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***TRIMLINE KXNP SERIES
AIR-TO-AIR
HEAT EXCHANGERS

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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I. Introduction

Kooltronic TrimLine Heat Exchangers are designed for indoor applications with ambient temperatures from 50°F to 131°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 "This Side Up" arrows, rough handling, falling off conveyors, excessive vibration, crushing, etc. Therefore, a thorough inspection should be done upon receipt of all shipments. Any carton tears, dents, scratches, loose articles or evidence of oil are signs of damage and should be noted on the Freight Bill. Cartons should be opened promptly and the units inspected for CONCEALED DAMAGE. Kooltronic Heat Exchangers must be delivered in the proper mounting position to assure that damage to the compressor has not occurred during shipping. Any Kooltronic Heat Exchanger that is delivered removed from the banded pallet, lying down or double stacked should be refused.

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

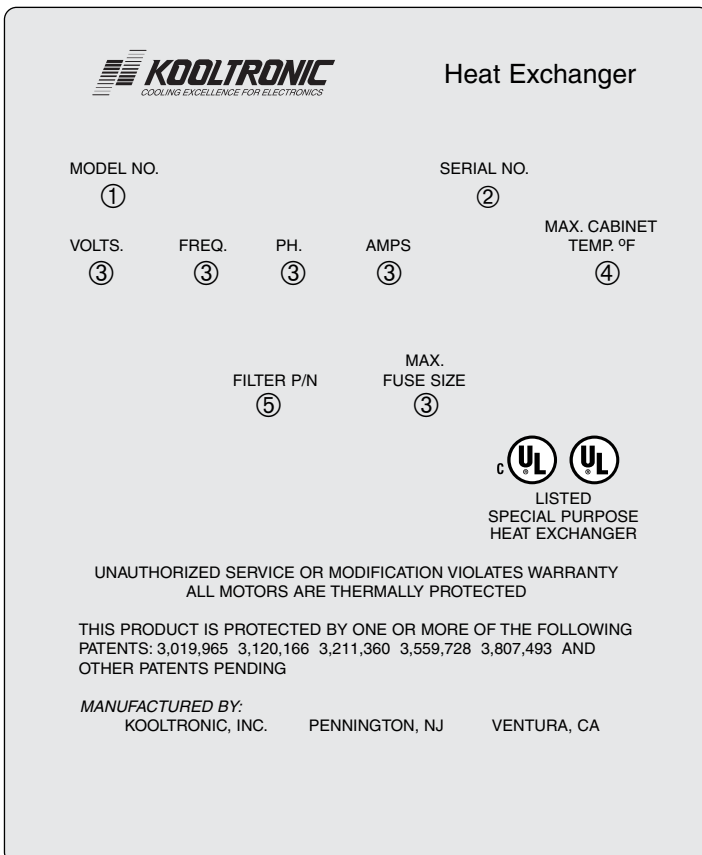
- Do not attempt to operate your Kooltronic Heat Exchanger until you read and thoroughly understand this Manual.
- Before operating this unit, all electrical wiring must be checked to assure the proper connections.

CAUTION

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

IV. Product Identification and Nameplate

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



- 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.

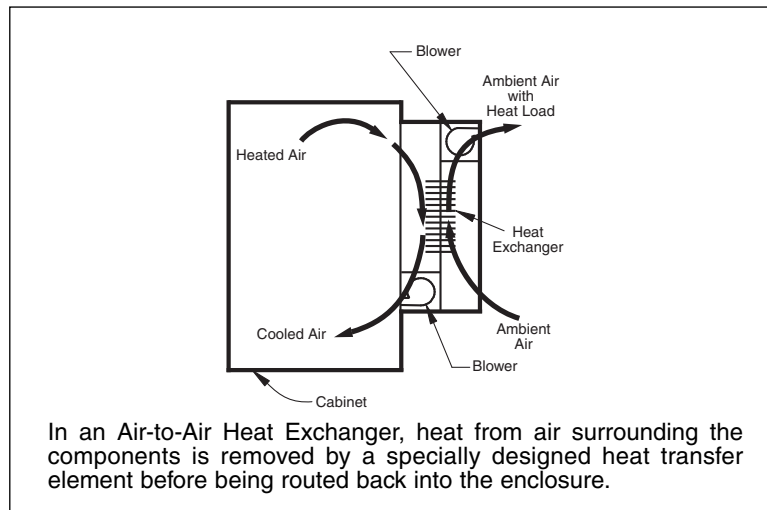
④ Make sure that these parameters are met. Failure to do so may result in permanent damage to the unit

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.



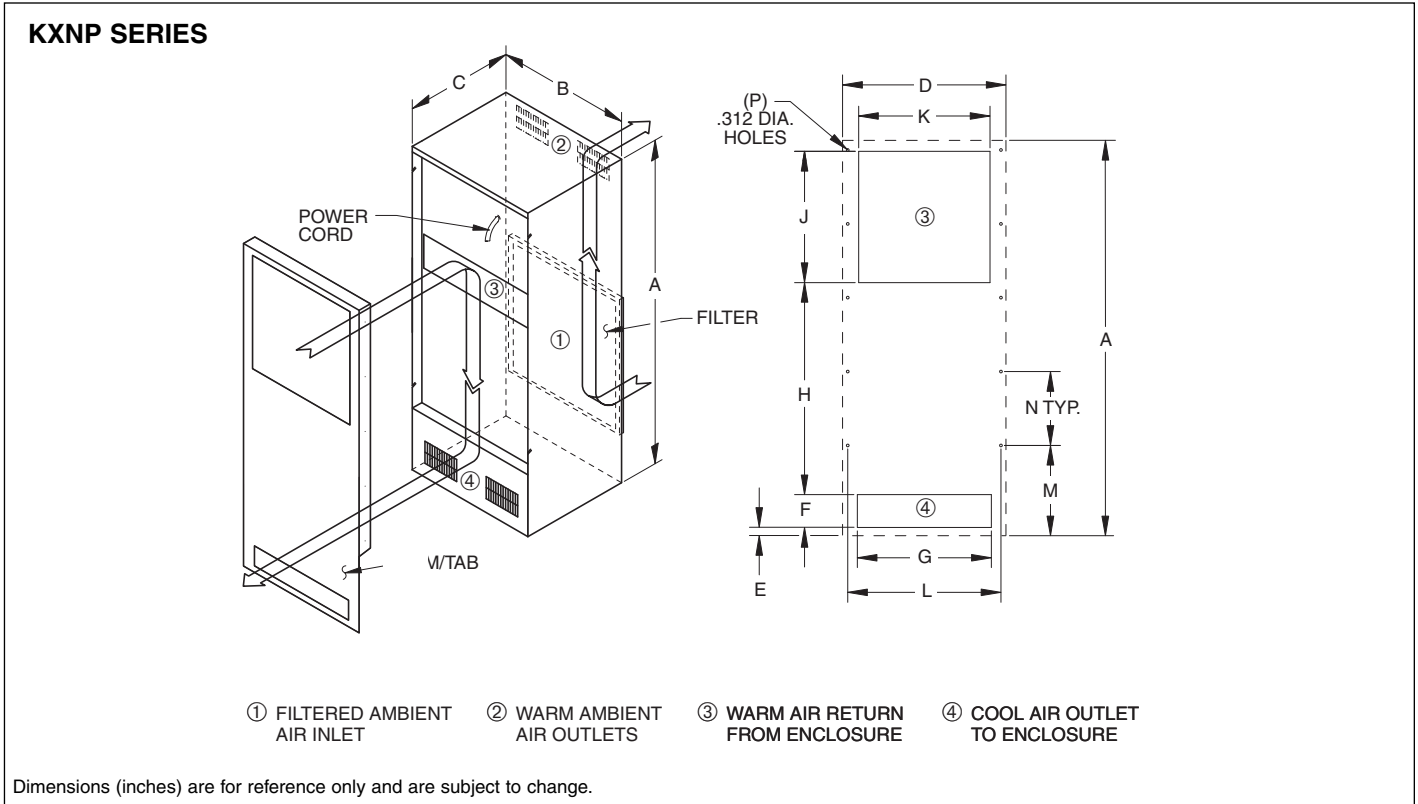
VI. Specific Model Data

Mounting

Kooltronic Heat Exchangers have been engineered to be installed easily. To avoid damaging your Heat Exchanger, please read the following information before installation:

1. Remove and save the four screws holding the Mounting Template and Assembly Bracket (M/TAB) to the unit. Remove the M/TAB.
2. See Figure 1 for proper orientation. Place the M/TAB flush against the outside of the cabinet to locate cutouts and mounting holes.
3. NOTE: The top cutout for the warm air return does not have to match the full opening on the M/TAB. You can locate your cutout anywhere within this opening. Locate your cutout close to the top and not less than 4" high. **Make sure the cutouts don't interfere with components inside your cabinet.**
4. Mount the M/TAB to the outside of the cabinet using all the mounting hardware supplied by Kooltronic (1/4-20 screws/nuts/washers). Preferred positions: one in each corner and two near center on each side. NOTE: Make sure the screws are inserted with heads on M/TAB side. Tighten nuts securely.
5. Route the power cord through the top cut out in your cabinet. Mount the unit to the M/TAB by sliding the studs on each side panel into the slots on the M/TAB.
6. Insert the remaining 10-32 screws and seal washers supplied by Kooltronic through the Air Conditioner side panel and into the M/TAB. To avoid misalignment of parts, install and slightly tighten all screws. Then secure all screws, but do not to overtighten.

Drawings and Dimensions



DIMENSIONS - UNIT (inches)

Model	A	B	C
KXNP33	32 ⁷ / ₈	12 ¹ / ₂	9 ³ / ₄
KXNP36	36 ³ / ₄	15 ³ / ₁₆	9 ³ / ₄
KXNP47	47 ¹ / ₄	15 ³ / ₁₆	9 ³ / ₄
KXNP59	59 ⁹ / ₁₆	17 ³ / ₁₆	13 ³ / ₄

DIMENSIONS - MOUNTING (inches)

Model	D	E	F	G	H	J	K	L	M	N	P
KXNP33	12 ³ / ₈	³ / ₈	2 ³ / ₄	9 ¹ / ₈	19 ⁵ / ₈	9	10 ¹ / ₂	11 ³ / ₁₆	7 ³ / ₈	8	8
KXNP36	15 ¹ / ₁₆	³ / ₄	3	12 ¹ / ₂	19 ³ / ₈	12	12	13 ⁵ / ₁₆	8 ¹ / ₄	6 ³ / ₄	10
KXNP47	15 ¹ / ₁₆	³ / ₄	3	12 ¹ / ₂	23 ⁷ / ₈	18	12	13 ⁵ / ₁₆	10 ¹ / ₈	7	12
KXNP59	17 ¹ / ₁₆	7 ¹ / ₂	2 ¹⁵ / ₁₆	15 ¹ / ₄	27 ⁷ / ₈	20	14	14 ¹¹ / ₁₆	11	6 ¹¹ / ₁₆	16

Technical Data

Model	Volts	Power		Maximum Allowable Temperature °F		Performance Watts/°F		Approx. Weight (lbs.)
		Amps	Watts	Enclosure	Ambient	Air In	Air Out	
KXNP33	115AC	2.60	227	160	131	33	58	56
K2XNP33	230AC	1.90	227	160	125	33	58	56
K7XNP33	24BLDC	10.00	240	160	131	33	58	56
K8XNP33	48BLDC	5.80	270	160	131	33	58	56
KXNP36	115AC	3.20	363	160	131	42	75	67
K2XNP36	230AC	1.60	363	160	131	42	75	67
K7XNP36	24BLDC	12.30	296	160	131	42	75	67
K8XNP36	48BLDC	7.90	370	160	131	42	75	67
KXNP47	115AC	3.40	354	160	131	56	109	79
K2XNP47	230AC	1.70	354	160	131	56	109	79
K7XNP47	24BLDC	12.30	296	160	131	56	109	79
K8XNP47	48BLDC	7.90	370	160	131	56	109	79
KXNP59	115AC	7.20	665	160	131	91	195	130
K2XNP59	230AC	3.25	665	160	131	91	195	130

** 60 Hz. operation. For 50 Hz. operation, consult Kooltronic.

Major Component Replacements

Model	Blower Assembly	Blower Wheel	Blower Wheel
KXNP33	7083-00-13	S42-25SCCW5/16	S42-25SCW5/16
K2XNP33	7082-00-03	S42-25SCCW5/16	S42-25SCW5/16
K7XNP33		S42-25SCCW5/16	S42-25SCW5/16
K8XNP33		S42-25SCCW5/16	S42-25SCW5/16
KXNP36	8050-00-33	S42-15-18ACCW5/	S42-15-18ACW5/1
K2XNP36	8050-00-34	S42-15-18ACCW5/	S42-15-18ACW5/1
K7XNP36		S42-15-18ACCW5/	S42-15-18ACW5/1
K8XNP36		S42-15-18ACCW5/	S42-15-18ACW5/1
KXNP47	8050-00-33	S42-15-18ACCW5/	S42-15-18ACW5/1
K2XNP47	8050-00-34	S42-15-18ACCW5/	S42-15-18ACW5/1
K7XNP47		S42-15-18ACCW5/	S42-15-18ACW5/1
K8XNP47		S42-15-18ACCW5/	S42-15-18ACW5/1
KXNP59	8060-00-11	S47-29SCCW3/8	S47-29SCW3/8
K2XNP59	6076-00-23	S47-29SCCW3/8	S47-29SCW3/8

Model	Capacitor	Blower Motor	Filter	Heat Exch. Element
KXNP33	0452-03	0261-08	12251F	0744-22A
K2XNP33	0452-03	0261-54	12251F	0744-22A
K7XNP33		0263-05	12251F	0744-22A
K8XNP33		0263-06	12251F	0744-22A
KXNP36	0452-03	0261-08	17121F	0744-23A
K2XNP36	0452-03	0261-54	17121F	0744-23A
K7XNP36		0263-05	17121F	0744-23A
K8XNP36		0263-06	17121F	0744-23A
KXNP47	0452-03	0261-08	17121F	0744-24A
K2XNP47	0452-03	0261-54	17121F	0744-24A
K7XNP47		0263-05	17121F	0744-24A
K8XNP47		0263-06	17121F	0744-24A
KXNP59	0452-03	0261-287	22501F	0744-25A
K2XNP59	0452-03	0261-288	22501F	0744-25A

NOTE: Part Numbers shown are for 60Hz/1Ø. For 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: One year
- Non-operating parts, except filters: 5 years

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 the KOOLTRONIC Customer Service Department, Pennington, New Jersey (609 • 466 • 3400) to obtain an RA number.
- 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.