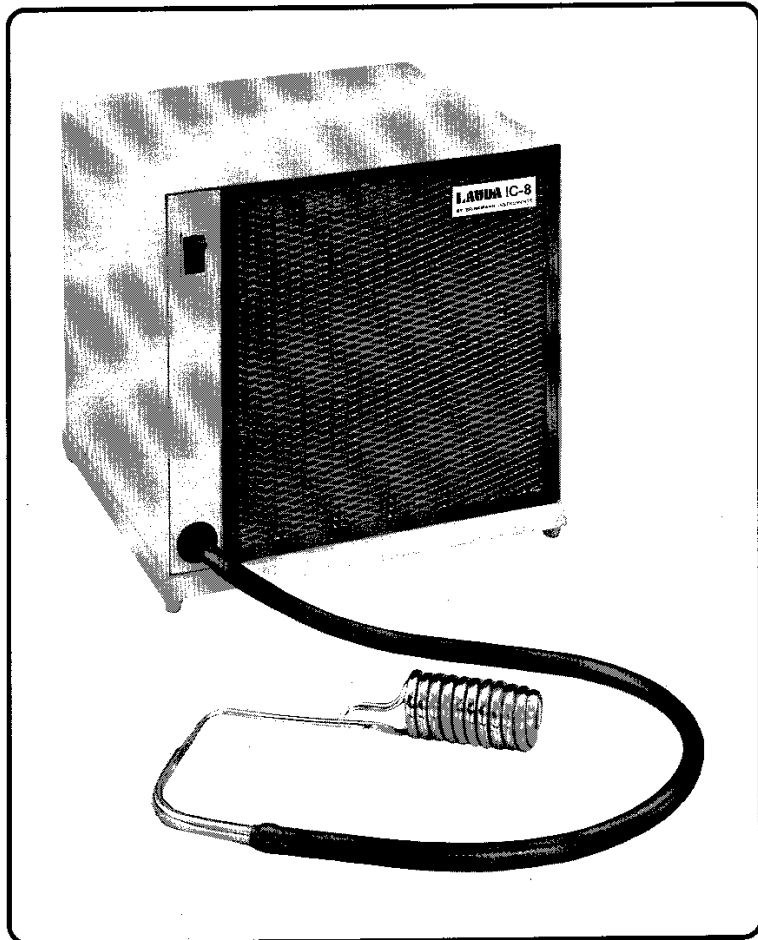


Lauda Immersion Coolers Models IC-6 and IC-8

Instruction Manual



Lauda

Shaping the future with **Brinkmann**

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Lauda Immersion Coolers Models IC-6 and IC-8

1. Warranty

In lieu of other warranties, either expressed or implied, all Lauda Immersion Coolers are unconditionally warranted for repair or replacement of all parts which may become defective due to manufacturing defects or faulty materials, for a period of one year from date of delivery. This warranty is effective only if the instrument is returned to Brinkmann Instruments, Inc. for examination and repairs, and becomes void if the equipment has been modified or altered in any way that has not been specifically authorized by us. Damage resulting from misuse of the equipment is not covered by this warranty; Brinkmann Instruments, Inc. will not be responsible for secondary damage due to continued unsupervised use of equipment which has become defective. Damage incurred during shipment must be reported to the carrier immediately since an inspection is essential to the settlement of any claim.

All packing materials must be retained until their disposal is authorized by the carrier or the carrier's representative.

2. Operational Warnings

INTRODUCTION

It is the user's responsibility to read and understand the contents of this manual prior to installation and use of this equipment. Lauda Immersion Coolers are laboratory instruments intended only for analysis and control of laboratory samples or laboratory specimens. **THEY ARE NOT MEDICAL DEVICES AND MUST NEVER BE USED FOR ANY APPLICATION INVOLVING DIRECT INVESTIGATION OR TREATMENT OF HUMAN BEINGS.**

WARNINGS

To prevent serious personal injury or the creation of a fire hazard:

1. Never use flammable or combustible liquids with Immersion Coolers.
2. Verify that liquid level completely covers the cooling coil at all times during use.
3. Never leave the Circulator unattended during the day or overnight, since uncontrolled cooling could occur in the event of an electronic or mechanical failure. If unattended or overnight operation is required, a suitable backup safety system should be installed.
4. Verify that the cooling coil is securely clamped to the reservoir (IC-6) or scaffolding setup of the cold trap condenser (IC-8) before using.

3. Basic Construction

3.1 Models IC-6 and IC-8 feature a low-temperature 1/5 horsepower compressor. The cooling system is self-contained and hermetically sealed to prevent oil or freon leaks typical of other refrigeration systems. Other features include a flexible insulated hose, and a durable stainless steel cooling coil.

3.2 Model IC-6

Model IC-6 is equipped with a flexible four-foot hose and a cooling coil made of 3/8" stainless steel tubing. The flexible tubing allows for easy immersion into beakers, reservoirs, etc. An optional clamp assembly is also available.

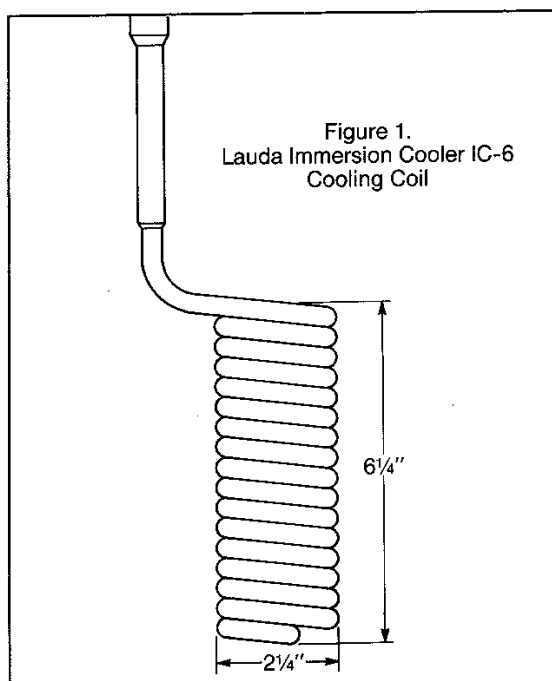


Figure 1. Lauda Immersion Cooler IC-6 Cooling Coil

3.3 Model IC-8

Model IC-8 is equipped with a flexible hose in either 4 or 6 foot lengths. The cooling coil is made of 1/4" stainless steel tubing which is molded to fit inside the cold finger of a cold trap or Dewar-type condenser. A separate

(optional) clamp assembly easily attaches the cooling coil to either the scaffolding of a rotary evaporator or a ring stand.

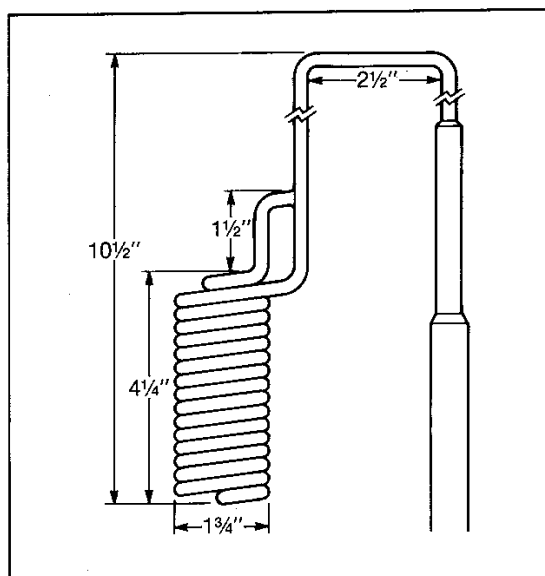


Figure 2. Lauda Immersion Cooler IC-8 Cooling Coil

4. Bath Liquids

- 4.1 Use only non-flammable liquids.
- 4.2 Operation from ambient to -30°C .
Use a water/ethylene glycol mixture in a ratio of 1:1.

5. Unpacking

- 5.1 Immersion Coolers are packed carefully to prevent transportation damage. If the unit is damaged upon delivery, a claim must immediately be filed with the carrier. The shipping and all packaging must be kept for inspection.
- 5.2 Models IC-6 and IC-8 are supplied complete with the flexible hose and coil. No assembly is required. Upon receipt of the unit, please complete the warranty card and return it to Brinkmann Instruments, Inc.
- 5.3 Models IC-6 and IC-8 may be supplied with an optional clamp assembly for operation with a cold trap or Dewar-type condenser, or reservoir.

6. Operating Instructions

6.1 Assembly

(a) For Models IC-6 and IC-8:

Be sure to position the circulator so that ventilation openings to the refrigeration system are not obstructed.

(b) For Model IC-6:

If coil is to be placed in a small vessel, such as a beaker, make sure it does not lean to one side, and that the vessel is in a flat and stable position.

(c) For Model IC-8:

Position the coil inside the empty cold finger and tighten the clamp assembly to an appropriate scaffolding or stand.

6.2 Liquid Level

When in use, the cooling coil must always be completely covered with liquid (see Section 4). The liquid level should be periodically checked and adjusted as required.

For maximum efficiency and temperature uniformity, the liquid should be continuously agitated or stirred with a pump or magnetic stirrer.

6.3 Connect the linecord to 110 VAC, 10A power supply. **NOTE:** It is suggested that a separately fused line be used.

6.4 Turn main switch to 'on' position (up). The red pilot light is illuminated.

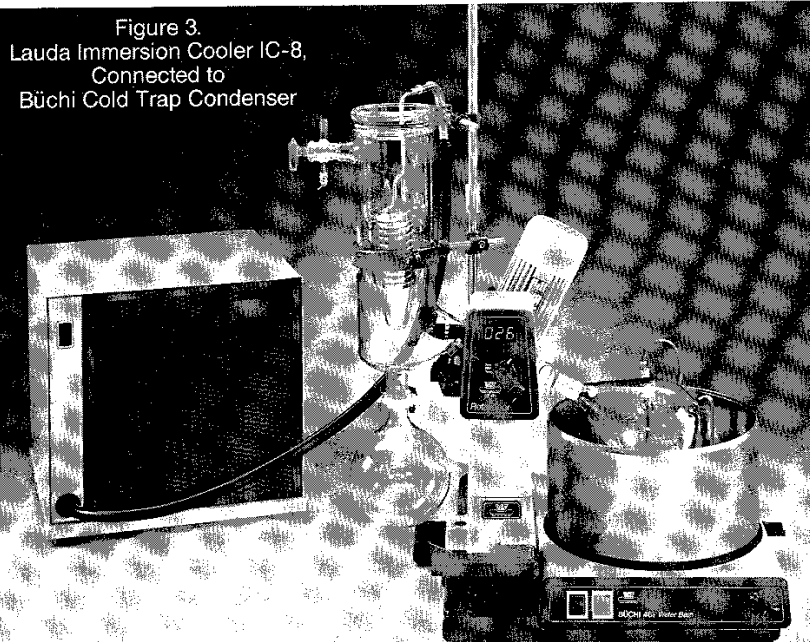
Minimum temperature should be achieved in approximately 30 minutes.

7. Temperature Control

The IC-6 Immersion Cooler is designed to operate in an open bath or container. It is intended strictly for cooling requirements, either for heat removal (1060 BTU/hr at 0°C) or for use with a heating immersion circulator to control temperature.

8. Refrigeration System

The refrigeration system is hermetically sealed. To ensure effective air movement, the ventilation openings must be unobstructed. The compressor is protected against excessive current and insufficient ventilation by an internal protection device. If airflow is restricted in any way, the refrigeration system will not cool properly and will automatically shut the compressor off. When the situation is corrected, the compressor will reset. If the refrigeration system does not operate properly, contact any of the Brinkmann Service Centers listed in Section 9.



9. Service Centers

For any Lauda Circulator or component contact the nearest Service Center.

NORTHEAST

Brinkmann Instruments, Inc.
Cantiague Road, Westbury, NY 11590
Attn: Lauda Service Dept.
Phone: (516) 334-7500

MIDWEST

Brinkmann Instruments, Inc.
110 River Road, Des Plaines, IL 60016
Attn: Lauda Service Dept.
Phone: (312) 297-1700

SOUTH

Brinkmann Instruments, Inc.
3772 Pleasantdale Road, Suite 145
Atlanta, GA 30340
Attn: Lauda Service Dept.
Phone: (404) 938-3400

SOUTHWEST

Brinkmann Instruments, Inc.
15800 W. Hardy Road, Suite 560
Houston, TX 77060
Attn: Lauda Service Dept.
Phone: (713) 847-2500

WEST COAST

Brinkmann Instruments, Inc.
841 Hinckley Road, Burlingame, CA 94010
Attn: Lauda Service Dept.
Phone: (415) 697-9215

CANADA

Brinkmann Instruments (Canada) Ltd.
50 Galaxy Boulevard
Rexdale (Toronto), Ontario M9W 4Y5
Attn: Lauda Service Dept.
Phone: (416) 675-7911

10. Ordering Information

Catalog No.	Description
27 50 160-6	IC-6 with 4' hose
27 50 525-2	IC-8 with 4' hose
27 50 175-3	IC-8 with 4' hose, clamp assembly
27 50 528-7	IC-8 with 6' hose
27 50 178-8	IC-8 with 6' hose, clamp assembly
Spare Parts	
27 60 085-9	Fuse, 10 amp, set of 5
27 60 530-3	On/off switch with pilot light
Accessories	
27 50 527-9	Clamp assembly
15 50 261-4	Cold Trap, complete, 'RE' models
15 50 255-0	Cold Trap, complete, 'EL' models
15 50 253-3	Cover, for cold trap
15 50 262-2	Outer Sleeve of Cold Trap
15 50 263-1	Cold Finger Insert
15 50 265-7	O-ring

11. Technical Data

Technical specifications were determined with a 6L, covered, insulated bath (Model IC-6), and a covered cold trap condenser (Model IC-8). Neither system was under heat load.

Model	IC-6	IC-8
Operating range	ambient to -20°C	ambient to -30°C
Heat removal capacity BTU/hr at 0°C	1060	1060
Dimensions		
Housing (l x w x d)	14.5 x 14 x 14.2"	14.5 x 14 x 14.2"
Coil (h x w)	6¼ x 2¼"	4¼ x 1¾"
Tubing diameter	¾"	¼"
Weight (lbs)	52	52

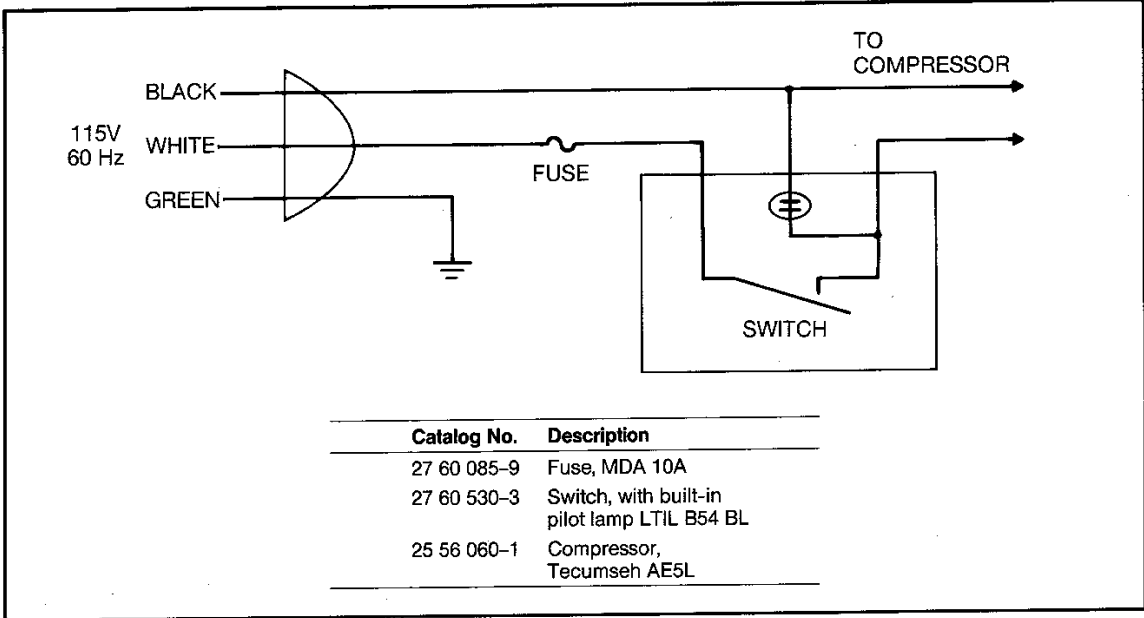


Figure 4. Lauda Immersion Coolers Model IC-6 and IC-8, Wiring Diagram