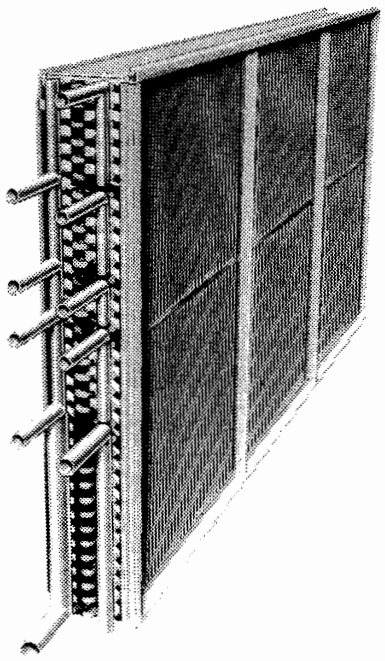
TRANE™

Installation Maintenance

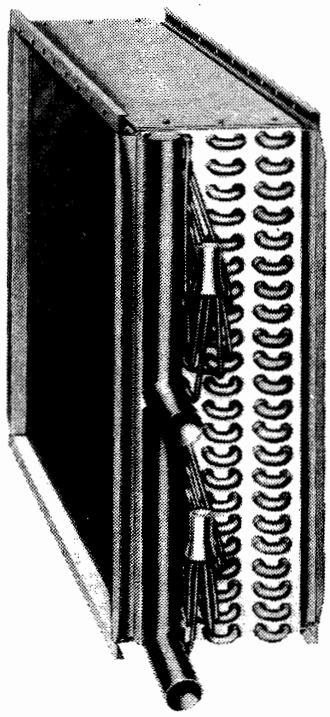
COIL-IM-2B

Library	Service Literature
Product Section	Air Handling
Product	Coils Cooling/Heating
Model	Coil
Literature Type	Installation/Maintenance
Sequence	2B
Date	August 1986
File No.	SV-AH-COIL-COIL-IM-2B-686
Supersedes	COIL-IM-2A (383)

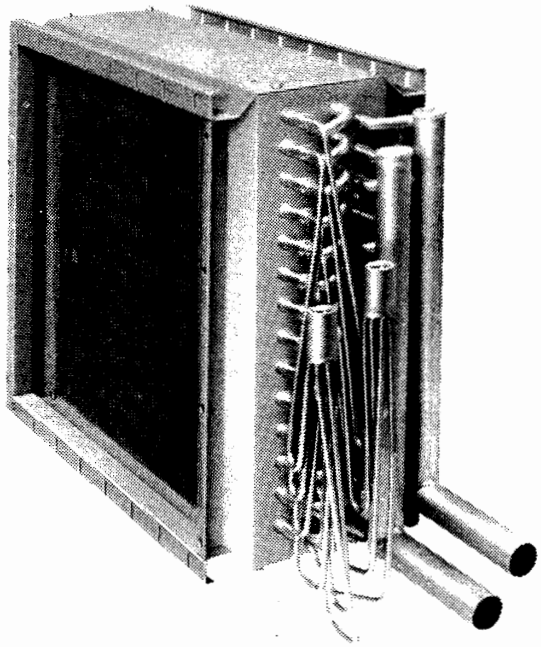
Type H & F Prima-Flo® and Sigma-Flo® and Type FD Delta-Flo™ Refrigerant Coils



Type H



Type F



Type FD

Art No.
AH/COIL-2017A
AH/COIL-2002
AH/COIL-2015

Since The Trane Company has a policy of continuous product improvement, it reserves the right to change specifications and design without notice. The installation and servicing of the equipment referred to in this booklet should be performed by qualified, experienced technicians.

X39640277-02

Model Number Description

Trane products are identified by a multiple character model number that precisely identifies a particular type of unit. An explanation of the alphanumeric model number is shown below. It will enable the owner or Service Engineer to define operation, components and accessories.

Model No.
Digit No.

D	W	O	A	E	E	C	4	D	A	A
1	2	3	4	5	6	7	8	9	10	11

(Continued)

Digit 1
Trane Std. Cooling and Heating Coils

Digits 2 & 3
Coil Type

WO = W
WA = W (Alt. Tubes)
WD = WD
DO = D
KO = K
P2 = P2
P4 = P4
P8 = P8
DD = DD
F1 = F (5/16 dist. tubes)
F2 = F (1/4 dist. tubes)
F3 = F: F1 (Ent. Air Side) - F2 (Lvg. Air Side)
F4 = F: F2 (Ent. Air Side) - F1 (Lvg. Air Side)
F5 = FD - 1/4 Distr Tubes
F6 = FD - 3/16 Distr Tubes
F7 = FD: F5 Ent Air Side - F6 Lvg Air Side
F8 = FD: F6 Ent Air Side - F5 Lvg Air Side
(F5–F8: Delta Flo)
FA = 1/4 Distr Tubes (Intertwined)
FB = 3/16 Distr Tubes (Intertwined)
NS = NS
NO = N
AO = A
AA = A (Alt. Tubes)
TO = T
TT = TT
ST = ST
HA = H - Small Header Size
HB = H - Large Header Size
WC = WC
WS = WS
WL = WL
DL = DL
LL = LL
SS = Special

Digit 4
Development Sequence

Digit 5
Coil Application

A = Unit - Heating
B = Unit - Cooling (Non-Sprayed)
C = Unit - Cooling (Sprayed)
D = Shipping - Heating
E = Shipping - Cooling (W/O Drain Holes)
F = Shipping - Cooling (W/Drain Holes)
S = Special

Digit 6
Finned Width

A = 6
B = 9
C = 12
D = 15
E = 18
F = 24
G = 30
H = 33
J = 36
K = 42
L = 48
M = 54
S = Special

Digit 7 & 8
Finned Length

First Character	+	Second Character
A = 0		0
B = 10		1
C = 20		2
D = 30		3
E = 40		4
F = 50		5
G = 60		6
H = 70		7
J = 80		8
K = 90		9
L = 100		
M = 110		
N = 120		
P = 130		
R = 140		
T = 150		
U = 160		
S = Special		

Digit 9
Rows

A = 1
B = 2
C = 3
D = 4
E = 6
F = 8
G = 10
H = 12
S = Special

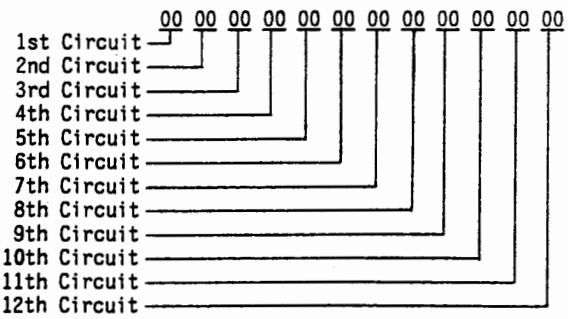
Digit 10
Design Sequence

Digit 11
Fin Type

A = Sigma-Flo®
B = Prima-Flo®
D = Delta-Flo™
S = Special

Heat Recovery Coil Header Arrangement (To be put on 2nd Coil)

Number of Header Tubes for Each Circuit Listed in Sequence Starting from Top of Coil



Total Number of Headered Tubes Available (Tubes Fed)

	Finned Width							
Rows	12	18	24	30	33	36	42	48
4 & 6	8	12	16	20	22	24	28	32
2 & 3	4	6	8	10	11	12	14	16
1	2	3	4	5	5	6	7	8

The Trane Company
La Crosse, Wisconsin 54601-7599
Printed in U.S.A.

Model No.
Digit No.

L	4	A	O	A	A	A	O	O	K
12	13	14	15	16	17	18	19	20	21

Digit 12 & 13 Fin Spacing

First Character	+	Second Character
A = 40		0
B = 50		1
C = 60		2
D = 70		3
E = 80		4
F = 90		5
G = 100		6
H = 110		7
J = 120		8
K = 130		9
L = 140		
M = 150		
N = 160		
P = 170		
R = 180		

Digit 14 Fin Material
A = Aluminum
C = Copper
S = Special

Digit 15 Fin Coating
0 = None
B = Phenolic Plus ZRC
P = Phenolic
Z = ZRC
S = Special

Digit 16 Tube Material
A = Standard Copper
B = .024 Wall Copper
C = .035 Wall Red Brass
D = .049 Wall Red Brass
S = Special

Digit 17 Casing Option
A = Standard
B = Stainless Steel
C = Special

Digit 18 Airflow and Connection Side

Airflow Direction	Connection
A = Horizontal	Right
B = Horizontal	Left
C = Vertical Up	Right
D = Vertical Up	Left
E = Vertical Down	Right
F = Vertical Down	Left

Digit 19 Turbulators or Refrigerant Circuits
T = W/Turbulators
O = W/O Turbulators

Sigma-Flo & Prima-Flo
Number of Circuits (Tubes Fed) Standard or Upstream Rows on a Vertical Split

	Finned Width				
	12	18	24	30	33
A =	8	12	16	20	22
B =	4	6	8	10	11
C =	2	3	4	5	7
D =	1	2	2	4	3
E =		1		2	

Number of Circuits (Tubes Fed) per Distributer on a Horizontal Split (Tubes Fed--Top Half and Bottom Half)

	Finned Width				
	12	18	24	30	33
F =	4-4	6-6	8-8	10-10	11-11
G =	2-2	3-3	4-4	5-5	5-6
H =	1-1	1-2	2-2	2-3	3-4
J =		1-1	1-1	2-2	1-2
K =				1-1	

S = Special

Delta-Flo
Number of Circuits (Tubes Fed) per Distributor on a Standard or Upstream Rows on a Vertical Split

	Finned Width						
	18	24	30	33	36	42	48
L =	14	19	24	26	28	33	38
M =	7	9	12	13	14	16	19
N =	4	4	6	6			
P =	2	2					

Number of Circuits (Tubes Fed) on a Horizontal Split (Tubes Fed--on a Top Half and Bottom Half)

	Finned Width						
	18	24	30	33	36	42	48
R =	7-7	9-10	12-12	13-13	14-14	16-17	19-19

Number of Circuits (Tubes Fed) on a Intertwined coil

	Finned Width						
	18	24	30	33	36	42	48
T =	7-7	9-10	12-12	13-13	14-14	16-17	19-19
U =	3-4	4-5	6-6	6-7	7-7	8-9	9-10
V =	2-2	2-2	3-3	3-3			

S = Special

Digit 20 Vertical Split Refrigerant Coils

Sigma-Flo & Prima-Flo
Number of Circuits (Tubes Fed) on Downstream rows of a Vertical Split

	Finned Width				
	12	18	24	30	33
A =	8	12	16	20	22
B =	4	6	8	10	11
C =	2	3	4	5	7
D =	1	2	2	4	3
E =		1		2	

O = No Vertical Split
S = Special

Delta-Flo
Number of Circuits (Tubes Fed) on Downstream Rows of a Vertical Split

	Finned Width						
	18	24	30	33	36	42	48
L =	14	19	24	26	28	33	38
M =	7	9	12	13	14	16	19
N =	4	4	6	6			
P =	2	2					

O = No Vertical Split
S = Special

Digit 21 Plant Location
C = Clarksville
K = Lexington
L = La Crosse

General Information

Notice

World environmental scientists have concluded, based on the best currently available evidence, that ozone in our upper atmosphere is being reduced due to release of CFC fully halogenated compounds.

The Trane Company urges that all HVAC servicers working on Trane equipment, or any manufacturer's products, make every effort to eliminate, if possible, or vigorously reduce the emission of CFC, HCFC and HFC refrigerants to the atmosphere resulting from installation, operation, routine maintenance, or major service on this equipment. Always act in a responsible manner to conserve refrigerants for continued use even when acceptable alternatives are available.

Refrigerant used in any type of air-conditioning or refrigerating equipment should be recovered for reuse, recovered and/or recycled for reuse, reprocessed (reclaimed), or properly destroyed, whenever it is removed from equipment. Never release to the atmosphere!

Literature Change History

COIL-IM-2B (June 1986)

Includes addition of type FD (Delta-Flo) coils.

General

Trane refrigerant coils, Type F, FD and H, are factory dehydrated and sealed with a 10 - 20 psig holding charge prior to shipment. Do not break the seals until the coil is installed.

Coils are shipped packaged. Upon receipt, inspect each coil for any in-transit damage. Claims for shipping damage must be filed immediately with the delivering carrier. Make specific notations concerning the damage on the freight bill. Concealed damage must be reported within 15 days of receipt.

General data is given in Table 1. Type F refrigerant coils have certified ratings when used with Refrigerant-12 or -22, and may be used with most other refrigerants, such as R-500 or R-502 Type FD are certified for R-22 only. There is not an ARI certification program for type H coils. Maximum operating pressure for Type F, FD and H coils is 300 psig. See Figure 1. Use a thermal expansion valve or other metering device to control refrigerant flow into the coil.

Table 1
General Data for Type F, FD & H Coils

Prima-Flo and Sigma-Flo (Type F Coils)

Number of Rows	Finned Width	Finned Length	Fins Per Foot		Tube Material	Max. Std. Operating Pressure (Tube Side)
			Aluminum	Copper		
2, 3, 4, 6, 8	12", 18, 24, 30, 33"	12" thru 144"	80-168	80-144	5/8" OD Copper (Std)	300 PSIG

Delta-Flo (Type FD Coils)

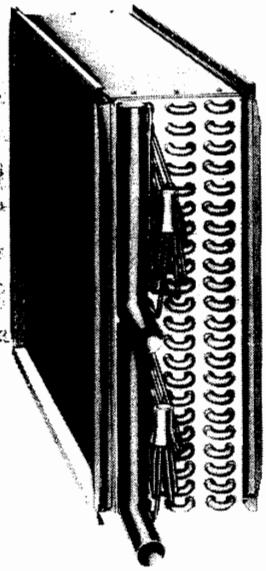
Number of Rows	Finned Width	Finned Length	Fins Per Foot		Tube Material	Max. Std. Operating Pressure (Tube Side)
			Aluminum	Copper		
4, 6	18", 24, 30 33, 36, 42 48"	12" thru 168"	72-168	N/A	1/2" OD Copper (Std)	300 PSIG

Type H Coil

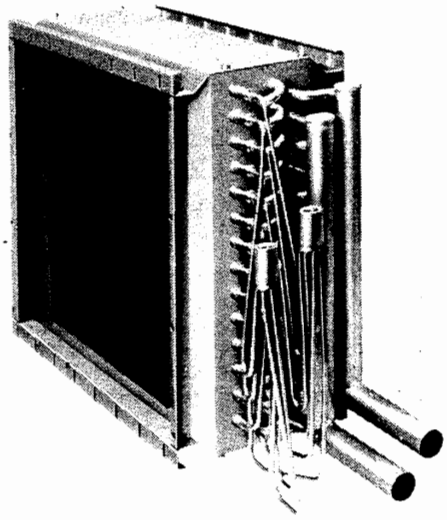
Number of Rows	Finned Width	Finned Length	Fins Per Foot		Tube Material	Max. Std. Operating Pressure (Tube Side)
			Aluminum	Copper		
1, 2, 3 4, 6	12", 18, 24 30, 33, 36, 42, 48"	12" thru 144	80-168	80-144	5/8" OD Copper (Std)	300 PSIG

Figure 1
Type F, FD and H
Refrigerant Coil

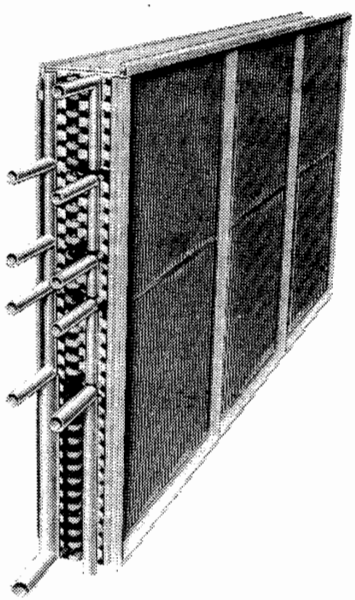
Type F
Coil



Type FD
Coil

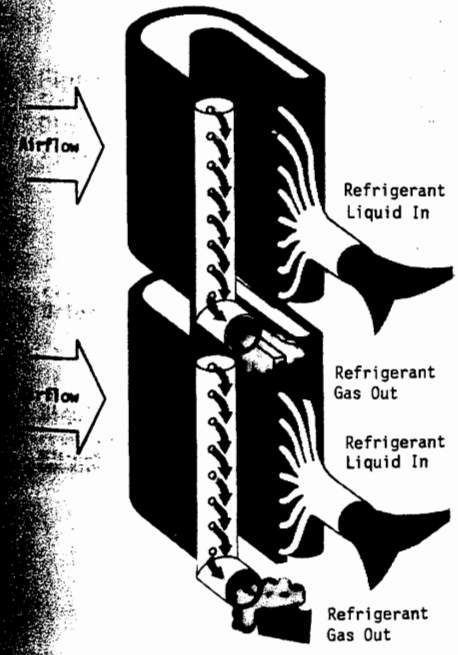


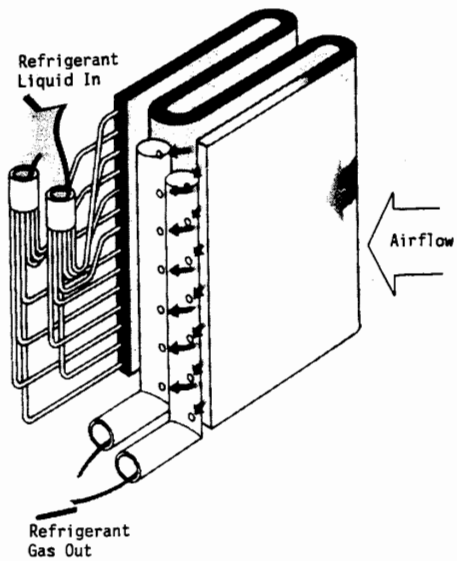
Type H
Coil

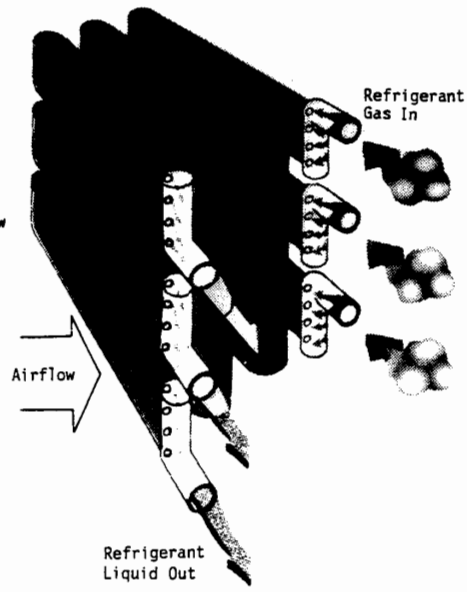


Art No.
AH/COIL-2002
AH/COIL-2015
AH/COIL-2017A

Note: Distributor is mounted in a vertical position per the above illustration.







Art No.
AH/COIL-2002A
AH/COIL-2016
AH/COIL-2017

Note: Above coil circuits are illustrated to show the direction of refrigerant flow.

Installation

Note: Type F, FD and H coils have been dehydrated and charged with a holding charge. To prevent leaks and system contamination, do not break the seals until the coil is installed.

To determine which side of the coil the piping connections should be on, look at the fin surface on the downstream side and with the air blowing in your face, call out right or left hand connections.

Install the coil with airflow in the same direction as indicated on the coil nameplate or casing. Be careful not to damage the coil fins while handling.

WARNING: Do Not Use Slots In Coil Casing To Lift Coils Weighing More Than 750 Pounds.

The suction connection must be at the bottom of the suction header. Refrigerant distributor must be in a vertical down-feed position. A refrigerant coil should not be used for vertical upward or downward airflow or in a vertical tube position.

When stacking more than three coils, stacking channels or bar stock (supplied by the installer) should be used. If used, stacking channels should be positioned under both ends of the coil and at each center support. To ensure that no unconditioned air bypasses the stacked coils, install caulk or metal blockoffs between and around the coils, on the entering air side.

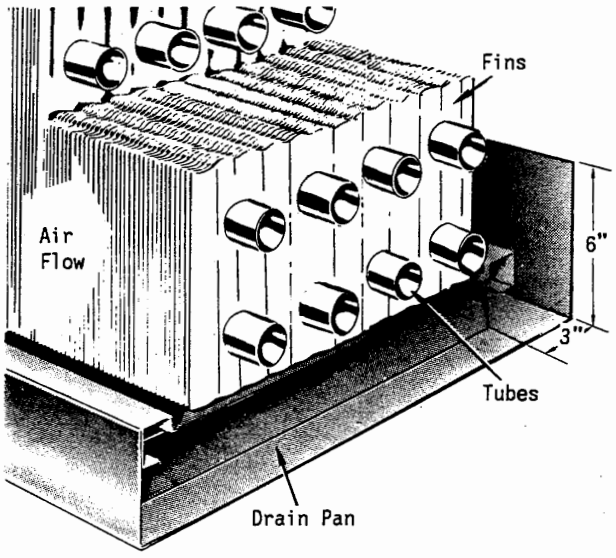
Note: Straighten coil fins at the time of installation to maintain maximum heat transfer. For additional information refer to Maintenance Section.

Provide means for condensate collection and removal. Figure 2 illustrates the dimensional recommendations for drain pans.

Be sure that filters are installed upstream of the coil. Clean, efficient filters will minimize the need for frequent coil cleaning and will help keep the coils operating at maximum performance.

Leak-test the entire refrigeration system after all piping is complete. Charge the unit according to approximate weight requirements, operating pressures and superheat/subcooling measurements.

Figure 2
Recommended Drain Pan & Dimensions



Art No.
AH/COIL-1019
AH/CLCH-2001

Refrigerant Piping

Follow accepted refrigeration piping practices and safety precautions. See Figure 3 for typical refrigerant coil piping and components. Specific recommendations are provided with the highside components, including instructions for pressure-testing, evacuation, and system charging. General recommendations for component selection and line sizing follow.

Liquid Line Sizing

All compressors have a Refrigerant Charge Limit (RCL) that must not be exceeded. Since the RCL and pressure drop are in direct conflict with each other, Trane recommends that the liquid line be sized as small as possible, while maintaining a low enough pressure drop to ensure 5 F of subcooling at the expansion valve.

Liquid Line Components

Trane recommends the use of a properly sized liquid line filter-drier, installed upstream from the expansion valve and as close to the evaporator coil as possible. Base filter-drier selection on a maximum pressure drop of 2 psi at the design condition.

Install moisture indicator/sight glass between the expansion valve and filter-drier. The moisture indicator/sight glass must be sized to match the size of the liquid line at the thermal expansion valve.

Size liquid line shutoff valve with an access port using the selected liquid line OD, and install it close to the condenser.

Minimize use of other valves, tube bends and reducers, since these items tend to increase pressure drop and to reduce subcooling at the expansion valve. Liquid line receivers, other than those factory-installed, are not recommended.

The Thermal Expansion Valve (TEV) must be selected for proper size and capacity. The size of the valve (TEV) should cover the full range of loadings. Check that the valve will successfully operate at the lightest load condition. Also consider the use of a hot gas bypass valve when sizing the TEV. Select expansion valves with external equalizer connections, and those designed to operate against a back pressure of 20 pounds per square inch higher than actual evaporator pressure.

Install the TEV directly on the coil liquid connection (distributor) provided. The liquid distributor must be in a true vertical position.

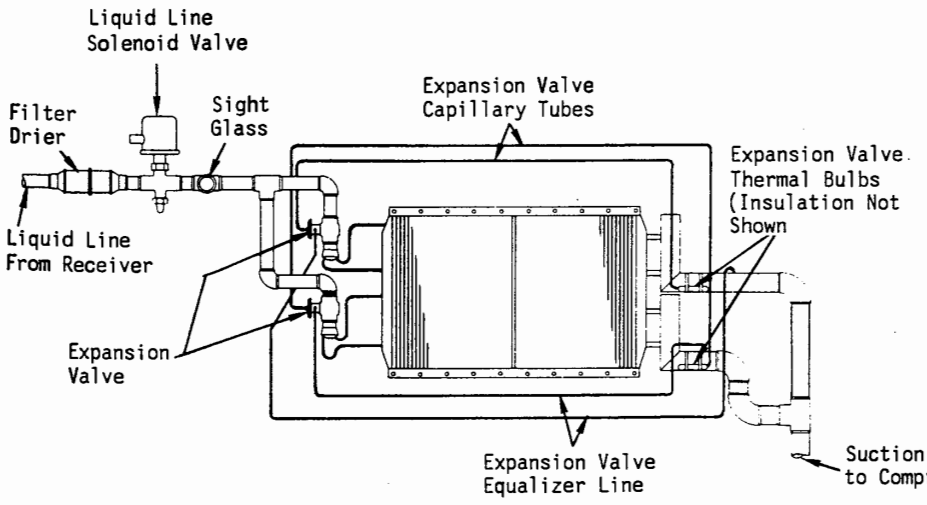
Caution: Disassemble the thermal expansion valve before completing the brazing connections. If necessary, wrap the valve in a cool, wet cloth while brazing. Failure to protect the valve from high temperatures may result in damage to the internal components.

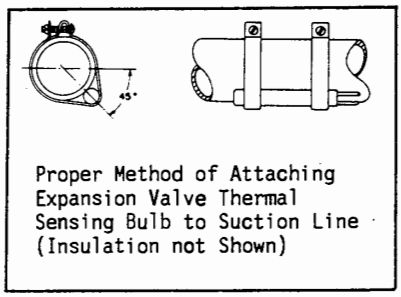
Suction Line Sizing

Suction line tubes must be sized to maintain refrigerant vapor velocities that are high enough to ensure oil entrainment under all operating conditions.

It is not necessary to pitch horizontal suction lines toward the compressor when the refrigerant coil is used with Trane condensing units, which are designed with a gas trap in the suction line just prior to the compressor.

Figure 3
Recommended Refrigerant Piping and Components for Type F and FD Coils





Proper Method of Attaching Expansion Valve Thermal Sensing Bulb to Suction Line (Insulation not Shown)

Notes:
1. Refrigerant distributor must be in vertical down-feed position.
2. Install the expansion valve directly on the distributor.
3. Install the sight glass and filter-drier as close to the evaporator coil as possible.
4. Install a Schraeder valve/pressure tap near the expansion valve sensing bulb location on each circuit.
5 Refer to the Trane Refrigeration Manual for complete suction and liquid line piping arrangements.
6. Reference refrigerant heat recovery Application Manual (SYS-AM-5) for type H coil applications.

Suction Line Components

Install suction line pressure tap on the leaving side of the evaporator coil near the TEV sensing bulb location. Accurate superheat measurement and thermal expansion valve adjustment demands that suction pressure be measured near the evaporator coil.

Suction line filter-driers are usually only necessary on systems that have experienced a severe compressor motor burnout or other failure which results in extremely high refrigerant temperature. Do not leave this filter-drier in the suction line permanently.

Refrigerant Charging

Evacuate and leak-test the entire refrigeration system after piping is complete. Charge the unit according to approximate weight requirements and operating pressures. See Table 2 for coil internal volume. Then measure superheat and subcooling after the system has been allowed time to stabilize and adjust the thermal expansion valve setting if necessary. Always allow the system to stabilize before taking pressure or temperature readings.

Thermal Expansion Valve Adjustment

The importance of proper suction gas superheat cannot be over-emphasized. Accurate superheat measurements should be taken with other trouble analysis procedures to monitor refrigerant flow, coil efficiency and compressor protection.

Refer to compressor or condensing unit service literature for recommended superheat setting.

Table 2
Internal Volume of Prima-Flo and Sigma-Flo Type F and H Refrigerant Coil (Cubic Feet)

Coil Finned Width	Headers Cu. In. Per Coil	Return Bends In^3/Coil Rows of Tubes						Tubes In^3/(Inch of Coil Length) Rows of Tubes						Coil Finned Width
		1	2	3	4	6	8	1	2	3	4	6	8	
12"	14		10	15	20	30	40		4.4	6.7	8.8	13.3	17.7	12"
18"	30	8	15	22	30	45	60	3.3	6.7	10.0	13.3	20.0	26.7	18"
24"	40	10	20	30	40	60	80	4.4	8.8	13.3	17.7	26.5	35.3	24"
30"	100	13	26	39	52	78	104	5.5	11.0	16.5	22.0	33.0	44.0	30"
33"	110	14	28	42	56	84	114	6.1	12.2	18.3	24.3	36.5	48.7	33"
36"	120	18	36	49	62	90		6.7	13.3	19.8	26.5	39.7		36"
42"	148	21	42	57	72	104		7.8	15.4	23.2	30.9	46.3		42"
48"	177	24	48	65	82	120		8.8	17.7	26.4	35.3	52.9		48"

Internal Volume Delta-Flo Type FD Refrigerant Coil

Nominal Finned Width	Headers In^3/Coil	Return Bends In^3/Coil Rows of Tubes		Tubes In^3/(Inch of Coil Length) Rows of Tubes	
		4	6	4	6
18"	85	19	28	10.5	15.8
24"	142	25	36	14.3	21.3
30"	164	33	49	17.9	26.9
33"	173	33	53	19.4	29.2
36"	240	31	52	20.9	31.4
42"	262	36	61	24.7	37.0
48"	285	42	70	28.4	42.7

Notes: 1. To calculate total internal volume (In^3) of a F, H & FD coil, add the following:

Total Volume = Header Vol. + Return Bend Vol. + (Tube Vol. X Coil Length (In))

2. To calculate the correct operating charge for the coil using R22: (Assumed Suction Temperature = 40 F)

$$\text{Internal Volume } (in^3) \times \frac{1 Ft.^3}{1728\ in^3} \times \frac{9.4\ LBS}{Ft.^3} = \text{LBS. Refrigerant 22.}$$

Instruments

Because of the importance and sensitivity of superheat measurement and adjustment, the gauges used to measure suction pressure should be of the best quality available. Do not use gauges that are permanently installed on the equipment. Trane recommends a good quality gauge on a standard refrigerant manifold set. To measure suction temperature, an electronic temperature tester is sufficient.

Table 3
Refrigerant-22 Pressure/ Temperature Conversion Chart

Temperature (Degrees F)	Suction Pressure (PSIG)
26	49.9
27	51.2
28	52.4
29	53.6
30	54.9
31	56.2
32	57.5
33	58.8
34	60.1
35	61.5
36	62.8
37	64.2
38	65.6
39	67.1
40	68.5
41	70.0
42	71.4
43	73.0
44	74.5
45	76.0
46	77.6
47	79.2
48	80.8
49	82.4
50	84.0

Measurement

In order to determine suction gas superheat, the pressure at the evaporator outlet must be measured and converted to saturated vapor temperature. Use a pressure/temperature conversion chart as given in Table 3 to convert pressure (psig) to temperature (degrees F). The computed saturated vapor temperature is then subtracted from the actual suction temperature, which is also measured on the suction line at the expansion valve sensing bulb location. The difference between these two temperature readings is the suction gas superheat reading.

Note: If a pressure tap is not provided at the thermal expansion valve sensing bulb location, suction pressure may be measured at the compressor, if suction line pressure loss is added to the compressor pressure reading. Suction pressure at the compressor plus estimated suction line pressure loss equals an estimate of suction pressure at the thermal expansion valve sensing bulb location.

To determine actual superheat, complete the following:

1. Cut the suction line insulation to gain access to the suction line at the sensing bulb. If Armaflex insulation is used, slit the insulation for the length of the temperature sensor.

2. Clean the line carefully and attach the electronic temperature sensor. Make sure the sensor is making good contact with the tube. Black electrical tape may be used to prevent sensor contact with ambient air.

   Note: For accurate measurement, the temperature sensor must be properly installed and insulated. Make sure that the insulation covers the sensor completely and seal all connections to the pipe to keep ambient air from affecting the temperature readings.

3. Install the pressure gauge to monitor suction pressure at the expansion valve sensing bulb location. If no pressure tap is provided, install the pressure gauge at the compressor and estimate the suction line pressure loss between the compressor and sensing bulb.

4. Operate the system for approximately 10 to 15 minutes in order for the expansion valve to stabilize.

5. To calculate superheat from pressure and temperature readings, compare the vapor temperature of the refrigerant as converted from the suction pressure reading (plus suction line pressure loss, if applicable) to the suction temperature measured by the electronic tester.

Example 1: R-22

Suction Pressure = 66.0 psig (measured at expansion valve sensing bulb)
Suction Pressure Converted to Saturated Vapor Temperature = 38 F.
Suction Temperature = 52 F.
Suction Superheat = 52-38 = 14 F.

Example 2: R-22

Suction Pressure = 65.0 psig (measured at the compressor)
Estimated Suction Line Pressure Loss = 3 psi
Total Estimated Suction Pressure = 68 psig (at the sensing bulb)
Suction Pressure Converted to Saturated Vapor Temperature = 40 F.
Suction Temperature = 52 F.
Suction Superheat = 52-40 = 12 F.

Adjustment

To increase the superheat reading, turn the adjusting stem of the expansion valve clockwise to close the valve and to limit the amount of refrigerant flowing into the evaporator. Adjustment should be made at one-half turn at a time. To decrease the superheat reading, increase refrigerant flow to the evaporator. Continue with tests and adjustments, one-half turn at a time, until an acceptable reading is obtained. Allow the system to re-stabilize for 10 minutes after each adjustment.

Caution: Incorrect superheat readings may be due to plugged filters or blocked refrigerant flow. Before making major adjustments to the expansion valve, check refrigerant level and filter/driers to ensure proper flow. Blocked filters may cause floodback to the compressor, damaging internal components.

Installation Checklist

Use the following checklist to verify that all necessary installation procedures have been completed. Refer to specific sections of this manual for more detailed information.

[ ] Coil is installed with airflow in same direction as indicated on the coil nameplate or casing.

[ ] Suction connection is at the bottom of the suction header.

[ ] If stacking more than three coils, stacking channels are properly installed. Bypass air is prevented by caulk or blockoffs.

[ ] Condensate drain pans and piping installed.

[ ] Clean filters are installed upstream of the coil.

[ ] A liquid line filter-drier is installed upstream of the expansion valve.

[ ] A moisture indicator/sight glass is installed between the expansion valve and filter-drier.

[ ] A liquid line shutoff vlave with access port is installed close to the condenser.

[ ] A schraeder valve is installed in the suction line close to the refrigerant coil outlet.

[ ] The thermal expansion valve, with external equalizer connections, is installed directly on the coil liquid connection. The liquid distributor must be in a true vertical position.

[ ] Piping system is evacuated, leak-tested and charged.

[ ] Superheat and subcooling measurements are taken. Thermal expansion valve is adjusted if necessary to obtain desired superheat.

Coil Identification

A nameplate is provided on the top channel near the piping connection end of the coil. The nameplate contains the coils serial number and model number. Use these numbers whenever inquiring on coil information with a Trane representative.

Maintenance

Coil Cleaning

Keep coils clean to maintain maximum performance. For operation at its highest efficiency, clean the coil often during periods of high cooling demand or when dirty conditions prevail. A routine cleaning schedule is recommended to prevent dirt build-up in the coil fins, where it may not be visible.

Remove large debris from the coils and straighten fins before cleaning.

Clean refrigerant coil fin surfaces with cold water and detergent or with one of the commercially available chemical coil cleaners. Rinse coils thoroughly after cleaning.

Caution: Do not clean the coil with hot water or steam. The use of hot water or steam as a refrigerant coil cleaning agent will cause high pressures inside the coil tubing and subsequent damage to the coil.

Caution: Do not use acidic chemical coil cleaner. Do not use alkaline chemical coil cleaners that, after mixing, have a ph value greater than 8.5, without also using an aluminum corrosion inhibitor in the cleaning solution. Failure to follow these guidelines or the manufacturer's instructions for use of cleaning chemicals could result in damage to the unit.

WARNING: Some Chemical Coil-Cleaning Compounds Are Caustic, As Well As Toxic. Use These Substances Only In Accordance With The Manufacturer's Instructions. Failure To Do So Could Result In Serious Injury, Death Or Equipment Damage.

Fin Straightening

Coil fins may have been bent during shipping or servicing, and must be straightened to maintain maximum heat transfer. Reduction of the effective coil surface correspondingly reduces coil capacity. Always check fin appearance after any handling of the coil and after any servicing is done near the coils.

Fin rakes are sized according to number of fins per inch of the coil. For relatively small bends that require only minor repair, other tools may be used to evenly space the fins. Be careful not to damage the coils.

For further information on this product or other Trane products, refer to the "Trane Service Literature Catalog", ordering number IDX-IOM-1. This catalog contains listings and prices for all service literature sold by Trane. The catalog may be ordered by sending a $20.00 check to: The Trane Company, Service Literature Sales, 3600 Pammel Creek Road, La Crosse, WI 54601.

PRINTED BY PRODUCTION SERVICES — LA CROSSE JH/LW