

***Keep This Manual  
With Heat Exchanger***

***KTHE300 & KTHE500  
AIR-TO-AIR  
HEAT EXCHANGER  
  
OPERATOR'S MANUAL***

***CAUTION***

**BEFORE INSTALLING AND  
USING THIS HEAT EXCHANGER,  
IT IS IMPORTANT THAT THIS  
MANUAL BE READ AND  
UNDERSTOOD THOROUGHLY**

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# **TABLE OF CONTENTS**

		<b>Page</b>
I.	Introduction	2
II.	Incoming Inspection	3
III.	Product Handling	3
IV.	Product Identification Label	3
V.	Principles of Operation	4
VI.	Specific Model Data	4-6
	Mounting	
	Drawings and Dimensions	
	Technical Data	
	Major Component Replacements	
VII.	Maintenance	6
VIII.	Packing Procedure	7
IX.	Warranty	8

## ***I. Introduction***

Kooltronic Heat Exchangers are designed for indoor applications with ambient temperatures from 50°F to 125°F and maximum allowable enclosure temperature of 160°F. These heat exchangers utilize a counterflow airstream, for maximum heat transfer efficiency in a closed-loop system, providing cooling within sealed electronic cabinets.

This Manual provides you with the necessary general information for properly installing and operating Kooltronic Heat Exchangers. Unit specific technical data and mounting instructions are presented later in the Manual.

## II. Incoming Inspection

Kooltronic Heat Exchangers are designed, built, and packaged to withstand the shock and vibration normally associated with shipment by common carriers. Occasionally improper handling during shipping causes damage. Such handling could include unbanding of palletized shipments, failing to respect any carton handling instructions, falling off conveyors, excessive vibration, crushing, etc. Therefore, a thorough inspection should be done upon receipt of all shipments. Any carton tears, dents, scratches, or loose articles should be noted on the Freight Bill. Cartons should be opened promptly and the units inspected for CONCEALED DAMAGE.

An immediate claim **MUST** be filed with the freight carrier and an inspection requested. Retain all packing materials. Kooltronic cannot assume responsibility for Consignee's failure to file a timely freight claim.

## III. Product Handling

- Do not attempt to operate your Kooltronic Heat Exchanger until you read and thoroughly understand this Manual.
- Before operating this unit, all electrical wiring must be checked to assure the proper connections.

### **CAUTION**

**Operate this unit only on the proper voltages and frequencies as noted on the nameplate.**

## IV. Product Identification Label

Each Kooltronic Heat Exchanger includes an identification label. This label provides:

**KOOLTRONIC**  
COOLING EXCELLENCE FOR ELECTRONICS

Heat Exchanger

MODEL NO. ①

SERIAL NO. ②

VOLTS. ③

FREQ. ③

PH. ③

AMPS ③

MAX. CABINET TEMP. °F ④

FILTER P/N ⑤

MAX. FUSE SIZE ③

UNAUTHORIZED SERVICE OR MODIFICATION VIOLATES WARRANTY  
ALL MOTORS ARE THERMALLY PROTECTED

THIS PRODUCT IS PROTECTED BY ONE OR MORE OF THE FOLLOWING  
PATENTS: 3,019,965 3,120,166 3,211,360 3,559,728 3,807,493 AND  
OTHER PATENTS PENDING

MANUFACTURED BY:  
KOOLTRONIC, INC. PENNINGTON, NJ VENTURA, CA

- ① Model Number
- ② Serial Number
- ③ Electrical power characteristics
- ④ Maximum enclosure temperature
- ⑤ Filter Part Number

We recommend you copy this information from your unit.

① ② ⑤ When ordering parts, specify the Model Number and Serial Number.

③ Before operating, be sure that the power source matches these requirements.

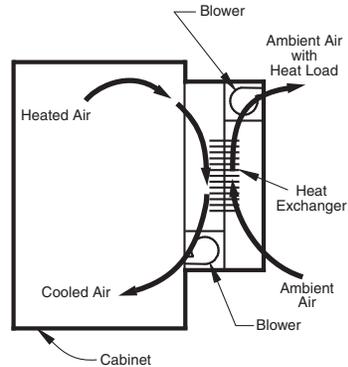
④ Make sure that these parameters are met. Failure to do so may result in permanent damage to the unit

## ***V. Principles of Operation***

The main component of the heat exchangers is counterflow aluminum element through which heat transfer occurs.

Ambient blower draws ambient air from the bottom inlet through an aluminum mesh air filter, through the element and exhaust it through a discharge grill.

Cabinet blower draws cabinet air from the top inlet through the element and exhaust it through the bottom discharge into the cabinet.



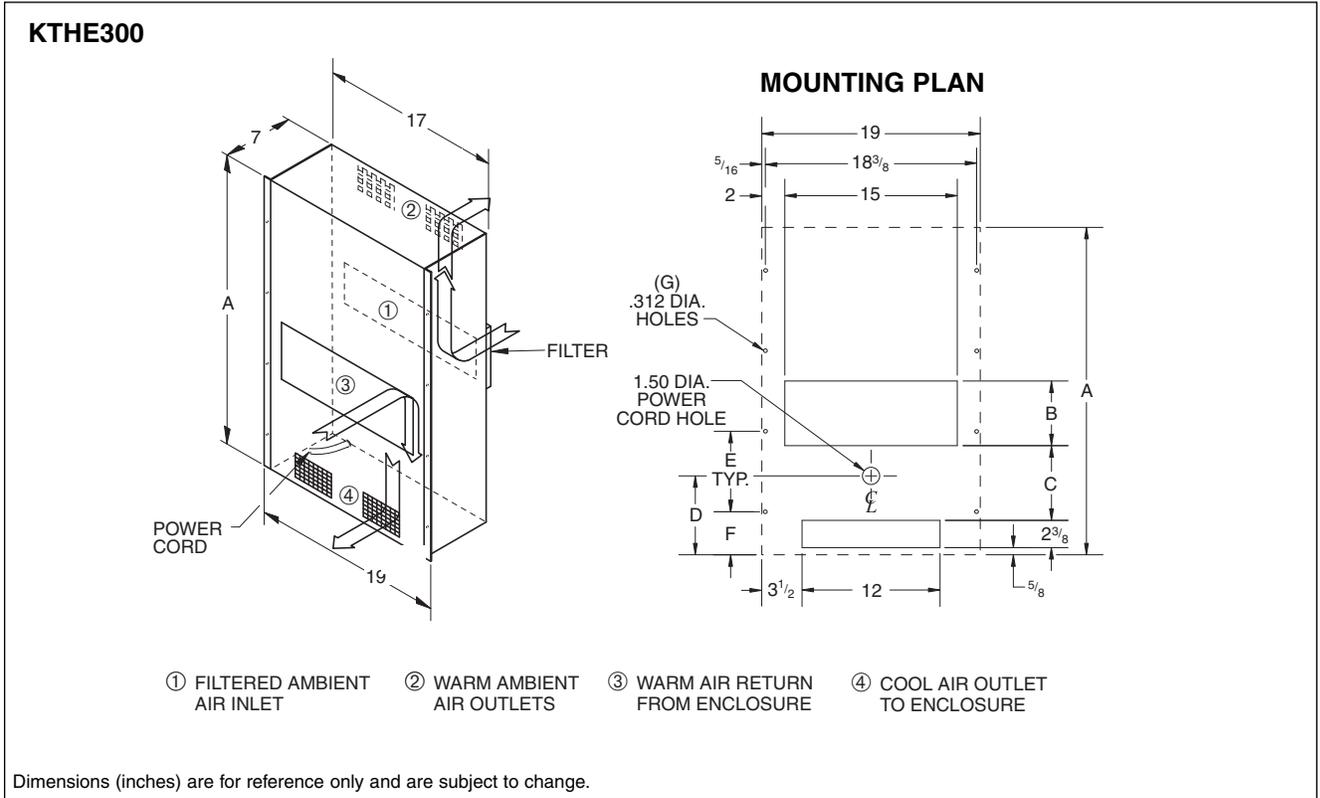
In an Air-to-Air Heat Exchanger, heat from air surrounding the components is removed by a specially designed heat transfer element before being routed back into the enclosure.

## ***VI. Specific Model Data***

### ***Mounting***

- Panel Mounted Heat Exchangers KTHE300 and KTHE500 are equipped with two vertical mounting rails. Using these rails, the units may be mounted to any available vertical surface on the enclosure.
- Refer to page 5 for location of all mounting holes and cutouts.
- Make sure cutouts do not interfere with components inside your cabinet.
- Proper alignment of air inlets and outlets is essential for optimum Heat Exchanger performance
- All Kooltronic externally mounted Heat Exchangers are fully gasketed to ensure proper sealing. This seal is necessary to maintain the integrity of the closed-loop system.
- Use all existing mounting holes to insure stability and a tight seal.

## Drawings and Dimensions



### Dimensions (inches)

### Performance

Model	A	B	C	D	E	F	G	Watts/°F**	
								Air In	Air Out
KTHE300	28 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	7	3 <sup>3</sup> / <sub>4</sub>	8	28	57
KTHE500	47 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	14	3 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	26	42	84

### Technical Data

Model	** Power		Max. Ambient	Approx. Weight
	Amps	Watts	Temp. °F	(lbs)
KTHE300	3.0	275	125	60
KTHE500	3.0	275	125	70

\*\*60 Hz. operation

The technical data applicable to 230V units is same as for 115V, except Amps are one half of 115V units.

## **Major Component Replacements\***

<b>Model</b>	<b>KTHE300</b>	<b>KTHE500</b>
Blower Assembly	5417-00-35	6015-00-129
Blower Capacitor	0452-03	0452-06
Blower Motor	0261-08	0261-08
Coil	0744-06	0744-07
Filter	7001F	10501F

\* Part numbers shown are for 115V, 60 Hz. For 230V, 60Hz and all 50Hz, consult Kooltronic.

## **VII. Maintenance**

Kooltronic Air-Cooled Heat Exchangers are designed to require only routine cleaning of air filters and the heat exchanger element to assure unimpeded airflow through the heat exchanger element. It is not possible to recommend specific filter cleaning intervals since the level and the nature of air borne particulate matter differs widely with each installation. It is generally sufficient to remove and wash the reusable aluminum mesh air filter when the outer surface of these filters appear covered with a thin layer of dust or lint. Filter recoating adhesive is recommended. Appropriate disposable filters are available from Kooltronic.

If filter service is neglected or delayed, the heat exchanger will not perform at its design capacity. The first indication of excessively clogged air filter is usually a gradual increase of temperature within the equipment cabinet. Continued operation under these conditions will cause damage, shorten blower motor life and void the warranty.

### **CAUTION**

**Disconnect electric power from the Heat Exchanger  
before proceeding.**

## Filter Removal and Service

Kooltronic Heat Exchanger feature an easily removable inlet filter to facilitate necessary cleaning.

### **CAUTION**

**Do not operate the Heat Exchanger for extended periods of time with the filter removed. The heat exchanger element may become clogged with dust or lint from the ambient environment. A clogged heat exchanger element is not readily detected and will give the same reaction as clogged filter. A clean filter is the best protection.**

- 1) Move the filter forward, using attached tab, to clear the near filter retainer. Pull the filter downward and toward you until the far side of the filter clears the far filter retainer.
- 2) After removal, the filter should be flushed under warm running water with the clean side up, driving contaminants out the dirty side of the filter. If the accumulated dirt is oily, washing in a detergent bath is recommended, followed by warm water rinse as above.
- 3) The filter may be sprayed with **Kooltronic A-16 Filter Recoating Adhesive** to trap fine airborne contaminants, or they can simply be dried and reinstalled as strainer type filters. **Recoating is recommended for the best results.**
- 4) Reinstall the filter: (a) Holding the tab, slide the filter into the near retainer, (b) press filter against the unit and (c) slide forward into far retainer.

## ***VIII. Packing Procedure***

- Keep Heat Exchanger in proper upright position.
- Pack Heat Exchanger in an appropriate carton (preferably original carton if possible), with adequate internal protective packaging, making sure carton is marked properly.
- For local controlled transportation, strap carton where possible, to a secure part of truck to prevent falling or sliding, minimizing vibration, etc.
- For common carrier shipment, band unit(s) securely to a pallet. Unpalletized shipment risks severe damage which voids the warranty.

## IX. Standard Warranty

KOOLTRONIC products are warranted to be free of defects in workmanship, materials and components. The following warranty periods apply from date of shipment:

- Air moving devices/components and hermetic system components: 1 year
- Spare parts, except filters: 90 days

The above warranty applies when the equipment is operated under the following conditions:

- Ambient temperature not in excess of 125°F (52°C) in normal atmosphere or as stated on product nameplate
- Voltage variation no greater than  $\pm 10\%$  from nameplate rating
- Frequency variation no greater than  $\pm 3\text{Hz}$  from nameplate rating
- Maximum cooling load no higher than air conditioner nameplate rating
- Waiting five minutes before restarting air conditioner after intentional or accidental shutoff
- Compliance to all other installation, maintenance and operating instructions, as supplied
- The purchaser assumes the responsibility of grounding the unit and installing it in accordance with local electrical and safety codes, as well as the National Electric Code (NEC) and OSHA

**KOOLTRONIC cannot assume responsibility for mis-application of its products or the erroneous selection of an inappropriate product by a non-authorized KOOLTRONIC representative. Our applications engineers will gladly assist in the selection of the proper product, provided all required details of the application are furnished.**

**THIS WARRANTY CONSTITUTES THE ENTIRE WARRANTY WITH RESPECT TO THE PRODUCT AND IS IN LIEU OF ALL OTHERS, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND IN NO EVENT IS KOOLTRONIC RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.**

### RETURN AUTHORIZATION (RA) PROCEDURE

- All returns require a Return Authorization number whether the return is for warranty or non-warranty repair, rotation of stock, damage or any other reason. Returns without an RA number will be refused.
- Customer must call KOOLTRONIC After Sale Kare (ASK), Pennington, New Jersey (609 • 466 • 3400) to obtain an RA number, or email ask@kooltronic.com.
- The following information is required when an RA is requested:
  - Original customer Purchase Order number and date
  - Date product was received by customer
  - Number of parts to be returned
  - Product description, model and serial number
  - Reason for return
  - Action requested
  - Contact name, telephone, FAX numbers and e-mail address
- Pack unit in a suitable container for shipment, preferably the

KOOLTRONIC assumes no liability beyond the repair or replacement of its own product. This Warranty does not cover:

- Labor or reimbursement of labor for evaluation, removal, installation, repair, or cost of any warranted part, unless authorized in writing by KOOLTRONIC
- Use of equipment for other than its designed purpose or operating conditions
- Operation in harsh, oily, corrosive or other abnormal environmental conditions, without the proper filtration, sealing, protective coatings and/or weather protection
- Damage to hermetic system resulting from continuous operation with dirty or clogged air filters or improper or negligent maintenance
- Use of refrigerant other than designated
- Customer modification or abuse
- Shipping damage or other accident (Claims for shipping damage are the responsibility of the customer. Timely claims must be filed by the customer with the freight carrier)
- Cracked or broken hermetic tubing, brazed joints or other internal damage caused by shipping or mishandling
- Damage caused by shipping units attached to an enclosure
- Any and all conditions resulting from noncompliance with the preceding operating conditions
- Returned freight must be paid by customer
- **This standard warranty does not apply to custom products. Consult your KOOLTRONIC representative for limitations**

original packaging if available. All Heat Exchangers must be returned in an upright position properly secured to a pallet. **Improper packaging may void warranty claim.** If a Heat Exchanger is received laying down or shipped via UPS or similar small parcel service the warranty will be void.

- Mark carton prominently with KOOLTRONIC's Return Authorization Number.
- Enclose all pertinent documents.
- Freight charges on all products returned to KOOLTRONIC shall be paid by the customer. Unauthorized collect shipments will be refused.
- If a unit is repaired under Warranty, KOOLTRONIC will pay the freight charges both ways within the Continental USA at KOOLTRONIC's negotiated rates. Warranty repaired units will be returned to customer at KOOLTRONIC expense only within the Continental USA.
- All authorized returns are subject to a restocking fee.