



HX/VX

INSTALLATION INSTRUCTIONS

OPERATION AND MAINTENANCE

FOREWORD

The following information is to be used by the installer as a guide. Since each installation is unique unto itself, only general topics are covered. The order in which topics may be presented may not be those required by the actual installation.

This guide does NOT supersede or circumvent any applicable national, state or local code.

The installation is to be performed only by individuals whose experience meets or exceeds the requirements of the work involved.

The installer MUST read the entire contents of this guide and develop a thorough understanding before beginning.

Due to a continuing program of product research, ICP reserves the right to discontinue or change without notice, any or all specifications or designs without incurring obligations.

INSPECTION

Thoroughly inspect all packages upon receipt. Ensure carton(s) have not been dropped, crushed or punctured. Inspect all contents for damage. If damage is found, immediately file a claim with the delivering carrier.

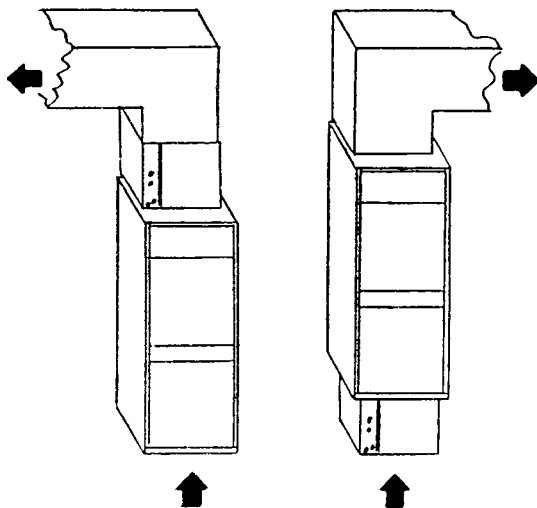


Fig. 1

Fig. 2

SAFETY

The installation and/or servicing of comfort conditioning equipment can be hazardous due to system pressures and electrical devices.

**ONLY TRAINED/QUALIFIED PERSONNEL
SHOULD PERFORM SERVICE AND/OR
INSTALLATION**

**OBSERVE ALL PRECAUTIONS AND WARNINGS
IN PRODUCT DATA OR ATTACHED TO UNIT.**

Follow all safety codes. Wear eye protection and gloves. Have a fire extinguisher readily available.

**DISCONNECT ALL POWER SUPPLIES BEFORE
ACCESSING EQUIPMENT.**

**DISCONNECTING MORE THAN ONE POWER
SUPPLY MAY BE REQUIRED TO DE-ENERGIZE
SOME EQUIPMENT.**

ELECTRIC SHOCK CAN CAUSE DEATH

DESCRIPTION

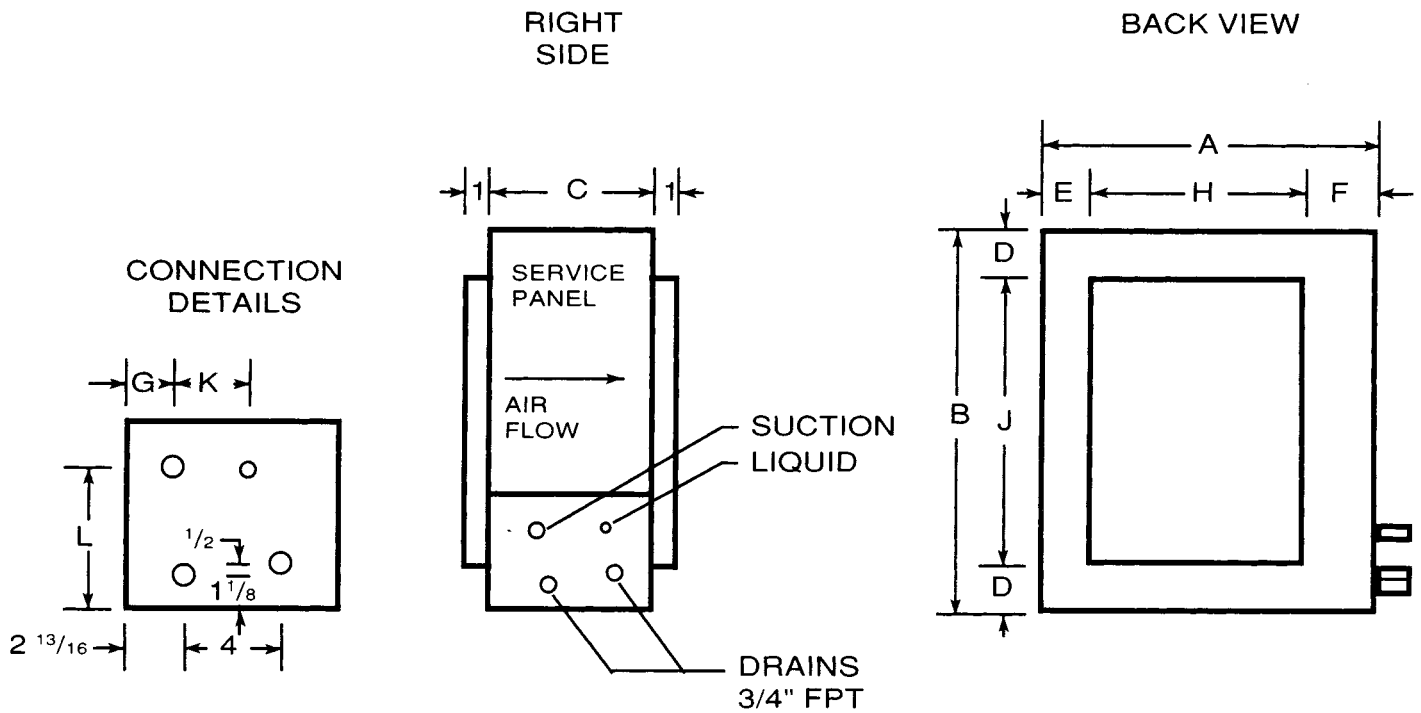
The Magic Aire model series indoor coils may be used in the following UP-FLOW applications:

AIR FLOW	FURNACE TYPE	FIG
BLOW THROUGH	FOSSIL OR ELECTRIC	1
DRAW THROUGH	ELECTRIC ONLY	2

All models are suitable for use with cooling only and heatpump systems using refrigerant 22. Consult the factory for other applications.

HX SERIES

HORIZONTAL DIRECT EXPANSION CASED COILS



DIMENSIONS

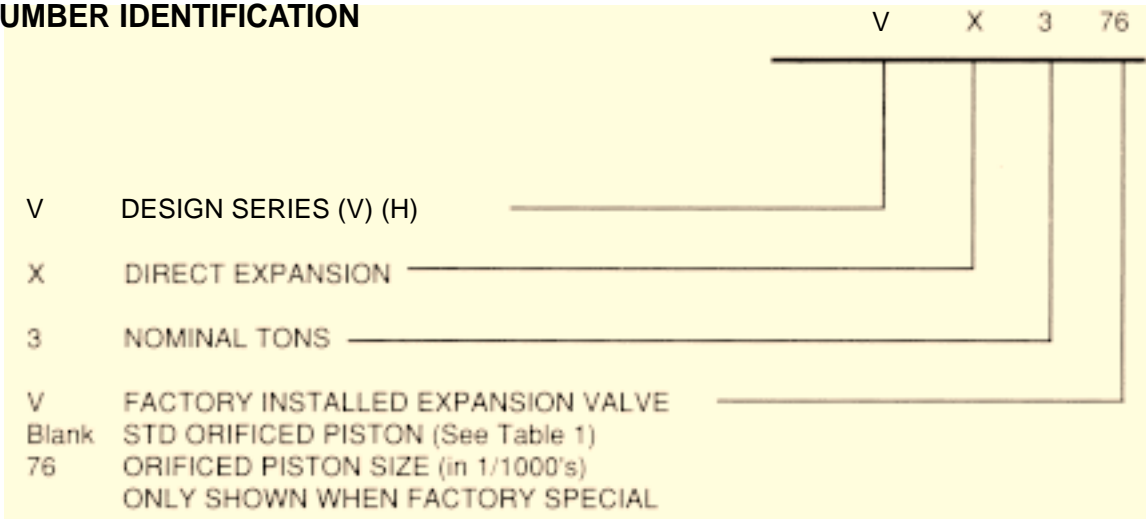
MODEL	A	B	C	D	E	F	G	H	J	K	L
HX-2	19.0	24.5	9.5	1.75	1.75	3.25	2.90	14.0	21	3.0	4.8
HX-2.5	21.0	24.5	9.5	1.75	1.75	3.25	2.90	16.0	21	3.0	4.8
HX-3	23.0	24.5	9.5	1.75	1.75	3.25	3.75	18.0	21	2.1	4.8
HX-3.5	26.0	24.5	9.5	1.75	1.75	3.25	3.75	21.0	21	2.1	4.8
HX-4	30.0	25.0	9.5	2.00	2.00	4.00	2.90	24.0	21	3.0	5.1
HX-5	36.0	25.0	9.5	2.00	2.00	4.00	2.90	30.0	21	3.0	5.1
HX-7.5V	53.5	27.5	9.5	1.75	1.75	6.63	1.50	44.5	24	4.0	3.5
HX-10V	56.5	33.5	9.5	1.75	1.75	6.63	1.50	47.5	30	4.0	3.5

SPECIFICATIONS

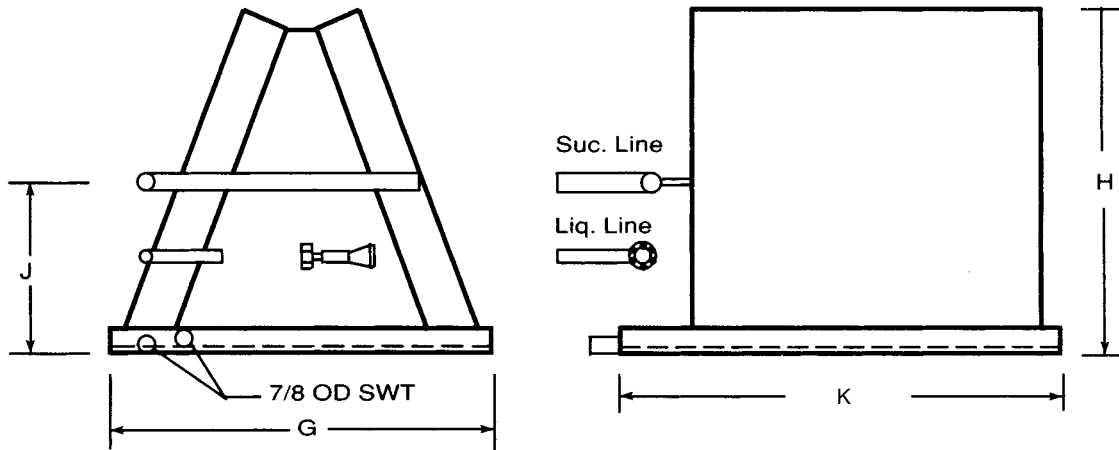
MODEL	NOM CAP	NOM CFM	FA SQ. FT	LIQUID OD SWT	SUCTION OD SWT	ROWS/FPI	SHIPPING WT.
HX-2	2.0	800	1.94	.375	.750	2/15	35
HX-2.5	2.5	1000	2.44	.375	.750	2/15	37
HX-3	3.0	1200	2.75	.375	.750	3/10	48
HX-3.5	3.5	1400	3.21	.375	.750	3/11	50
HX-4	4.0	1600	4.00	.375	.750	2/15	56
HX-5	5.0	2000	5.00	.375	.750	2/15	62
HX-7.5V	7.5	3000	7.16	.625	1.125	3/10	130
HX-10V	10	4000	10.22	.625	1.375	3/10	156

PRODUCT DESCRIPTION

MODEL NUMBER IDENTIFICATION

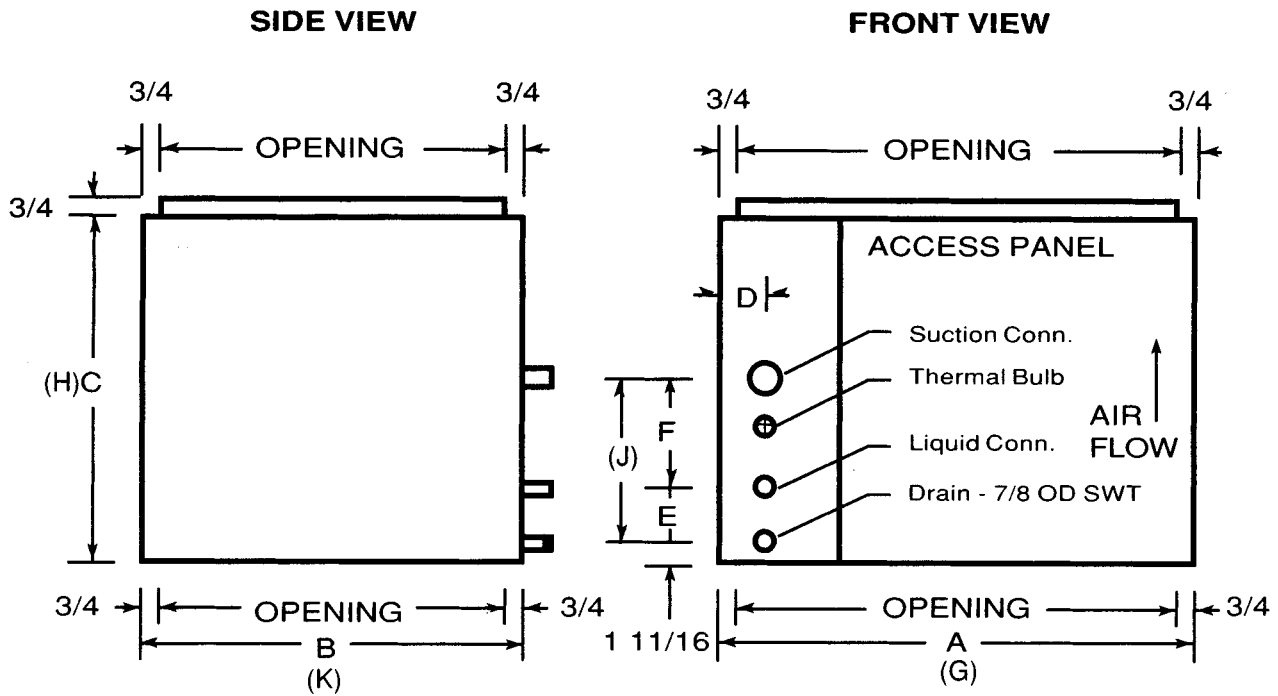


VX COIL ONLY



VX SERIES

VERTICAL DIRECT EXPANSION COILS



Coil only dimensions – (G), (H), (J), (K)

DIMENSIONS

MODEL	A	B	C	D	E	F	G	H	J	K
VX-2V	22.00	22	15.25	4.63	2.63	8.00	18.38	11.50	8.81	21.75
VX-3V	22.00	22	15.25	4.63	2.63	8.00	18.38	12.00	8.81	21.75
VX-4V	24.88	22	19.50	4.50	3.50	8.63	22.75	16.25	12.56	21.75
VX-5V	28.38	22	19.50	4.25	4.00	9.63	26.63	16.50	13.63	21.38
VX-7.5V	38.88	22	19.50	2.00	2.50	11.75	36.63	16.50	14.56	21.38
VX-10V	51.50	22	19.50	2.50	3.75	9.44	48.63	16.50	13.50	21.38
VX-15V	71.88	21	20.50	3.75	10.94	9.56	69.75	15.63	13.25	20.50

SPECIFICATIONS

MODEL	NOM CAP	NOM CFM	FA SQ. FT	LIQUID OD SWT	SUCTION OD SWT	ROWS/FPI	SHIPPING WT.	
							COIL ONLY	W/CAB
VX-2V	2.0	800	3.00	.375	.750	2/10	31	47
VX-3V	3.0	1200	3.00	.375	.750	3/10	37	54
VX-4V	4.0	1600	4.00	.500	.875	3/10	48	69
VX-5V	5.0	2000	5.11	.500	1.125	3/10	56	81
VX-7.5	7.5	3000	7.34	.625	1.125	3/10	76	119
VX-7.5 DUAL				(2) .500	(2) .875	3/10	76	119
VX-10	10	4000	10.00	.625	1.375	3/10	103	162
VX-10 DUAL				(2) .500	(2) 1.125	3/10	103	162
VX-15	15	6000	14.20	.875	1.625	3/10	-	171
VX-15 DUAL				(2) .625	(2) 1.125	3/10	-	171

REFRIGERANT CONTROL DEVICE

For thermostatic expansion valve use, see section labeled REFRIGERANT METERING DEVICE in the INSTALLATION portion of this guide.

Standard model series are shipped from the factory with an orificed piston flow control device. Fig. 3 shows location and assembly detail Table 1 list standard orifice sizes supplied from the factory.

Performance ratings can only be achieved by using a properly sized refrigerant control device. Consult the condensing unit manufacturer's specifications.

MODEL NO.	STD ORIFICE
H/VX-2	.061
HX-2.5	.070
H/VX-3	.076
HX-3.5	.082
H/VX-4	.086
H/VX-5	.098

TABLE 1

MODEL NO.	NOM. SCFM
H/VX-2	800
HX-2.5	1000
H/VX-3	1200
HX-3.5	1400
H/VX-4	1600
H/VX-5	2000

TABLE 2

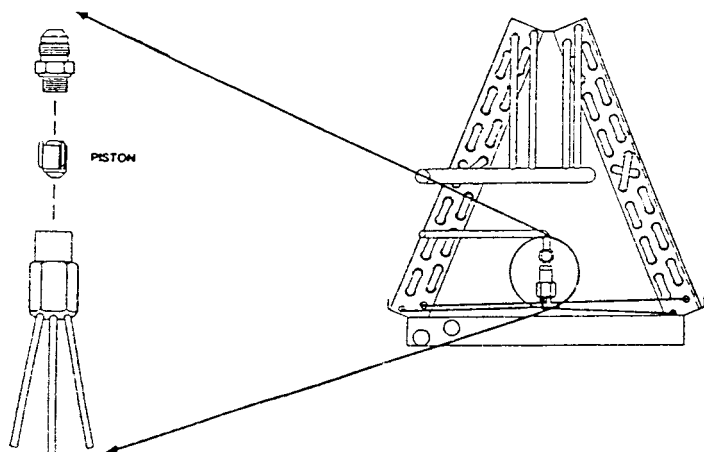


FIG 3

PRE-INSTALLATION

Cabinet models will require no adapter for most installations.

VX (coil only) models require a field supplied enclosure be constructed. Fig. 4 shows a basic design that may be suitable for an up-flow/blow through application. Please note the support bracket height dimension. Consult the air handler/furnace manufacturer's specifications for proper minimum measurement.

Field constructed cabinets must be adequately insulated to prevent condensation, and properly sealed to prevent leakage.

Measure the length and width of:

- (a) the available area on furnace/air handler
- (b) the furnace flange dimensions
- (c) the coil cabinet opening

If the coil cabinet dimension is	Then
Smaller than the furnace and Larger than flanges	No adapters should be needed
Larger than furnace	Adapters are required. (See Fig. 5)
Smaller than flanges	Adapters are required. (See Fig. 6)

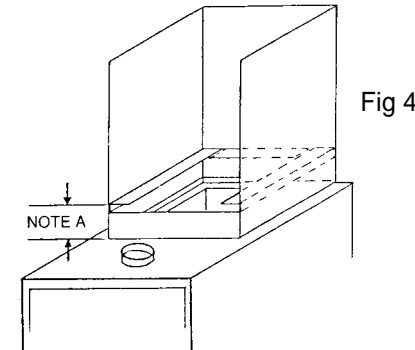


Fig 4

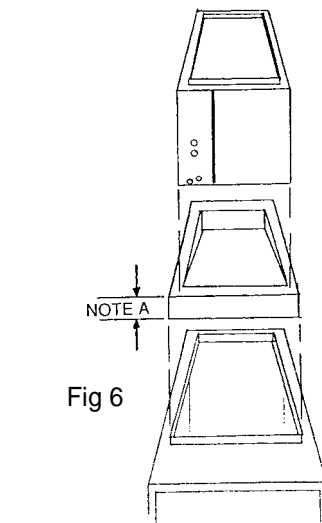


Fig 6

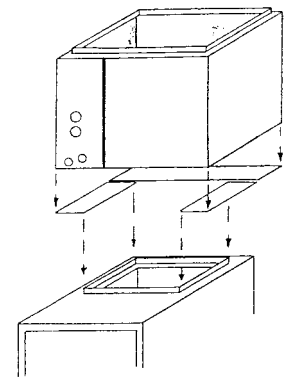


Fig 5

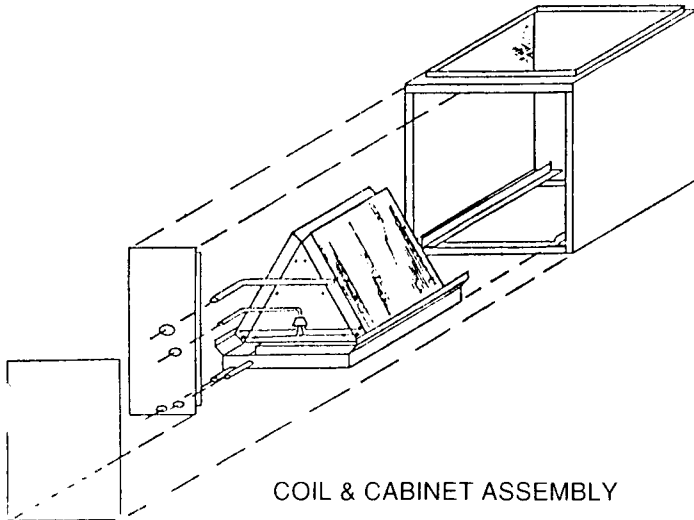
NOTE A –
Consult air handler manufacturer's specifications for dimensional requirements.

COIL & CABINET

Fig. 7 explains the assembly of the coil within the cabinet. Seal tubing and drain line openings with mastic tape to prevent air leakage. Ensure that back of coil assembly drain pan is firmly nestled against rear of cabinet to prevent air by-passage.

NOTE: PROPER DRAINAGE DEPENDS UPON ORIENTATION OF ASSEMBLY!

ALWAYS SHIM ASSEMBLY TO LEVEL OR SLIGHT SLOPE TO THE FRONT TO PROMOTE CONDENSATE FLOW ON ANY INSTALLATION.



COIL & CABINET ASSEMBLY

Fig 7

INSTALLATION

REFRIGERANT PIPING

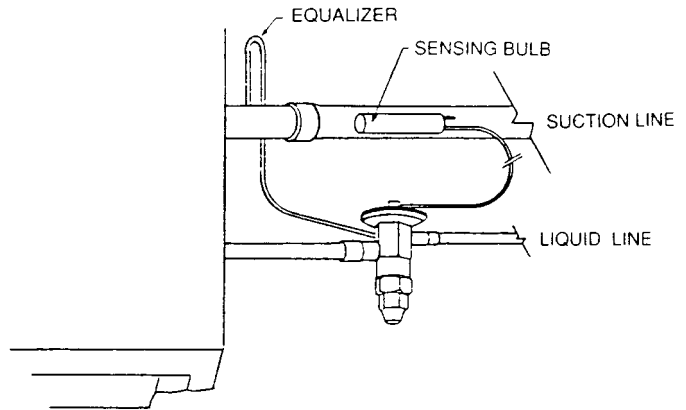
Always use the condensing unit manufacturer's recommended line sizes. The suction line must be insulated for satisfactory operation. Observe all condensing unit manufacturer's recommendations or requirements. Use refrigerant grade copper only.

REFRIGERANT METERING DEVICE

Confirm installed orificed piston is correct per condensing unit's specifications for a matched manufacturer's system.

If it is desired to install and use a thermostatic expansion valve in lieu of the orificed piston, the piston must be removed from the assembly. If an expansion valve is to be used when installed as the indoor coil of a heatpump, a by-pass check valve must be used.

Fig. 8 shows the basic installation of a TXV and the location of the sensing bulb.



FOLLOW TXV MANUFACTURER'S INSTRUCTIONS

Fig 8

Magic Aire strongly recommends evaporator coil usage in up-flow arrangements only. However, it sometimes becomes necessary for their usage in down-flow applications. Because of condensate blow off, Magic Aire requires installation of an additional drain pan in the bottom of the plenum. Some of those instances will need a condensate pump. Magic Aire's warranty only covers correctly applied applications. (See Fig. 9)

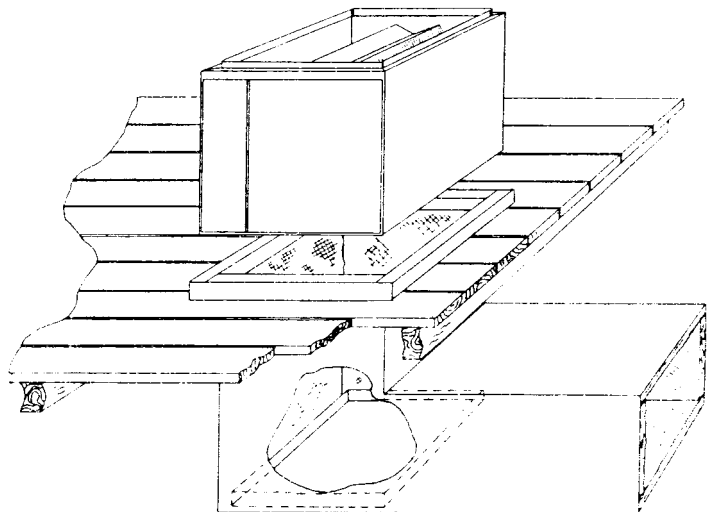


Fig 9

INSTALLATION

LEAK TEST

Pressurize sealed system and check for leaks.

EVACUATION

Always evacuate (portions of) a system that have been exposed to the atmosphere. Purge line sets before attaching to equipment if suspect of having particulate matter.

DUCTWORK

Ductwork and all connections must comply with any applicable codes and be constructed to industry accepted standards. The use of flexible duct connectors can reduce transmitted sound and vibration.

CONDENSATE CONNECTION

Attached to the base of the coil(s) is(are) an open centered drain pan which collects and directs condensate toward two piping connections.

The connection at the base of the pan is the primary drain. Attach a properly sized trap to this drain.

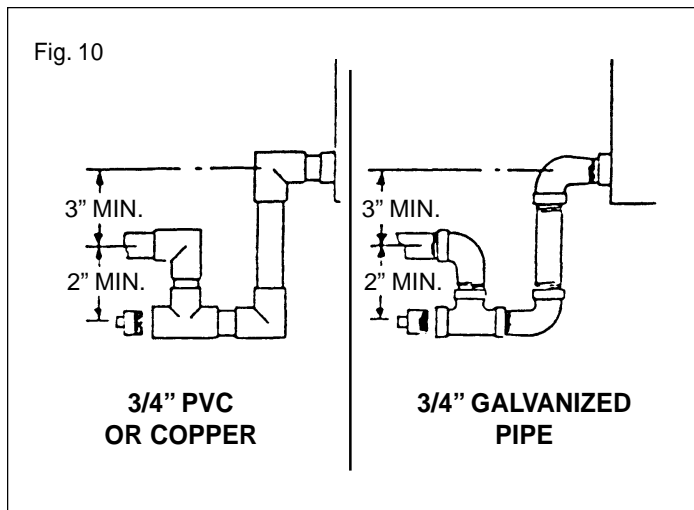
Fig. 8 can be used as a guide for the installation of the trap.

All drain lines must be pitched downward a minimum of 1/4 inch per foot of horizontal run to assure proper flow.

When condensate lines are run in an unconditioned area, insulation may be required to prevent it from sweating.

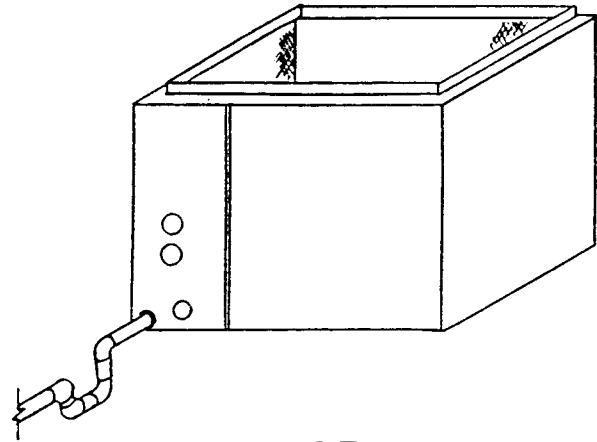
NOTE: FEDERAL HOUSING ADMINISTRATION REQUIRES A SECONDARY DRAIN PAN BE PROVIDED UNDER THE UNIT WHEN IT IS INSTALLED OVER LIVING AREAS. IT IS ADVISED TO PROVIDE THE SAME IN ANY AREA WHERE WATER CAN CAUSE DAMAGE.

Condensate drain must consist of a minimum of 3/4 in. copper tubing or 3/4 in. galvanized iron pipe or PVC-type plastic pipe. (Fig. 10) The condensate drain trap must be properly designed to ensure the removal of condensate. (Incorrect trapping can hold water in pan causing overflow.) Be sure drain pitches downward at a slope of one inch every 10 feet.



CAUTION:

If unit is located above an occupied space, or where damage can result from condensate overflow, install a water tight pan of corrosion-resistant metal beneath unit to catch any overflow due to restricted drain lines. A separate 3/4 in. condensate drain must be provided from this added pan. (Fig. 11)



— OR —

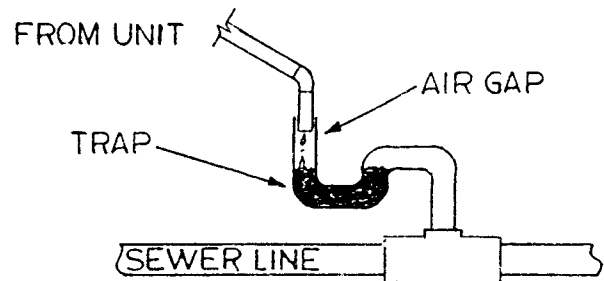


Fig. 11

START UP

Refer to the condensing unit installation and start-up instructions for system start-up and charging procedures.

All Products Limited Warranty



United Electric warrants that goods will be free from defects in material and workmanship under normal use and maintenance for a period of one year from the date of original installation. A new or rebuilt part to replace any defective part will be provided without charge, PROVIDED the defective part is returned to United Electric. The replacement part assumes the unused portion of the warranty.

THIS WARRANTY DOES NOT INCLUDE LABOR or other costs incurred for identifying, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts.

UNITED ELECTRIC WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance.
2. Damage or repairs required as a consequence of faulty installation or application by others.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers, or other damages due to the inadequacy or interruption of electrical services.
4. Damage or repairs required as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operation.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of United Electric.
6. Parts not supplied or designated by United Electric.
7. United Electric products installed outside the United States and Canada.

FOR SERVICE OR REPAIR, FOLLOW THESE STEPS IN ORDER:

FIRST – Contact the installing contractor.

SECOND – Contact the distributor or nearest United Electric representative.

THIRD – Contact

UNITED ELECTRIC CO., L.P.
501 Galveston Street
Wichita Falls, Texas 76301
Phone: (940) 397-2100

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

BUYER'S EXCLUSIVE REMEDY – The buyer's acceptance of the goods shall confirm the buyer's review and acceptance of United Electric's All Products Limited Warranty, notwithstanding any other written or oral warranty of goods that may be given to the buyer. **THE BUYER'S EXCLUSIVE REMEDY AGAINST UNITED ELECTRIC SHALL BE LIMITED TO UNITED ELECTRIC'S ALL PRODUCT LIMITED WARRANTY. NO OTHER REMEDY, INCLUDING, BUT NOT LIMITED TO, RECOVERY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS, SHALL BE AVAILABLE TO THE BUYER.**

Supersedes any other warranty certificates supplied with the product.