



Air-Cooled Condensers

20 to 120Tons





Introduction

Air-Cooled Condensers Built for Every Need

Trane has the right condenser... If you are designing a new system or replacing an existing air-cooled condenser, Trane can satisfy virtually any application need. Whether coupled with an industrial compressor, a single zone commercial self-contained unit, compressor chiller or a Cold Generator® chiller, Trane has the right air-cooled condenser for the job. When teamed with any one of a

wide range of compressor-evaporator combinations, Trane air-cooled condensers, available in 20 to 120 tons, are ideal for multistory office buildings, hotels, schools, municipal and industrial facilities.



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Features and Benefits

20 to 120 Ton Units

Trane 20 to 120 ton air-cooled condensers have an operating range of 40 F to 115 F, with a low ambient option down to 0 F.

The control panel is factory-installed and wired to prevent potential damage and to provide weathertight protection.

The control panel contains:

- fan motor contactors.
- fan cycling controls.
- terminal point connection for compressor interlock.
- 115-volt control power transformer.

These standard features reduce installation costs and provide easy interface with control logic.

All Trane air-cooled condenser coils are tube-in-sheet construction with copper tubing mechanically bonded to configured aluminum fins. 20 to 30 ton condensers are single circuit; 40 to 120 ton units are dual circuited; all feature integral subcooling.

Copper coils are optional.

Durable Construction

Trane 20 to 120 ton condensers are built for long life. The unit frame is constructed of 14 gauge galvanized steel. Louvered panels provide excellent coil protection while enhancing unit appearance and strength. The unit surface is phosphatized and finished with Trane Slate Grey air-dry paint. This air dry-paint finish exceeds 500 consecutive hour salt spray resistance in accordance with ASTM B117.

Application Considerations

Certain application constraints should be considered when sizing, selecting, and installing air-cooled condensers. Unit and system reliability depends on properly and completely acknowledging these considerations. Consult your local Trane sales engineer if your application varies from these guidelines.

Setting the Unit

A base or foundation is not required if the selected unit location is level and strong enough to support the operating weight. Refer to the Weights section for the weight of individual units.

Isolation and Sound Emission

The most effective method of noise isolation is proper unit location. Units should be placed away from noise sensitive areas. Structurally transmitted noise can be reduced with the use of spring isolators and they are recommended for acoustically sensitive applications. Flexible electrical conduit, for maximum isolation effectiveness, will

reduce sound transmitted through electrical conduit.

State and local codes on sound emissions should always be considered. Since the environment in which a sound source is located affects sound pressure, unit placement must be carefully evaluated.

Servicing

Recommended minimum space envelopes for servicing are located in the Dimensional Data section and serve as guidelines for providing adequate clearance. The minimum space envelopes also allow for control panel door swing and routine maintenance requirements.



Application Considerations

Unit Location

Unobstructed flow of condenser air is essential to maintaining capacity and operating efficiency. When determining unit placement, careful consideration must be given to assure a sufficient flow of air across the condenser heat transfer surface. Two detrimental conditions are possible and must be avoided: Warm air recirculation and coil starvation.

Warm air recirculation occurs when discharge air from the condenser fans is recycled back at the condenser coil inlet. Coil starvation occurs when free airflow to the condenser is restricted.

Both warm air recirculation and coil starvation cause reductions in unit efficiency and capacity because of the higher head pressures associated with them. In more severe cases, nuisance unit shutdowns will result from excessive head pressures.

Cross winds, those perpendicular to the condenser, tend to aid efficient operation in warmer ambient conditions. However, they tend to be detrimental to operation in lower ambients or when hot gas bypass is used due to the accompanying loss of adequate head pressure. As a result, it is advisable to protect air-cooled condensers from continuous direct winds exceeding 10 miles per hour.

Debris, trash, supplies, etc., should not be allowed to accumulate in the vicinity of the air-cooled condenser. Supply air movement may draw debris into the condenser coil, blocking spaces between coil fins and causing coil starvation. Special consideration should be given to low ambient units. Condenser coils and fan discharge must be kept free of snow or other obstructions to permit adequate airflow for satisfactory unit operation.

Clearance

Vertical condenser air discharge must be unobstructed. While it is difficult to predict the degree of warm air recirculation, a unit installed with a ceiling or other obstruction above it will lose capacity and the maximum ambient operation will be reduced. Nuisance high head pressure tripouts may also occur.

The inlet to the coil must also be unobstructed. A unit installed closer than the minimum recommended distance to a wall or other vertical riser may experience a combination of coil starvation and warm air recirculation, resulting in unit capacity and efficiency reductions, as well as possible excessive head pressures. The recommended lateral distances are listed in the Dimensional Data section.

Voltage

Nominal voltage is the nameplate rating voltage. The actual range of line voltages at which the equipment can satisfactorily operate is given below:

| Nominal Voltage | Voltage Utilization Range |
|-----------------|---------------------------|
| 200/220 | 180-220 or 208-254 |
| 460 | 416-508 |
| 575 | 520-635 |

200/230-volt units ship from the factory set for operation in the 180 through 220-volt range. By changing leads on unit transformers, the unit will operate in the 208 through 254-volt range.

Effects of Altitude

The tables in the Performance Data section are for use at sea level. At elevations substantially above sea level, the decreased air density will decrease condenser capacity. Refer to the Performance Adjustment Factors section to correct performance at other altitudes.

Ambient Limitations

Trane condensers are designed for year-around applications in ambients from 0 F through 115 F. For operation below 0 F or above 115 F, contact the local Trane sales office.

Start-up and operation of Trane condensers at lower ambient temperatures require that sufficient head pressure be maintained for proper operation. Minimum operating ambient temperatures for standard unit selections and units with hot gas bypass are shown in the General Data section. These temperatures are based on still conditions (winds not exceeding five mph.) Greater wind velocities will result in a drop in head pressure, therefore, increasing the minimum starting and operating ambient temperatures.

Units with the low ambient option are capable of starting and operating in ambients down to 0 F, 10 F with hot gas bypass. Optional low ambient units use a condenser fan damper arrangement that controls condenser capacity by modulating in response to head pressure.

Maximum cataloged ambient temperature operation of a standard condenser is 115 F. Operation at design ambients above 115 F can result in excessive head pressures. For operation above 115 F, contact the local Trane sales office.



Selection Procedures

When selecting a combination of equipment, it becomes necessary to match the compressor and condenser performance. The following procedure should be used in determining the correct condenser.

First:

Determine the total cooling load and the evaporator sst and compressor required.

Example:

- Given - Total cooling load = **96 tons**
- Ambient temp = **95 F**
- Evaporator sst = **45 F**
- Compressor - **CUAB-D10E**

The compressor was selected from **COM-DS-1** catalog according to the sst and maximum acceptable condensing temperature for adequate compressor capacity.

a

Plot at least two gross compressor capacities (less subcooling) at the design suction temperature and different condensing temperatures. (subcooling factor is .047% per deg. F subcooling, **16 F** for **CUAB-D10E**)

Example:

(From **COM-DS-1**)

CUAB-D10E Compressor at **45 F** sst.

With:

115 F condensing temperature = 113.5 tons divided by 1.075 subcooling factor = **105.6** tons.

With:

125 F condensing temperature = 105.1 tons divided by 1.075 subcooling factor = **97.8** tons

b

Plot two gross condenser heat rejection points on chart PD-1 divided by the compressor **N** factor (Table PD-1 to PD-3) at different condensing temperatures.

Example: Anticipating 100 ton condenser to meet design load of 96 tons.

| Cond. Temp | ITD | | Gross Heat of Rejection (MBh) | = | Tons | ÷ | N Factor | = | Tons |
|------------|-------|---|-------------------------------|---|-------|---|----------|---|------|
| 115 | at 20 | = | 830 | = | 69.2 | ÷ | 1.25* | = | 55.4 |
| 125 | at 30 | = | 1285 | = | 107.1 | ÷ | 1.30* | = | 82.3 |

*N factor corrected from Table PD-2
 sst - saturated suction temperature
 F - degree Fahrenheit
 N - compressor factor
 ITD - initial temperature difference

c

Transfer the results from the compressor and condenser plots to Chart SP-1 and do the following. Draw a line through the two points representing gross heat compressor capacities less subcooling (**105.6** and **82.3**). Draw a line through the two points representing condenser gross heat of rejection (**55.4** and **82.3**).

d

At the point of intersection of the compressor and condenser lines draw dashed lines to the left and bottom margins of Chart SP-1. The end points of these lines will show a resultant gross condenser capacity of **93.8** tons at **129.4 F** condensing temperature.

e

From chart PD-2 calculate the percent increase in capacity due to subcooling.

Example:

At **95 F** ambient and **129.4 F** condensing temperature there is a **10.1%** increase in capacity due to subcooling. This yields a system net capacity of **93.8** tons x **110%** = **103.2** tons.

f

If necessary use the values in Table PD-4 to adjust the system capacity for altitude.

g

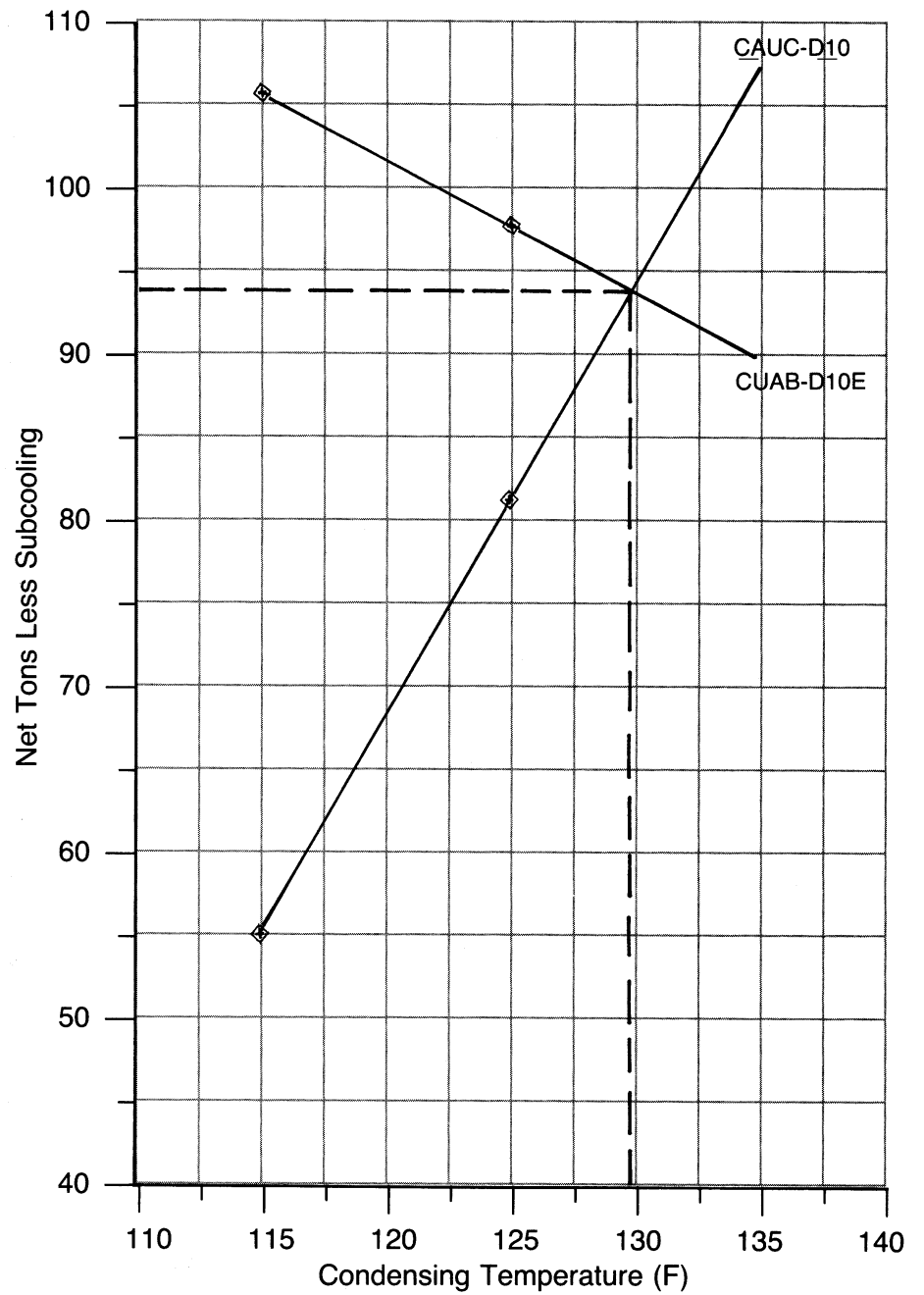
Compare this result with the design capacity and condensing temperature.

The required cooling load is **96** tons, therefore, the **CAUC-D10** is the proper selection.

Repeat the process steps **B** through **G** as necessary to achieve the most economic condenser selection.

Selection Example

Chart SP-1 - Selection Example





Model Number Description

20To 60Ton Model Nomenclature

C **A** **U** **C** **C20** **4** **1** ***** **0** **3** **H** **0'**
 1 2 3 4 5,6,7 8 9 10 11 12 13 14

Digit 1 – Unit Type

C = Condenser

Digit 2 – Condenser

A = Air-Cooled

Digit 3 – Airflow

U = Upflow

Digit 4 – Development Sequence

C = Third

Digit s 5,6,7 – Nominal Capacity

C20 = 20Tons C40 = 40Tons
 C25 = 25Tons C50 = 50Tons
 C30 = 30Tons C60 = 60Tons

Digit 8 – Power Supply

G = 200/230/60/3 XL
 4 = 460/60/3 XL
 5 = 575/60/3 XL

Digit 9 – Condenser Circuit

1 = Single (20-30 Ton)
 2 = Dual (40-60 Ton)

Digit 10 – Design Sequence

* = Factory Assigned

Digit 11 – Ambient Control

0 = Standard
 1 = 0 F

Digit 12 – Agency Approval

0 = None
 3 = UL/CSA

Digits 13, 14 – Miscellaneous

H = Copper Fins
 1 = Spring Isolators
 2 = Rubber Isolators

80To 120Ton Model Nomenclature

C **A** **U** **C** **C80** **4** **2** **A** **0** **3** **H** **0'**
 1 2 3 4 5,6,7 8 9 10 11 12 13 14

Digit 1 – Unit Type

C = Condenser

Digit 2 – Condenser

A = Air-Cooled

Digit 3 – Airflow

U = Upflow

Digit 4 – Development Sequence

C = Third

Digits 5,6,7 – Nominal Capacity

C80 = 80 Tons
 D10 = 100 Tons
 D12 = 120 Tons

Digit 8 – Power Supply

F = 230/60/3
 4 = 460/60/3
 5 = 575/60/3
 E = 200/60/3

Digit 9 – Condenser Circuit

2 = Dual Circuit

Digit 10 – Design Sequence

A = First

Digit 11 – Ambient Control

0 = Standard
 1 = 0 F

Digit 12 – Agency Approval

0 = None
 2 = CSA
 3 = UL/CSA

Digits 13, 14 – Miscellaneous

H = Copper Fins
 1 = Spring Isolators

1. The service digit for each model number contains 14 digits; all 14 digits must be referenced.



General Data

Table GD-1 – General Data

| | 20Ton | 25Ton | 30Ton | 40Ton | 50Ton | 60Ton | 80Ton | 100Ton | 120Ton |
|---|------------|------------|--------------------|------------|------------|------------|------------|-------------|-------------|
| Model Number | CAUC-C20 | CAUC-C25 | CAUC-C30 | CAUC-C40 | CAUC-C50 | CAUC-C60 | CAUC-C80 | CAUC-D10 | CAUC-D12 |
| Gross Heat Rejection (MBh) ¹ | 301 | 373 | 455 | 614 | 712 | 888 | 1244 | 1425 | 1819 |
| Condenser Fan Data | | | | | | | | | |
| Number/Size/Type | 2/26"/Prop | 3/26"/Prop | 3/26"/Prop | 4/26"/Prop | 6/26"/Prop | 6/26"/Prop | 8/26"/Prop | 12/26"/Prop | 12/26"/Prop |
| Fan Drive | Direct | Direct | Direct | Direct | Direct | Direct | Direct | Direct | Direct |
| No. of Motors/Hp (Each) | 2/1.0 | 3/1.0 | 3/1.0 | 4/1.0 | 6/1.0 | 6/1.0 | 8/1.0 | 12/1.0 | 12/1.0 |
| Nominal Cfm | 12,400 | 16,700 | 19,000 | 24,800 | 33,400 | 38,000 | 49,600 | 66,800 | 76,000 |
| Condenser Coil Data | | | | | | | | | |
| No./Size (In.) | 1/63x71 | 1/71x71 | 1/45x71 1/49x71 | 2/65x70 | 2/51x96 | 2/66x90 | 4/65x70 | 4/51x96 | 4/66x90 |
| Face Area (Sq. Ft.) | 31.0 | 35.0 | 46.1 | 63.2 | 67.1 | 88.0 | 126.4 | 136.0 | 165.0 |
| Rows/Fins Per Ft. | 3/168 | 3/156 | 3/168 | 3/168 | 3/156 | 3/168 | 3/168 | 3/156 | 3/168 |
| General Data | | | | | | | | | |
| No. Refrigerant Circuits | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Operating Charge ² (Lbs of R-22) | 25 | 28 | 37 | 52 | 56 | 74 | 104 | 112 | 148 |
| Condenser Storage Capacity ³ | 67 | 76 | 96 | 136 | 142 | 184 | 272 | 284 | 368 |
| Ambient Temperature Operating Range | | | | | | | | | |
| Standard Ambient (F) | 40-115 | 40-115 | 40-115 | 40-115 | 40-115 | 40-115 | 40-115 | 40-115 | 40-115 |
| Low Ambient Option (F) | 0-115 | 0-115 | 0-115 | 0-115 | 0-115 | 0-115 | 0-115 | 0-115 | 0-115 |

Notes:

1. Gross Heat Rejection is at a 30 F ITD (Initial Temperature Difference) between condensing temperature and ambient air entering condenser (includes the effect of subcooling).
2. Operating charge is for entire unit.
3. At conditions of 95 F ambient, condenser is 95 percent full.



Performance Adjustment Factors

Chart PD-2- Compressor-Condenser Capacity Increase Due To Subcooling (R-22)

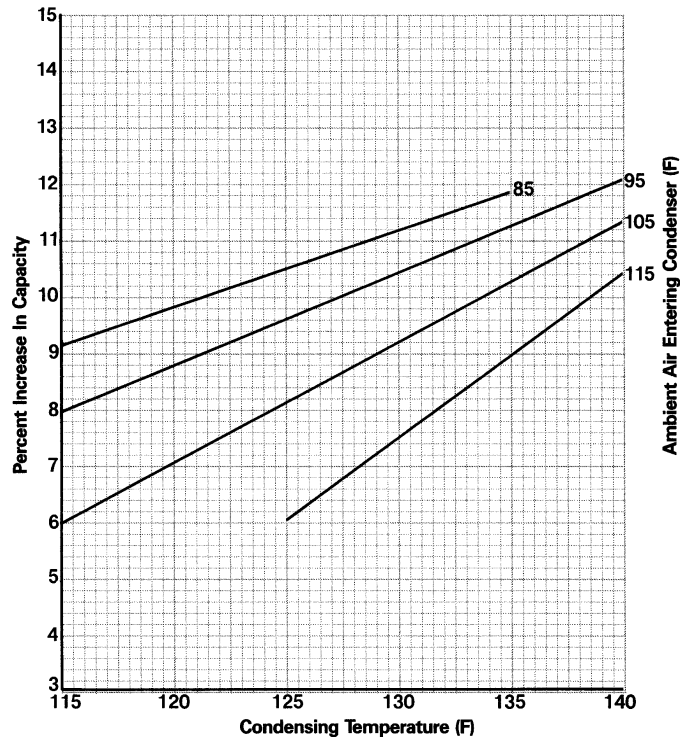


Table PD-1 - - N Factor - - Semihermetic Compressors

| Cond. Temp. | Saturated Suction Temperature (F) | | | | |
|-------------|-----------------------------------|------|------|------|------|
| | 30 | 35 | 40 | 45 | 50 |
| 110 | 1.34 | 1.32 | 1.29 | 1.27 | 1.25 |
| 115 | 1.36 | 1.34 | 1.31 | 1.29 | 1.27 |
| 120 | 1.40 | 1.37 | 1.34 | 1.32 | 1.30 |
| 125 | 1.43 | 1.40 | 1.37 | 1.34 | 1.32 |
| 130 | 1.48 | 1.44 | 1.40 | 1.38 | 1.35 |
| 135 | 1.52 | 1.48 | 1.44 | 1.41 | 1.38 |
| 140 | 1.58 | 1.54 | 1.49 | 1.45 | 1.42 |
| 145 | 1.65 | 1.59 | 1.54 | 1.49 | 1.46 |

Note:

- In order to determine N factor for CUAB units, find proper factor corresponding with the proper suction and condensing temperature from Table 9-1. This factor should be adjusted by adding or subtracting the correction value from Table 9-2.

Table PD-2 - - N Factor - - Open Compressors

| Cond. Temp. | Saturated Suction Temperature (F) | | | | |
|-------------|-----------------------------------|-------|-------|-------|-------|
| | 30 | 35 | 40 | 45 | 50 |
| 110 | 1.245 | 1.225 | 1.215 | 1.195 | 1.175 |
| 115 | 1.260 | 1.240 | 1.230 | 1.210 | 1.190 |
| 120 | 1.275 | 1.255 | 1.245 | 1.225 | 1.205 |
| 125 | 1.290 | 1.270 | 1.260 | 1.240 | 1.220 |
| 130 | 1.305 | 1.285 | 1.275 | 1.255 | 1.235 |
| 135 | 1.320 | 1.300 | 1.290 | 1.270 | 1.250 |
| 140 | 1.335 | 1.315 | 1.305 | 1.285 | 1.265 |

Table PD-4 - - N Factor Correction - - Compressor

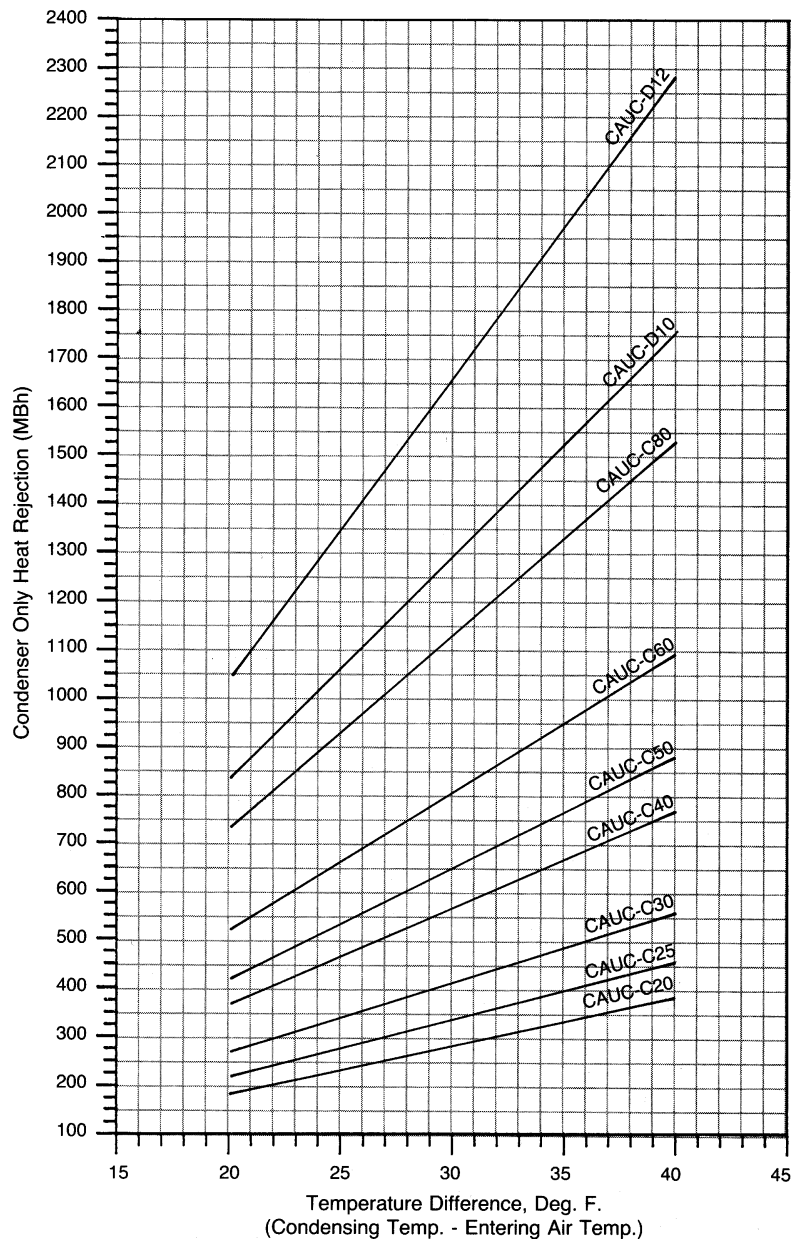
| Compressor | Correction Factor |
|------------|-------------------|
| CUAB-015M | + 0.02 |
| 020M | --- |
| 025M | - 0.01 |
| 030M | + 0.01 |
| 040R | - 0.02 |
| 050R | - 0.04 |
| 060R | - 0.04 |
| 075E | - 0.02 |
| 100E | - 0.04 |

Table PD-3 - - Altitude Correction Multiplier For Cooling Capacity - - Air-Cooled Condenser

| Altitude (Ft) | 2,000 | 4,000 | 6,000 | 8,000 | 10,000 |
|-----------------------|-------|-------|-------|-------|--------|
| Correction Multiplier | 0.977 | 0.949 | 0.917 | 0.881 | 0.843 |

Performance Data

Chart PD-1 – Condenser Heat Rejection (R-22), 20-120 Ton





Electrical Data

Table ED-1 — Electrical Data

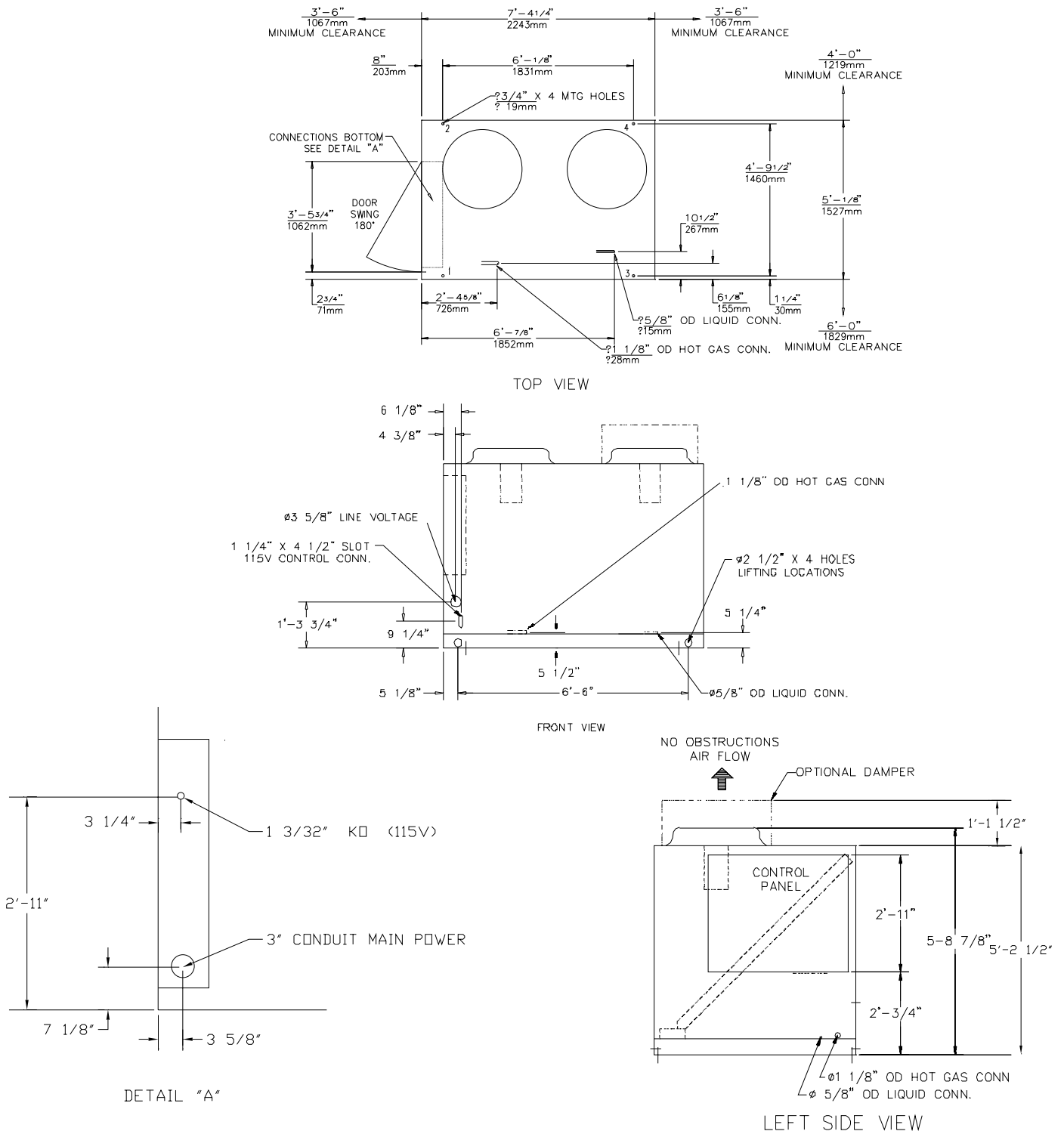
| Nominal Tons | Model No. | Unit Characteristics | | | | Condenser Fan Motor | | | |
|--------------|-----------|----------------------------|-------------------------|----------------------------------|---------------------------|---------------------|---------------|---------------|------------------|
| | | Electrical Characteristics | Allowable Voltage Range | Minimum Circuit Ampacity (3),(5) | Maximum Fuse Size (2),(5) | No./HP (1) | FLA (Ea.) (1) | LRA (Ea.) (1) | KW (Ea.) (1),(4) |
| 20 | CAUC-C20G | 200-230/60/3 | 180-220/208-254 | 9.2 | 15 | 2/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C204 | 460/60/3 | 416-508 | 4.1 | 15 | 2/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C205 | 575/60/3 | 520-635 | 3.2 | 15 | 2/1.0 | 1.4 | 7.2 | 0.9 |
| 25 | CAUC-C25G | 200-230/60/3 | 180-220/208-254 | 13.3 | 20 | 3/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C254 | 460/60/3 | 416-508 | 5.9 | 15 | 3/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C255 | 575/60/3 | 520-635 | 4.6 | 15 | 3/1.0 | 1.4 | 7.2 | 0.9 |
| 30 | CAUC-C30G | 200-230/60/3 | 180-220/208-254 | 13.3 | 20 | 3/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C304 | 460/60/3 | 416-508 | 5.9 | 15 | 3/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C305 | 575/60/3 | 520-635 | 4.6 | 15 | 3/1.0 | 1.4 | 7.2 | 0.9 |
| 40 | CAUC-C40G | 200-230/60/3 | 180-220/208-254 | 17.4 | 20 | 4/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C404 | 460/60/3 | 416-508 | 7.7 | 15 | 4/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C405 | 575/60/3 | 520-635 | 6.0 | 15 | 4/1.0 | 1.4 | 7.2 | 0.9 |
| 50 | CAUC-C50G | 200-230/60/3 | 180-220/208-254 | 25.6 | 30 | 6/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C504 | 460/60/3 | 416-508 | 11.3 | 15 | 6/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C505 | 575/60/3 | 520-635 | 8.8 | 15 | 6/1.0 | 1.4 | 7.2 | 0.9 |
| 60 | CAUC-C60G | 200-230/60/3 | 180-220/208-254 | 25.6 | 30 | 6/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C604 | 460/60/3 | 416-508 | 11.3 | 15 | 6/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C605 | 575/60/3 | 520-635 | 8.8 | 15 | 6/1.0 | 1.4 | 7.2 | 0.9 |
| 80 | CAUC-C80E | 200/60/3 | 180-220 | 34 | 40 | 8/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C80F | 230/60/3 | 208-254 | 34 | 40 | 8/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-C804 | 460/60/3 | 416-508 | 15 | 20 | 8/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-C805 | 575/60/3 | 520-635 | 12 | 15 | 8/1.0 | 1.4 | 7.2 | 0.9 |
| 100 | CAUC-D10E | 200/60/3 | 180-220 | 50 | 60 | 12/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-D10F | 230/60/3 | 208-254 | 50 | 60 | 12/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-D104 | 460/60/3 | 416-508 | 22 | 25 | 12/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-D105 | 575/60/3 | 520-635 | 17 | 20 | 12/1.0 | 1.4 | 7.2 | 0.9 |
| 120 | CAUC-D12E | 200/60/3 | 180-220 | 50 | 60 | 12/1.0 | 4.1 | 20.7 | 0.9 |
| | CAUC-D12F | 230/60/3 | 208-254 | 50 | 60 | 12/1.01 | 4.1 | 20.7 | 0.9 |
| | CAUC-D124 | 460/60/3 | 416-508 | 22 | 25 | 12/1.0 | 1.8 | 9.0 | 0.9 |
| | CAUC-D125 | 575/60/3 | 520-635 | 17 | 20 | 12/1.0 | 1.4 | 7.2 | 0.9 |

Notes:

1. Electric information is for each individual motor.
2. Maximum fuse size is permitted by NEC 440-22 is 300 percent of one motor RLA plus the RLA of the remaining motors.
3. Minimum circuit ampacity equals 125 percent of the RLA of one motor plus the RLA of the remaining motors.
4. All Kw values taken at conditions of 45 F saturated suction temperature at the compressor and 95 F ambient.
5. Local codes may take precedence.

Dimensional Data (20Ton)

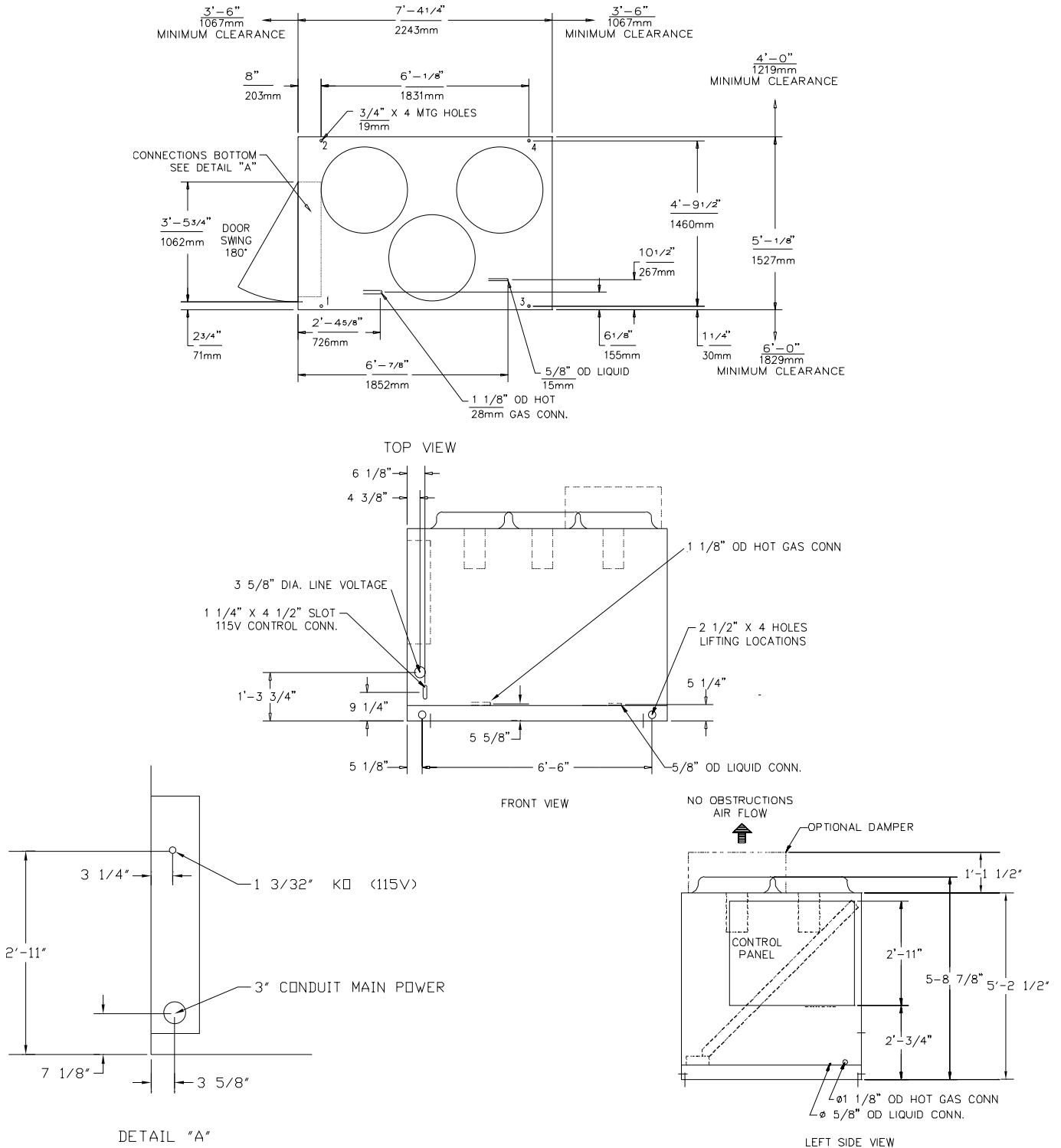
Figure DD-1 – CAUC-C20 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations





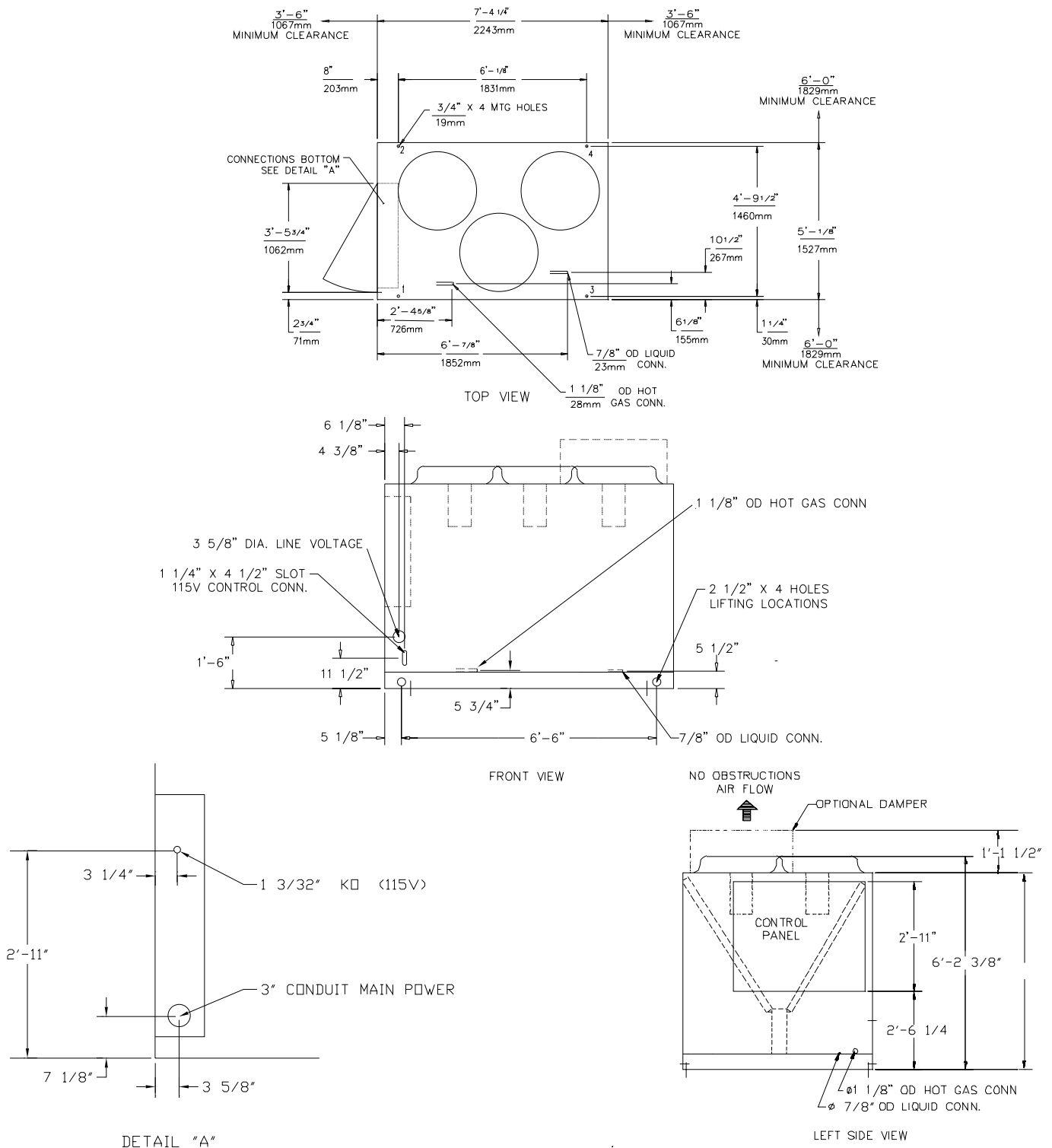
Dimensional Data (25 Ton)

Figure DD-2 – CAUC-C25 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations



Dimensional Data (30Ton)

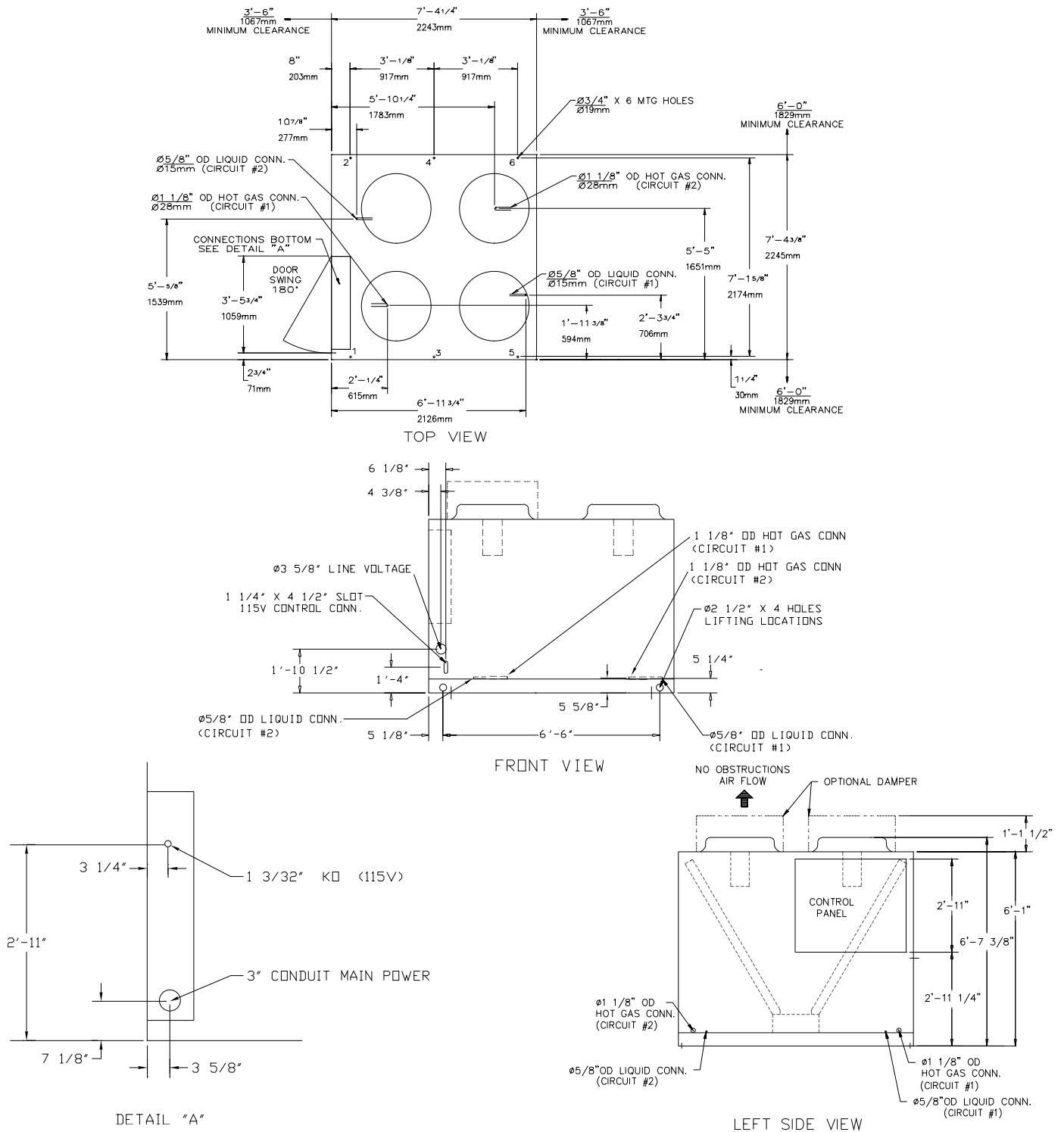
Figure DD-3 – CAUC-C30 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations





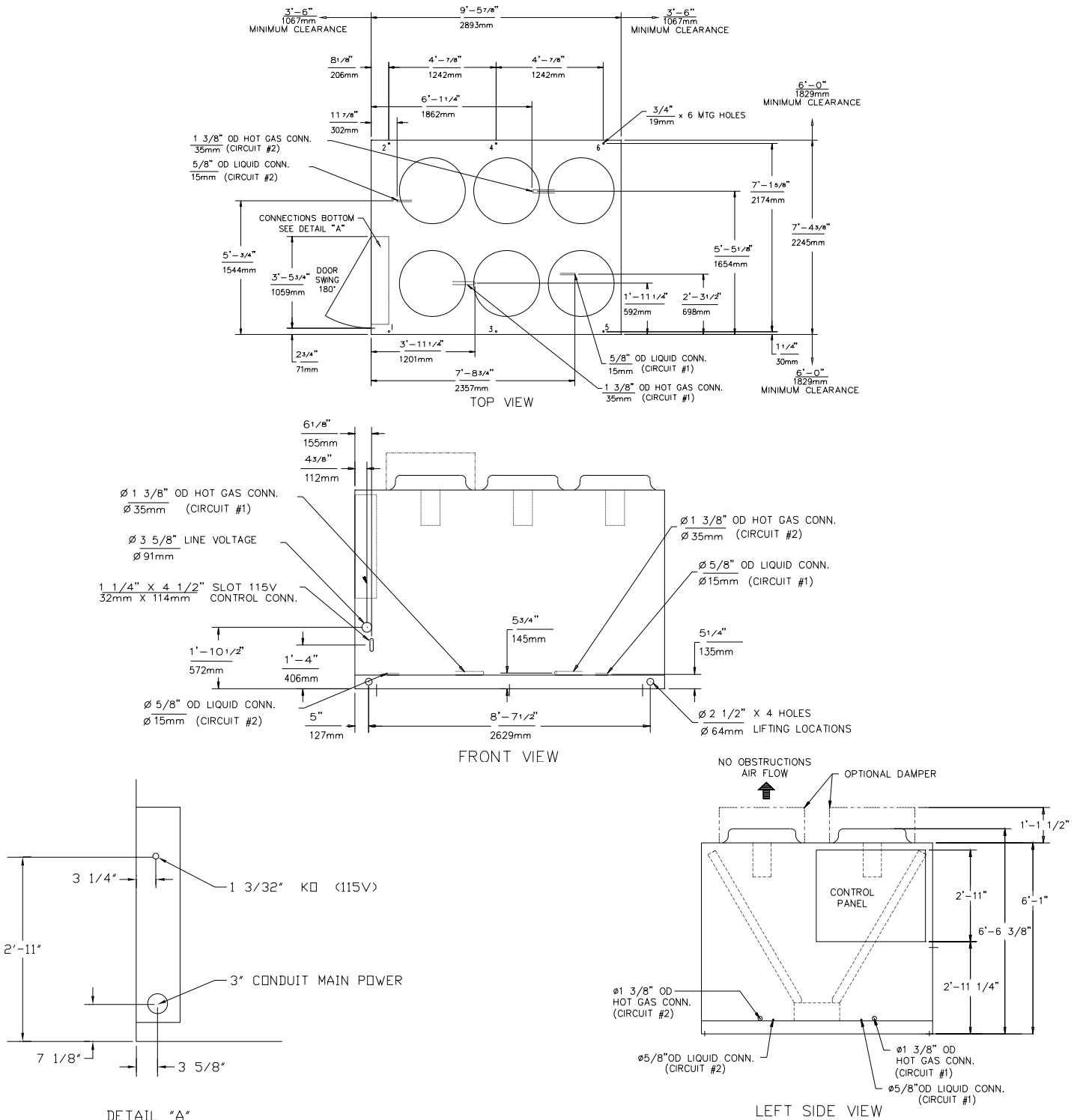
Dimensional Data (40Ton)

Figure DD-4 - CAUC-C40 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations



Dimensional Data (50Ton)

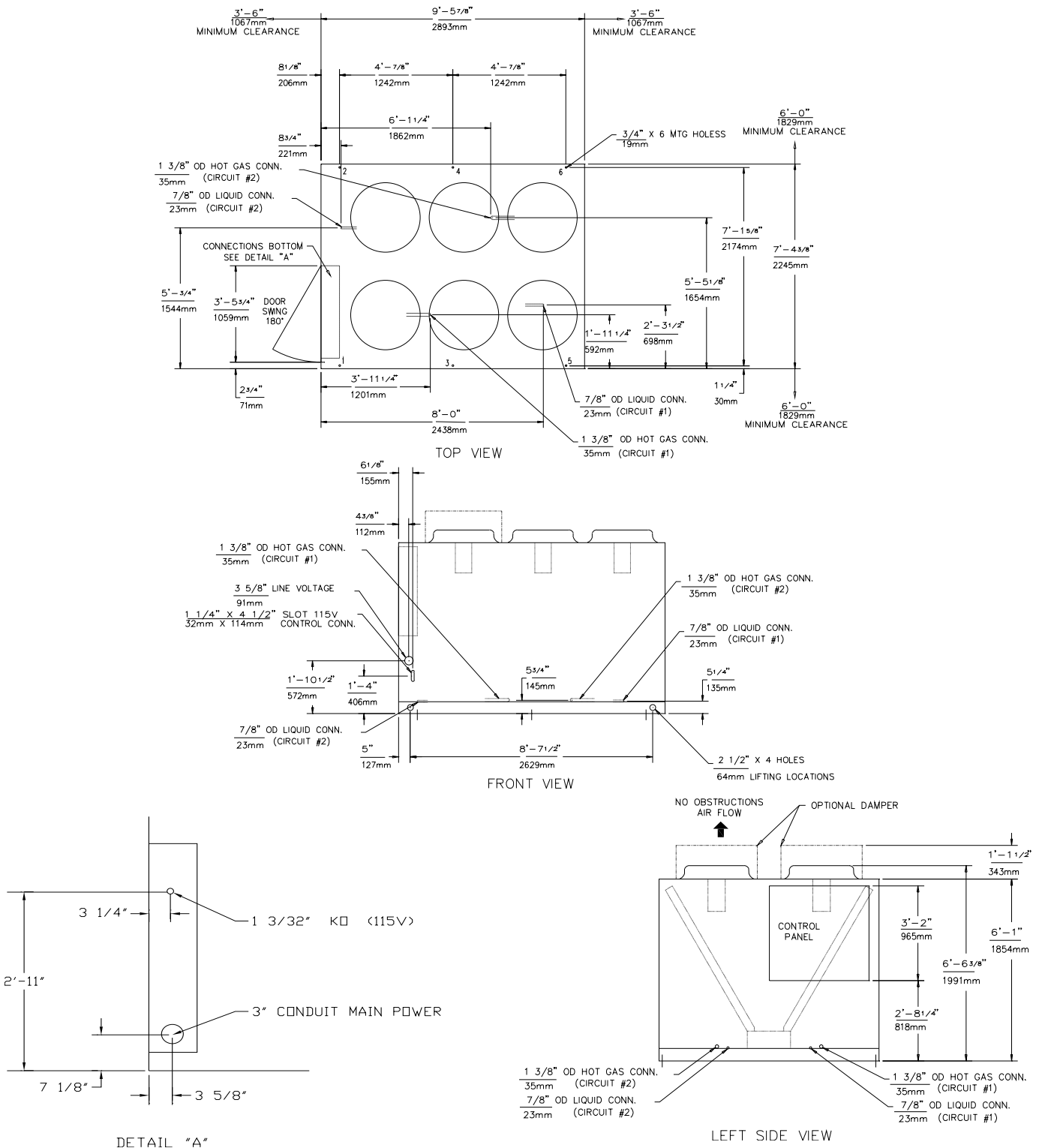
Figure DD-5 – CAUC-C50 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations





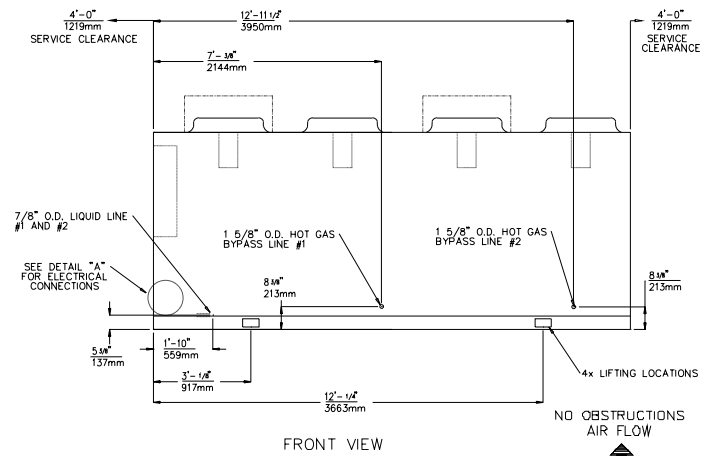
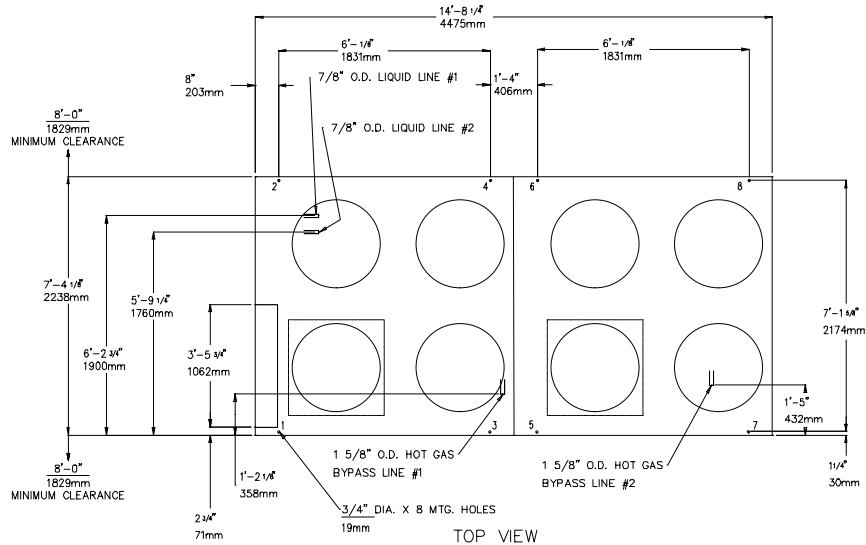
Dimensional Data (60 Ton)

Figure DD-6 - CAUC-C60 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations



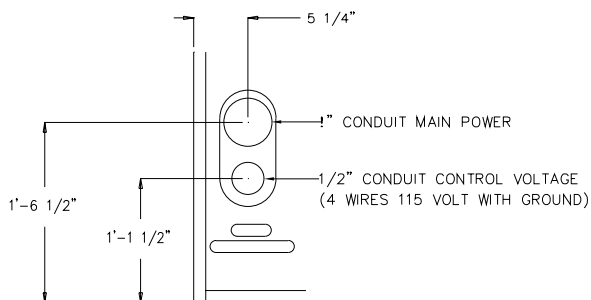
Dimensional Data (80Ton)

Figure DD-7 – CAUC-C80 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations

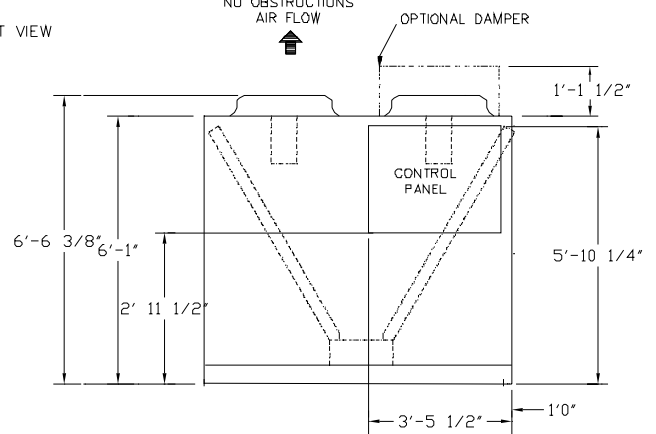


NOTES:

- HOT GAS DISCHARGE AND LIQUID LINE CONNECTION LOCATIONS SHOWN IN THE FRONT VIEW DO NOT REPRESENT HOLES IN THE UNIT PANEL. ACCESS TO THESE CONNECTIONS ARE PROVIDED BY THE CUSTOMERS.
- DIMENSIONAL TOLERANCE +/- 1/8".



DETAIL "A"

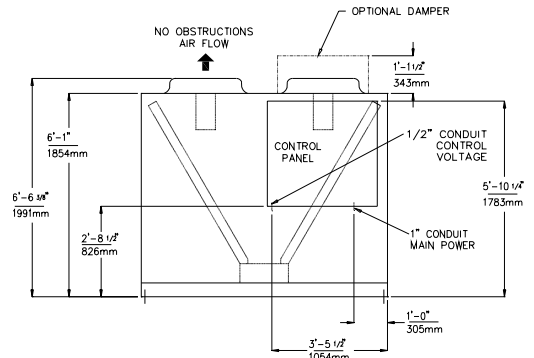
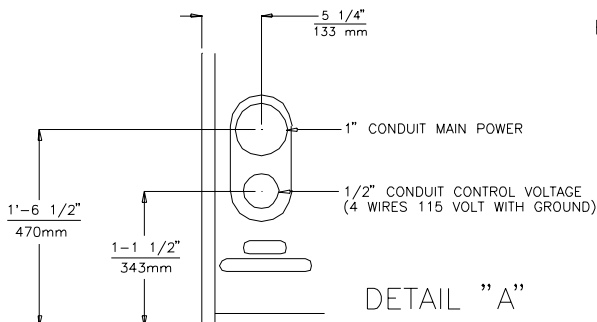
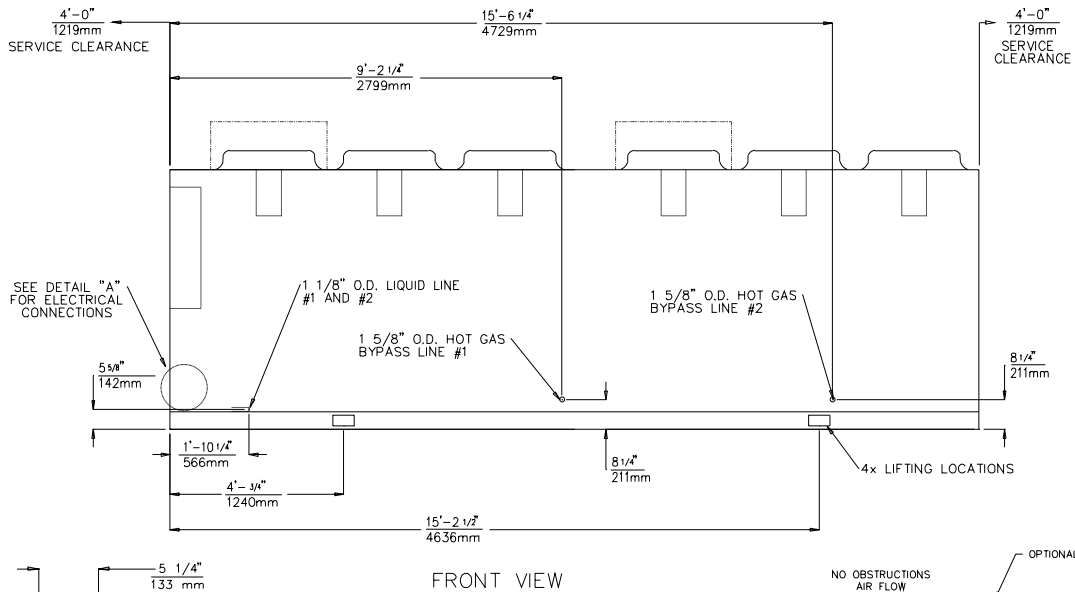
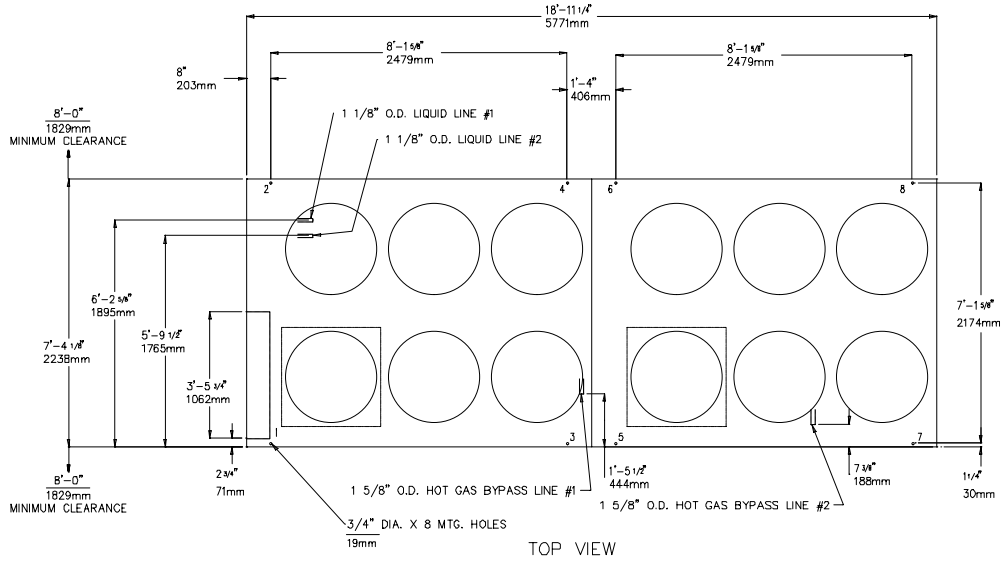


LEFT SIDE VIEW



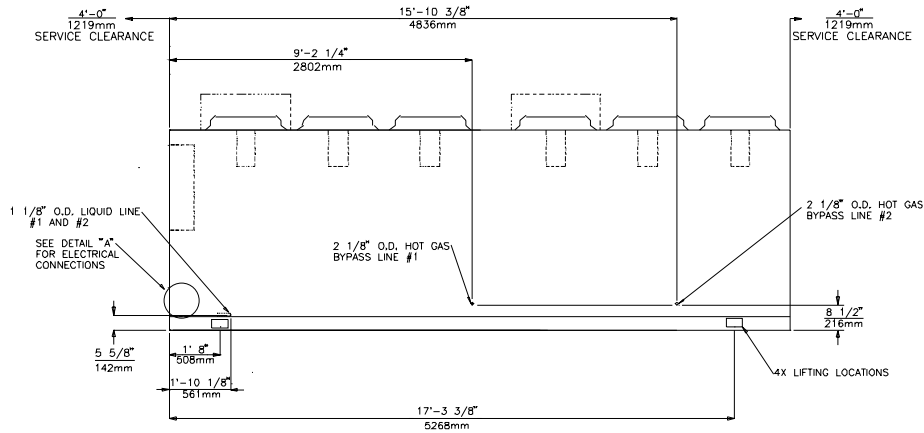
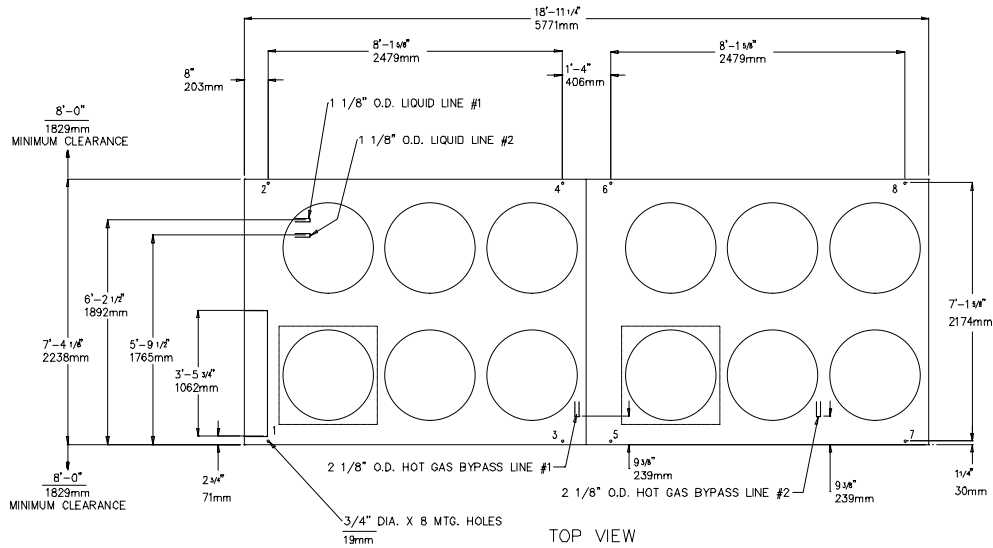
Dimensional Data (100Ton)

Figure DD-9 – CAUC-C100 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations



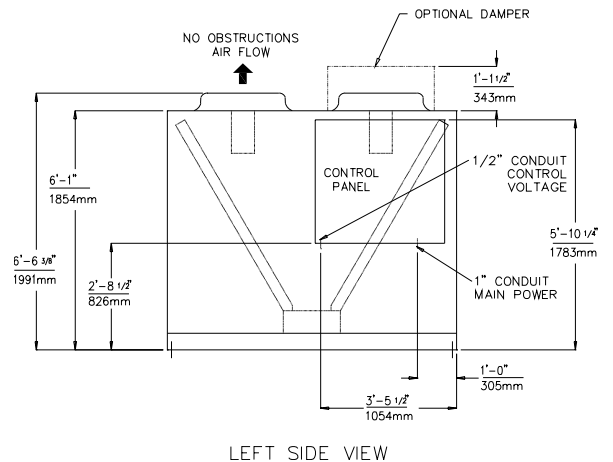
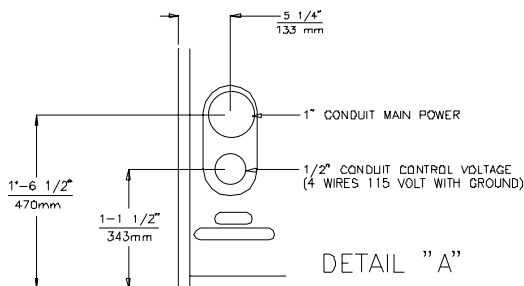
Dimensional Data (120Ton)

Figure DD-10 – CAUC-C120 Unit Dimensions, Recommended Clearances, Mounting Locations, Electric and Refrigerant Connection Sizes and Locations



NOTES:

- HOT GAS DISCHARGE AND LIQUID LINE CONNECTION LOCATIONS SHOWN IN THE FRONT VIEW DO NOT REPRESENT HOLES IN THE UNIT PANEL. ACCESS TO THESE CONNECTIONS ARE PROVIDED BY THE CUSTOMERS.
- DIMENSIONAL TOLERANCE +/- 1/8".



Weights

Figure W-1 – 20-30Tons

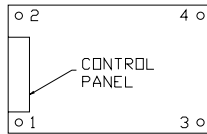
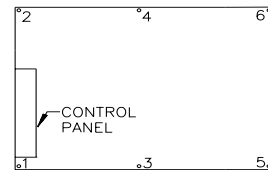


Figure W-2 – 40-60Tons

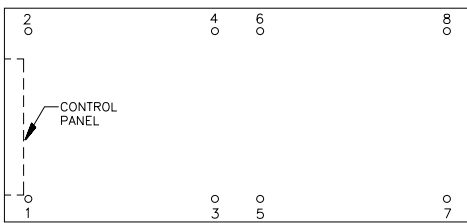


Top View (Mounting Locations)

Table W-1 – 20 to 60 Ton Weights (Lbs./Kg.)

| Nominal Tons | Model Number | Operating Weight | | Weight On Isolator At Mounting Locations | | | | | | | | | | | | |
|--------------|--------------|------------------|--------|--|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|-------|
| | | AL | CU | Loc. 1 | | Loc. 2 | | Loc. 3 | | Loc. 4 | | Loc. 5 | | Loc. 6 | | |
| 20 | CAUC-C20 | Lb. | 1146 | 1348 | 320 | 371 | 326 | 365 | 248 | 306 | 252 | 301 | — | — | — | — |
| | | Kg. | 519.8 | 611.5 | 145.2 | 168.3 | 147.9 | 165.6 | 112.5 | 138.8 | 114.3 | 136.5 | | | | |
| 25 | CAUC-C25 | Lb. | 1190 | 1394 | 329 | 378 | 337 | 381 | 259 | 315 | 265 | 319 | — | — | — | — |
| | | Kg. | 539.8 | 632.3 | 149.2 | 171.5 | 152.9 | 172.8 | 117.5 | 142.9 | 120.2 | 144.7 | | | | |
| 30 | CAUC-C30 | Lb. | 1302 | 1585 | 353 | 414 | 371 | 444 | 282 | 355 | 296 | 381 | — | — | — | — |
| | | Kg. | 590.6 | 719.0 | 160.1 | 187.8 | 168.3 | 201.4 | 127.9 | 161.0 | 134.3 | 172.8 | | | | |
| 40 | CAUC-C40 | Lb. | 2048 | 2366 | 363 | 406 | 347 | 392 | 349 | 404 | 334 | 389 | 335 | 401 | 320 | 387 |
| | | Kg. | 929.0 | 1073.2 | 164.7 | 184.2 | 157.4 | 177.8 | 158.3 | 183.3 | 151.5 | 176.5 | 152.0 | 181.9 | 145.2 | 175.5 |
| 50 | CAUC-C50 | Lb. | 2280 | 2664 | 407 | 464 | 392 | 449 | 387 | 453 | 373 | 438 | 367 | 441 | 354 | 427 |
| | | Kg. | 1034.2 | 1208.4 | 184.6 | 210.5 | 177.8 | 203.7 | 175.5 | 205.5 | 169.2 | 198.7 | 166.5 | 200.0 | 160.6 | 193.7 |
| 60 | CAUC-C60 | Lb. | 2465 | 3010 | 433 | 515 | 420 | 505 | 417 | 511 | 405 | 501 | 401 | 507 | 389 | 497 |
| | | Kg. | 1118.1 | 1365.3 | 196.4 | 233.6 | 190.5 | 229.1 | 189.2 | 231.8 | 183.7 | 227.3 | 181.9 | 230.0 | 176.5 | 225.4 |

Figure W-3 – 80-120Tons



Top View (Mounting Locations)

Table W-2 – 80 to 120 Ton Weights (Lbs./Kg.)

| Nominal Tons | Model Number | Coil Fin | Operating Weight | | Weight On Isolator At Mounting Points | | | | | | | |
|--------------|--------------|----------|------------------|-------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| | | | AL | CU | Loc. 1 | Loc. 2 | Loc. 3 | Loc. 4 | Loc. 5 | Loc. 6 | Loc. 7 | Loc. 8 |
| 80 | CAUC-C80 | AL | Lb. | 4036 | 514 | 478 | 522 | 485 | 524 | 487 | 532 | 494 |
| | | Kg. | 1830.7 | 233.2 | 216.8 | 236.8 | 220.0 | 237.7 | 220.9 | 241.3 | 224.1 | |
| 100 | CAUC-D10 | CU | Lb. | 4542 | 603 | 571 | 600 | 569 | 600 | 568 | 597 | 566 |
| | | Kg. | 2060.3 | 273.5 | 259.0 | 272.2 | 258.1 | 272.2 | 257.6 | 270.8 | 256.7 | |
| 100 | CAUC-D10 | AL | Lb. | 4911 | 631 | 600 | 630 | 598 | 629 | 598 | 628 | 597 |
| | | Kg. | 2227.6 | 286.2 | 272.2 | 285.8 | 271.3 | 285.3 | 271.3 | 284.9 | 270.8 | |
| 120 | CAUC-D12 | CU | Lb. | 5371 | 586 | 549 | 597 | 560 | 600 | 562 | 611 | 572 |
| | | Kg. | 2436.3 | 265.8 | 249.0 | 270.8 | 254.0 | 272.2 | 254.9 | 277.1 | 259.5 | |
| 120 | CAUC-D12 | AL | Lb. | 5472 | 698 | 666 | 700 | 668 | 700 | 668 | 702 | 670 |
| | | Kg. | 2482.1 | 316.6 | 302.1 | 317.5 | 303.0 | 317.5 | 303.0 | 318.4 | 303.9 | |
| 120 | CAUC-D12 | CU | Lb. | 5971 | 774 | 742 | 779 | 747 | 780 | 748 | 786 | 753 |
| | | Kg. | 2708.4 | 351.1 | 336.6 | 353.4 | 338.8 | 353.8 | 339.3 | 356.5 | 341.6 | |



Mechanical Specifications

General

Factory-assembled and wired air cooled condensing unit. The unit frame is constructed of 14 gauge welded galvanized steel. Panels and access doors are 14 or 16 gauge galvanized steel. Unit surface is phosphatized and finished with Trane Slate Gray air-dry paint. This paint finish exceeds ASTM-B117 500 hour continuous salt spray test. The unit coils are protected with steel louvered panels. These panels add strength to the cabinet and an aesthetically pleasing appearance to the unit.

Refrigeration Circuits and Control

The 20 to 30 ton units are single circuit. The 40 to 120 ton units are dual circuited. All the necessary controls to run the unit fans are provided. The control panel contains fan motor contactors, terminal point connection for compressor interlock and 115 volt control power transformer. Standard units will operate from 40 to 115 F. All units shipped with factory installed liquid line service valves.

Condenser Coils and Fans

Condenser coils have configured aluminum fins mechanically bonded to copper tubing with integral subcooler. The coils are underwater burst/leak tested at 450 psi. Direct drive condenser fan motors have permanently lubricated ball bearings and thermal overload protection.

Low Ambient Operation

Standard ambient control allows operation down to 40 F with cycling of condenser fans. Optional low ambient allows operation down to 0 F with external damper assembly for head pressure control. Refer to Options section for details.

Options

Low Ambient Control

Low ambient allows operation down to 0 F through the use of fan cycling and head pressure control dampers. The control consists of a heavy gauge damper assembly, R-22 operator, tubing and grommet. All components are factory-mounted for both production and Packed Stock Plus units. Low ambient control must be ordered when the air-cooled condenser is matched with a CCKC heat recovery chiller.

Copper Finned Condenser Coil

Copper fins are mechanically bonded to copper tubes for use in corrosive atmospheres. Nominal unit capacity remains the same.

Spring Isolation Package

Spring isolators reduce transmission of noise and vibration to building structure, equipment, and adjacent spaces. Isolators consist of a cast, spring loaded, telescoping housing as the isolation medium. Mountings include built-in leveling bolts, resilient inserts that act as centering guides, and ribbed neoprene acoustical pads bonded to the bottom of the isolator. The kit includes instructions for field installation.

Neoprene-in-shear Isolation Package

Neoprene isolators reduce transmission of noise and vibration to building structure, equipment, and adjacent spaces. Isolators have a steel plate and base completely imbedded in neoprene. Mountings have a 1/4-inch deflection. The kit includes instructions for field installation. Available on 20 to 60-ton units only.



TRANE®

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Since The Trane Company has a policy of continuous product and product data improvement, it reserves the right to change design and specifications without notice.