

Follow-Up Service Procedure

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It is important to keep Procedures and Test Reports up-to-date as new or revised pages are received. Correct maintenance will decrease the amount of time the UL Representative spends when visiting your facility. Refer to the **HOW TO UPDATE** column below for instructions.

PAGE	FUNCTION	HOW TO UPDATE
Authorization Page	Authorizes the appropriate type of Follow-Up Service (L or R). Contains the names and addresses of the Applicant, Listee (Recognized or Classified Company) and Manufacturer and the corporate Identifier number assigned by UL to each entity, as well as the name of the UL product category title.	Replace present page by matching the UL File Number, Volume Number and most current "Issued" or "Revised" date.
Addendum to Authorization Page	Lists the names, addresses and UL identifier numbers of all manufacturing locations when multiple locations exist	Replace, add or delete page by matching the UL File Number, Volume Number and most current "Issued" or "Revised" date.
Listing Mark Data (LMD) Page, Classification Mark Data (CMD) Page or Recognized Component Marking Data (RCMD) Page	Used only for products covered under Type R service as shown on the Authorization Page. Use to determine the correct Listing/Classification/Recognized Component Mark(ing). For Listed and Classified categories the assigned control number is included, which is part of the required marking. Also includes additional information regarding minimum size, application, procurement, and any other optional markings, as well as the appropriate UL Mark.	Replace present page with most current "Issued" or "Revised" date.
Multiple Listing (ML) Correlation Sheet	Correlates product model numbers between those products made by a Manufacturer for the Basic Applicant and those supplied to another company, the Multiple Listee.	Replace, add or delete page(s) with most current "Issued" or "Revised" date.
Index	Catalogs the contents of the Procedure by some logical means, i.e. Section Number or Issue Date.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Appendices (App.)	Contains instructions for the Manufacturer and UL Representative concerning specific responsibilities and required periodic tests. May also outline tests to be conducted on samples to be forwarded to UL's facilities.	Replace present page by matching the UL File Number, Volume Number, Appendix letter (eg. App.A), Page Number and most current "Revised" date.
	Standardized Appendix Pages are the same for all manufacturers within a particular product category.	Replace present page by matching the Appendix letter (eg. App.A), Page Number and most current "Revised" date.
Follow-Up Inspection Instructions (FUII) Pages	Contains information similar to that in the Appendices. FUII Pages are issued as part of the Procedure when a UL Standard is used in conjunction with the Procedure, and are the same for all manufacturers within a particular category.	Replace present pages by matching the Page Number and most current "Issued" or "Revised" date.
Section General (Sec. Gen.)	Contains description, requirements, identifications and/or specifications that are common to all products covered by the entire volume and supplements the information provided in the Description Section.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Description Section (Sec.)	Contains the specific description of one or more products or systems. This includes written text supplemented by photographs, drawings, etc., as necessary, to define features that affect compliance with the applicable requirements.	Replace present page by matching the UL File Number, Volume Number, Section Number, Page Number and most current "Issued" date.

The above page(s) may not appear in all UL Follow-Up Service Procedures. Their inclusion is determined by UL's Conformity Assessment Services staff.

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File SA32601

Vol 1

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FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

HEAT EXCHANGERS, REFRIGERANT
(SNHZ, SNHZ7)

Manufacturer: NINGBO HRALE PLATE HEAT EXCHANGER CO
(100221-769) LTD
FENGHUA EXPORT-ORIENTED SCIENTIFIC
AND TECHNOLOGICAL PARK
JINSHUI RD XIWU FENGHUA
NINGBO 315509 ZHEJIANG CHINA

Applicant: SAME AS MANUFACTURER
(100221-769)

Listee: SAME AS MANUFACTURER
(100221-769)

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc. (UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc. (UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only. Minimum size is not specified, as long as the Listing Mark is legible. The following is suggested.



XXXX = The control number assigned by UL, 3NNL.

The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Mark is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye.

The product identity is: "REFRIGERANT HEAT EXCHANGER".

The product identity may be omitted if the Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate which includes the rating or the catalog or model designation.

Separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) will always include the four elements.

The manufacturer may reproduce the Mark or obtain it from a UL authorized supplier.

THIS PAGE IS TO BE REVISED BY FUS DEPARTMENT ONLY

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(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only. Minimum size is not specified, as long as the Listing Mark is legible. The following is suggested. (If only Canadian coverage is authorized, use only the C-UL Symbol).

UL Symbol to the left and the C-UL Symbol to the right.



Alternatively, the Canadian/US Mark
may be used. The UL Symbol with "C" to the left and "US" to the right.



XXXX = The control number assigned by UL, 3NNL.

The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Mark is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye.

The product identity is: "REFRIGERANT HEAT EXCHANGER".

The product identity may be omitted if the Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate which includes the rating or the catalog or model designation.

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DESCRIPTION

PRODUCT COVERED:

USL and CNL: Brazed Plate Heat Exchangers, Models B3-12-XXX-X.X, B3-14-XXX-X.X, B3-16-XXX-X.X, B3-23-XXX-X.X, B3-27-XXX-X.X, B3-32-XXX-X.X, B3-52-XXX-X.X, B3-60-XXX-X.X.

Notes:

- 1) XXX - None or one or two or three numbers, indicate plate numbers.
- 2) X.X - None or one or two numbers, indicate design pressure.

GENERAL:

These products are brazed plate heat exchangers for use in refrigerant systems. They consist of a series of corrugated stainless steel plates brazed together, provided with four connections for inlet and outlet ends of both a refrigerant and process side. The refrigerant side is meant to handle all types of refrigerants except ammonia. The process side is capable of handling water, glycol, liquid Freon. These heat exchangers are designed to be used as evaporators, condensers, super heaters, economizers, de-super heaters, water heater, etc. in chillers and heat pumps for domestic or commercial use. Optional mounting bracket may be provided.

USL denotes compliance of these refrigerant-containing components to all the requirements in the UL Standard for Refrigerant-Containing Components and Accessories, Nonelectrical, UL207, Seventh Edition.

CNL denotes compliance of these refrigerant-containing components to all the requirements in the Canadian Standard for Refrigerant-Containing Components for Use in Electrical Equipment, CAN/CSA-C22.2, No. 140.3-M1987.

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

In most applications, the highest efficiency will be realized by connecting the heat exchanger for counter-current flow, although special applications may require co-current (parallel) flow.

PRESSURE RATINGS:

Model	Design Pressure, PSIG (MPa)	
	Process Side	Refrigerant Side
B3-12-XXX-X.X, B3-14-XXX-X.X, B3-16-XXX-X.X, B3-23-XXX-X.X, B3-27-XXX-X.X, B3-32-XXX-X.X, B3-52-XXX-X.X, B3-60-XXX-X.X	450 (3.1)	450 (3.1)

HEAT EXCHANGER, MODELS B3-12-XXX-X.X, B3-14-XXX-X.X, B3-16-XXX-X.X, B3-23-XXX-X.X, B3-27-XXX-X.X, B3-32-XXX-X.X, B3-52-XXX-X.X, B3-60-XXX-X.X.

FIG. 1

(REPRESENTS ALL MODELS)

General - Fig. 1 shows an overall view of heat exchangers, Models B3-12-XXX-X.X, B3-14-XXX-X.X, B3-16-XXX-X.X, B3-23-XXX-X.X, B3-27-XXX-X.X, B3-32-XXX-X.X, B3-52-XXX-X.X, B3-60-XXX-X.X, for details refer to Ill. 1.

1. Brazed Plates - Heat exchanger consists of corrugated stainless steel plates brazed together with copper brazing material. Plates form internal "Corrugated" configuration. Height varies depending on number of plates. Overall length, thickness and width are as follows:

Model	Channel Plate Thickness, mm	Cover Plate Thickness, mm	Length, mm	Width, mm	Number of Plates, Max
B3-12-XXX-X.X	0.40	2.0	189	72	60
B3-14-XXX-X.X	0.40	2.0	196	86	60
B3-16-XXX-X.X	0.40	2.0	202	92	60
B3-23-XXX-X.X	0.40	2.0	315	72	60
B3-27-XXX-X.X	0.40	2.0	286	116	120
B3-32-XXX-X.X	0.40	2.0	286	116	120
B3-52-XXX-X.X	0.40	2.0	526	112	120
B3-60-XXX-X.X	0.40	2.0	526	124	120

2. Connections - Units are provided with four standard plumbing connections which vary in size and can be externally or internally threaded or provided with inner diameter sweat fittings or a combination thereof. Connections are located at each corner.