CFS-2000 CHILLER™

Operating Instructions

P/N 100100 (110 VAC)

P/N 100105 (230 VAC)

Thank you for purchasing this CFS-2000 CHILLER™

- **As you will notice from the table of contents, the manual for your new product is quite extensive.**
- **To guarantee perfect and successful work with this machine, please take some time to read the manual carefully.**
- **And finally, we believe you will enjoy years of great ground fog effects if you care for and maintain your CFS-2000 CHILLER™.**

CITC

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Contents

1. Set of Equipment Supplied

- **1 CFS-2000 Chiller™ (110VAC: P/N 100100; 230VAC: P/N 100105)**
- **Double 4" (10cm) adapter**
- **Instruction booklet**

2. Accessories and Parts

- **Flexible 8' x 5" (2.4m x 12.7cm) heavy-duty coated Chiller Hose with 45° Elbow (need two) (single hose w/elbow P/N 250012)**
- **CITC FogMax™ water-based fog machine (P/N 100092 110VAC; P/N 100095 230VAC)**
- **CITC Low-Ground Fog Fluid in 1 gal. (3.8 liter) container (P/N 150490-B)**
- **CITC Low-Ground Fog Fluid in 5 gal. (56.8 liter) Cubitainer (P/N 150490-C)**
- **Universal DMX Relay for On/Off control (110VAC: P/N 250041; 230VAC: P/N 250042)**
- **Wireless Remote for On/Off control (110VAC only P/N 250010)**

Please check whether all the products you ordered are supplied.

3. Description of the CFS-2000 Chiller™

The CFS-2000 Chiller™ is CITC's dry-ice based chiller fogging system, designed for indoor use. Double fans force 100 cfm (2.8 m^3/min) of fog into the dry ice chamber where water droplets of fog are dried and cooled before exiting the unit through dual 5" (12.7cm) hoses The CFS-2000 Chiller™ is easy to use, easy to clean, and easy to carry. Because the unit is made of durable plastic, it will last for years to come. We recommend using with CITC's water-based low-ground fogging fluid in your fogger. It's designed to be thick, dry, stay low to the ground and not leave a residue.

4. Safety Instructions

WARNING: Read and understand all labels and operating instructions before attempting installation.

- Never open the machine without disconnecting power lead first!
  Risk of electrical shock- This device is supplied with a grounding conductor. To reduce risk of electrical shock, connect only to properly grounded, grounding type receptacles. Never remove the third prong from the plug.
- This machine requires a 110VAC circuit for operation. The CFS-2000 Chiller™ draws approximately 2 amps at 110 VAC (1 amp at 230VAC). If you have any doubts about the capacity or grounding of your existing circuits, consult a qualified electrician.
- Be sure area around chiller and fogger is dry before applying electrical power.
- Make sure that your unit is pointed in a direction that leaves a 10ft (3m) open area out in front. Place the front of the machine away from direct contact with electrical instruments and people.
- Fog fluid is very slippery when spilled. Care in keeping any drips or spills cleaned up is necessary.

5. Operating the CFS-2000 CHILLER™

5.1 Selecting the Location

Secure a good location for the machine to rest solidly on the floor separated from the output so that the output of the machine will not be vacuumed back into the back of the fog machine to cause heating up of the low-ground fluid. It is possible to place a barrier to stop or block flow of fog back into the unit. Bear in mind that the unit uses two 8ft (2.4m) output tubes. The actual location of unit will be some distance behind the point where the fog appears. Try to lay the tubes out as straight as possible and leave an open area out in front. Do not bend the hoses in any sharp angle as this would cause back pressure and reduce fog output.

Place your water-based fog machine (CITC Fog Max™ or other) with the fogger outlet 3”-4” (8–10cm) away from side intake opening of chiller

5.2 Electrical Power Requirements

This machine requires a 110VAC (or 230VAC) circuit for operation. The CFS-2000 Chiller™ draws approximately 2 amps at 110 VAC and 1 amps at 230VAC. If you have any doubts about the capacity or grounding of your existing circuits, consult a qualified electrician.

5.3 Hooking things up

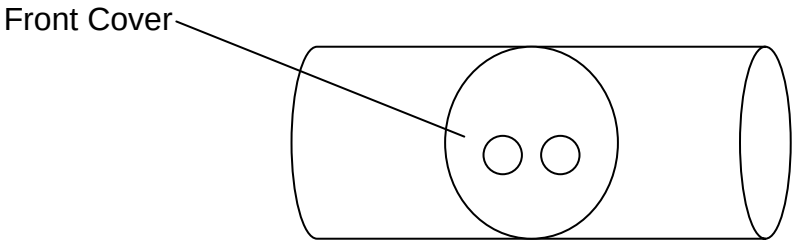
Plug in cord under the control box. NOTE: The control box receptacle has a pull-out fused box under the cord insert with an extra fuse inside for emergency replacement (Fuse P/N 704052 (3.15 amp), P/N 704076 (1 amp)).

Recommended accessories are two (2) eight foot (2.4m) tubes with 45^{o} elbows. Screw on the double 4" (10cm) adapter to the front outlet by using the eight (8) assembly screws being sure that it is tight. Check the tape on the outside ribs to make sure that there isn't any curling and that it is in good order. Place the small side of the curved pipes onto the 4" (10cm) outlets so that it is a nice tight fit. Attach the 5" (12.7cm) tubing to the large end, this can be difficult and may require a little extra time but you may find that you will want to leave that on all the time and not remove it. If you need to remove the hose, take off the entire elbow from the machine, which is an easy connection. You'll have to straighten out the corners and make sure it goes on smoothly for a nice snug fit. It may not need to have any kind of clamp on there to hold it in place, unless stretching the hose requires it be attached with sheet-metal screws.

Attach the elbows so that they are pointing in a downward position unless you're going to split the output and have one output going one way and the output going the other. You can then have one elbow facing off at a 45° angle but still pointing in a downward position. Lay the tube along the floor keeping it on the floor away from any hot lights. Do not bend the tubes into sharp 90^{o} angles. The straighter the hose the better the flow.

The cooler you can keep the tube, the longer the low ground fog fluid will stay low to the ground. Once you have established where the tubing is going to go, you may want to screw it down to the floor or anchor it someway to keep it from moving so that it stays in the same general area and is stretched out completely.

5.4 Loading the dry ice



Open the CFS-2000 Chiller^{TM} by removing the locking pin and pulling straight back on the front cover. When opening doorway, pull back evenly using Tab on top to start. 5" (12.7cm) outlets are mounted to doorway plug and entire unit is a snug fit. Wiggle slightly while opening if necessary. (It is not necessary to disconnect tubing from outlets when opening doorway.)

Fill the CFS-2000 Chiller^{TM} with 30-40 lbs (13.6kg – 18.2kg) of dry ice blocks through the 10" (25cm) round opening, being careful to only load the top shelf. Evenly cover the shelf area. 30lbs (14kg) minimum = 1-3 hours; 40lbs (18kg) = 4 hours; 50lbs (23kg) = 5 hours.

5.5 Operating the machine

Adjust your water-based fog machine (CITC Fog Max or other), to 40% of fog capacity. The water-based fogger should be adjustable to low amounts of continuous fog for best effect. Do not over fog.

Warm up water-based fogger, and then switch chiller on. Fog will begin slowly rolling out. The fog is being cooled inside chiller chamber. To increase output, slowly adjust you water-based fogger's output to slightly higher amounts. Be careful not to overfill the chiller with too much fog at one time. Wait at least one full minute between adjustments. Too much fog will not cool down fast enough inside the chiller to give the best low ground fog effect.

An area of up to 40' can be easily covered. To keep the fog from wandering away (thinning) or moving with drafts of wind, create a fog barrier by using any type of 12" (30cm) high material to stop the fog from going out and drafts of air from coming in. Stop drafts by closing all doors and reducing ventilation fans or air conditioning units while operating the chiller. Drafts of air will disturb the effect. When the fogger is stopped, the fog will disappear. As long as fresh fog is entering the floor are it will continue to lie on the floor as a blanket.

Periodically check the floor to be sure it is dry. Clean up any spills as fog fluid is very slippery.

5.6 Shut down

Remove any dry ice and holding machine level, take it outside to dump out trapped fluid taking care to avoid letting any liquid drain toward the fans. You don't want fog fluid getting into the bearings of the fans! Turn the 10" (25cm) opening to the bottom and allow to drain. Then simply wipe down the inside and outside with a paper towel.

Refer to your fogger manual for instructions on shutting down the fogger. In the case of CITC's Fog Max™ we recommend cleaning the tube and pump by operating the unit while running a pint of 5% vinegar/distilled water mix through the pump and then rinsing with a pint of distilled water. This will keep the piston in the pump from becoming stuck and not working. When finished, water should remain in the line for storage. Do not drain or empty the tube of water.

5.7 Troubleshooting

1. **If the fans do not run** when you turn on the CFS-2000 Chiller™ with the rocker switch, remove the cord, pull out the drawer in the bottom of the power receptacle and check the 2nd fuse in the back. If blown, check your electrical connections, cords, 110V or 220V line, and then replace the blown fuse in front with the spare one in back. Check to see if fans are free to spin & there are no obstructions. Close drawer, plug in cord, and try again.

2. **If the pump does not draw fluid** into the fogging unit, be sure the unit is warm and ready to operate. Then check to see that the tubing is in the fluid, not above the fluid. Check electrical power to the machine. Hold up tubing, remove filter and push, blow or use a turkey baster to force the fluid inside the pump. Try again to see if it will pump

now. Check to hear any sound coming from the pump side (nearest the top). A slight vibrating sound should be heard if the pump is pumping fluid. A loud knocking sound will be heard if only air is in the line and fluid has not come in yet. Force fluid through the line to get it started. This is called "priming" and the line needs to be full of fluid for the fog mechanism to work. **Note: do not run the pump without fluid passing through the tube. This will cause the pump to become hot and could damage the piston.**

5.8 Notes on optional Universal DMX control

Each DMXed unit will occupy a unique DMX address on the DMX chain. By adjusting the dip switches on the side of the machine near the DMX cable plug-ins, the user may assign one address to the machine, giving you on/off control with one DMX channel (there is no timer on this DMX).

Step 1). Attach the DMX cable to the upper "in" female connector located on the back of the fogger.
Step 2). The DMX address is configured by adding the dip switch numbers together to total the number required. For example, DipSwitch 1 + 6 = 33. Your DMX channel would be 33.

Dip Switch	1	2	3	4	5	6	7	8	9
Channel #	1	2	4	8	16	32	64	128	256

When you move the slide control or digital control;

0 – 50% = Off
51% - 100% = Fans are On

"Input" and "Output" designations on the DMX plugs are arbitrary (i.e., you can use the input plug for output and visa-versa). It is not necessary to attempt converting your DMX line's connector to female/male to match the appropriate socket on the plug. As long as it is looped in/out, it will work.

Once your fogger is warm and the green ready lite is on, you may control the fog output from the control booth.

6. Service and Maintenance

Care of your CFS-2000 Chiller™ will give you years of service. Note: cleaning your unit is going to pay off in constant good performance.

Remove any dry ice and holding machine level, take it outside to dump out trapped fluid taking care to avoid letting any liquid drain toward the fans. You don't want fog fluid getting into the bearings of the fans! Turn the 10" (25cm) opening to the bottom and allow to drain. Then simply wipe down the inside and outside with a paper towel.

7. Technical Data

CFS-2000 Chiller™ Technical Data P/N 100100 (230V P/N 100105)	
Type of Fog	Thick, white, dry, low-ground fog
Weight	17 lbs. / 7.7 kg
Dimensions	20” x 28” x 15” (51 cm x 71 cm x 38 cm)
Shipping Weight	27 lbs. (12.3 kg)
Shipping Box Size	22” x 16” x 31” (56 cm x 41 cm x 79 cm)
Dry ice capacity	30 – 50 lbs dry ice (14 kg – 23 kg)
Output time for one load	30 lbs (14kg) of dry ice lasts 3 hours
Output	Double fans force 100 cfm (2.8 m^3/min) of fog into dry ice chamber where it is dried and cooled before exiting unit through dual 5” (13cm) hoses
User Supplies	Dry ice blocks and variable speed fog machine such as CITC FogMax™
Recommended Fluid	CITC’s water-based Low –Ground Fog Fluid P/N 150490
Power cord	6 ft
Electrical Supply	110 VAC, 2 amps, 60hz or 230 VAC, 1 amp, 50hz
Fuse	3.15 A P/N 704052, 1A P/N 704076
Limited Warranty	One Year
	Rev: 8/1/03

8. Limited Warranty Conditions for the CFS-2000 CHILLER™

1. **Subject to the following conditions we will repair any defect or fault in the unit if it is caused by a proven factory fault and has been advised immediately after appearance and within 30 days of delivery to the end user. Insignificant deviations of the regular product quality does not guarantee replacement rights, nor do faults or defects caused by water, by generally abnormal environment conditions or Force Majeure.**

2. **Limited Warranty Service will be done in the following way: Faulty parts will be repaired or replaced (our choice) with correct parts. Faulty units have to be shipped to us or sent to us at customer's expense. The RMA# has to come with the faulty unit.**

3. **The customer loses all rights for limited warranty services, if any repairs or adjustments are done to the units by unauthorized persons and/or if spare parts are used, which are not approved by us. Also non-compliance with the instructions in this manual or mistakes by incorrect handling/treating of the machine, any faults and damages caused by undue force will lead to a loss of limited warranty.**

4. **Freight costs to CITC when under the limited warranty services are the responsibility of the customer. CITC will pay freight upon return.**

5. **Limited warranty services do not cause an extension of the limited warranty time or the start of a new limited warranty time. The warranty of replaced parts ends with the limited warranty time of the whole unit.**

6. **If a defect/fault can not be repaired by us in a satisfactory time, we will, within 30 days after sale of the unit, our choice either:**

   - **Replace the whole unit for free or**
   - **Refund the lesser value or**
   - **Take back the whole unit and refund the purchase price, but not more that the usual market price at the time of refund.**

7. **Further claims, especially for damages, losses etc. outside the unit are excluded.**

If you should send the unit for service, do not forget to remove any liquid from inside the unit. Obtain your RMA# by calling CITC. Payment arrangements for repair must be made before receiving RMA # in case unit is not covered under Limited Warranty.

Send unit to:

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