HEATCRAFT

Evaporator Coils

Single, dual or quad compressor circuits allow precise capacity control. Unique interlaced circuiting options assure uniform refrigerant distribution over the entire face area of the coil. Wide fin spacing availability reduces the affect of frost build up on low temperature applications. For use in central systems or duct applications.

EVAPORATOR COIL CONSTRUCTION

Tubing	3/8" or 1/2" O.D. Copper, 5/8" O.D. Copper, Stainless Steel, or Carbon Steel
Type	Standard: single compressor circuit Face control: multiple compressor circuits Row control: 2 compressor circuits Interlaced: 2 compressor circuits Interlaced face control: 4 compressor circuits
Rows	2, 3, 4, 5, 6, 8, 10, 12
Fin Surface	Sine Wave (corrugated), New Ripple (peak and valley) or Flat
Casing	Galvanized Steel, Stainless Steel, Carbon Steel, Copper or Aluminum
Connections	Copper Sweat, Carbon Steel or Stainless Steel
Vents & Drains	Standard on all coils.
Ammonia Construction is available	

HEATCRAFT

CERTIFIED DRAWING
EVAPORATOR CP 1067-D

Customer ______________________ Customer P.O. Number ______________________

Job ____

Written by ______________________ Date ______________________

Approved by ______________________ Date ______________________

#	TAG	QTY	MODEL NUMBER						HAND	FIG#
			TYPE	FPI	ROWS DEEP	FIN	FH	FL	Left, Right Universal	
1										
2										
3										
4										

#	DISTRIB TUBE SIZE 0.25 or 0.3125	# OF CIRCUITS PER COIL	NOZZLE SIZE	DIMENSIONAL DATA										
				CONNECTIONS							FLANGES			
				SUCTION	LIQUID	H	I	J	L	M	R	S	T	W
1														
2														
3														
4														

MATERIALS OF CONSTRUCTION	
FINS	AL CU CS St Stl
TUBES	CU CU-Rfl CuNi CS SS
HEADERS	CU Carbon Stl St Stl
CONN	Cu Sweat CS St Stl
CASING	AL Galvanized Stl CU Stainless Steel

	GENERAL OPTIONS
☐	Inverted Flanges
☐	End Plates Only
☐	Label Kit
☐	Mounting Holes
☐	Phenolic Coating

REMARKS:

* 3.25 IF "EJ" or "EK"
2.50 Max for others

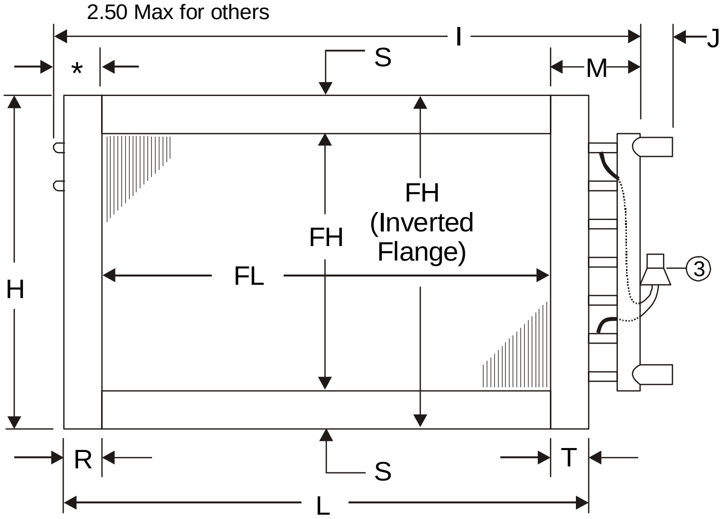
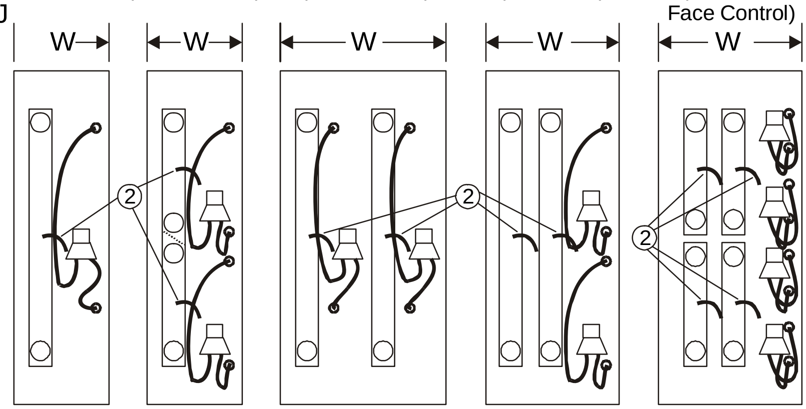


Figure 1 | Figure 2 (Face Control) | Figure 3 (Row Control) | Figure 4 (Interlaced) | Figure 5 (Interlaced Face Control)



GENERAL NOTES

1. Mounting holes are optional. 0.375" diameter holes on 6" centers from the centerline of the fin height and finned length are typical for all flanges. Not available with Inverted Flanges or when S < 0.75".
2. Headers are equipped with external equalizer connections.
3. Liquid distributor may extend beyond suction header.
4. All dimensions are in inches.
5. The suction line should be connected to the lower connection on the entering air side for counterflow operation. Cap all unused connections.
6. With Inverted Flanges or End Plates Only construction, headers will extend a maximum of 0.375" above and below the casing.
7. Intermediate tube supports are fabricated from heavy gauge stock and supplied per the chart below.

Finned Length (FL)	**≤ 48**	**> 48 ≤ 96**	**> 96 ≤ 144**	**> 144**
Tube Supports	0	1	2	4

HEATCRAFT™

DX COILS

TABLE OF CONTENTS

NOMENCLATURE

5 E N 14 06 C 30.00 X 60.00

Tube OD:
3 = 3/8"
4 = 1/2"
5 = 5/8"

Coil Type:

E - Evaporator

Circuiting:
N - Normal
F - Face Control
R - Row Control
J - Inerlaced
K - Interlaced Face Control

Finned Length

Fin Height

Fin Design:
A - Flat (AL, CU)
B - New Ripple (AL, CU)
C - Sine Wave (AL, CU)
D - Raised Lance (AL)
F - Flat (AL, CU, SS, CS)
G - New Ripple (AL, CU, SS, CS)
H - Sine Wave (AL, CU, SS, CS)

Rows Deep

Fins Per Inch

Heatcraft's evaporator coils are designed and engineered for efficient operation with all refrigerants. The performance capabilities are excellent for comfort cooling, process refrigeration, and moisture control dehumidifying.

Heatcraft's direct expansion type evaporator coils are engineered and designed to deliver the maximum possible heat transfer efficiency under all operating conditions. The wide variety of circuiting available offers the opportunity to provide the best circuit for peak coil performance. All evaporator coils are counter flow circuited and equipped with pressure type distributors and all distributor tubes are of equal length to assure equal distribution of refrigerant to each circuit. Circuiting for face control and row control is also available as standard on a wide variety of coils.

EN

Model Type - EN (Figure 1), is used for applications where capacity control is not required. Single or multiple distributors are available depending on the number of circuits required. Model EN evaportors utilize dual suction connections when multiple distriubtors are used.

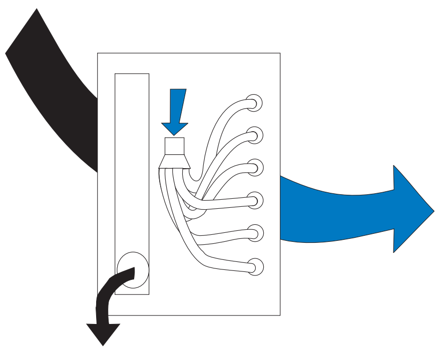


Figure 1- EN Normal
(Rows 2, 3,4, 5, 6, 8, 10, 12)
(Right Hand shown)

EN

EF

Model Type - EF (Figure 2) is used for face control. Face Control is the simplest form of capacity control. Type EF coils are normally furnished with two distributors and two suction connections offering 50% capacity reduction capabilities.

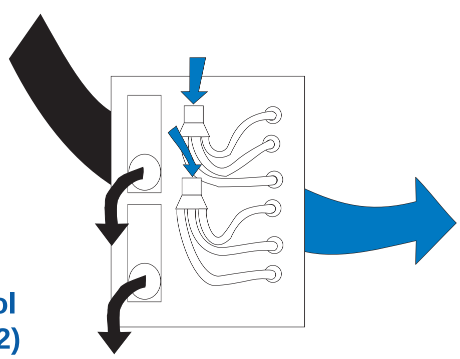


Figure 2 - EF Face Control
(Rows 2, 3, 4, 5, 6, 8, 10, 12)
(Right Hand shown)

EF

EVAPORATOR COIL TYPES

ER

Model Type - ER (Figure 3) offers a row control option for six row evaporators. These coils are split two rows and four rows which offer approximately a 50 % capacity reduction.

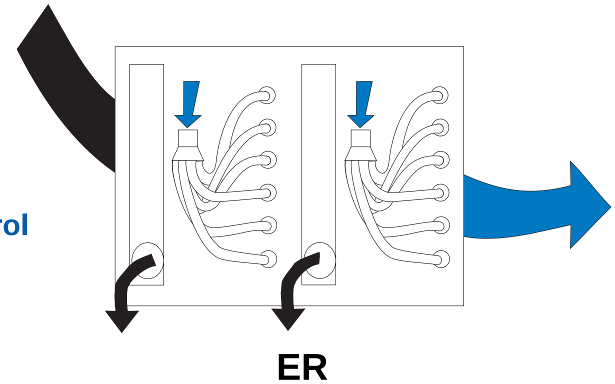


Figure 3 - ER Row Control (Rows 6) (Right Hand shown)

EJ

Model Type EJ (Figure 4) coils come with interlaced circuiting. This form of capacity control utilizes two distributors with each feeding every other tube in the first row of the coil. Each distributor has a separate suction connection. Type EJ coils are normally furnished with two distributors and two suction connections offering 50% capacity reduction capabilities.

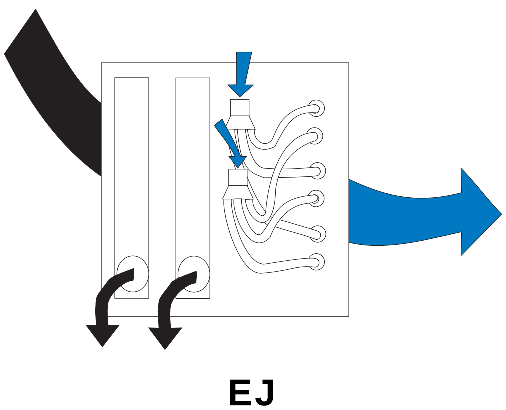


Figure 4 - EJ Interlaced (Rows 3, 4, 6, 8, 10, 12) (Right Hand shown)

EK

Model Type EK (Figure 5) for applications that require face control and interlaced circuits, this model type is recommended. Interlaced face control normally utilizes four distributors and four suction connections offering 25, 50 and 75% capacity reduction capabilities.

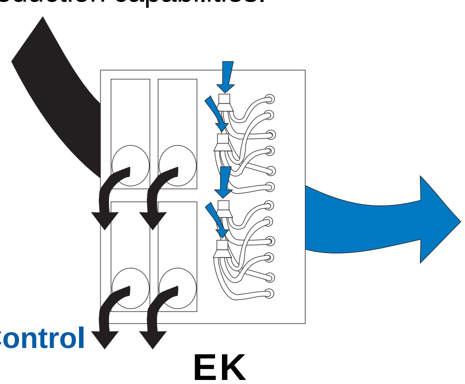


Figure 5 - EK Interlaced Face Control (Rows 4, 6, 8, 10, 12) (Right Hand

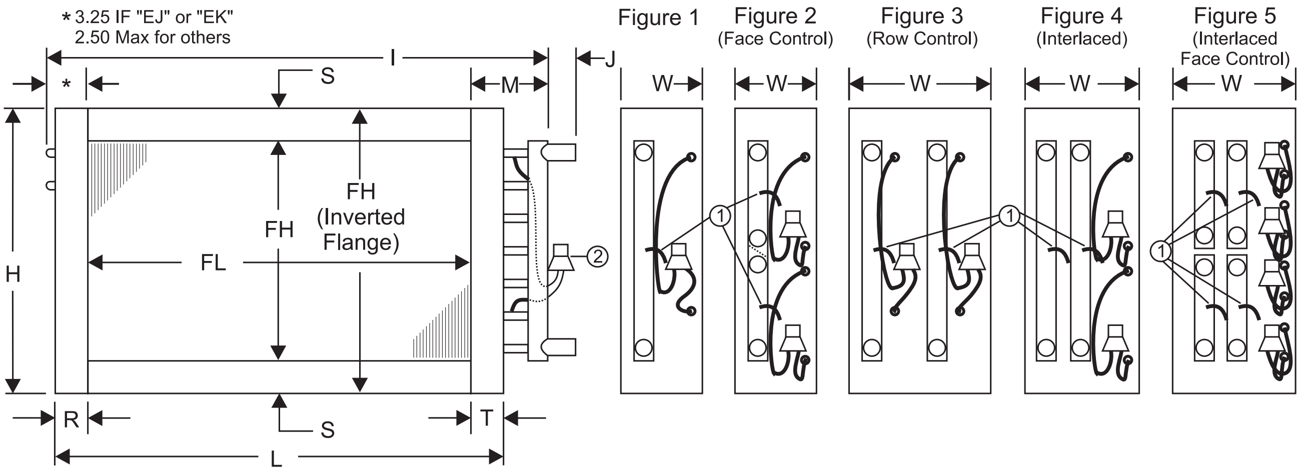


Figure 6 - Indicates the dimensional data needed to quote and build the coil

EVAPORATOR CONSTRUCTION

CONNECTIONS

Connections are constructed of carbon steel or stainless steel butt-weld or copper sweat material (see Table 1). Liquid supply connections are spaced evenly along the height of the coil and the suction connections are located at the bottom of the each compressor circuits unless stated otherwise.

Universal connection coils have two supply suction connections and should be located at the bottom of the coil of the entering air side when installed to insure proper oil return to the compressor. The coil is both left and right hand. This option is used when the coil hand is not available or if the coil is to be used as a backup for quick replacement of either a right or left hand coil. Using universal connections can cut inventory by providing the flexibility of one coil for either hand connections. Upon installation the extra connections are capped since they are not needed.

Material
Copper Sweat UNS # 12200, ASTM B-75, with a H55 Temper
Stainless Steel 304L or 316L ASTM A312 Sch 40 or Sch 80
Carbon Steel A53A Sch 40
Cupro-nickel UNS# C70600, 90/10, ASTM B-111
Admiralty Brass UNS # c44400, ASTM B-111, Type B

Table 1 - Material Options

EVAPORATOR CONSTRUCTION

TUBING

Tubing and return bends shall be constructed from seamless copper for standard construction or cupro-nickel, admiralty brass, stainless steel or carbon steel tubing for special applications. Copper tube temper shall be light annealed with a maximum grain size of 0.040 mm and a maximum hardness of Rockwell 65 on the 15T scale. Tubes will be mechanically expanded to form an interference fit with the fin collars. See Table 5 for size and material availability. See Tables 1 and 2 for more information.

Tubing Type	Connections	Tube O.D.	Tube Thickness
Copper	Carbon Steel, Red Brass, Copper Sweat	.375	.013, .016, .025, .030
		.500	.016, .022, .030
		.625	.020, .025, .035, .049
Copper - Rifled	Copper Sweat	.375	.012, .016
		.500	.016
Cupronickel	Carbon Steel, Red Brass	.625	.020, .035, .049
Admiralty Brass	Carbon Steel, Red Brass	.625	.049
Stainless Steel	Stainless Steel	.625	.035, .049, .065
Carbon Steel	Stainless Steel	.625	.035, .049, .065

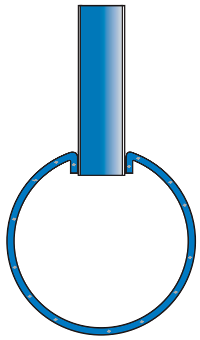
Table 2 - Connection & Tubing Information

HEADERS

Headers shall be constructed from UNS 12200 seamless copper conforming to ASTM B75 and ASTM B251 for standard applications. Stainless steel headers wil be constructed of 304L & 316L (ASTM-A249) Sch-5 or Sch-10. Carbon steel headers shall be constructed of Sch-10 (ASTM-A135A) or Sch-40 (ASTM A53A). End caps shall be die-formed and installed on the inside diameter of the header such that the landed surface area is three times the header wall thickness.

BRAZED COPPER TUBES-TO-COPPER HEADER JOINT

Seamless copper tubes are brazed into heavy gauge seamless drawn copper headers. This combination of similar metals eliminates unequal thermal expansion and greatly reduces stress in the tube-header joint. When possible, intruded tube holes in the header allow an extra landed brazing surface for increased strength and durability. The landed surface area is three times the core tube thickness to provide enhanced header-to-tube integrity. All core tubes are evenly extended within the inside diameter of the header no more than 0.12 inch (See Figure 12).



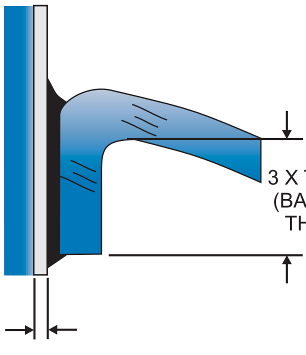


Figure 7 - Brazed Joint

TUBE SUPPORTS

Tube supports will be constructed of the same material as the case, when possible and provided according to the following chart.

Finned Length (FL)	< 48	> 48 ≤ 96	> 96 ≤ 144	> 144
Tube Support	0	1	2	4

Table 3 - Tube Supports

COIL CASE

Casings and end plates shall be made from 16 gauge galvanized steel unless otherwise noted. Double-flanged casings on top and bottom of finned height are to be provided, when possible, to allow stacking of the coils. All sheet metal brakes shall be bent to 90 degrees +/- 2 degrees unless specified otherwise. Coils shall be constructed with intermediate tube support sheets fabricated from a heavy gauge sheet stock of the same material as the case, when possible.

Material	Gauge (in.)		
	16	14	12
Galvanized Steel, ASTM A-924 and A-653	X	X	X
Copper ASTM B-152	X	X	X
Aluminum Alloy-3003, Embossed Finish Alloy-5052, Mill Finish (.125 only)	X	X	X
Stainless Steel 304L (or) 316L, 2B-Finish, ASTM A-240	X	X	*X
Stainless Steel 201L	X	X	

Table 4 - Case Material

* Not available in pierce and flare header plates

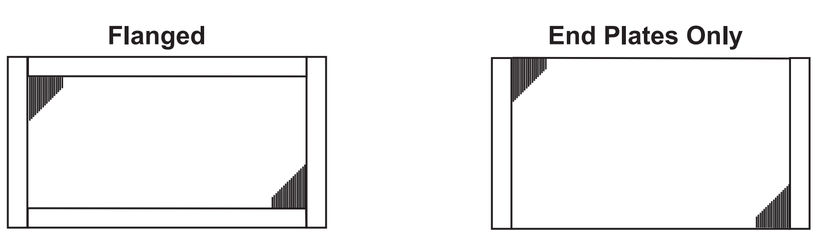


Figure 8 - Case Styles

FINS

Coils shall be built of plate fin type construction providing uniform support for all coil tubes. Coils are manufactured with die-formed aluminum, copper, cupro-nickel, stainless steel or cabon steel fins (see Table 5) with self-spacing collars which completely cover the entire tube surface, providing metal-to-metal contact. Fins are self-space die-formed fins 4 through 14 fins/inch with a tolerance of +/- 4%.

Material	Fin Thickness (in.)			
	.0060	.0075	.0095	.0160
Aluminum Alloy-1100	X	X	X	X
Copper Alloy-110	X	X	X	X
Cupro-nickel 90/10 Alloy-706		X		
Stainless Steel 302-2B		X	X	
Carbon Steel ASTM A109-83		X	X	

Table 5 - Fin Material

Tube O.D.	Fin Material	Fin Thickness	Fin Surface	FPI
3/8"	AL, CU	.0060 AL, CU	A, B, C	8-24
			H	6-18
		.0060 AL	D	10-24
		.0075 AL, CU	B, C	6-22
		.0075 AL	H	6-18
		.0095 AL, CU	A, B, C	6-24
		.0095 AL	H	6-16
1/2"	AL, CU	.0060 CU	A, B, C	8-18
		.0060AL	A, B, C	7-18
		.0060	H	8-14
		.0075	A, B, C	6-18
			H	6-14
		.0095	A, B, C	6-16
			H	4-14
5/8"	AL, CU	.0060 CU	A, B, C	8-14
		.0060 AL	A, B, C	6-14
	AL, CU	.0075	A, B, C	5-14
	AL, CU, CS, SS		F	5-14
	AL, CU		G	6-14
	CS, SS		G	6-14
	AL, CU, CS, SS		H	6-14
	AL, CU	.0095	A, B, C	4-14
	AL, CU		F	4-14
	CS, SS		F	5-14
	AL, CU, CS, SS		G	5-14
	AL, CU		H	5-14
	CS, SS		H	6-14
	AL, CU	.0160	A, B, F, G	4-14

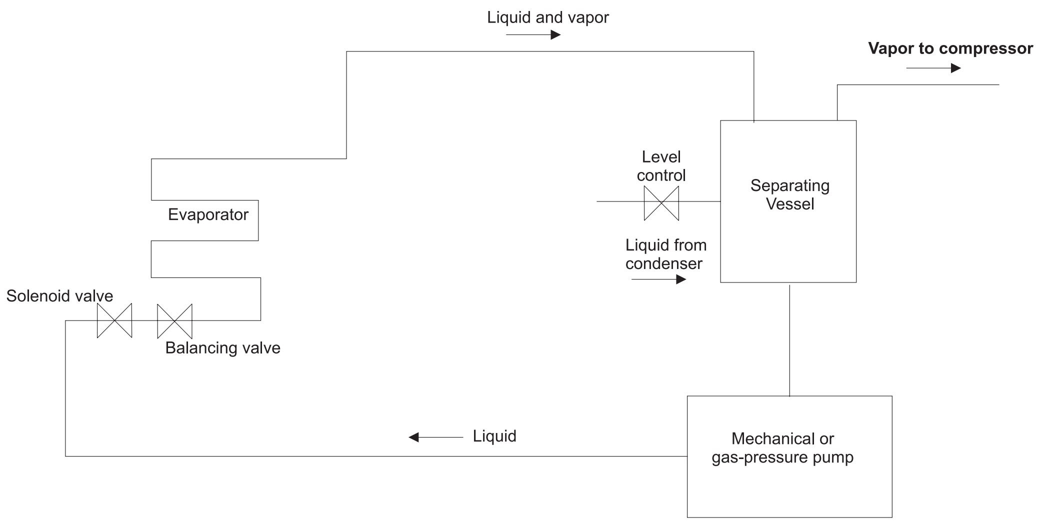
Table 6 - Fin Information

LIQUID OVERFEED EVAPORATORS

Liquid overfeed evaporators perform the same function as a standard DX evaporator except that a mixture of liquid and vapor leaves the coil in lieu of 100% vapor. This is achieved by feeding the evaporator more liquid than can be completely boiled off through the coil. The construction is slightly different in that instead of having a distributor that properly distributes refrigerant to all the coil's circuits a liquid overfeed coil has a supply header with an orifice welded into each tap tube. These orifices are largest at the top of the coil and get smaller going to the bottom of the coil. Because refrigerant is so light, gravitational pull has an effect on the distribution of refrigerant in the coil so these orifices act as a way to counteract this force. The liquid connection is located at the top of the coil and the suction connection is located at the bottom of the coil to ensure proper oil return. Since this coil requires a much higher refrigerant charge than a standard DX coil, this application is typically seen in ammonia systems. This is because of ammonia's relatively low cost as compared to HFC refrigerants.

There are costs and benefits of this system that should be considered. The added costs involved would be in the initial installation and cost of equipment. This type of coil typically requires a refrigerant pump that will force more liquid through the coil than can be evaporated. Also since there is a mixture of liquid and vapor leaving the coil and liquid refrigerant cannot be compressed, this mixture must be separated so that only pure vapor refrigerant is introduced into the compressor. This is typically done in a large tank where the mixture enters the tank at the side and the vapor refrigerant is pulled off the top of the tank and the liquid falls to the bottom. The final additional cost would be the added refrigerant charge due to the tank, extra piping and increased liquid refrigerant volume in the system.

The benefit can be seen in the annual operation of the system. This liquid overfeed application runs much more efficiently than a standard DX coil. Because there is liquid refrigerant all the way through the coil it is ensured that there will be no dry surface on the interior of the coil tube. With a completely wetted interior tube surface the refrigerant side heat transfer coefficient is increased. This means that more capacity can be generated out of less surface area. Also, since the refrigerant leaving the coil is at saturation and not superheated, the temperature of the refrigerant entering the compressor is lowered. This results in lower compressor discharge temperatures, which can both extend the life of the compressor and have the compressor run more efficiently.



GENERAL FORMULAS

TOTAL BTUH (Air Cooling)

Total BTUH = 4.5 x SCFM x (Total Heat Ent. Air - Total Heat Lvg. Air)

Where 4.5 = Density Std. Air x Min./Hr.

Density std. air = .075 lbs./cu. ft.

Min./hr. = 60

SENSIBLE BTUH (Air Cooling)

Sensible BTUH = 1.08 x SCFM x (Ent. Air DB - Lvg. Air DB)

Where 1.08 = (Specific heat of air) x (Minutes/Hr.) x Density Std. Air

Specific heat = .24 btu/lb.F

Min./hr. = 60

Density std. air = .075 Lbs./cu. ft.

Standard Conditions:

Temperature = 70°F

Pressure = 14.69 psi

Density = .075 lb/ft^3

SENSIBLE TOTAL RATIO

S/T Ratio = Sensible BTUH ÷ Total BTUH

LEAVING AIR TEMPERATURE (cooling)

Lvg Air Temp. = Ent. Air Temp. - (Sensible BTUH ÷ (1.08 x SCFM))

FACE AREA

FA (Sq. Ft.) = (Fin Height x Finned Length) ÷ 144

FACE VELOCITY (FPM)

FPM = SCFM ÷ Face Area (sq. ft.)

MBH PER SQUARE FOOT OF FACE AREA

MBH/Sq. Ft. = Total BTUH ÷ (Face Area (Sq. Ft.) x 1000)

BASIC VAPOR COMPRESSION CYCLE

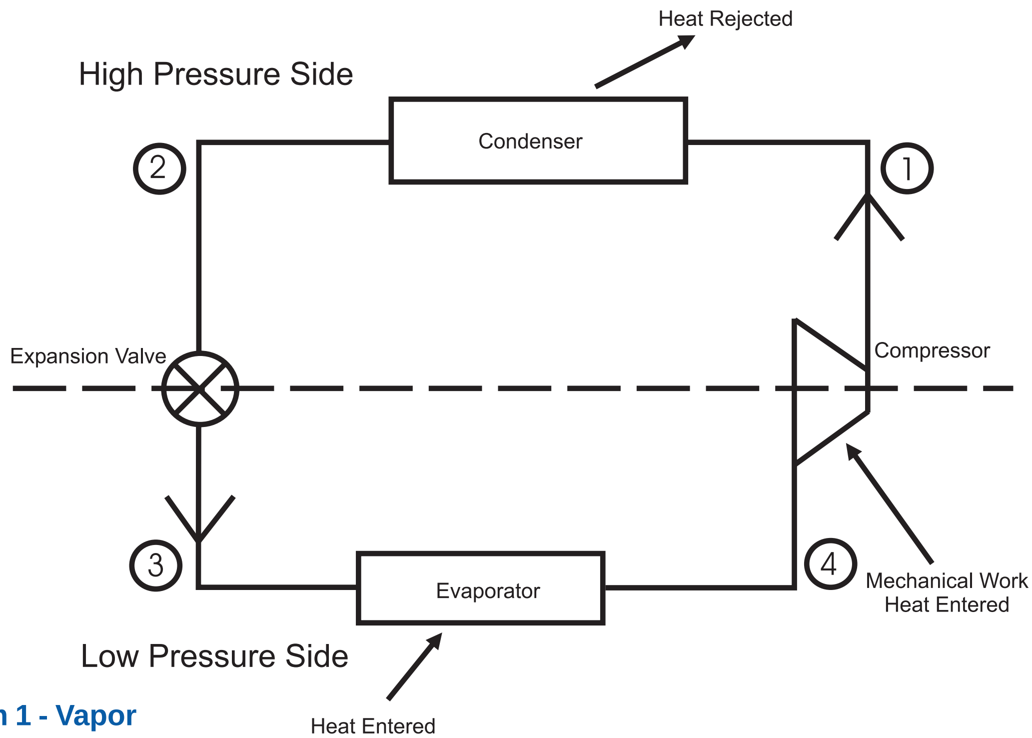


Diagram 1 - Vapor Compression Cycle

1) This refrigerant is in a high temperature, high pressure vapor form. The compressor has just raised the refrigerant pressure and the refrigerant temperature includes both the superheat from the evaporator and the heat compression from the compressor.

2) This refrigerant is in a high pressure liquid form. It is still pressurized from the compressor and it has been condensed back to liquid form by the ambient air blowing over the condenser coil. Since the refrigerant is at a high pressure its saturation temperature is well above ambient air temperature. The ambient air picks up the refrigerant's superheat from the evaporator and compressor, plus the latent heat of condensation. The refrigerant has also been subcooled in order to insure that a full column of liquid reaches the expansion valve.

3) This refrigerant is in a low temperature, low pressure liquid form. This refrigerant has just been depressurized by the expansion valve and due to the expansion its temperature has dropped. It is now at saturation and ready to be evaporated.

4) This refrigerant is in a low pressure vapor form. This refrigerant has just been boiled inside of the evaporator. Since the refrigerant is at a low pressure its saturation temperature is well below ambient air temperature. The refrigerant was boiled off by using ambient air to supply both the latent heat of evaporation and the superheat. The reason the refrigerant is superheated is to insure that no liquid reaches the compressor.

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LUVATA

HEATCRAFT

Evaporator Coil (DX) Installation Operation and Maintenance

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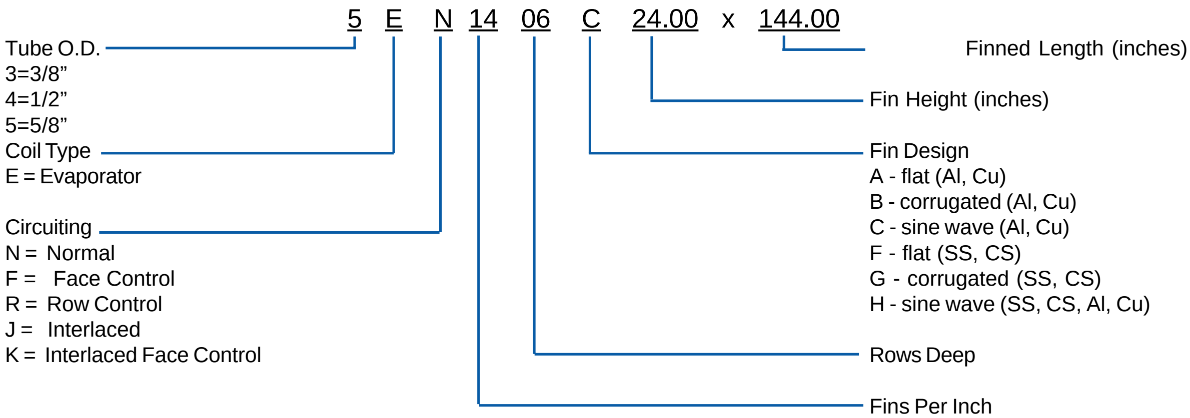
Guidelines for the installation, operation and maintenance of Heatcraft's direct expansion (DX) cooling coils have been provided to help insure proper performance of the coils and their longevity. These are general guidelines that may have to be tailored to meet the specific requirements of any one job. As always, a qualified party or individual should perform the installation and maintenance of any coil. Protective equipment such as safety glasses, steel toe boots and gloves are recommended during the installation and routine maintenance of the coil.

Receiving Instructions

1. All Heatcraft coils are factory tested, inspected and carefully packaged.
2. Damage to the coils can occur after they have left the factory. Therefore, the coils should be inspected for shipping damage upon receipt. The freight bill should also be checked against items received for complete delivery.
3. Damaged and/or missing items should be noted on the carrier's freight bill and signed by the driver.
4. For additional assistance, contact your local Heatcraft coil representative.

Nomenclature



Mounting

1. Position the coil such that the suction header is at the entering air-side of the coil and the distributor tubes are at the leaving air-side of the coil. This orientation provides counter-flow heat exchange which is required for proper coil performance.
2. The suction connection is located at the bottom of the coil when properly installed.
3. See Figure 1 - Evaporator Coils.

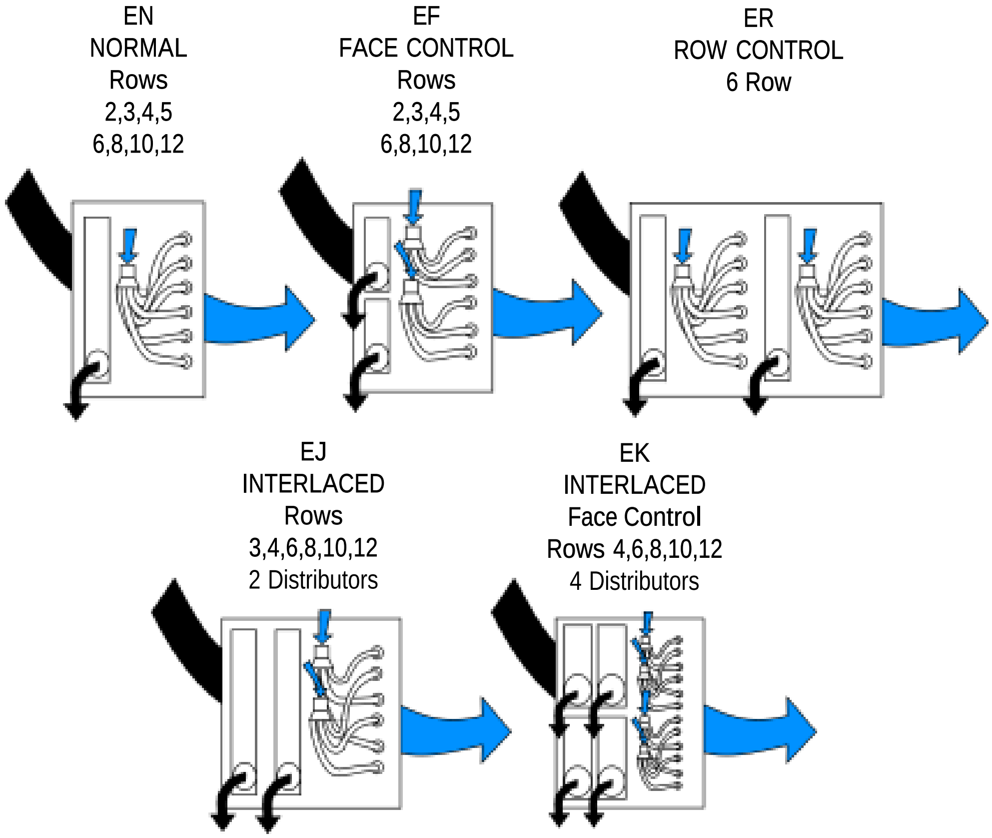


Figure 1 - Evaporator Coils

Coil Types

1. Heatcraft model EN evaporator coil is used for applications where capacity control is not required. Single or multiple distributors are available depending on the number of circuits required. Model EN evaporators utilize dual suction connections when multiple distributors are used.

2. Face control (model EF) is another evaporator coil option offered. Face control is the simplest form of capacity control. Type EF coils are normally furnished with two distributors and two suction connections offering 50% capacity reduction capabilities.

3. We offer a row control (ER) option for six row evaporators. These coils are split two rows and four rows which offer approximately a 50% capacity reduction.

4. Heatcraft modle EJ coils come with interlaced circuiting. This form of capacity control utilizes two distributors with each feeding every other tube in the first row of the coil. Each distributor has a separate suction connection.

5. For applications that require face control and interlaced circuits, we offer evaporator model EK. Interlaced face control utilizes four distributors and four suction connections.

6. See Figure 1 - Evaporator Coils.

Installation

1. Carefully remove the coil from the shipping package to avoid damage to the finned area. Damaged fins can be straightened using an appropriate fin comb. If a mist eliminator was purchased, remove it before installation.
2. We recommends cleaning the coil with a commercially available coil cleaner prior to installation. Refer to **Maintenance on** Page 6 for cleaning recommendations.
3. Proper clearance should be maintained between the coil and other structures such as the fan, filter racks, transition areas, etc.
4. Inspect the refrigerant distributor and verify that the nozzle is in place. The nozzle is generally held in place by a retaining ring or it is an integral part of the distributor itself (see Figure 2 - Distributor). If a hot gas bypass kit was ordered with the coil, the nozzle will be located in it rather than the distributor (see Figure 3 - Hot Gas Bypass Kit).
5. All field brazing and welding should be performed using high quality materials and an inert gas purge (such as nitrogen) to reduce oxidation of the internal surface of the coil.
6. If a hot gas bypass kit was ordered with the coil install it now. Complete installation instructions are in the box that contains the hot gas bypass kit. Align the side port with the hot gas line prior to brazing into place.
7. Connect the suction line and suction connection.
8. Install the expansion valve. Follow the expansion valve manufacturer's recommendations for installation to avoid damaging the valve. If the valve is externally equalized, use a tubing cutter to cut off the plugged end of the factory installed equalizer line. Next, use a de-burring tool to remove any loose metal from the equalizer line and attach it to the expansion valve. If the valve is internally equalized, the factory installed equalizer line can be left as is or it can be cut back and sealed.
9. The expansion valve's remote sensing bulb should be securely strapped to the horizontal run of the suction line at the 3 or 9 o'clock position and insulated.
10. Connect the liquid line to the expansion valve.

    Pressurize the coil, expansion valve assembly and suction connection to 100 psig with dry nitrogen or other suitable gas. The coil should be left pressurized for a minimum of 10 minutes.
11. If the coil holds pressure, the hook-up can be considered leak free. If the pressure drops by 5 psi or less, repressurize the coil and wait another 10 minutes. If the pressure drops again, there are more than likely one or more small leaks, which should be located and repaired. Pressure losses greater than 5 psi would indicate a larger leak, which should be isolated and repaired. Be sure to check valves and fittings as potential sites for leakage or bleed. If the coil is found to be leaking, contact your local Heatcraft coil representative. Unauthorized repair of the coil may void the coil's warranty (see the Heatcraft coil warranty policy on back cover).

12. Use a vacuum pump to evacuate the coil and any interconnecting piping that has been open to atmosphere. Measure the vacuum in the piping using a micron gauge located as far from the pump as possible (the vacuum at the pump will be greater than the rest of the system). Evacuate the coil to 500 microns or less then close the valve between the pump and the system. If the vacuum holds to 500 microns or less for one minute, the system is ready to be charged or refrigerant pumped down in another portion of the system can be opened to the coil. A steady rise in microns would indicate that moisture is still present and that the coil should be further vacuumed until the moisture has been removed.
13. Failure to obtain a high vacuum is indicative of a great deal of moisture or a small leak. Break the vacuum with a charge of dry nitrogen or other suitable gas and recheck for leaks (soapy water works well). If no leaks are found, continue vacuuming the coil until the desired vacuum is reached.
14. All field piping must be self-supporting.
15. Refer to Figures 4 - Hot Gas Bypass Kit Installed and Figure 5 - General Diagram, for general piping.
16. (If a mist eliminator was purchased) With the coil installed, place the mist eliminator into its brackets. Make sure the mesh is aligned with the coil face area (finned area).

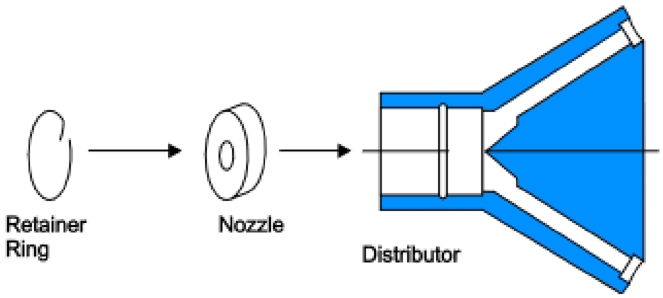


Figure 2 - Distributor

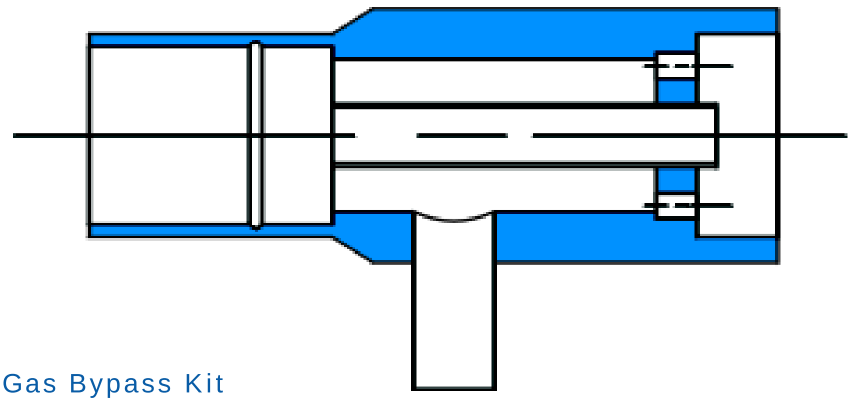


Figure3 - Hot Gas Bypass Kit

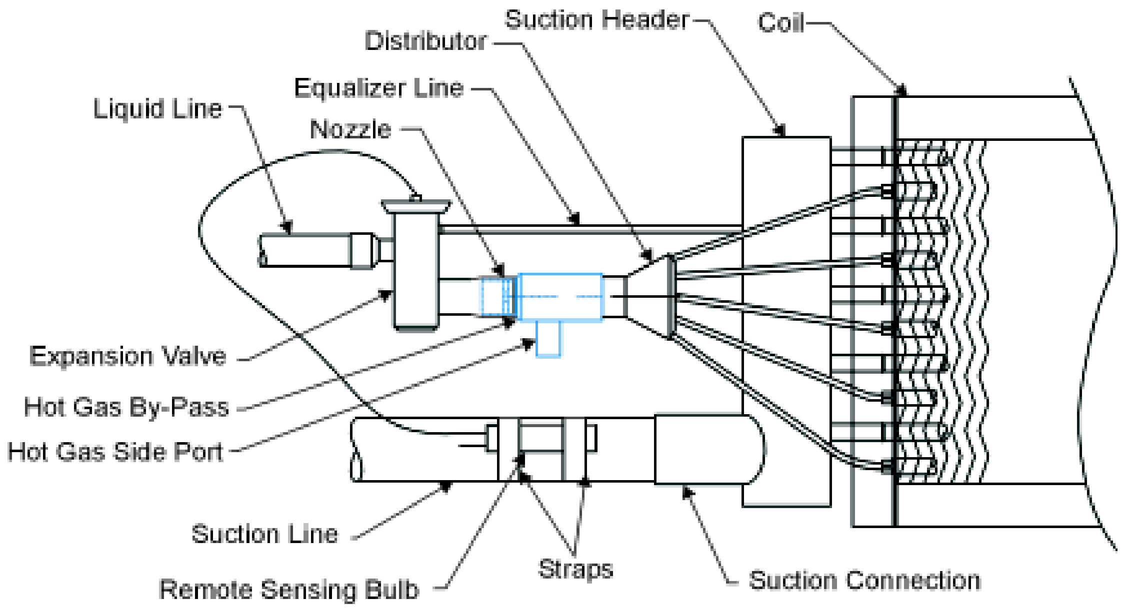


Figure 4 - Hot Gas Bypass Kit Installed

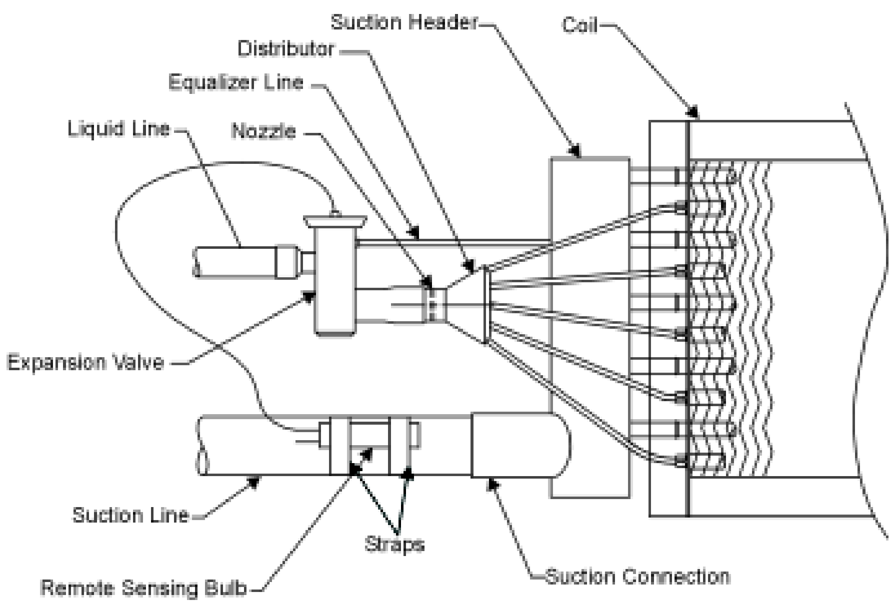


Figure 5 - General Diagram

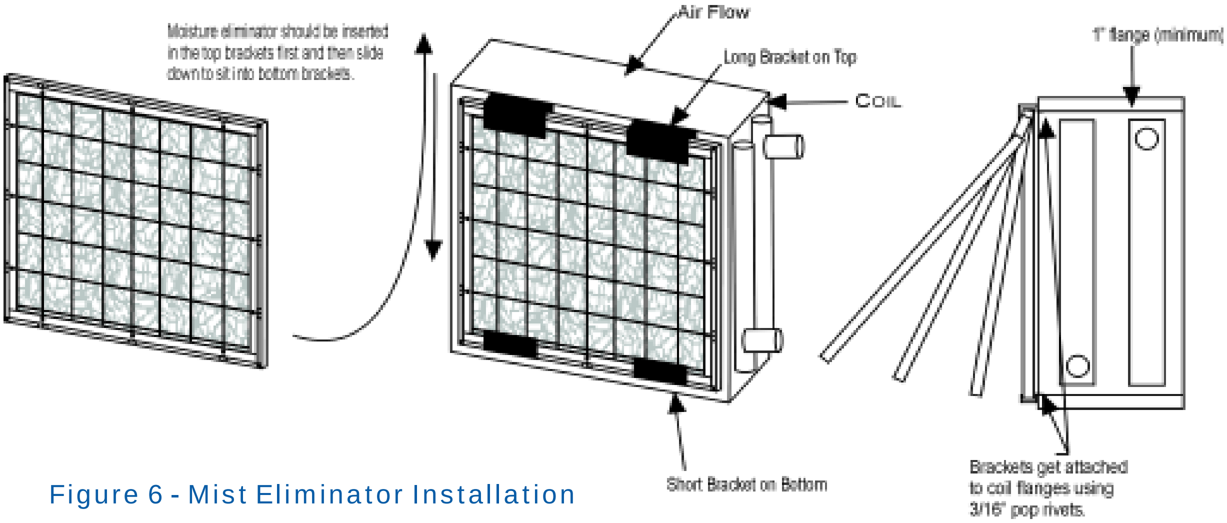


Figure 6 - Mist Eliminator Installation

Operation

1. Proper air distribution is vital to coil performance. Air flow anywhere on the coil face should not vary by more than 20%.
2. Air velocities should be maintained between 200 and 550 feet per minute without a mist eliminator and between 200 and 750 feet per minute with a mist eliminator.
3. The drain pan should be designed and installed such that there is no standing water.

Maintenance

1. Filters and mist eliminators should be inspected on a regular basis and changed as needed. Maintaining clean filters and mist eliminators is a cost-effective way to help maintain maximum coil performance and service life.
2. Periodic inspection of the coil for signs of corrosion and for leaks is recommended. Small leaks can be detected using a Halide torch. Repair and replacement of the coil and the connecting piping, valves, etc., should be performed as needed by a qualified individual(s).
3. Should the coil surface need cleaning, caution should be exercised in selecting the cleaning solution as well as the cleaning equipment. Improper selection can result in damage to the coil and/or health hazards. Clean the coil from the leaving air-side so that foreign material will be washed out of the coil rather than pushed further in. Be sure to carefully read and follow the manufacturer's recommendations before using any cleaning fluid.
4. The use of filter-dryers in the system piping is recommended along with a sight glass that has a moisture indicator. Replace the filter dryer(s) as needed.

Note: Refrigerant conversions are beyond the scope of this manual and should only be performed by qualified parties.

LUVATA

HEATCRAFT

COMMERCIAL PRODUCTS WARRANTY

Luvata Grenada LLC, hereinafter referred to as the “Company”, warrants that it will provide free suitable repair or replacement of coils in the event any coil of its manufacture used in the United States proves defective in material or workmanship within twelve (12) months from the date shipped by the Company.

THIS WARRANTY CONSTITUTES THE BUYER’S SOLE REMEDY. IT IS GIVEN IN LIEU OF ALL OTHER WARRANTIES. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT AND UNDER NO CIRCUMSTANCE SHALL THE COMPANY BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER THE THEORY BE BREACH OF THIS OR ANY OTHER WARRANTY, NEGLIGENCE, OR STRICT TORT.

This warranty extends only to the original purchaser. Of course, abuse, misuse, or alteration of the product in any manner voids the Company’s warranty obligation.

This warranty does not obligate the Company to pay any labor or service costs for removing or replacing parts, or any shipping charges.

No person (including any agent or salesman) has authority to expand the Company’s obligation beyond the terms of this express warranty, or to state that the performance of the coil is other than that published by Luvata Grenada LLC.

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