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Fluid Cooler
Installation and Operating Instructions

CFC/DFC Fluid Coolers

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Canadian Customers:

Cancoil Thermal Corporation
991 John F. Scott Rd.
Kingston, Ontario
K7L 4V3

Tel: (613) 541-1235
Fax: (613) 541-1239
Email: sales@can-coil.com

U.S. Customers:

Cancoil U.S.A. Inc.
P.O. Box 210
Danville, Illinois
61832-0210

Tel: (217) 431-8559
Fax: (217) 431-8696
Email: sales@cancoilusa.com

Section 1. Catalog Products Limited Warranty & General Information

For warranty information, please contact your Cancoil sales representative.

Cancoil fluid coolers have been carefully engineered to provide full performance at the design conditions. If properly installed and maintained they will provide years of trouble free performance.

Receiving Inspection - At delivery, inspect the equipment to make sure that the shipment is complete and there is no shipping damage. In the event of shipping damage or loss, note this on the delivery receipt and file a claim with the shipping company.

If concealed damage is found after delivery, immediately place a claim with the shipping company. Make arrangements for an inspector from the freight carrier to view the damage and make a determination as soon as possible.

Handling - Use proper equipment and technique when unloading and handling the condensing unit. Lift with a forklift or with a spreader bar and hooks placed in the lifting holes provided in the unit. DO NOT PUT FORKS OR HOOKS UNDER THE COIL SECTION OF THE UNIT. Do not use the headers or piping as a lift point.

Unit Placement and Mounting - Allow 3 feet of clearance on all sides of the condenser section and at least 6 feet of clearance above the condenser section for proper airflow. Mechanical ventilation must be used if air-cooled equipment is located indoors. Contact the factory for ventilation requirements if the unit is mounted indoors.

Mount the unit in a level position to assure proper functioning. The unit should be securely anchored to a structural base to prevent movement. Avoid locations that may allow recirculation of the condenser airstream. Allow sufficient clearance around the unit for proper servicing and preventative maintenance. Follow all building codes and requirements regarding roof loading and safe access to the equipment.

Please record the following information in the space provided. Please keep this document.

Installation Date _____

Equipment Model No. _____ Equipment Serial No. _____

_____ _____

_____ _____

_____ _____

Section 2. Piping

All fluid hookups and piping should be done by a licensed mechanical contractor in accordance with applicable codes and standards. Copper tubing must be refrigeration grade only. Piping must be kept clean and dry and free of all debris and chips. Use high temperature silver solder or equivalent alloy for brazing. DO NOT USE SOFT SOLDER. To avoid oxidation inside the piping, purge the system with dry nitrogen during the brazing process. Remove all flux from the joints after brazing.

Cancoil recommends no more than 8 ft/sec. fluid velocity inside copper tubing to minimize the possibility of erosion. The following table may be used for line sizing.

Table 1. – Maximum flowrates to minimize tube erosion based on 8 ft/ sec.

Copper Line Size	Maximum GPM
3/4"	8.5
7/8"	12
1 1/8"	20
1 3/8"	32
1 5/8"	42
2 1/8"	75
2 5/8"	120
3 1/8"	170

Section 3. Electrical Wiring and Sequence of Operations

Cancoil fluid cooler are available with a variety of optional fan cycling controls, however many units are shipped without fan controls.

Check the unit wiring diagram for specific information regarding the model in question.

Section 4. Leak Testing

All piping and leak testing work must be done by a licensed mechanical contractor.

Leak Testing – The unit has been leak-tested at the factory before shipping. After piping, the system should be leak tested after all pipe connections have been made. Leak test at 75 - 85 PSIG with all flow control valves in the system open. Leaks should be marked, isolated and repaired.

Freeze Protection – Verify that the correct type and concentration of glycol solution or brine is used to prevent freeze up in winter conditions.

Section 5. Start-up and Check Out Procedures

1. Check the supply voltage when the system is operating. It must be within 10% of the unit nameplate voltage.
2. Check the total amperage for the fan motors. It must be less than the value listed on the unit nameplate. The amperage on each leg must agree within 2%.
3. Check the operating control settings. See Section 6.
4. Check the freeze point of the glycol/ brine solution.

Section 6. Controls and Adjustment

The following table summarizes the controls and options typically found on Cancoil condensing units. Even though many units are ordered fully equipped with all the standard features, some units are specially configured for a particular application or specific location. These may have been built without some features, or may have additional options installed. It is important to inspect each unit at start-up and before service or maintenance to determine which components have been installed.

Table 5. – Fluid Cooler Unit Low Ambient Features & Control Options

Fluid Cooler Feature	CFC & DFC
No Fan Controls	std
Single Fan Contactor with Thermostat	opt
Multiple Fan Contactor with Thermostats	opt

The following paragraphs describe the function and adjustment of the various components.

Fluid Cooler Ambient Fan Cycling Control – The ambient fan cycling controls will stop the fans when the fluid temperature leaving the fluid cooler falls below the setpoint and will start the fans when the fluid temperature rises above the setpoint. Units with multiple thermostats may have them staged for better incremental control.

Please note that when all the fans are turned off it is no longer possible to modulate the fluid temperature leaving the fluid cooler. In this situation an external mixing valve (by others) is required for accurate fluid temperature control.