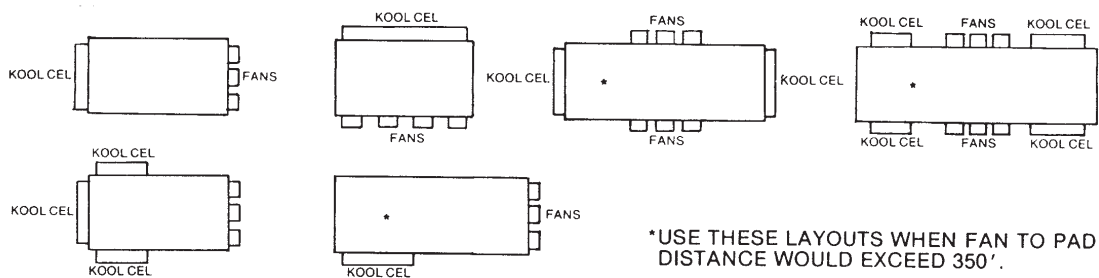
B. By Owner:

- Framing material
- Sump tank, drain and cover
- Water supply to float valve
- Return pipe from downspout to sump and filter

II. Building Preparation

A. Location of Pad System.

Typical Pad/Fan Relative Locations:

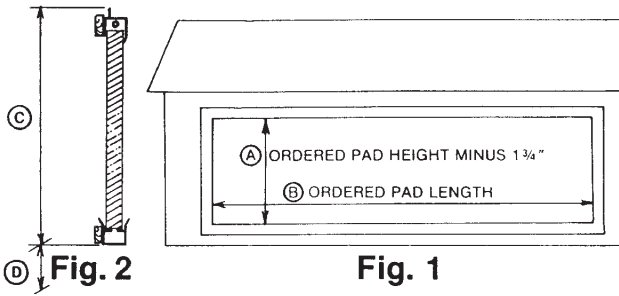


The Kool-Cel pad should be placed away from the fans (opposite) so that cooled air can flow through the building without turbulence. Pads should be no more than 250' (76.125 m) from the fans in greenhouses or livestock buildings to avoid excessive temperature rise and velocities.

In a greenhouse, the top of the pad should be near the top of the crop or have its midpoint centered on the midpoint of the crop.

In poultry and livestock installations, the pad is generally placed on the outside of the building so that the top of the pad is not below the highest desired cooling level. An eve extending beyond the Kool-Cel system is recommended.

B. Framed Opening and Sizes



B. Framed Opening and Sizes

THE CLEAR OPENING FOR THE PAD SYSTEM IS:

- A. (Vertical) = Ordered pad height minus $1\frac{3}{4}$ " (4.44 cm)
- B. (Horizontal) = Ordered pad length

THE OVERALL HEIGHT OF THE SYSTEM:

(Fig. 2)

- C. = Ordered pad height plus $6\frac{3}{4}$ " (17.15 cm)
- D. = 8" (Must be allowed below gutter for return piping to sump). If installing optional transition pump tank, refer to pages 10 and 11.

The side wall structure members should be left intact (See Fig. 3).

C. Stringers - The framing and support stringers could be any type of material (metal channels, rectangular square tubes, treated wood, etc.). The design should provide a flat surface for mounting support brackets and the lower stringer should be capable of carrying a load of 2.74 lbs. (1.23 kg) per sq. ft. of pad for the 4" (10.16 cm) system and 4.11 lbs.(1864.26 g) per sq. ft. for the 6" (121.92 cm) system. The stringers must be sloped a recommended $\frac{1}{2}$ " (1.27 cm) per 10' (3.05 m) to provide adequate run-off through the gutter. It is not necessary to add a third intermediate stringer when using our new style tall pad supports.

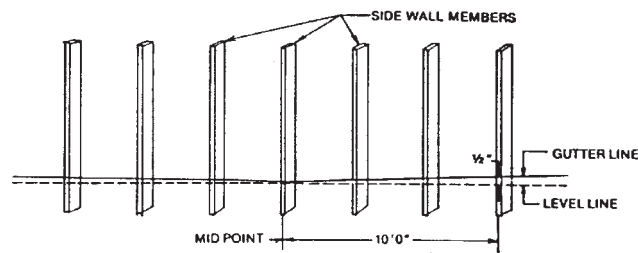


Fig. 3

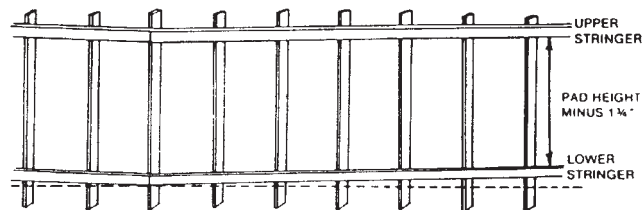


Fig. 4

D. Sump Tank and Cover - Provide a tank with a capacity of $\frac{3}{4}$ gallon (4.409 liters) per square foot of pad area and 1 gallon (3.78 liters) per square foot of 6" (15.24 cm) pad area when using centrifugal pumps. A tank cover should be provided capable of supporting the pump (#30 - 35 lbs.(15,875.72 grams), #60 - 50 lbs. (22,679.6 grams). The sump should be set in place prior to start of the installation of the distribution and return system.

E. Optional Transition Pump Tank - Refer to Pages 10 and 11.

III. System Installation

After installing all framing materials, the Kool-Cel distribution and return system will go together simply and quickly following the instructions step by step.

(Hints:)

Framing - Verify framing dimensions with Section II. All framing in this manual refers to standard treated 2" X 4" wood ($1\frac{1}{2}$ " X $3\frac{1}{2}$ "; 3.81 cm X 8.89 cm) and 2" X 6" ($1\frac{1}{2}$ " X $5\frac{1}{2}$ "; 3.81 cm X 13.97 cm).

Caulking - Where the following instructions refer to caulking, use $\frac{3}{16}$ " (.476 cm) to $\frac{1}{4}$ " (6.35 cm) bead of Butyl grip sealant provided with the system. Read and follow directions on the tube.

Packages - Place all cartons in the area of installation and open the tops of cartons. Do not remove the material until needed. The "basic package" contains all end caps, tee, downspout, plugs, etc.

Pad - have at least one pad (one each in a two-pad height) handy during installation of system.

A. Gutter Installation:

1. Gutter Support

- a. Start with the 2'6" (.7625 m) section found in the basic package, followed by the 10' sections , ending with the 7'6" (2.2875 m) or 2'6" (.7625 m) section at the opposite end (see Fig. 5).
- b. Locate the gutter support on the bottom stringer by aligning the bottom of the gutter support 3¼" (8.25 cm) below the top of the stringer and attach with #14 X 1¼" (3.17 cm) steel screws (see Fig. 6).

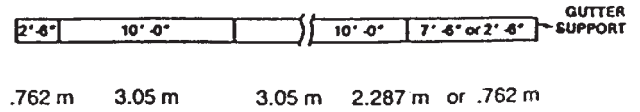


Fig. 5

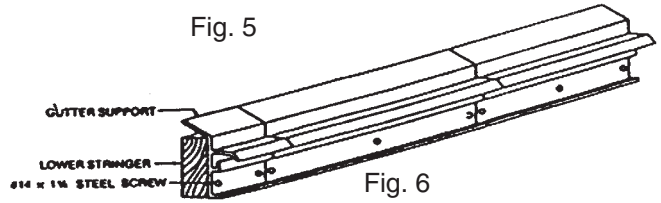
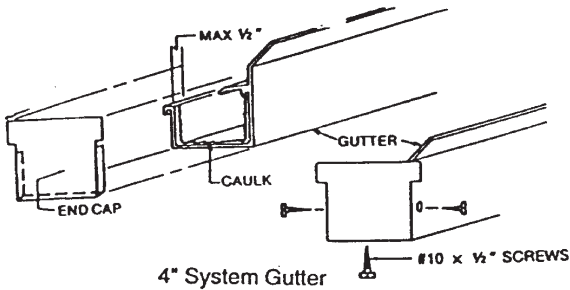
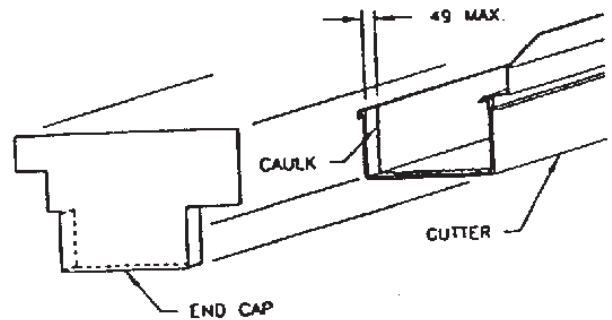


Fig. 6



4" System Gutter



6" System Gutter

Fig. 7

- c. Install the downspout (2"/5.08 cm tank fitting) in the gutter section with the downspout hole found in the basic package. This section is to be installed near the midpoint of the system over the sump. Insure the gaskets are seated on both sides of the gutter with the fittings as shown in Fig. 8.

GUTTER SUPPORT-Note that the joint in the gutter support is offset from the joint in the gutter.

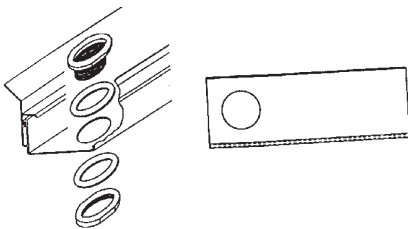


Fig. 8

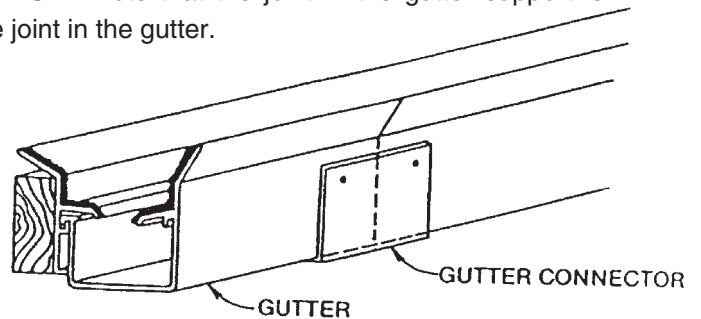


Fig. 9

- d. Slip the gutter connector over the outside of the gutter joint (see Fig. 9). The gutter connector should be centered over the joint and the bottom of the gutter connector should contact the bottom of the gutter. Using the gutter connector as a drill jig, drill two .125" (.3175 cm) diameter holes in the side and two in the bottom of the gutters. Remove the gutter

connector and coat the interior of the gutter connector liberally with caulking compound. Replace the gutter connector and secure with the four #10 x 1/2" (1.27 cm) stainless steel sheet metal screws provided.

- e. Caulk the top surface of the joints between the gutter pieces and the joints between the gutter supports to prevent water from seeping through to the stringer (see Fig. 10).

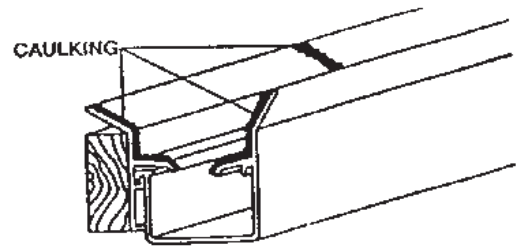


Fig. 10

B. System Top Installation

1. Place a pad in the gutter assembly to establish the position of the top cover support and pipe support. The pipe support should be approximately 1/4" (.635 cm) above the pad. Mark the location of the mounting hole (see Fig. 11). Follow this procedure for both ends and the midpoint. Run a chalk line through the midpoint mark and the end marks. This will indicate the position of the mounting hole on the top stringer when installing the top cover support and the pipe supports.

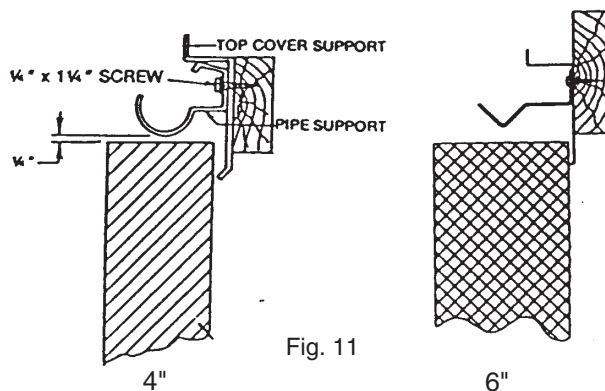


Fig. 11

2. Mount the top cover support and the pipe support by aligning the mounting holes with the chalk line mark on the top stringer as shown in Fig. 11 and secure with the 1/4" x 1 1/4" (.635 cm X 3.175 cm) screws. Note only one pipe support at each joint (see Fig. 12).
3. Caulk the top cover support joint so that water will not seep through the top stringer (see Fig. 12).

C. Installation of Distribution Pipe

1. Place a 10' (3.05 m) section of pipe into the pipe supports near the midpoint of the system with the metered holes pointing directly up and connect the tee to the pipe (see Fig. 13). Make sure the small hole in the tee is in the upward side. MAKE SURE ALL METERED HOLES ARE AT THE TOP SO THAT THE WATER WILL SPRAY DIRECTLY UPWARD.

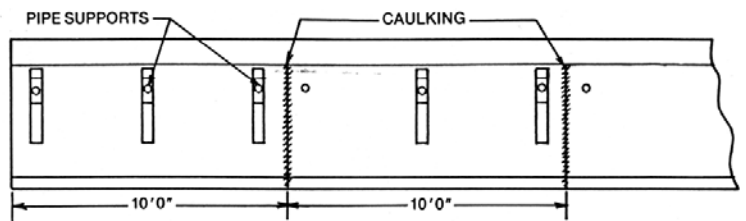


Fig. 12

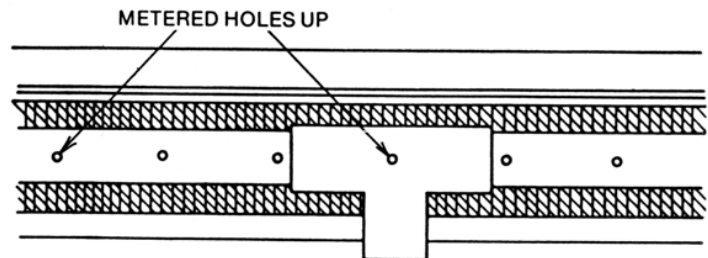


Fig. 13

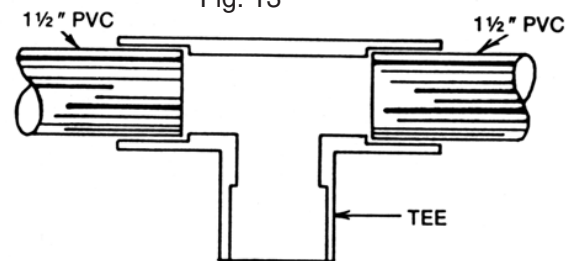


Fig. 14

2. Slide the pipe into the tee. These connections do not need to be cemented, but should be pushed tightly together (see Fig. 14).

3. Install the remaining pipe using couplings (no cement) always making certain that the metered holes are pointing directly upward. Determine the overall length of the end pipe system. Saw off the excess pipe squarely approximately 1½" (3.81 cm) past the end of the top cover support and remove the burrs.

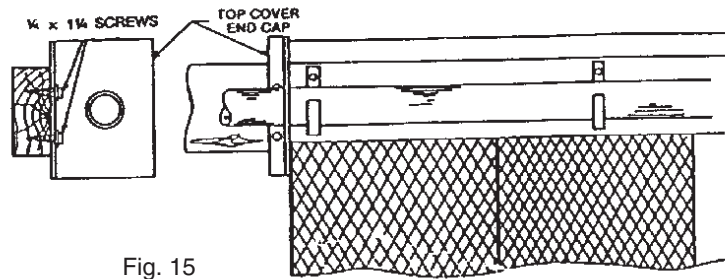


Fig. 15

4. Slip the top cover end cap over the pipe with the pipe centered in the hole. Attach to the top stringer with the two ¼" x 1¼" (.635 cm X 3.175 cm) screws provided (see Fig. 15).
5. Apply PVC cement on the pipe and one end of the Tee fitting and push the Tee all the way on the pipe (see Fig. 16).
6. Cut the 4'8" (1.42 m) length of pipe into two 2'4" (.711 m) lengths. Remove burrs and apply PVC cement to the bottom leg of the tee and one end of the PVC pipe. Insert the pipe into the tee as shown in Fig. 16.

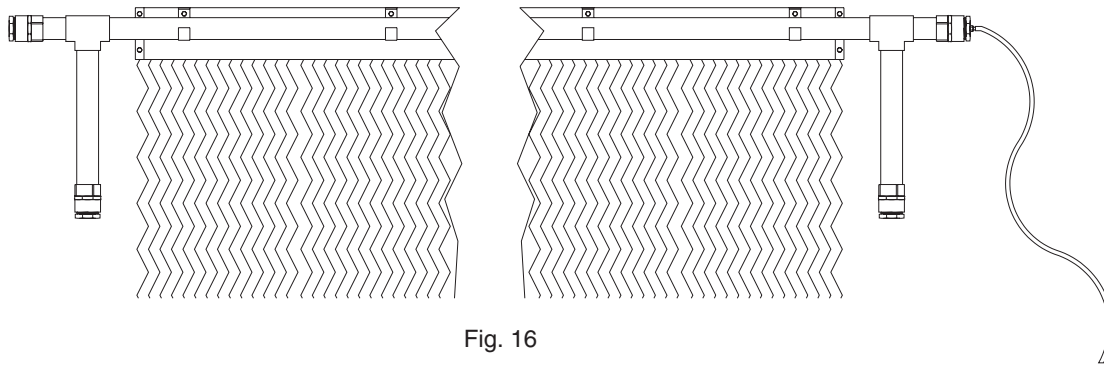


Fig. 16

7. Cement a short piece of PVC pipe (enough length for the pipe to fully seat into the Tee & PVC adapter) in each end of the system Tee's. If no pipe is available, cut 4" - 6" (1.372 m) off the 2'4" (.711 m) pieces.
8. Cement the 4 PVC adapters to the ends of the 4 pipes. Make sure the glue doesn't run onto the threads of the adapters.
9. At one end of the system, screw the PVC plug into the adapter and hand tighten (see Fig. 17). At the other end, screw the PVC plug with the bleed-off fitting into the adapter and hand tighten (see Fig. 18). The plug with the bleed-off fitting should be installed in one end near a drain.
10. To provide necessary bleed-off of water from your Kool-Cel system, a bleed-off connection and hose are provided. Attach the hose to the pipe adapter that has just been installed and drain the bleed-off water outside the building or into a floor drain.

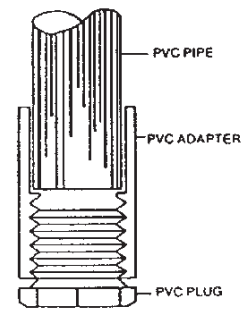


Fig. 17

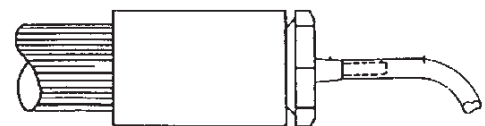


Fig. 18

D. Pad Installation

1. The pads should now be installed by placing the pads into the gutter assembly. Press pads into the gutter to seat them on the pad support (See Fig. 19).

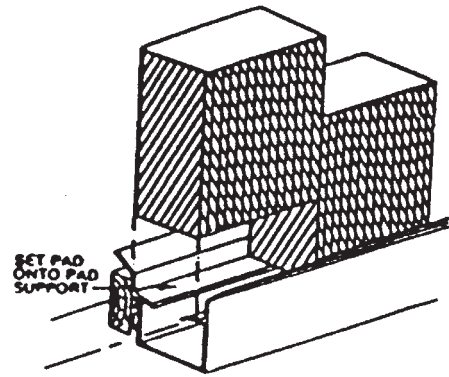


Fig. 19

2. If 60" (1.25 m) or taller one piece or two piece pads are to be used, tall pad supports should be installed. The supports install between every other pad, centered between the top and bottom and the front and back of the pads. Holding the tall support in position, press the pads together until the support sticks into both pads (see Fig. 20). NOTE: The last pad installed may need to be trimmed to fit available space easily. DO NOT force the last pad into a space that is smaller than the pad.

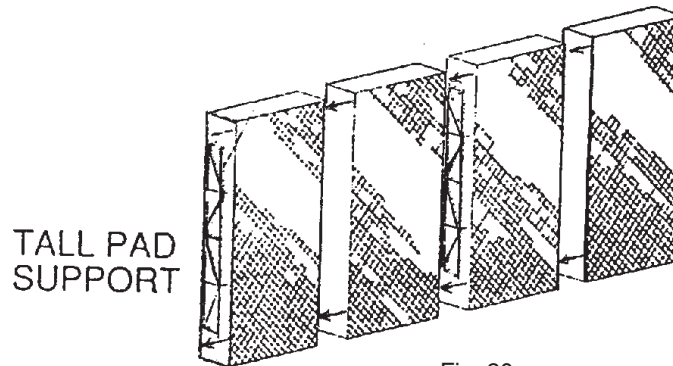


Fig. 20

E. Top Cover Installation

1. Install the top cover connector by inserting the connector between the top cover support and the pipe support (see Fig. 21). Do not install a connector at each end. Be certain there is 5 feet from the end to the center of the first connector, then 5 feet to the center of all other connectors.
2. The top cover should now be installed by slipping the top cover over the lip on the top cover support (see Fig. 21). Start at each end and install toward the tee connection.
3. To fit the top cover over the tee, cut a slot in the cover section at the tee high enough to allow the top cover to set into the same position as the rest of the covers.

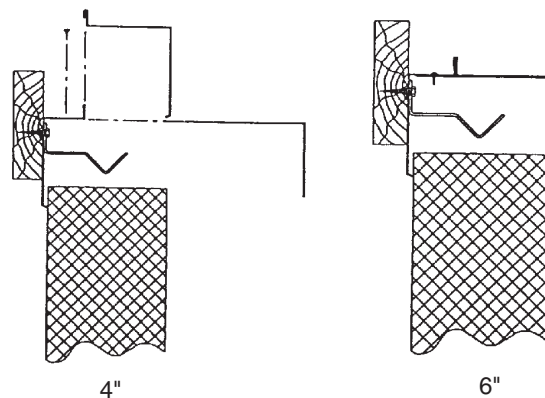
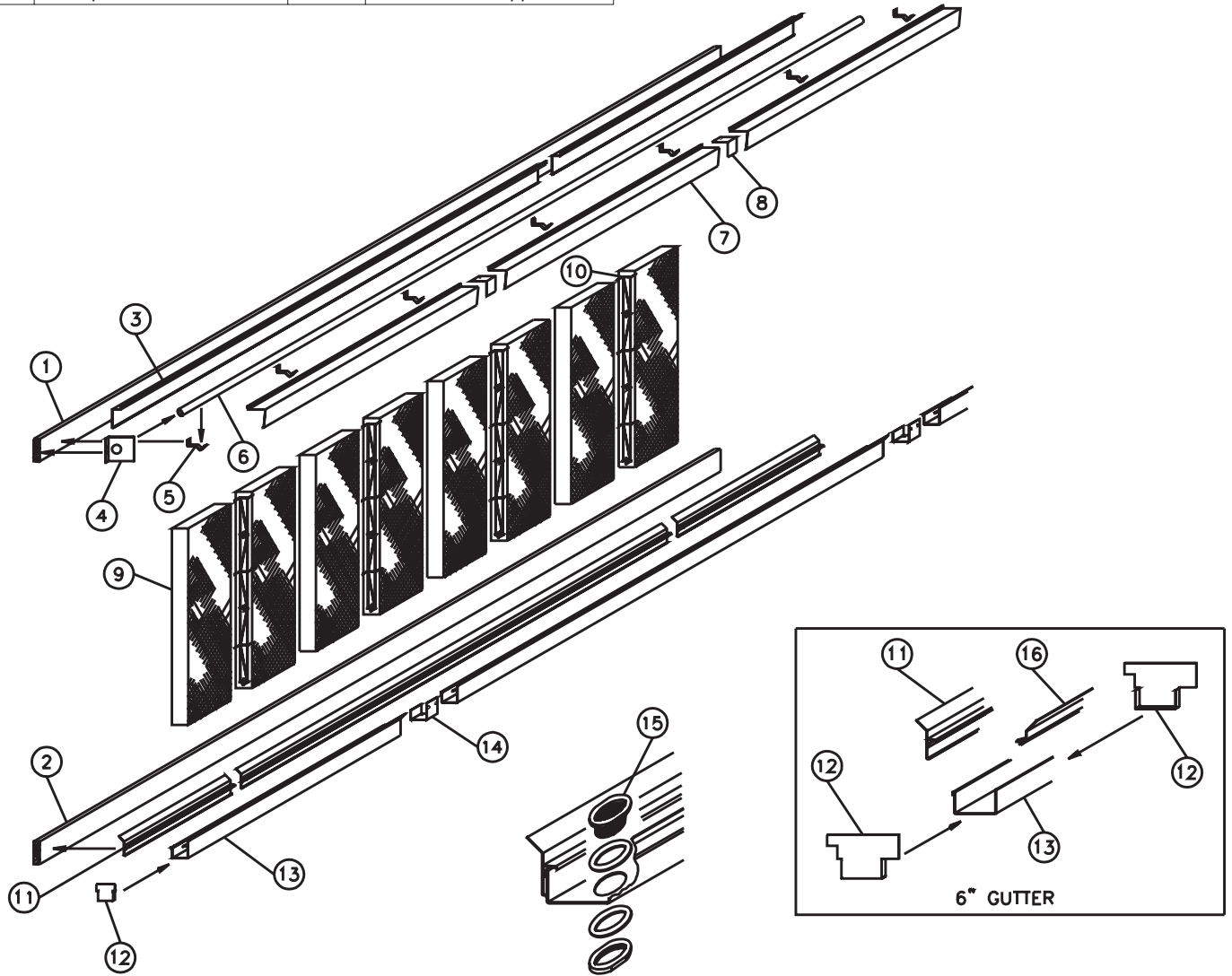


Fig. 21

Aluminum Kool-Cel System

1	Top Stringer (By Others)	9	Evaporative Pad
2	Bottom Stringer (By Others)	10	Tall Pad Support
3	Top Cover Support	11	Pad Gutter Support
4	Top Cover End Cap	12	Gutter End Cover
5	Pipe Support	13	Gutter
6	PVC Pipe	14	Gutter Connector
7	Top Cover	15	2" Tank Fitting
8	Top Cover Connector	16	6" Pad Support



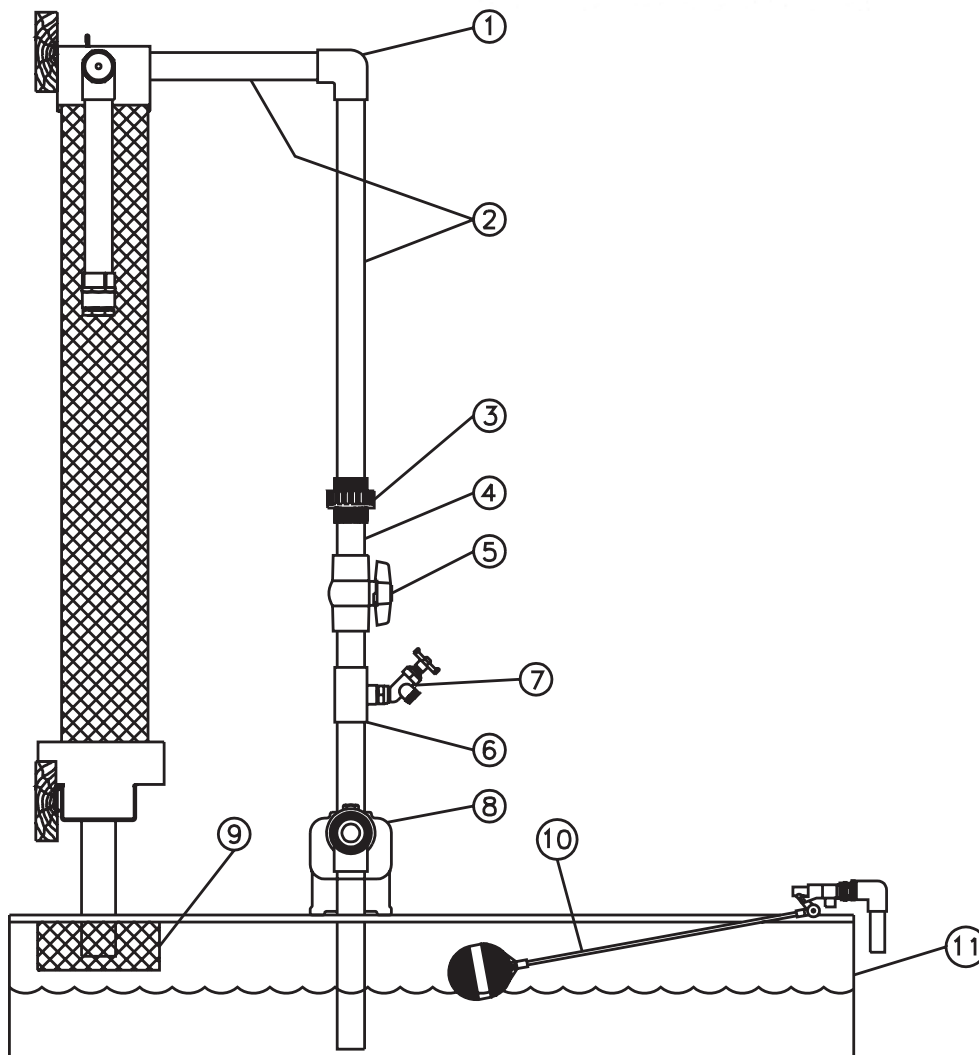
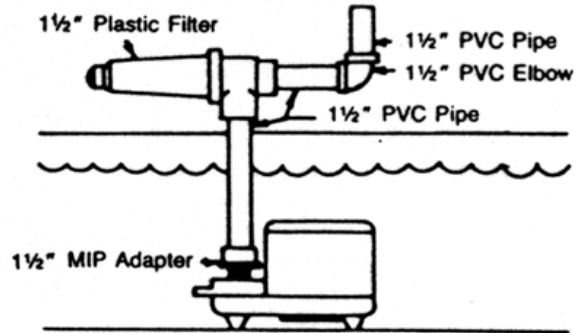
Exploded View - 4" System

F. Plumbing Installation.

A complete plumbing kit is available from Acme through your distributor. There are extra items in this kit so that one kit may fit all installations. If you have not purchased this kit, see below for items required. Assemble the plumbing as shown below after the system has been installed.

PARTS LEGEND	
1	PVC ELBOW 1½" (3.81 cm)
2	PVC PIPE 1½" (3.81 cm)
3	PVC UNION 1½" (3.81 cm)
4	PVC NIPPLE 1½" (3.81 cm)
5	PVC BALL VALVE 1½" (3.81 cm)
6	PVC TEE 1½" X 1½" x ¾" (3.81 cm X 3.81 cm X 1.9 cm)
7	HOSE BIBB ¾" (1.9 cm)
8	PUMP
9	SCREEN OVER RETURN (LEADER PIPE BY OTHERS)
10	FLOAT VALVE
11	OPERATING WATER LEVEL, APPROX ½ FULL

Pump Side Views 15S, 30S, and 70S Submersible Pumps

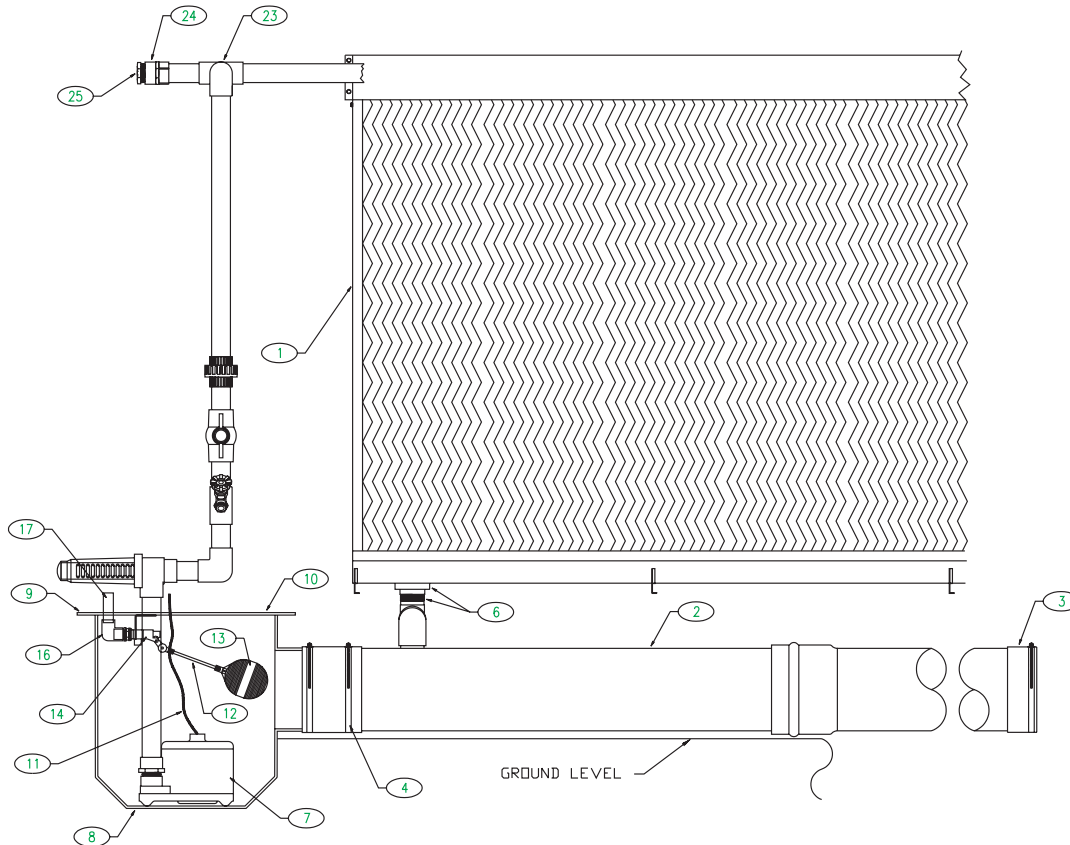
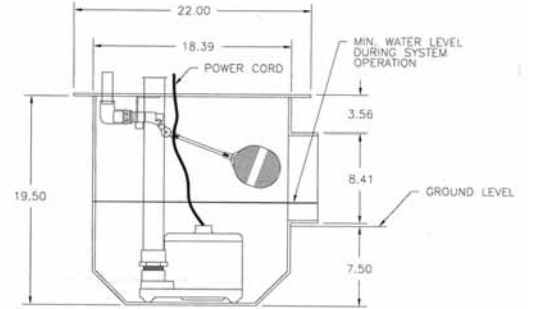
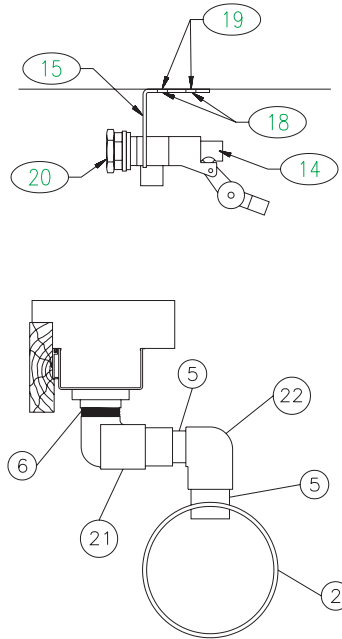


8" PVC Transition Pump Tank (Optional)

Optional 8" PVC Transition Pump Tank - Install the Transition Pump Tank according to Figures below.

8" PVC Transition Pump Tank & Related Items	
Item #	Description
*1	Kool-Cel System
†2	8" PVC Pipe
3	8" Pipe Cap w/Connector
4	8" Coupler 1/8 X 6 X 30 Neoprene
†5	2" PVC Pipe
*6	2" Threaded Tank Fitting w/2 Rings
7	Pump
8	Transition Pump Tank
9	Transition Pump Tank - Left Half
10	Transition Pump Tank - Right Half
11	Pump Power Code / Supplied w/Pump
12	Float Rod
*13	Float
*14	Float Valve
15	Float Valve Bracket
†16	3/4" PVC Elbow
†17	3/4" PVC Pipe
18	1/4" X 20 Whiz Lock Nut
19	1/4" X 20 X 1 Bolt
20	3/4" To 1/2" Reducing Bushing
21	2" 90° Street Ell MIPT X SLIP
22	2" 90° Street Ell SP X SLPT
*23	1 1/2" Tee
*24	1 1/2" Female Adaptor
*25	1 1/2" Plug

*Items supplied in basic package or plumbing completer kit
 †Supplied by others



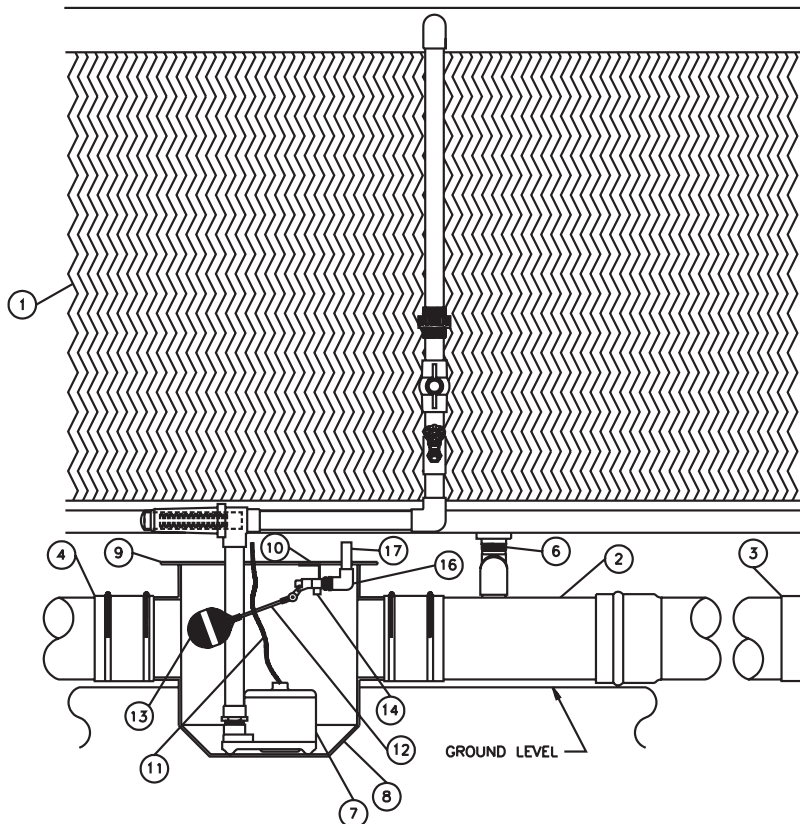
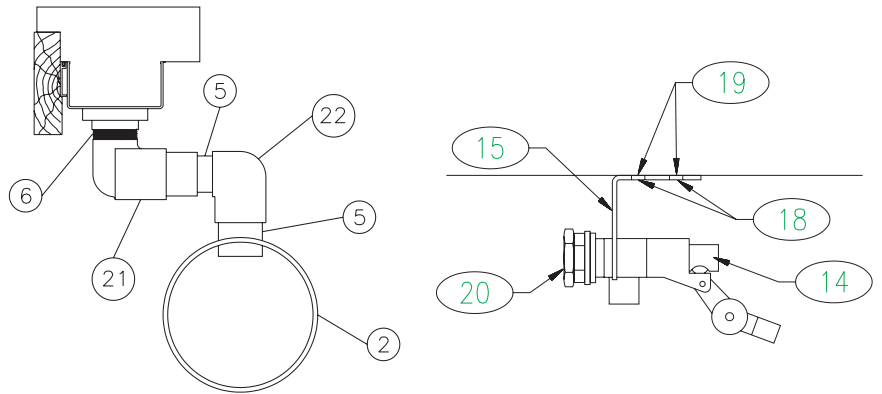
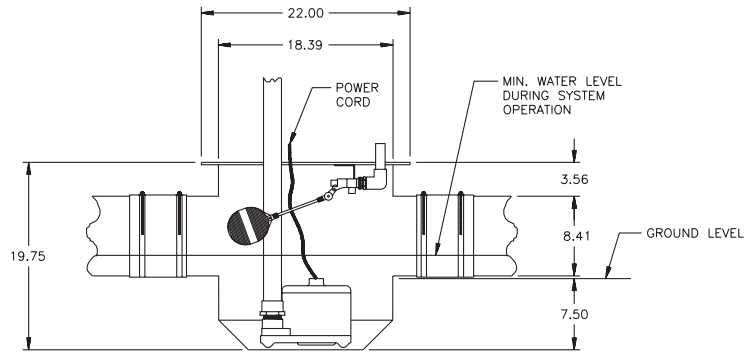
End System Drain

8" PVC Transition Pump Tank Double Inlet (Optional)

Optional 8" PVC Transition Pump Tank - For systems over 50' in length, install the Transition Pump Tank according to Figures below.

8" PVC Transition Pump Tank & Related Items	
Item #	Description
*1	Kool-Cel System
†2	8" PVC Pipe
3	8" Pipe Cap w/Connector
4	8" Coupler 1/8 X 6 X 30 Neoprene
†5	2" PVC Pipe
*6	2" Threaded Tank Fitting w/2 Rings
7	Pump
8	Transition Pump Tank
9	Transition Pump Tank Lid - Left Half
10	Transition Pump Tank Lid - Right Half
11	Pump Power Cord; Supplied w/Pump
12	Float Rod
*13	Float
*14	Float Valve
15	Float Valve Bracket
†16	3/4" PVC Elbow
†17	3/4" PVC Pipe
18	1/4" X 20 X 1 Whiz Lock Nut
19	1/4" X 20 X 1 Bolt
20	3/4 to 1/2 Reducing Bushing
21	2" 90° Street Ell MIP X SLIP
22	2" 90° ELL SP X SLPT

* Items supplied in basic package or plumbing completer kit
 † Supplied by others



Middle System Drain

IV. Start Up and Testing

Before installing the top covers, you may proceed with the start-up and testing of the system. If installed, remove top covers.

- A. Test Water - Make up water should be tested for Ph level and salable salts. Ph must be between 6 and 9 and salt concentrates below 40,000 ppm. See Padcare VI.
- B. Float Valve - Open the water supply line to the sump. Adjust the float valve so the water shuts off before the water level in the tank reaches the top of the overflow pipe.
- C. Pump - Prime the pump (#30 and #60) per instructions received with pump.
- D. Flush the system to clean out all accumulated debris as follows:
 - 1. Remove plugs from ends of system.
 - 2. Open the flow valve. Close clean out valve.
 - 3. Be sure pump is primed prior to operation. Run power to pump and let the system flush out for approximately 5 minutes.
 - 4. Shut the pump off and replace plugs.
- E. Turn on the pump and be sure the water is flowing from all holes in the distribution pipe. Clean out any holes that are not spraying water.
- F. Adjust the flow valve until the water sprays approximately 12" (30.28 cm) in the air. Replace the pad covers and your system is ready for operation.
- G. The temperature in an empty greenhouse will be considerably higher than a greenhouse with plants as the plants assist cooling by transpiration.

V. Maintenance

A regular maintenance schedule should be set up to keep your Kool-Cel system operating at peak efficiency and to maximize the life of the system.

- A. Visual checks of the system should be made daily or while in the area of the pad:
 - 1. Check for dry spots on the pad, see Start Up and Testing IV, E.
 - 2. Check for algae and scale on pads, see Pad Care (VI).
- B. During the cooling season when the pad is in operation:
 - 1. Weekly:
 - a. Clean out strainer to prevent possible damage to pump. This may need to be done twice weekly.
 - b. Clean out sediment plugs at the ends of the system. Remove plugs and drain into a bucket with system pump off; replace plugs.
 - c. Drain the sump to remove sediment, usually every two to four weeks. This should be done weekly in areas with extremely high salt concentrations. Close flow valve and connect hose to the hose bibb and turn on pump.
 - 2. Monthly:
 - a. Inspect complete system:
 - 1. Check for leaks and repair.
 - 2. Check bleed off connection to insure bleed off is occurring at all times.
 - 3. Check the strainer from the downspout in the sump - replace if necessary.
 - a. Test water for Ph level (make up water and sump water). See Pad Care IV.
- C. Start and End of Cooling Season
 - 1. At the end of each season, drain the pump and piping system to avoid damage caused by rust and impure particles in the water. If the system is outside the building, the pump must be drained and removed to avoid freeze damage.
 - 2. To restart the system in the spring, follow the Start Up and Testing IV procedure.
 - 3. Inspect all parts and pads and replace any damaged or worn parts. See parts list on Page 14.

VI. Pad Care

Kool-Cel pads are very durable and long lasting. To maximize the life of your pads and keep the efficiency of the original installation, review the following items and take necessary action to correct any conditions that may be detrimental to the pad.

- A. Ph of recirculating water (from sump) must be maintained between 6 and 9 (7 is pure water). If these limits are exceeded, the stiffening agents in the pad will leach out and destroy the pad. Water containing acids to a degree that the Ph is below 6.0 aromatic hydrocarbons, or wetting and dispersing agents such as phosphates can be harmful to the pads.
- B. Hard water resulting in Calcium Carbonate deposits on the pad is not harmful, but should be kept within limits. The help of good a water treatment expert is advisable if any hardness problems are encountered.
- C. Sodium Chloride (salt water) concentrate above 50,000 ppm (approx.) will deposit salt on the pad and reduce air flow. Keep salt concentrates below 50,000 ppm in recirculating water and below 40,000 ppm in make-up water.
- D. Algae will grow on any surface that is wet and exposed to sunlight. To help prevent algae build-up, follow these steps:
 1. Do not draw make-up water from an open pond. Use well water or chlorinated water from city systems.
 2. Cover the sump to avoid exposure to sunlight and airborne particles and to keep animals from drinking it.
 3. Keep fans running to dry the pads after the pump is shut off, thus killing the algae spores left on the pad.
 4. Isolate the water make-up system from any other system that may carry fertilizers which would enhance algae growth.
 5. If algae persists, use a swimming pool water algaecide non-chlorine, chloride (tablet type) in the sump about $\frac{1}{4}$ the concentrate suggested for pools.
- E. Airborne dust and bugs do not seem to clog the air flow passages for Kool-Cel. This clogging washes away when the system is running.
- F. Kool-Cel should be guarded when installed within the reach of poultry or livestock. To guard from poultry, a 10" x 14" (25.4 cm X 35.56 cm) mesh guard should be installed approximately 8" - 12" (20.32 cm - 30.48 cm) from the pad the full length of the system and approximately 3' (.915 m) from the birds feet. Protect the pad from livestock with a full heavy gauge wire screen approximately 2" x 2" (5.08 cm x 5.08 cm) mesh, placed at least 6" (15.24 cm) from the pad.
- G. Bleed-Off - Since the water is continuously evaporating and being replaced with fresh water, the salts and minerals are left behind in the recirculating water. As these impurities become concentrated, they build up on the pads unless preventive steps are taken. To reduce the build-up of deposits and scale, a bleed-off from 1 to 2 percent of the circulating water is usually required. This is particularly true in areas that have a high mineral content in their water. The required bleed-off is provided by the bleed-off fitting in the plug.

PART LIST

Should a need ever exist for repair parts, contact your Acme distributor:

4" ALUMINUM PARTS LIST		6" ALUMINUM PARTS LIST		MISCELLANEOUS PARTS LIST	
P/N	Description	P/N	Description	P/N	Description
515155	7'6" (2.287 cm) Pad Gutter Support	515155	7'6" (2.287 cm) Pad Gutter Support	515169	Tube Caulk
515154	2'6" (.762 cm) Pad Gutter Support	515154	2'6" (.762 cm) Pad Gutter Support	515171	PVC Tee w/Hole
515159	10' (3.05 m) Pad Gutter Support	515159	10' (3.05 m) Pad Gutter Support	515675	PVC Tee
515172	4" X 10' (10.16 cm X 3.05 m) Pad Gutter	515664	6" X 10' (15.24 cm X 3.05 m) Pad Gutter	515181	PVC Adapter
515558	4" X 10' (10.16 cm X 3.05 m) Pad Gutter w/Downspout	515665	6" X 10' (15.24 cm X 3.05 m) Pad Gutter w/Downspout	515182	PVC Plug
515557	4" X 5' (10.16 cm X 1.525 m) Gutter w/Downspout Hole	515666	6" X 5' (15.24 cm X 1.525 m) Pad Gutter w/Downspout	515183	PVC Plug w/Bleed-Off
515166	4" (10.16 cm) Gutter Connector With Screws	515667	6" (15.24 cm) Gutter Connector w/Screws	515176	Bleed-Off Tubing
515162	4" (10.16 cm) Gutter End Cover With Screws	515668	6" (15.24 cm) Gutter End Cover w/Screws	515068	PVC Elbow
515160	4" X 5' (10.16 cm X 1.525 m) Top Cover Support	515669	6" X 5' (15.24 cm X 1.525 m) Top Cover Support	515157	1 1/2" (3.81 cm) PVC Pipe X 4'8" (1.421 m)
515161	4" X 10' (10.16 cm X 3.05 m) Top Cover Support	515670	6" X 10' (15.24 cm X 3.05 m) Top Cover Support	515073	PVC Cement
515163	4" X 5' (10.16 cm X 1.525 m) Top Cover	515671	6" X 5' (15.24 cm X 1.525 m) Top Cover	515071	1 1/2" (3.81 cm) Filter
515165	4" (10.16 cm) Top Cover Connector	515672	6" (15.24 cm) Top Cover Connector	515099	Filter Replacement - Filter Insert
515167	4" (10.16 cm) Top Cover End Cap	515673	6" (15.24 cm) Top Cover End Cap	515179	Filter Replacement - Clear Cove
515164	4" (10.16 cm) Pipe Hanger	515674	6" (15.24 cm) Pipe Hanger	516087	Float Valve Assembly (Valve, Float, Rod)
515178	1 1/2" x 5' (3.81cm x 1.524m) Dist. Pipe w/Holes	515178	1 1/2" x 5' (3.81 cm x 1.524m) Dist. Pipe w/Holes	515427	Pad Support Wire
515065	1 1/2" x 10' (3.81cm x 3.05m) Dist. Pipe w/Holes	515065	1 1/2" x 10' (3.81 cm x 3.05m) Dist. Pipe w/Holes	515404	Plumbing Kit

NOTES

TERMS AND CONDITIONS OF SALE

ACCEPTANCE All orders and sales are subject to written approval and acceptance by an executive officer of Acme Engineering & Manufacturing Corporation at Muskogee, Oklahoma, (the "Company") and are not binding on the Company until so approved.

DELIVERY All shipping and delivery dates are estimated only. No delays in delivery will subject the Company to any costs, damages or fees for late delivery. Delivery of the products herein specified shall be made F.O.B. point of shipment, unless otherwise stated. The Company shall not be liable for delay due to causes beyond its reasonable control, such as Acts of God, acts of the purchaser, acts of civil or military authorities, priorities, fires, strikes, floods, epidemics, war, riots, delays in transportation, car shortages, and inability, due to reasons beyond its reasonable control, to obtain necessary labor, material, or manufacturing facilities. In the event of such a delay, the date of delivery shall be extended for a period equal to the time lost by reason of the delay.

TERMS OF PAYMENT If, in the judgment of the Company, the financial condition of the purchaser at any time does not justify continuation of manufacture or shipment on the terms of payment specified, the Company may require full or partial payment in advance.

Pro rata payments shall become due as shipments are made. Each shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall not vitiate the contract as to other shipments or deliveries.

SALES AND SIMILAR TAXES The Company's prices do not include sales, use, excise, or similar taxes. Consequently, in addition to the price specified herein, the amount of any present or future sales, use, excise, or other similar tax applicable to the sale of the product herein shall be paid by the Purchaser, or in lieu thereof

the Purchaser shall provide the Company with a tax exemption certificate acceptable to the taxing authorities.

CANCELLATION Any contract resulting from the Purchaser's order may be canceled by the Purchaser only by negotiations and upon payments of reasonable cancellation charges which will take into account expenses already incurred and commitments made by the Company.

DESIGN CHANGES The Company reserves the right to make changes in design, improvements and additions in and to its products any time without imposing any liability or obligations to itself to apply or install the same in any product manufactured by it.

TITLE The title and right of possession of the products sold herein shall remain with the Company and such products shall remain personal property until all payments herein (including deferred payments whether evidenced by notes or otherwise) shall have been made in full in cash and the Purchaser agrees to do all acts necessary to perfect and maintain such right and title in the Company.

PRICE ADJUSTMENTS Prices are subject to change upon notice by the Company. Prices on existing orders are subject to surcharges in the event of cost increases of metals and transportation. All complete component accessory material manufactured by others and furnished with the Company's products such as motors, drives, vibration equipment, controls or other completely assembled component structures, are subject to adjustment to the price at time of shipment regardless of the date of original order entry.

SAFETY ACCESSORIES The Company manufactures products designed to serve multiple applications and offers a wide range of safety equipment, including guards and other devices, as may be required to meet

customer specifications. Without exception, the Company recommends that all orders include applicable safety devices. Products ordered without applicable safety devices is clearly the responsibility of the Purchaser. Further, the Purchaser warrants that it has determined and acquired any and all safety devices required for products sold by the Company. Weather covers and guards for motor and V-belt drives, couplings, shafts and bearings, along with inlet and outlet screens, are optional accessories noted in the price list.

GOVERNING LAW The rights, obligations and remedies of Purchaser and the Company, the interpretation of these terms and conditions and the sale of products by the Company shall be governed by Oklahoma law, without regard to any principles of conflict of laws.

ARBITRATION Any dispute arising under or in connection with these terms and conditions or the sale of products shall be settled by binding arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The dispute shall be resolved by one neutral arbitrator who shall have no affiliation with either Purchaser or the Company and shall be selected by the American Arbitration Association office in Dallas, Texas. The arbitration proceedings shall be held in Muskogee, Oklahoma.

APPLICABLE DOCUMENTS The agreement between the Company and the Purchaser relating to the products includes these terms and conditions of sale, any applicable installation and maintenance instructions provided by the Company and any terms appearing on the Company's quotation, sales order acknowledgment and invoice.

WARNING Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failures and this possibility should be recognized by the Purchaser and all End Users. If these products are used in a life support ventilation system where failure could result in loss or injury, the Purchaser and all End Users should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

WARNING DO NOT use in HAZARDOUS ENVIRONMENTS where fan's electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments. Comply with all local and national safety codes including the National Electrical Code (NEC) and National Fire Protection Act (NFPA).

CAUTION Guards must be installed when fan is within reach of personnel or within eight (8) feet (2.5 m) of working level or when deemed advisable for safety.

DISCLAIMER The Company has made a diligent effort to illustrate and describe the products accurately in all Company literature; however such illustrations and descriptions are for the sole purpose of identification and do not express or imply any warranty.

LIMITED WARRANTY

WARRANTY AND DISCLAIMER: The Company extends this limited warranty to the original purchaser and warrants that products supplied by the Company, shall be free from original defects in workmanship and materials for two years from date of shipment (except for the warranty periods noted for products listed below), provided same have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been altered or repaired without the Company's express authorization, or altered or repaired in any way so as, in the Company's judgment, to affect its performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. The Purchaser assumes all risks and liability for results of use of all products.

Evaporative cooling pads are warranted to be free of defects in materials and workmanship for a period of two years from date of shipment provided same have been properly handled, stored, installed, serviced, maintained and operated; and further, not subjected to excessive heat, corrosive agents or chemicals, or mechanical abuse that may cause tearing, crushing or undue deterioration, nor used on a system or in a manner other than that for which it was designed as explained in the product literature.

The following products are warranted to be free of defects in materials and workmanship for the periods shown from date of shipment: Acme's exclusive duplex split pillow block bearings and shaft five years, belts one year, Polyethylene tubing 90 days, AIR40 Heater warranty one year, AIR40 Emitter warranty three years and DDP fan lifetime warranty on its propeller, cone, and housing.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to P. O. Box 978, Muskogee, Oklahoma, 74402, within 15 days after discovery of the defect and prior to the expiration of two years from the date of shipment by the Company of the product claimed defective, and Purchaser shall be barred from any

remedy if Purchaser fails to make such claim within such period.

Within 30 days after receipt of a timely claim, the Company shall have the option either to inspect the product while in Purchaser's possession or to request Purchaser to return the product to the Company at Purchaser's expense for inspection by the Company. The Company shall replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Purchaser F.O.B. point of shipment; provided, however, if circumstances are such as in the Company's judgment to prohibit repair or replacement to remedy the warranted defects, the Purchaser's sole and exclusive remedy shall be a refund to the Purchaser of any part of the invoice price, paid to the Company, for the defective product or part.

The Company is not responsible for the cost of removal of the defective product or part, damages due to removal, or any expenses incurred in shipping the product or part to or from the Company's plant, or the installation of the repaired or replaced product or part.

The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to the manufacturer's warranty, if any. To the extent not prohibited by the manufacturer's warranty, the Company shall pass through to Purchaser such manufacturer's warranty.

THE COMPANY'S WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND WAIVED. THIS WARRANTY CONSTITUTES THE COMPANY'S SOLE AND EXCLUSIVE WARRANTY FOR DEFECTIVE GOODS AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCTS.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Company or to assume for the Company any other liability in connection with any of its products except in writing and signed by an officer of the Company.

REPLACEMENT PARTS If replacement parts are ordered, purchaser warrants that the original components in which these replacement parts will be placed are in satisfactory working condition, and

when said replacement parts are installed, the resultant installation will operate in a safe manner, at speeds and temperatures for which the original product was purchased.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at the Company's sole option and may be subject to additional charge.

The Company assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at Purchaser's and End User's risk and shall not constitute any warranty or guarantee of such products or their performance.

LIMITATION OF LIABILITY The cumulative liability of the Company to the Purchaser and any other persons for all claims in any way relating to or arising out of the products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if the Company has been advised of the possibility of such claims or demands. In no event shall the Company be liable to the Purchaser or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by the Purchaser or such other persons.

INDEMNITY The Company's maximum liability to Purchaser and to any end user is as set forth above. The Company makes no warranty to anyone for any products not manufactured by the Company and shall have no liability for any use or installation of any products (whether manufactured by the Company or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by the Company regarding the products and its installation and use. If the Company incurs any claims, lawsuits, settlements, or expenses (including attorney fees) for any loss, injury, death or property damage including, but not limited to, claims arising out of the Purchaser's or any end user's installation or use of the products, the Purchaser shall indemnify and hold the Company harmless.



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