KRAMER

Catalog KM-CTT-0720A
Replaces KM-CTT-0320B and all previous versions

CTT Series

Thermobank

Hot Gas Defrost – 12 through 70 HP

Available for applications from +35°F down to -30°F, Kramer's Thermobank is the ultimate refrigeration package. Thermobank's patented hot gas defrost system provides the ultimate in ruggedness and efficiency. Known throughout the industry as the definitive refrigeration system, Thermobank delivers more refrigeration with less energy consumption, less equipment,lower installation costs and lower operating costs than conventional refrigeration packages. With its fast defrost period (typically 5 to 10 minutes), Thermobank is refrigerating while other systems are still defrosting. Superior design, superior components and superior manufacturing quality lead to Thermobank.

Standard Features:

- All Welded Thermobank
- Liquid Subcooling Circuit
- Manual Pumpdown Switch
- Crankcase Heater(s)
- Liquid Line Filter-Drier
- Semi-Hermetic Compressor(s)
- Moisture Indicating Sightglass
- Electronic Room Thermostat (Loose)
- Environmentally Safe Refrigerants
- Suction Solenoid Valve
- Floating Head Pressure
- Sub-Circuit Fusing
- Replaceable Core Liquid Line Filter-Drier
- Replaceable Core Suction Line Filter
- Low Noise / Energy Efficient 850 RPM Motors
- Bank Water Level Gauge
- Thermobank Drain Valve
- Adjustable Fan Cycling
- Copper Tube-Aluminum Fin Coils
- Hi-Lo Pressure Switch
- Pressure Relief Valve
- Electronic Oil Pressure Safety Control
- Weatherproof Outdoor Housing
- Manual Compressor Switch
- Receiver With Service Valves
- Evaporator(s)
- Complete Defrost Controls
- X-Braided Pressure Control Hose
- Suction & Discharge Vibration Elim.
- Control Circuit Transformer - 460V & 575V

optional features on following page

SINCE 1914 – with over 100 years of continuous improvement in heat transfer technology, KRAMER presents models CTT refrigeration units.

Options:

- Oil Separator
- Non-Fused Disconnect
- Phase Loss Monitor
- Pressure Relief Valve
- Oversize Condenser
- Oversize Liquid Receiver
- Suction Accumulator
- Anti-Short Cycle Timer
- Single Point Alarm
- High, Low, And Oil Pressure Gauges
- Copper Fin Coil
- Coated Fin Coil

THERMOBANK is available for all commercial and industrial applications with temperatures ranging from -30°F to +35°F. This factory packaged hot gas defrost system employs a re-evaporator, ensuring a highly efficient defrost cycle, but requires no suction accumulators, reversing valves or hot gas line from condensing unit to evaporator.

THERMOBANK provides continuous energy savings as the outdoor temperature drops; BTU per Hour increases and compressor watts decrease resulting in more cooling and less energy usage for each operating hour.

Less equipment is needed with **THERMOBANK** because it does more refrigeration in 24 hours than other packaged systems. With it's extremely fast defrost period (typically 5 to 10 minutes), **THERMOBANK** is refrigerating while others are still defrosting. With the lowest possible, head pressure there is a marked increase in BTU per Hour capacity.

Models CTT

Low and Medium Temperature Models

Nomenclature:

CTT	4	1200	L	44	-	E
I	II	III	IV	V		VI

NOMENCLATURE

I — **Series Designator**
CTT - Thermobank

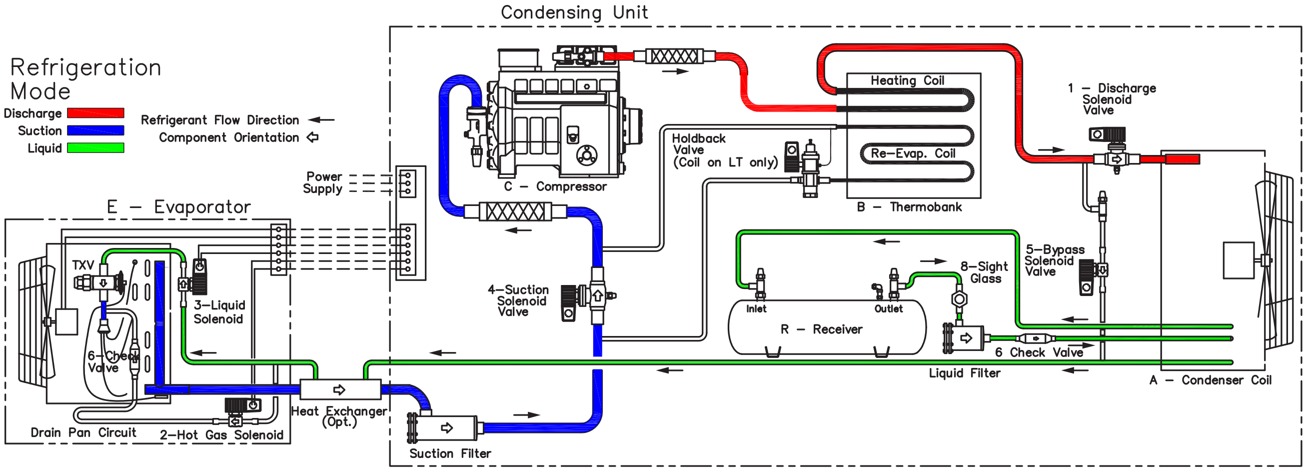
II — **Compressor Code**
2 - Copeland Discus
4 - Bitzer

III — **Nominal HP**
EX: 1200 - 12 HP

IV — **Temperature Range**
L - Low
M - Medium

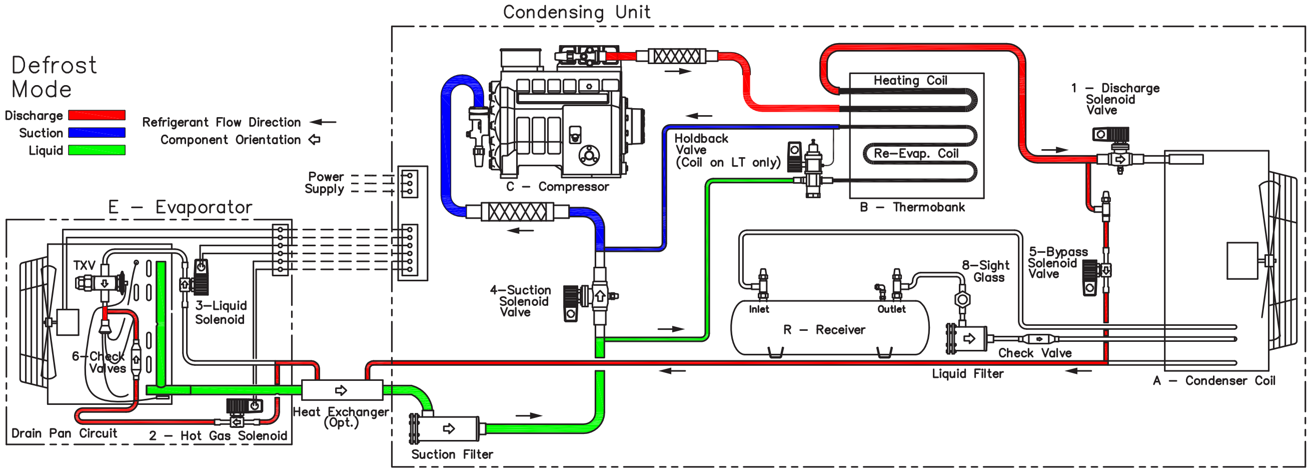
V — **Refrigerant Type**
44 - R404A or R507
47 - R407C

VI — **Voltage Code**
G - 460/3/60
J - 575/3/60
V - 208/3/60
W - 230/3/60



SCHEMATIC LEGEND

A = CONDENSER	1 = DISCHARGE SOLENOID
B = THERMOBANK	2 = HOT GAS SOLENOID
C = COMPRESSOR	3 = LIQUID SOLENOID
E = EVAPORATOR	4 = SUCTION SOLENOID
R = RECEIVER	5 = BY-PASS VALVE
X = EXPANSION VALVE	6 = CHECK VALVE
	8 = SIGHT GLASS



HOW THERMOBANK WORKS

Every refrigeration system discharges the heat picked up from the evaporator and the compressor. This waste heat is normally rejected by the condenser. With Thermobank, the compressor (C) discharge passes through a heating loop that is submerged in a water filled bank (B), and then on through the condenser (A). The bank stores sufficient heat to fully re-evaporate all the liquid resulting from the defrost of the Evaporator (E).

THE REFRIGERATION CYCLE

The compressor discharge refrigerant, after heating the bank water, flows to the air cooled condenser and then to the receiver (R). From the receiver the liquid refrigerant flows through a sub-cooling circuit in the condenser and on to the expansion valve (X), and the evaporator (E). The refrigerant returns to the compressor as in any standard system.

To prevent excessive super-heating of the refrigerant vapor returning to the compressor and to maintain the water temperature in the bank, the refrigerant flow bypasses the bank through the suction line solenoid (4) during the refrigeration cycle. This normally closed suction line solenoid is generously sized for minimum pressure drop, providing an extra margin of safety. On low temperature systems, an electronically operated holdback valve (H) ensures that no refrigerant flows through the bank during the refrigeration cycle.

THE DEFROST CYCLE

A time clock automatically puts the Thermobank system into a defrost cycle and initiates the following: Discharge solenoid Valve (1) closes; the evaporator (E) fans stop; hot gas solenoid valve (2) opens; liquid solenoid valve (3) closes; suction solenoid valve (4) closes.

The compressor discharge gas goes directly into the liquid line because by-pass solenoid valve (5) is open when discharge solenoid (1) is closed. All the warm liquid refrigerant in the liquid line flows through the evaporator. This liquid refrigerant insures a rapid defrost and charges the defrost circuit. Additional hot gas condenses in the evaporator providing an unusually rapid defrost at all ambient conditions.

With the suction solenoid (4) closed, the liquid refrigerant flows through the holdback valve (H) which controls the rate of refrigerant flow and the pressure in the bank. The bank becomes an evaporator and absorbs the stored heat. The Thermobank system utilizes a high pressure safety control which functions to momentarily open the discharge line solenoid (1) if discharge pressures rise to a high level.

The defrost cycle is terminated by a pressure switch that senses evaporator pressures and starts the post-defrost period. During post-defrost the discharge solenoid (1) is open; by-pass solenoid valve (5) is closed and hot gas solenoid (2) is closed. Suction solenoid (4) and liquid solenoid (3) remain closed. At the end of the pressure terminated post-defrost period, both suction solenoid (4) and liquid solenoid (3) open and the evaporator fan motors start. During defrost, the hot gas by-passes the receiver so after defrost the receiver contains ample liquid refrigerant to begin refrigerating immediately and prevent compressor short cycling. The system then returns to the normal refrigeration cycle.

FASTEST DEFROST

THERMOBANK has a typical defrost cycle duration of 5 to 10 minutes. The defrost is uniform throughout the coil, and minimizes the heat and vapor added to the room during defrost. The defrosting evaporator receives the full heat of rejection of the refrigerant. This is the sum of the compressor heat while operating at maximum suction pressure during the defrost cycle and the heat extracted from the bank. There is always an adequate supply of refrigerant for defrosting.

EXTRA COMPRESSOR PROTECTION

Many factors are incorporated in Thermobank to protect the compressor and insure long life. All units utilize a pump-down cycle to prevent refrigerant migration to the compressor during the off-cycle. During the defrost cycle the bank is protected against flood-back. The holdback valve protects against overloading the compressor motor by regulating the inlet pressure to the compressor. The reduced refrigerant charge is additional protection for the compressor.

BANK DESIGN

The bank has a welded hermetic design to insure a long, leak free life. The heavy gauge steel shell has a bulls-eye water level gauge. Checking the water level is quick and easy. The shell is insulated with closed cell foam to maintain proper water temperature at any ambient condition and provide optimum system performance. The internal heat transfer loops are die formed from extra heavy wall, seamless copper tubing. The bank contains a thermostat controlled immersion heater for stabilizing water temperature and automatic freeze protection. The heavy duty welded design makes the bank durable, reliable, safe and service free. A drain connection is also provided for seasonal shutdown when applicable.

EXTRA LARGE CONDENSERS

Ratings for ambient temperatures to 105°F are given for all Thermobank systems. Special systems are available for ambient design temperatures above 110°F. All condensers have a maximum fin spacing of 12 FPI to help prevent coil fouling and increase the time between coil cleanings. Generous coil surface keeps head pressures lower, saves energy, and extends the life of the equipment. An integral subcooling circuit is standard to prevent flash gas in liquid risers and increase system efficiency. Fan cycle controls allow some adjustability to the head pressure and will minimize fan motor energy consumption in low ambient's. An optional pressure control may be provided on the header end fan to assure sufficient head pressure is available for a good cold ambient re-start.

OPERATING HOURS

The length of defrost must be taken into account when selecting equipment. Thermobank's defrost cycle is very rapid, typically 5 to 10 minutes, and for this reason the equipment can be selected on the basis of 22 hours per day operation. Other systems require 30 to 40 minutes for a complete defrost and the general practice is to select this equipment on eighteen hours per day operation. For the same job, Thermobank equipment requirement is 10% less than others. Thermobank will be refrigerating while others are still defrosting.

AVERAGE OUTDOOR TEMPERATURE

The Average Outdoor Temperature is considerably less than the design outdoor temperature. The outdoor temperature may vary hourly during a twenty-four hour day. It varies day to day, month to month, and season to season. It is the average outdoor temperature that dictates the number of hours of equipment operation. As the outdoor temperature drops, the capacity of Thermobank increases. With more BTU's per hour, the equipment operates less time to handle the 24 hour refrigeration load. Page 7 shows the Annual Average Outdoor Temperature for locations throughout the U.S.A. and Canada. Select the location nearby or similar in temperature. The estimated annual electrical savings can be calculated from Table 1.

AVERAGE OUTDOOR TEMPERATURE

STATE-CITY	AAOT-°F
ALABAMA	63
Birmingham	62
Huntsville	60
Mobile	67
ALASKA	26
Anchorage	36
Fairbanks	27
Juneau	41
ARIZONA	60
Flagstaff	46
Phoenix	72
ARKANSAS	61
Little Rock	61
CALIFORNIA	59
Fresno	63
Los Angeles	65
Redding	62
San Francisco	57
Stockton	61
COLORADO	45
Colorado Springs	49
Denver	50
Grand Junction	53
CONNECTICUT	49
Hartford	50
DELAWARE	55
Wilmington	54
D.C.	55
Washington	57
FLORIDA	71
Gainesville	68
Jacksonville	68
Miami	75
Orlando	72
Tampa	72
W. Palm Beach	74
GEORGIA	64
Atlanta	61
Macon	64
Savannah	66
HAWAII	76
Honolulu	77
IDAHO	45
Boise	51
ILLINOIS	52
Chicago	49
Peoria	51
INDIANA	52
Fort Wayne	50
Indianapolis	52

STATE-CITY	AAOT-°F
IOWA	48
Des Moines	50
KANSAS	55
Goodland	51
Wichita	56
KENTUCKY	56
Louisville	56
LOUISIANA	66
New Orleans	68
Shreveport	65
MAINE	41
Portland	45
MARYLAND	54
Baltimore	55
MASSACHUSETTS	48
Boston	51
Blue Hill Obs.	48
MICHIGAN	45
Detroit	49
Grand Rapids	47
Marquette	39
MINNESOTA	41
Duluth	38
Minneapolis	45
MISSISSIPPI	63
Jackson	64
Tupelo	62
MISSOURI	55
Kansas City	54
St. Louis	56
MONTANA	433
Billings	47
Glasgow	42
Great Falls	45
Helena	44
NEBRASKA	49
North Platte	48
Omaha	50
Scottsbluff	48
Valentine	47
NEVADA	50
Las Vegas	67
Reno	51
NEW HAMPSHIRE	44
Concord	45
NEW JERSEY	63
Newark	55
Trenton	54
NEW MEXICO	54
Albuquerque	56

STATE-CITY	AAOT-°F
NEW YORK	46
Albany	47
Buffalo	48
New York	55
Syracuse	47
NORTH CAROLINA	59
Asheville	55
Charlotte	60
Raleigh	59
NORTH DAKOTA	41
Bismarck	41
OHIO	51
Akron	50
Cincinnati	53
Cleveland	50
Columbus	51
Youngstown	48
OKLAHOMA	60
Oklahoma City	60
OREGON	49
Portland	53
PENNSYLVANIA	49
Allentown	51
Erie	49
Philadelphia	54
Pittsburgh	50
Scranton	49
RHODE ISLAND	50
Providence	50
SOUTH CAROLINA	63
Charleston	65
Greer	60
SOUTH DAKOTA	46
Huron	45
TENNESSEE	58
Bristol	55
Knoxville	57
Memphis	62
TEXAS	65
Amarillo	57
Dallas	65
El Paso	63
Houston	68
Lubbock	60
San Antonio	68
Wichita Falls	63
UTAH	49
Salt Lake City	52
VERMONT	43
Burlington	44

STATE-CITY	AAOT-°F
VIRGINIA	55
Norfolk	59
Richmond	58
Roanoke	56
WASHINGTON	48
Seattle	53
Spokane	47
PUERTO RICO	76
San Juan	79
WEST VIRGINIA	52
Beckley	51
Charleston	55
Elkins	49
WISCONSIN	43
Green Bay	44
Milwaukee	46
WYOMING	43
Cheyenne	46
Sheridan	45

CANADA

PROVINCE-CITY	AAOT-°F
ALBERTA	
Calgary	35
Edmonton	34
BRITISH COLUMBIA	
Vancouver	51
Victoria	51
MANITOBA	
Brandon	35
Winnipeg	36
NEW BRUNSWICK	
Saint John	42
NEWFOUNDLAND	
Gander	43
St. John's	44
NOVA SCOTIA	
Halifax	46
ONTARIO	
Ottawa	42
Sault Ste. Marie	40
Thunder Bay	37
Toronto	47
Windsor	49
QUEBEC	
Montreal	43
Quebec	39
SASKATCHEWAN	
Regina	35
Saskatoon	34

Calculate Your Savings

ANNUAL AVERAGE OUTDOOR TEMPERATURE	75°F	70°F	65°F	60°F	55°F	50°F	45°F	40°F
ESTIMATED ANNUAL ELECTRICAL SAVINGS	5%	10%	15%	20%	25%	30%	35%	40%
FACTOR TO COST CONVENTIONAL SYSTEM	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60

Conventional System Operating Cost x Factor = Thermobank Operating Cost. For temperature between those shown, interpolate to obtain savings.

LOW TEMPERATURE (0°F to -40°Fst) PERFORMANCE DATA

MODEL CTT	SUCTION TEMPERATURE							
	0°F	-5°F	-10°F	-15°F	-20°F	-25°F	-30°F	-40°F
1200L44	96,100	86,000	76,800	68,400	60,700	53,400	46,500	33,200
1500L44	113,700	102,400	92,200	82,700	73,900	65,700	57,800	42,400
2200L44	132,000	119,800	109,200	98,100	87,500	77,300	67,600	49,100
2700L44	169,800	153,700	138,100	123,100	108,700	95,200	82,600	60,400
3100L44	187,300	169,600	153,900	136,300	121,700	106,400	92,700	69,350
4400L44	267,000	242,100	218,600	196,300	175,100	154,800	135,300	98,300
5400L44	340,500	307,900	279,100	248,500	219,400	192,000	166,400	121,700
6200L44	373,300	338,000	306,700	271,650	242,600	212,100	184,750	138,200

AMBIENT CORRECTION FACTOR	
AMB.	R404A
80°F	1.15
85°F	1.10
90°F	1.05
95°F	1.00
100°F	0.95
105°F	0.90

For design conditions other than 95° F, multiply the rating by the correction factor.

LOW TEMPERATURE PHYSICAL DATA

MODEL CTT	COMPRESSOR		COND FANS			CONNECTIONS		CHARGE LBS.		UNIT CONFIG.	APPROX. NET LBS.
	QTY.	MODEL NO.	QTY.	DIA.	HP	SUC. OD	LIQ. OD	UNIT[2]	RECV[1]		
1200L44	1	4DA-F47KE	2	30	1	1-5/8	5/8	22	95	B	1,300
1500L44	1	4DH-F63KE	2	30	1	1-5/8	5/8	29	95	B	2,200
2200L44	1	4DJ-F76KE	2	30	1	2-1/8	7/8	39	128	B	2,500
2700L44	1	6DH-F93KE	2	30	1	2-1/8	7/8	49	162	B	3,100
3100L44	1	6DJ-F11ME	3	30	1	2-1/8	7/8	58	195	C	3,600
4400L44	2†	4DJ-F76KE	4	30	1	3-1/8	1-1/8	58	195	D	5,000
5400L44	2†	6DH-F93KE	4	30	1	3-1/8	1-1/8	101	370	D	5,500
6200L44	2†	6DJ-F11ME	6	30	1	3-1/8	1-1/8	101	370	E	7,000

† Compressors piped in parallel.

[1] Receiver at 90% full.

[2] Estimated refrigerant charge is for a condensing unit only. It does not include evaporators, interconnecting piping or other accessories.

See back cover for unit configuration.

LOW TEMPERATURE ELECTRICAL DATA

MODEL CTT	230/3/60					208/3/60 and 230/3/60					460/3/60				
	COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA‡	COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA‡	COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA‡
1200L44	45.2	220	8.0	58.2	70	–	–	–	–	–	22.6	110	4.0	31.1	37
1500L44	52.6	278	8.0	65.6	79	–	–	–	–	–	26.3	139	4.0	34.8	42
2200L44	–	–	–	–	–	57.7	374	8.0	70.7	86	28.8	187	4.0	37.3	45
2700L44	–	–	–	–	–	72.4	450	8.0	85.4	104	36.2	225	4.0	44.7	54
3100L44	–	–	–	–	–	85.9	470	12.0	102.9	125	42.9	235	6.0	53.4	65
4400L44	–	–	–	–	–	115.4	748	16.0	137.4	152	57.6	374	8.0	70.6	78
5400L44	–	–	–	–	–	144.8	900	16.0	166.8	185	72.4	450	8.0	85.4	95
6200L44	–	–	–	–	–	171.8	940	24.0	201.8	224	85.8	470	12.0	102.8	114

MODEL CTT	575/3/60				
	COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA‡
1200L44	17.5	106	4.2	22.2	27
1500L44	20.9	113	4.2	25.6	31
2200L44	24.1	135	4.2	28.8	35
2700L44	32.5	172	4.2	37.2	45
3100L44	39.6	200	6.3	46.4	56
4400L44	48.2	270	8.4	57.1	69
5400L44	65.0	344	8.4	73.9	90
6200L44	79.2	400	8.4	88.1	108

‡ MCA does not include evaporator motors.
– Not Available

MEDIUM TEMPERATURE (+10°F to +25°Fst) PERFORMANCE DATA

MODEL CTT	R404A & R507 SUCTION TEMPERATURE				R407C SUCTION TEMPERATURE			
	+25°F	+20°F	+15°F	+10°F	+25°F	+20°F	+15°F	+10°F
1200M**	125,300	114,700	104,600	95,000	112,100	101,300	91,300	81,800
1500M**	144,300	130,700	119,100	108,000	129,100	115,500	103,900	93,000
2000M**	157,900	143,500	132,200	118,900	150,000	136,300	125,600	113,000
2500M**	201,000	183,200	167,700	151,200	179,700	161,800	146,300	130,200
3000M**	228,100	207,700	188,400	170,100	204,000	183,400	164,300	146,500
3500M**	298,900	272,000	246,700	222,900	267,300	240,200	215,200	192,000
4000M**	339,400	310,000	282,000	255,400	303,500	273,800	246,000	219,900
5000M**	384,800	350,400	317,300	285,900	344,100	309,500	276,700	246,200
6000M**	455,400	384,800	376,300	339,800	407,200	339,800	328,200	292,600
7000M**	584,100	455,400	485,700	440,300	522,200	402,200	423,600	379,100

AMBIENT CORRECTION FACTOR		
AMB.	R404A	R407C
80°F	1.15	1.10
85°F	1.10	1.07
90°F	1.05	1.03
95°F	1.00	1.00
100°F	0.95	0.96
105°F	0.90	0.92

** 44 = R404A OR R507, 47 = R407C. For ambient design conditions other than 95°F, multiply the rating by the correction factor.

MEDIUM TEMPERATURE PHYSICAL DATA

MODEL CTT	COMPRESSOR		COND. FANS			CONNECTIONS R407C		CONNECTIONS R-404A & R-507		CHARGE LBS. R407C		CHARGE LBS. R-404A & R-507		UNIT CONFIG.	APPROX. NET LBS.
	QTY.	MODEL NO.	QTY.	DIA.	HP	SUC. OD	LIQ. OD	SUC. OD	LIQ. OD	UNIT[2]	RECV[1]	UNIT[2]	RECV[1]		
1200M**	1	3DF-R15ME	2	30	1	1-5/8	7/8	1-5/8	7/8	29	106	25	91	B	2,000
1500M**	1	3DS-R17ME	2	30	1	1-5/8	7/8	1-5/8	7/8	34	102	29	94	B	2,200
2000M**	1	4DB-R20ME	2	30	1	2-1/8	7/8	2-1/8	7/8	34	102	29	94	B	2,600
2500M**	1	4DH-R22ME	2	30	1	2-1/8	7/8	2-1/8	7/8	45	140	39	128	B	3,000
3000M**	1	4DJ-R28ME	3	30	1	2-1/8	1-1/8	2-1/8	1-1/8	68	213	58	195	C	3,600
3500M**	1	6DH-R35ME	3	30	1	2-1/8	1-1/8	2-1/8	1-1/8	68	213	58	195	C	3,800
4000M**	1	6DJ-R40ME	3	30	1	2-1/8	1-3/8	2-1/8	1-1/8	86	286	74	262	C	4,300
5000M**	2‡	4DH-R22ME	4	30	1	2-5/8	1-1/8	2-5/8	1-1/8	90	286	78	262	D	5,250
6000M**	2‡	4DJ-R28ME	4	30	1	2-5/8	1-5/8	2-5/8	1-3/8	118	403	101	370	D	5,700
7000M**	2‡	6DH-R35ME	6	30	1	3-1/8	1-3/8	3-1/8	1-3/8	131	403	113	370	E	8,000

** 44 = R404A or R507, 47 = R407C † Compressors piped in parallel. See back cover for unit configuration.

1 Receiver at 90% full.

2 Estimated refrigerant charge is for a condensing unit only. It does not include evaporators, interconnecting piping or other accessories.

MEDIUM TEMPERATURE ELECTRICAL DATA

MODEL CTT	208-230/3/60 COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA[3]	208/3/60 and 230/3/60 COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA[3]	460/3/60 COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA[3]
1200M**	48.2	275	8.0	57.2	69	–	–	–	–	–	23.6	138	4.0	28.6	34
1500M**	53.5	275	8.0	65.5	79	–	–	–	–	–	26.0	138	4.0	34.0	41
2000M**	–	–	–	–	–	64.7	374	8.0	76.7	93	32.4	187	4.0	40.4	49
2500M**	–	–	–	–	–	73.7	428	8.0	85.7	105	36.9	214	4.0	44.9	55
3000M**	–	–	–	–	–	94.6	470	12.0	110.6	135	47.3	235	6.0	57.3	70
3500M**	–	–	–	–	–	112.3	565	12.0	128.3	157	56.2	283	6.0	66.2	81
4000M**	–	–	–	–	–	128.2	594	12.0	144.2	177	64.1	297	6.0	74.1	91
5000M**	–	–	–	–	–	147.4	856	16.0	167.4	186	73.8	428	8.0	85.8	96
6000M**	–	–	–	–	–	189.2	940	16.0	209.2	233	94.6	470	8.0	106.6	119
7000M**	–	–	–	–	–	224.6	1130	24.0	252.6	281	112.4	566	12.0	128.4	143

MODEL CTT	575/3/60 COMP. RLA	COMP. LRA	COND. FLA	UNIT AMPS	MCA[3]
1200M**	–	–	–	–	–
1500M**	23.6	110	4.2	28.8	34
2000M**	28.2	135	4.2	36.2	44
2500M**	34.4	172	4.2	39.6	48
3000M**	39.3	200	6.3	46.6	56
3500M**	42.5	230	6.3	49.8	60
4000M**	53.5	245	6.3	60.8	74
5000M**	68.8	344	8.4	78.2	95
6000M**	78.6	400	8.4	88.0	107
7000M**	85.0	460	12.6	98.6	119

** 44 = R404A OR R507, 47 = R407C

[3] MCA does not include evaporator motors.

– Not Available

Department of Energy Annual Walk-In Energy Factor (AWEF) Ratings		
Base Model Number	AWEF	
	Outdoor Rated	Indoor Rated
Medium Temperature Models[1]		
CTT*1200M4*	7.6	–
CTT*1500M4*	7.6	–
CTT*2000M4*	7.6	–
CTT*2000M4*	7.6	–
CTT*2500M4*	7.6	–
Low Temperature Models[2]		
CTT*1200L4*	3.15	–
CTT*1500L4*	3.15	–
CTT*2200L4*	3.15	–
CTT*2700L4*	3.15	–
CTT*3100L4*	3.15	–

* Each asterisk represents a variable character based upon model, voltage, and vintage ordered. See page 3 for nomenclature.

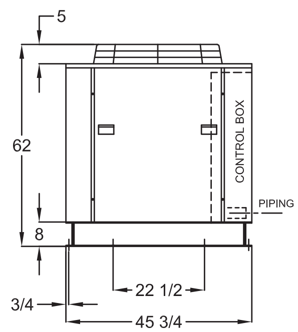
See page 11 for dimensional drawings.

^ Larger HP Single and Parallel Compressor models are not intended for use in walk-in coolers and freezers less than 3,000 sq. feet thus are outside of the scope of this DOE regulation. Dual Compressor models serve more than one refrigerated load thus are outside (exempt) of the scope of this DOE regulation.

1. If the medium temperature model has a numerical value in the table above, the following statement applies: "This refrigeration system is designed and certified for use in walk-in cooler applications."

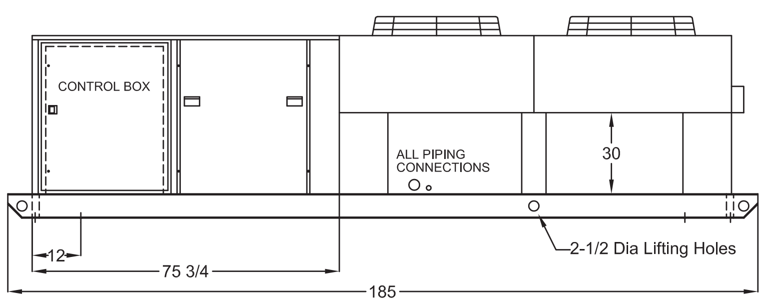
2. If the low temperature model has a numerical value in the table above, the following statement applies: "This refrigeration system is designed and certified for use in walk-in freezer applications."

PHYSICAL DIMENSIONS

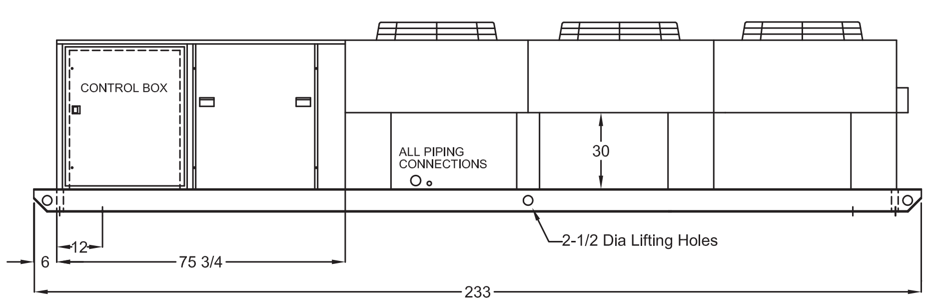


Dimensions are for Fan Configurations "B" and "C" below.

All dimensions are in inches.

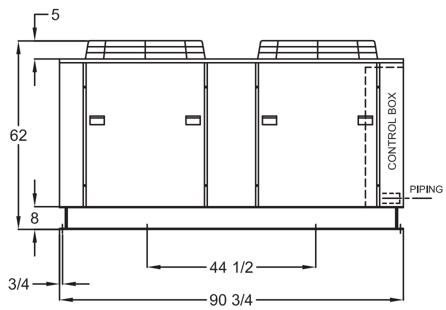


FAN CONFIGURATION "B"



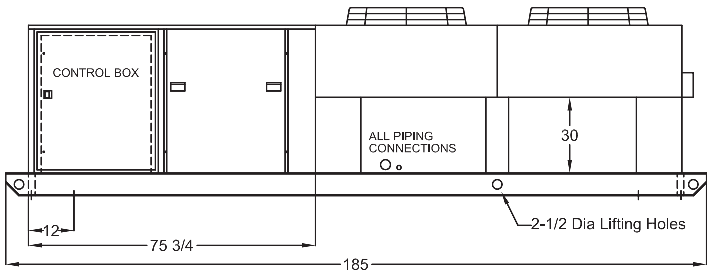
FAN CONFIGURATION "C"

PHYSICAL DIMENSIONS

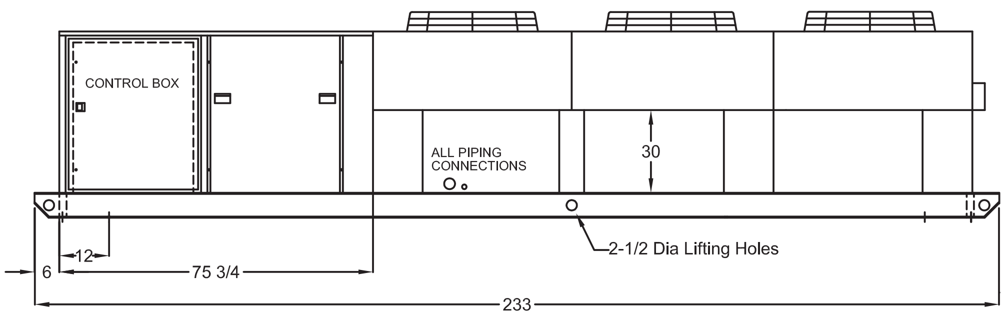


Dimensions are for Fan Configurations "D" and "E" below.

All dimensions are in inches.



FAN CONFIGURATION "D"



FAN CONFIGURATION "E"

Due to ongoing product improvement, specifications are subject to change without notice.

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