

## **Air-Cooled Split System Condensing Units**

**Model RCS 06G through 20F  
6.5 through 20 Tons**

**R-410A Refrigerant**



**6.5 – 7.5 Tons**



**10.0 – 12.0 Tons**



**15.0 – 20.0 Tons**

<b>Introduction</b> .....	<b>3</b>	<b>Performance Data</b> .....	<b>9</b>
Why Use a High Efficiency, Air-Cooled Split System? .....	3	Gross Capacity and Power .....	9
Agency Listed .....	3	Unit Capacities .....	10
Daikin's Unique Features .....	4	<b>Dimensional and Weight Data</b> .....	<b>14</b>
Components .....	5	<b>Electrical Data</b> .....	<b>16</b>
Accessories .....	6	Power Wiring .....	16
<b>Application Data</b> .....	<b>7</b>	<b>Wiring Diagrams</b> .....	<b>17</b>
General Rooftop Applications .....	7	<b>Engineering Guide Specification</b> .....	<b>20</b>
<b>Physical Data</b> .....	<b>8</b>		
Unit Capacity and Physical Data .....	8		

## Why Use a High Efficiency, Air-Cooled Split System?

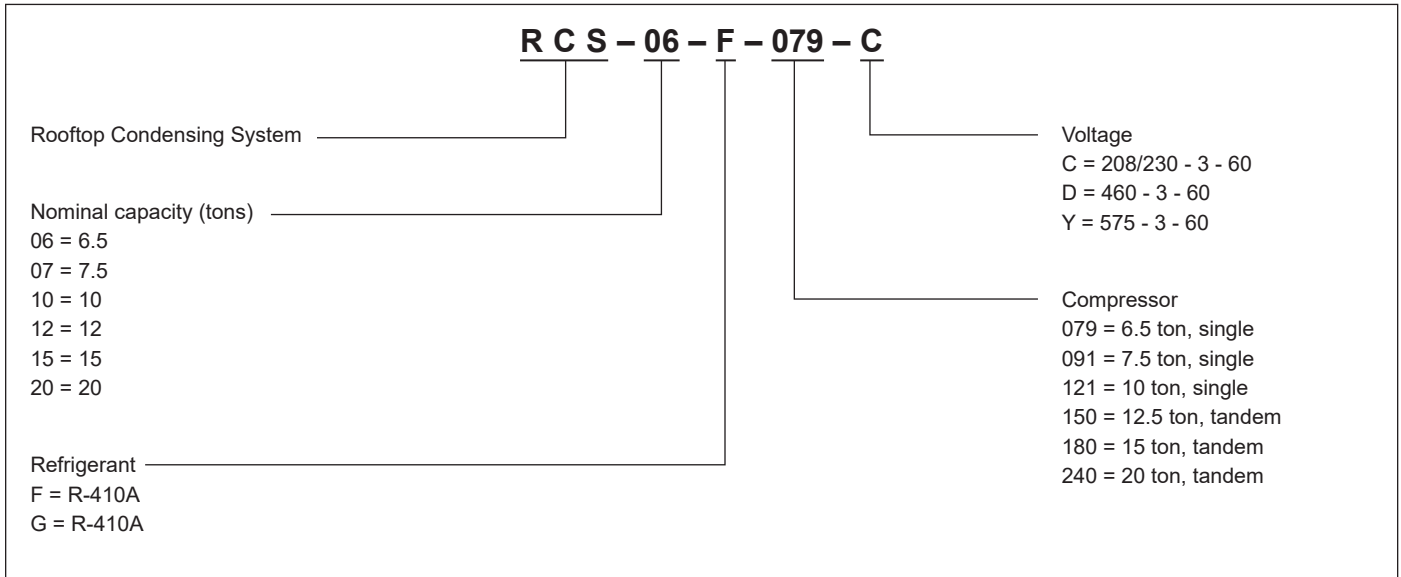
- The size ranges offered by Daikin allow you to mix or match components to meet actual job requirements, thus eliminating the need to use oversized or undersized equipment. Equipment sized to meet the actual building load will provide better operating economy, better humidity control, and longer equipment life.
- With an air-cooled system, you have no water or sewer connections to make, and no troublesome or costly water treatment.
- An air-cooled split system is inherently more efficient than a air-cooled chiller system. The air-cooled split system has no pump and runs at a higher, more efficient suction pressure.
- Remote mounting of the already quiet condensing unit keeps the compressor and condenser fan noise outside. Vertical discharge fans also contribute to quietness, carrying the noise up and away from the surrounding area.
- Because of the simple design of the Daikin condensing unit, installation is quick, simple, and very little maintenance is required.

**NOTE:** For further information on a complete air-cooled split system, refer to [Catalog 580](#) (Destiny Indoor Air Handlers).

### Agency Listed

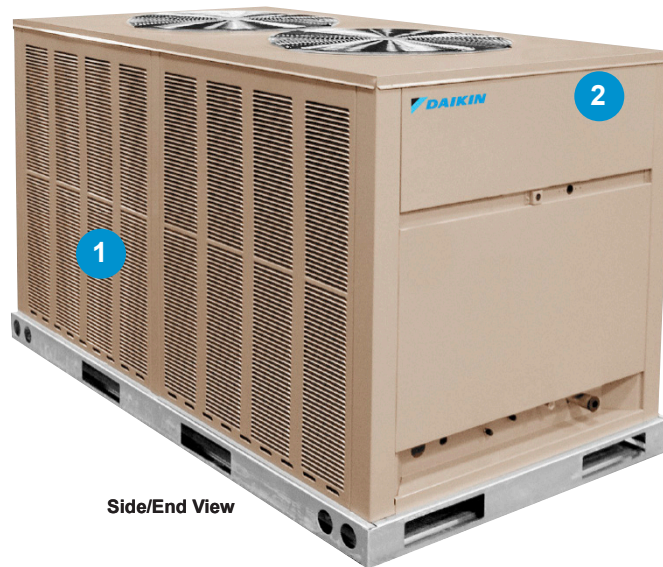


## Nomenclature

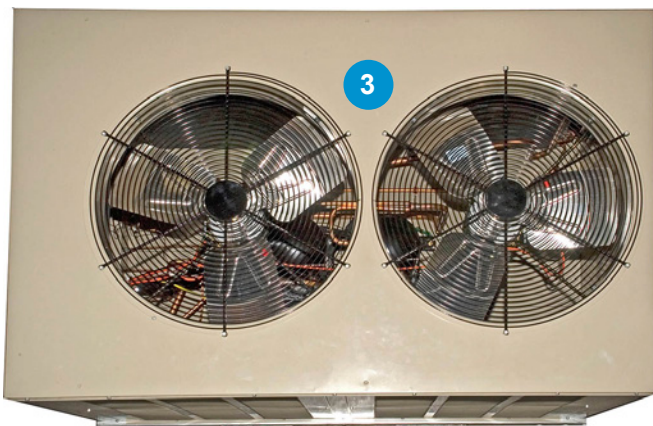


**NOTE:** For larger size units (greater than 20 ton), refer to [Catalog 222](#)

## Daikin's Unique Features



Side/End View



Top View



End View

### 1 Louvers

- Full-face coil louvers for aesthetics and hail protection

### 2 Durable construction

- Pre-painted exterior cabinet panels pass 1000-hour ASTM B 117 Salt Spray Test for durability

### 3 Condenser fans

- Vertical air discharge for quiet operation

### 4 Condenser coils

- Large face area
- High efficiency enhanced copper tubing
- All aluminum fin design

### 5 R410A refrigerant

- Environmentally friendly
- Excellent efficiency
- Insignificant glide making system easier to service

### 6 Scroll compressors

- Provide maximum dependability, efficiency and quiet operation

## Components

### Cabinet

- Galvanized steel with powder coat paint finish. The powder coat paint finish is high gloss, durable and capable of withstanding a 1000 hour salt spray test per ASTM B117.
- Unit is of the frame and panel type construction which allows all access panels to be opened or removed without affecting the structural strength of the unit.
- Fastening screws are also of the 1000 hour type.
- Stamped louver panels offer 100% protection for the condenser coil.

### Base Pan

- Galvanized steel with powder coat paint finish.

### Compressors

- High efficiency Copeland® scroll compressors.
- Engineered for long life and durability.
- Unloading (50%) is available on 10 to 20 ton models.
- All compressors have inherent high temperature protection.
- Mounted on isolators which reduce vibration and noise.

### Condenser Coil

- Constructed with copper tubes and aluminum fins and mechanically bonded to the tubes for maximum heat transfer capabilities.
- Condenser coil assemblies are leak tested up to 450 psig internal pressure.

### Refrigerant Connections

- Field sweat joints are made external of the unit and are located close to the ground for a neat looking installation.

### Crankcase Heaters

- Standard on 6 – 20 ton models.

### Low Ambient Control

- Pressure sensitive fan cycling control allows operation down to 0°F [-17.8°C]\*.
- \*6 and 7.5 ton units require additional low ambient kit for 0°F operation. Without the low ambient kit, the 6 and 7.5 ton units are rated down to 55°F ambient operation.

### Service Valves

- Standard on liquid and suction lines for all models.

### Service Access

- Control box with separate line and control voltages, as well as compressor and other refrigerant controls are accessible through access panels.
- Electrical access cover may be opened or removed without affecting normal operation of the unit.
- Condenser fan motors have molded plugs for easy removal.
- Removable louver panels/end access panel for coil cleaning.

### Condensing Section

- Open design permits unrestricted condenser airflow, access to compressors, refrigeration components, piping, and access for roof maintenance.
- High efficiency Copeland scroll compressors.
- 12 – 20 ton units feature dual compressors for redundancy and efficient capacity control.
- Large face area condenser for high operating efficiencies.
- Vertical air discharge minimizes noise.

### High Pressure Control

- Manual reset control deactivates system (opens contactor circuit) if abnormally high pressure occurs.

### Low Pressure Control

- Automatic reset control deactivates system if abnormally low pressure or refrigerant loss occurs.

### Condenser Fan Motors

- Direct drive, single-phase, permanently lubricated motors with inherent thermal overload.

### Equipment Ground

- Lug for field connection of ground wire.

### Testing

- All units are run-tested at the factory prior to shipment. Units are shipped with a nitrogen holding charge.

## Accessories

Accessories (Table 1) can be added to further enhance the unit.

Table 1: Accessories

Accessory Description	Model Number	Sizes
Anti-short cycle timer kit <sup>1</sup>	RXAT-A01	All
Sight glass	RXAG-A048	6.5 – 15 ton
	RXAG-A020	20 ton
Liquid Solenoid Valve	RXAV-CD078	6.5 & 7.5
	RXAV-CD120	10, 11, & 12
	RXAV-CD180	15 & 20

1. Not required when Daikin programmable thermostat is purchased.

## Programmable Thermostat (P/N 113129801)

The commercial setback digital thermostat uses microcomputer technology to provide precise time and temperature control. This thermostat offers the flexibility to design heating and cooling programs that fit building needs. This thermostat is adaptable to most residential 24 volt forced air multi-stage systems with electric or fossil fuel auxiliary and is the ultimate for comfort, convenience, and performance.

Figure 1: Digital Thermostat



### Features

The thermostat can enhance your HVAC system by offering you the following performance features.

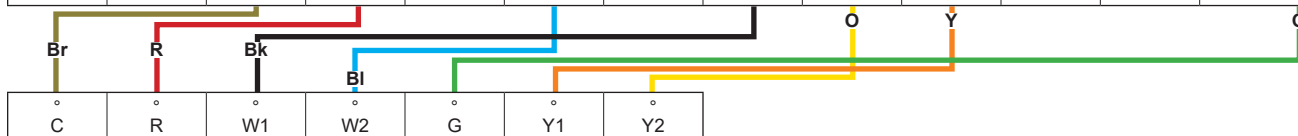
- Automatic heat/cool system changeover
- Fossil fuel or electric heat compatible
- Large luminescent display and industry first lighted keypad
- Permanent program memory
- Configuration menu allows keypad selection of options, no additional sub-bases required
- Selectable energy management recovery
- Onboard system and thermostat diagnostics
- Single stage models accept remote indoor sensor
- Staging models accept up to three indoor sensors and offer temperature averaging or weighted average by sensor location and program time

### Typical Connection

Use the terminal output information below to help you wire the thermostat properly for your multi-stage system. Colors shown are typical.

Thermostat Terminals (Upper)						
L	PH	D	SA	SB	SC	OT
Malfunction Light	X-10 Module Input	Not Used	Remote Sense A	Remote Sense B	Remote Sense C	Outdoor Sensor

Thermostat Terminals (Lower)												
System	E	C	R	W3/A <sup>1</sup>	W <sup>2</sup>	E <sup>2</sup> /P	W <sup>1</sup>	Y <sup>2</sup>	Y <sup>1</sup>	B	O	G
Multi-Stage	No Function	24 Volt (Common)	24 Volt (Hot)	Heat Mode 3rd Stage	Heat Mode 2nd Stage	No Function	Heat Mode 1st Stage	Cool Mode 2nd Stage	Cool Mode 1st Stage	Energized in Heat and Off Mode	Energized in Cool Mode	Blower/Fan Energized on call for Cool (and heat if configured to Electric Heat)



<sup>1</sup> Use a wirenut to extend from the leads provided in the unit to the thermostat.

<sup>2</sup> W1, W2, Y2 are optional depending upon size/options.



## General Rooftop Applications

Units are intended for use in normal heating, ventilating, and air conditioning applications. Consult your local Daikin sales representative for applications involving operation at high ambient temperatures, high altitudes, non-cataloged voltages, and for job specific unit selections that fall outside of the range of the catalog tables.

For proper operation, units should be rigged in accordance with instructions stated in [IM 962](#) (6 to 20 ton units). Follow factory check, test and start procedures explicitly to achieve satisfactory start-up and operation (refer to [IM 962](#)).

### Unit Location

A structural engineer must verify that the roof has adequate strength and ability to minimize deflection.

Unit condenser coils should be located in an area that will avoid contact with any heated exhaust air.

Allow sufficient space around the unit for maintenance/service clearance. Refer to [Figure 2](#) for recommended clearances. Consult your Daikin sales representative if available clearances do not meet minimum recommendations. Where code considerations (such as the NEC) require extended clearances, those codes take precedence.

### Service Clearance

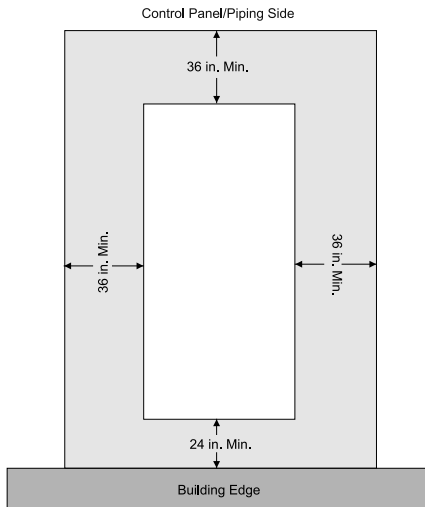
Allow recommended service clearances for units as shown in [Figure 2](#). Provide a roof walkway along the sides of the unit for service and access to controls and components. Contact your Daikin sales representative for service requirements less than those recommended.

### Unit Wiring

All units require three phase, 60 Hz, 208/230, 230, 460, or 575 volt power supply. All units include branch circuits and short circuit protection and are available with a power block.

All wiring must be installed in accordance with the National Electric Code (NEC) and local codes.

**Figure 2: RCS 06F – 20F Service Clearances**



## Unit Capacity and Physical Data

**Table 2: RCS 06G – 20F Physical Data**

Model	RCS					
	06G Single	07G Single	10G Single	12F Tandem	15F Tandem	20F Tandem
<b>Capacity and Weight</b>						
Capacity (tons) [kW]	6.5 [22.9]	7.5 [26.4]	10 [35.2]	12 [42.2]	15 [52.8]	20 [70.3]
Number of circuits	1					
Operating weight (lbs) [Kg]	245 [111.1]	307 [139.2]	557 [253.0]	650 [294.8]	746 [338.4]	952 [431.8]
Shipping weight (lbs) [Kg]	252 [114.3]	313 [141.9]	597 [271.0]	690 [313.0]	786 [356.5]	992 [450.0]
<b>Compressor</b>						
Quantity	1			2		
Type	Scroll					
RPM	3500					
Capacity Control, Stages	1			2		
Refrigerant charge R410A oz. [g]	219 [6209]	400 [11340]	437 [12,389]	378 [10,716]	506 [14,345]	655 [18,569]
<b>Condenser Fans</b>						
Quantity	1		2		3	
CFM [L/s]	5700 [2690]	5700 [2690]	8000 [3775]	8100 [3882]	12,000 [5663]	12,000 [5663]
Diameter (in.) [mm]	26 [660]	26 [660]	24 [610]	24 [610]	24 [610]	24 [610]
Drive	Direct					
"Motor horsepower each [W]"	1/2 [373]	1/2 [373]	1/3 [249]	1/3 [249]	1/3 [249]	1/3 [249]
Type	ECM			PSC		
RPM	975			1075		
<b>Condenser Coil</b>						
Quantity	1		2			
Rows	1		2		3	
Fins per inch	22	22	18	22	22	22
Sq. ft. [m <sup>2</sup> ]	28.38 [2.64]	28.38 [2.64]	32.88 [3.05]	33.9 [3.05]	40.38 [3.75]	40.38 [3.75]
Fins/tubes	Aluminum/Copper					
<b>Cabinet</b>						
Finish	Powder Coat					
Sheet metal	Galvanized					
Gauge (nominal) top	20					
Sides	20					
Base rails	14					
<b>Refrigerant Connection</b>						
Vapor sweat (in.) [mm]	1-1/8 [29]	1-1/8 [29]	1-3/8 [35]	1-3/8 [35]	1-5/8 [41.3]	1-5/8 [41.3]
Liquid sweat (in.) [mm]	1/2 [13]	1/2 [13]	5/8 [16]	5/8 [16]	5/8 [16]	7/8 [22]



# Gross Capacity and Power

**Table 3: RCS 06G–20F Gross Capacity and Power**

			Outdoor Ambient Temp. °F [°C]								
			75 [24]	80 [27]	85 [29]	90 [32]	95 [35]	100 [38]	105 [41]	110 [43]	115 [46]
RCS 06G	40 [4]	MBh [kW]	86.1 [25.20]	84.0 [24.50]	81.2 [23.80]	78.7 [23.10]	76.2 [22.30]	73.6 [21.60]	70.7 [20.70]	68.0 [19.90]	61.4 [18.00]
		kW*	4.9	5.1	5.4	5.6	5.9	6.2	6.5	6.8	9.6
	45 [7]	MBh [kW]	93.9 [27.50]	91.0 [26.70]	88.6 [26.00]	85.9 [25.20]	83.2 [24.40]	80.5 [23.60]	77.7 [22.8]	74.5 [21.80]	69.5 [20.40]
		kW*	5.0	5.2	5.4	5.7	6.0	6.2	6.5	6.9	9.5
	50 [10]	MBh [kW]	104.6 [30.70]	102.0 [30.00]	96.4 [28.30]	93.6 [27.40]	90.7 [26.60]	87.7 [25.70]	84.4 [24.70]	81.4 [23.80]	76.8 [22.50]
		kW*	4.3	4.5	5.5	5.8	6.0	6.3	6.6	7.0	9.3
RCS 07G	40 [4]	MBh [kW]	103.4 [30.3]	101.0 [29.50]	97.9 [28.7]	95.0 [27.90]	92.1 [27.00]	89.2 [26.10]	86.0 [25.20]	82.8 [24.30]	79.9 [23.40]
		kW*	6.0	6.3	6.6	6.9	7.2	7.6	7.9	8.3	8.6
	45 [7]	MBh [kW]	112.1 [32.8]	109.0 [32.00]	106.2 [31.10]	103.2 [30.30]	100.2 [29.40]	96.9 [28.40]	93.2 [27.30]	89.8 [26.30]	88.4 [25.90]
		kW*	6.1	6.4	6.7	7.0	7.3	7.7	8.1	8.5	8.8
	50 [10]	MBh [kW]	121.3 [35.60]	118.0 [34.70]	115.1 [33.70]	111.9 [32.80]	108.5 [31.80]	104.9 [30.70]	101.3 [29.70]	97.6 [28.60]	95.5 [28.00]
		kW*	6.3	6.6	6.9	7.2	7.6	7.9	8.3	8.7	9.0
RCS 10G	40 [4]	MBh [kW]	112.3 [32.90]	110.0 [32.30]	107.9 [31.60]	104.5 [30.60]	101.3 [29.70]	97.4 [28.60]	93.5 [27.40]	89.3 [26.20]	87.0 [25.50]
		kW*	6.8	7.1	7.5	7.9	8.3	8.7	9.2	9.6	10.1
	45 [7]	MBh [kW]	122.3 [35.90]	120.0 [35.30]	117.6 [34.5]	114.6 [33.60]	110.7 [32.40]	106.8 [31.30]	102.7 [30.10]	98.4 [28.8]	94.3 [27.60]
		kW*	6.9	7.3	7.6	8.0	8.4	8.8	9.2	9.7	10.2
	50 [10]	MBh [kW]	133.0 [39.00]	131.0 [38.40]	128.0 [37.50]	124.6 [36.50]	120.8 [35.40]	116.8 [34.20]	111.9 [32.8]	107.7 [31.60]	101.3 [29.70]
		kW*	6.3	6.6	6.9	7.2	7.6	7.9	8.3	8.7	9.0
RCS 12F	40 [4]	MBh [kW]	151.6 [44.42]	147.0 [43.06]	142.3 [41.70]	137.7 [40.33]	133.0 [38.97]	128.3 [37.61]	123.7 [36.24]	119.0 [34.88]	114.4 [33.51]
		kW*	9.5	10.0	10.6	11.1	11.6	12.1	12.7	13.2	13.7
	45 [7]	MBh [kW]	164.3 [48.13]	159.4 [46.69]	154.5 [45.26]	149.5 [43.82]	144.6 [42.38]	139.7 [40.94]	134.8 [39.50]	129.9 [38.07]	125.0 [36.63]
		kW*	9.6	10.1	10.7	11.2	11.7	12.3	12.8	13.3	13.8
	50 [10]	MBh [kW]	177.2 [51.90]	172.0 [50.39]	166.8 [48.88]	161.7 [47.36]	156.5 [45.85]	151.3 [44.34]	146.2 [42.82]	141.0 [41.31]	135.8 [39.80]
		kW*	9.7	10.3	10.8	11.3	11.9	12.4	12.9	13.4	14.0
RCS 15F	40 [4]	MBh [kW]	200.8 [58.84]	194.3 [56.94]	187.8 [55.03]	181.3 [53.12]	174.8 [51.22]	168.3 [49.31]	161.8 [47.40]	155.3 [45.50]	148.8 [43.59]
		kW*	11.4	12.2	13.0	13.8	14.5	15.3	16.1	16.9	17.6
	45 [7]	MBh [kW]	216.3 [63.38]	209.8 [61.47]	203.3 [59.56]	196.7 [57.64]	190.2 [55.73]	183.7 [53.82]	177.1 [51.90]	170.6 [49.99]	164.1 [48.08]
		kW*	11.8	12.6	13.3	14.1	14.8	15.6	16.3	17.1	17.8
	50 [10]	MBh [kW]	222.7 [65.24]	217.8 [63.82]	213.0 [62.40]	208.1 [60.98]	203.3 [59.56]	198.4 [58.14]	193.6 [56.72]	188.7 [55.30]	183.9 [53.88]
		kW*	12.2	12.9	13.7	14.5	15.2	16.0	16.7	17.5	18.2
RCS 20F	40 [4]	MBh [kW]	272.7 [79.90]	264.1 [77.39]	255.6 [74.88]	247.0 [72.37]	238.5 [69.87]	229.9 [67.36]	221.3 [64.85]	212.8 [62.35]	204.2 [59.84]
		kW*	17.6	18.5	19.4	20.4	21.3	22.2	23.1	24.0	24.9
	45 [7]	MBh [kW]	294.3 [86.23]	285.6 [83.67]	276.9 [81.12]	268.1 [78.56]	259.4 [76.05]	250.7 [73.54]	242.0 [71.03]	233.2 [68.52]	224.5 [66.01]
		kW*	18.0	18.9	19.9	20.8	21.7	22.6	23.5	24.4	25.3
	50 [10]	MBh [kW]	316.7 [92.79]	307.7 [90.14]	298.6 [87.50]	289.6 [84.86]	280.6 [82.22]	271.6 [79.58]	262.6 [76.94]	253.6 [74.29]	244.5 [71.65]
		kW*	18.5	19.4	20.3	21.3	22.2	23.1	24.1	25.0	25.9

**NOTE:**  
 \* kW = total kilowatts.  
 MBh = gross capacity × 1000 Btuh.  
 All values at approximately 20°F [11.1°C] subcooling.  
 Data includes 25 feet [7.62 m] of recommended vapor and liquid lines.

# Unit Capacities

Figure 3: RCS 06G R410A Unit Capacities

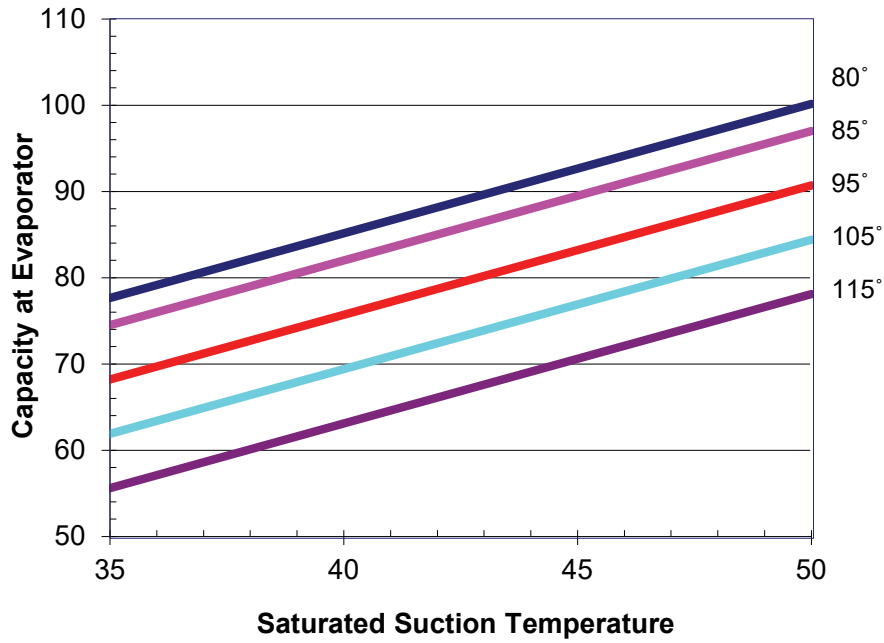


Figure 4: RCS 07G R410A Unit Capacities

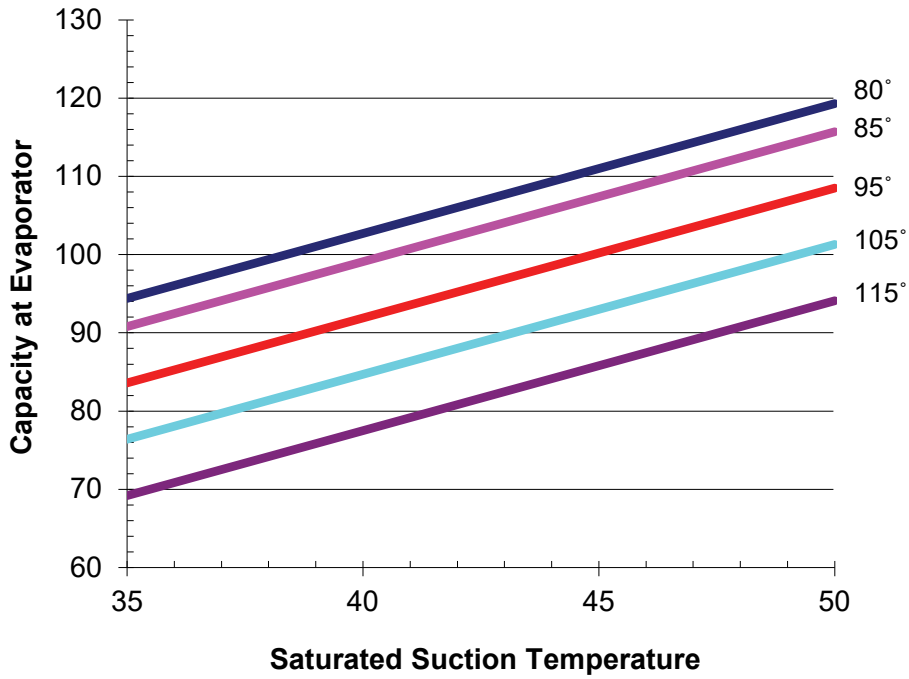


Figure 5: RCS 10G R410A Unit Capacities

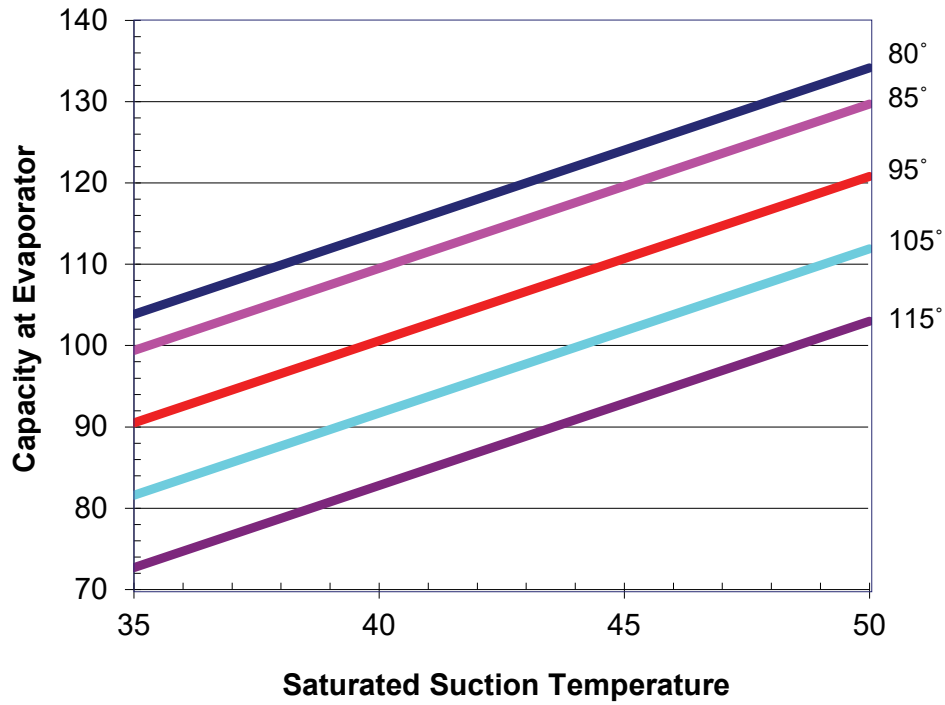


Figure 6: RCS 11F R410A Unit Capacities

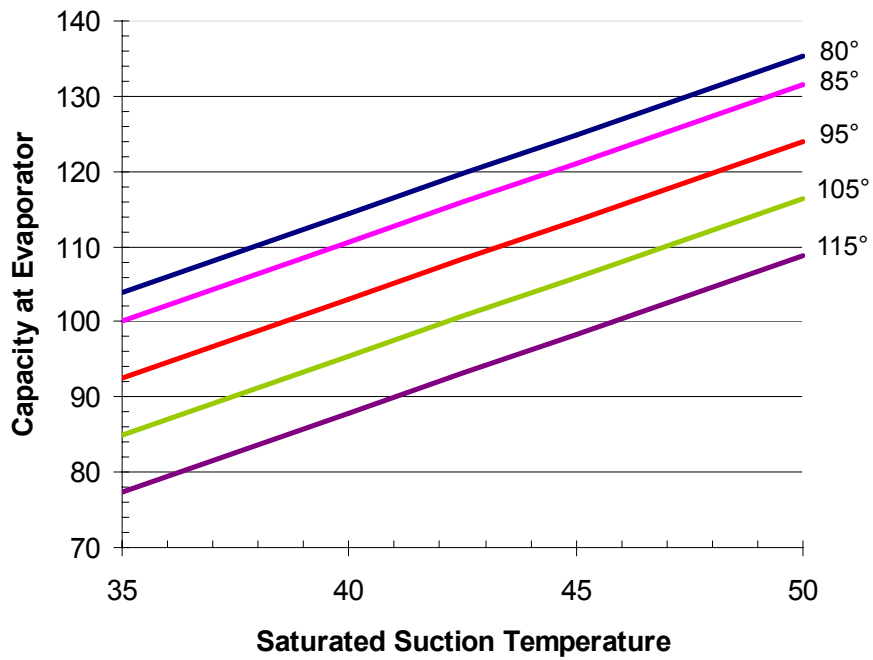


Figure 7: RCS 12F R410A Unit Capacities

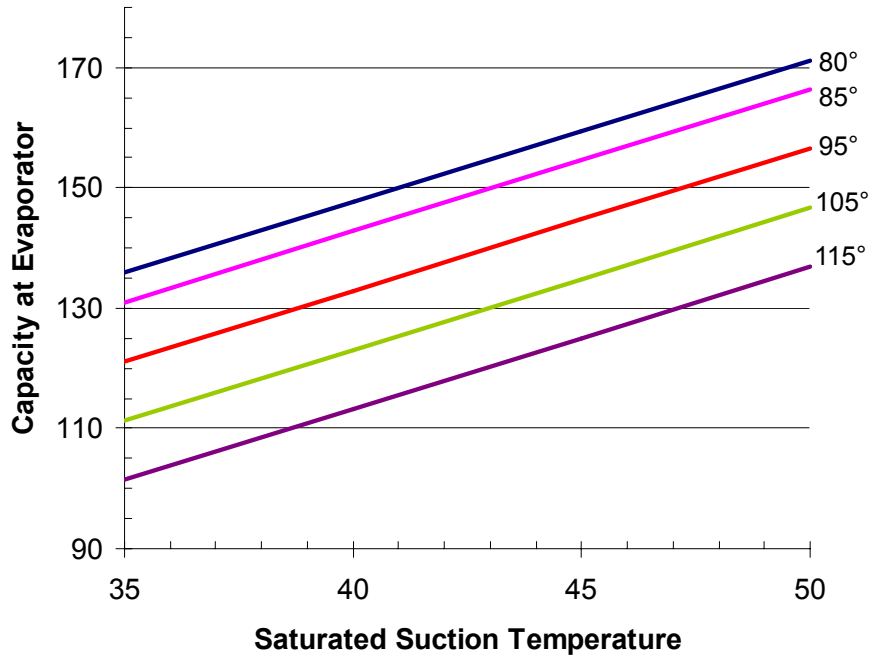


Figure 8: RCS 15F R410A Unit Capacities

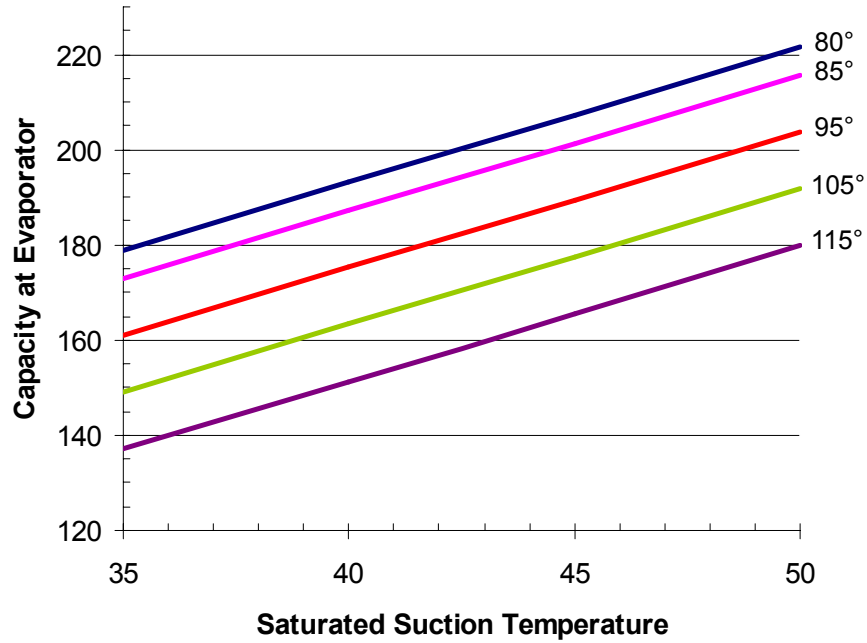


Figure 9: RCS 20F R410A Unit Capacities

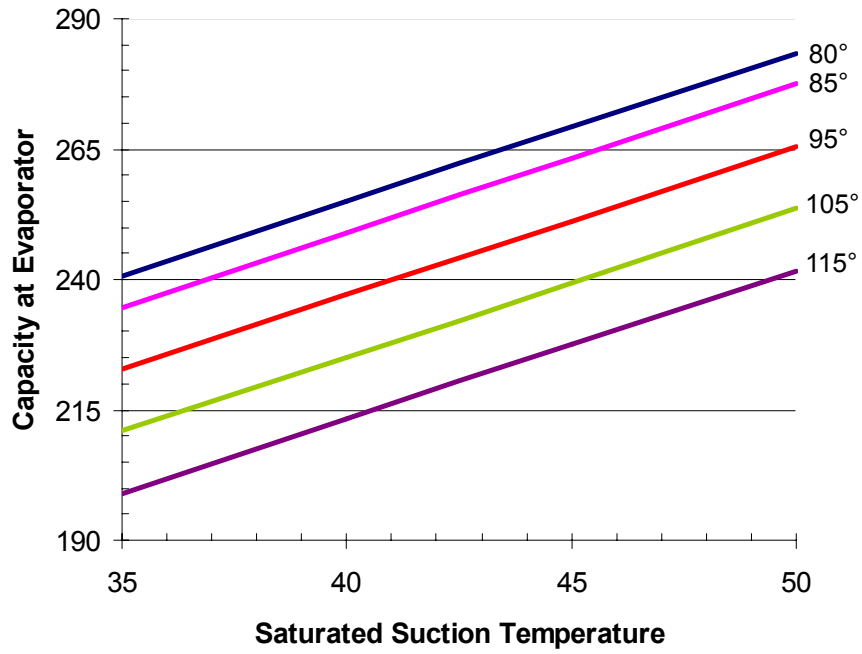


Figure 10: RCS 06G and 07G Dimensions and Weights

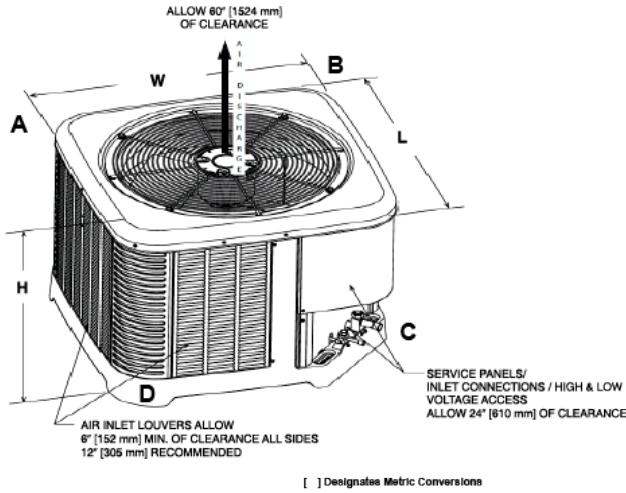


Table 4: RCS 06G and 07G Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
06G	291 [132]	50 [22.7]	73 [33.1]	69 [31.3]	99 [44.9]
07G	318 [144]	53 [24.0]	84 [38.1]	71 [32.2]	110 [49.9]

Table 5: RCS 06G and 07G Unit Dimensions

	RCS06G	RCS07G
Height "H" Inches [mm]	45 [1143]	51 [1295]
Length "L" Inches [mm]	35.75 [908]	35.75 [908]
Width "W" Inches [mm]	35.75 [908]	35.75 [908]

Figure 11: RCS 10G and 12F Dimensions and Weights

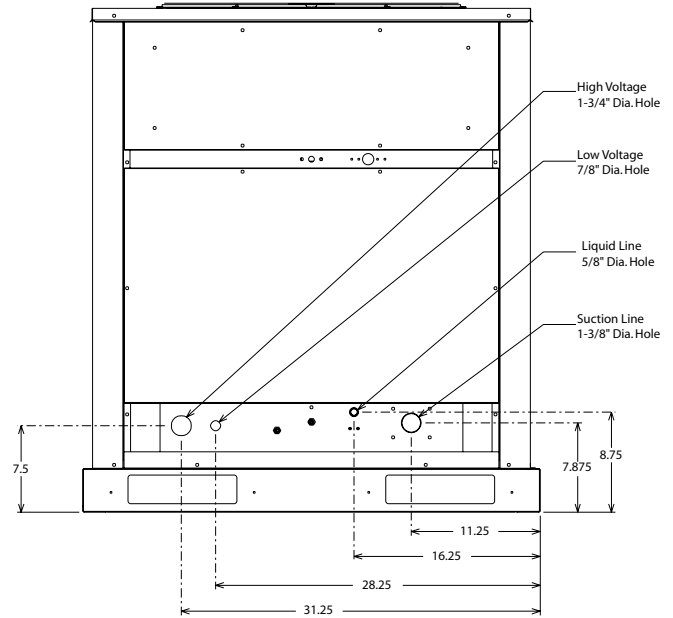
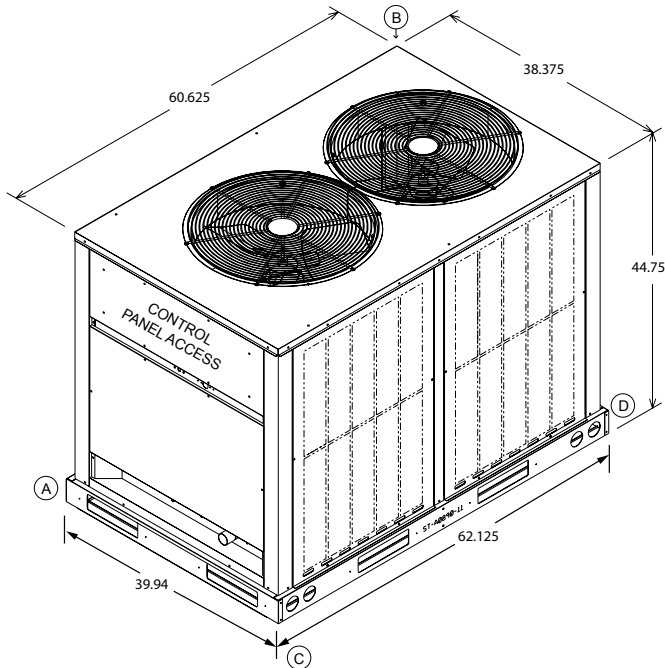
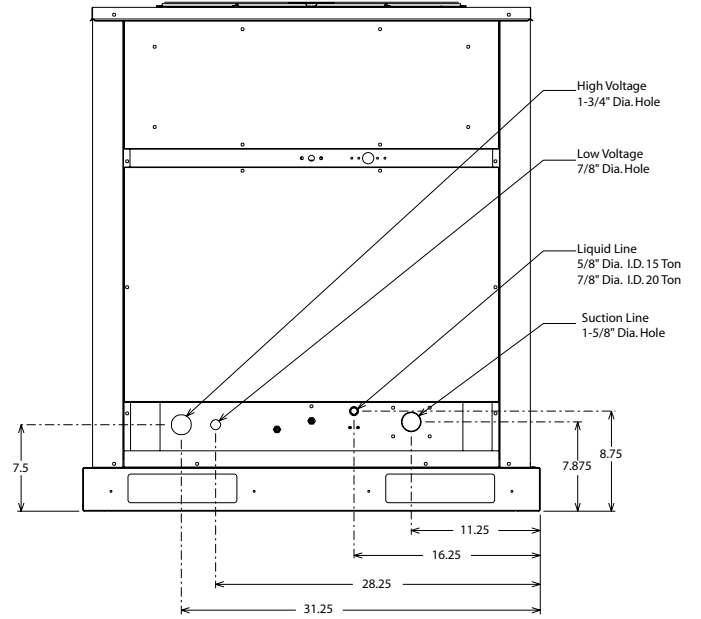
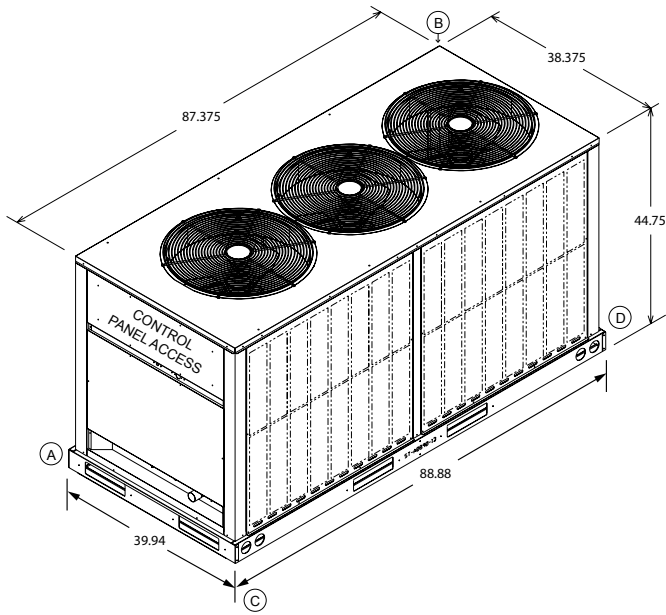


Table 6: RCS 10G and 12F Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
10G	557 [253]	137 [62.0]	148 [67.0]	131 [59.0]	142 [64.0]
12F	650 [293]	160 [72.0]	171 [78.0]	154 [70.0]	165 [75.0]

**RCS 15F – 20F Dimensions and Weights**



**Table 7: RCS 15F and 20F Operating Weights**

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
15F	746 [338.0]	183 [83.0]	196 [89.0]	177 [80.0]	189 [86.0]
20F	952 [432.0]	234 [106.0]	251 [114.0]	226 [103.0]	241 [110.0]



# Power Wiring

**Table 8: RCS 06G – 20F Electrical Data**

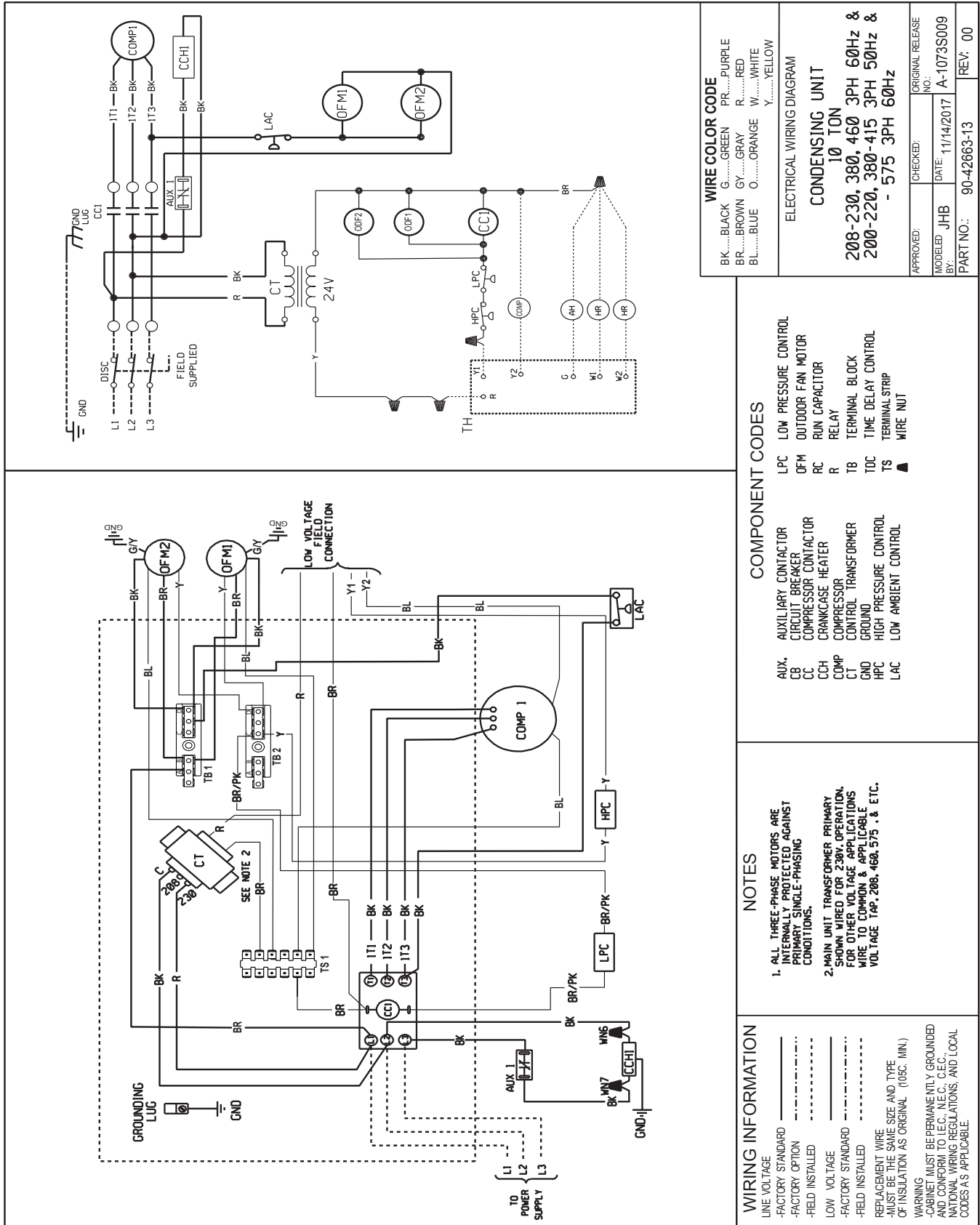
Model	RCS															
	06G		07G		10G		12F			15F			20F			
<b>Compressor Motor</b>																
Voltage	208/230	460-	208/230	460	208/230	460	208/230	460	575	208/230	460	575	208/230	460	575	
Phase and hertz	3 – 60															
Number of compressors	1							2								
<b>Operating Current</b>																
Rated load amps (each) <sup>1</sup>	25	11.8	27.9	13.6	32.6	14.8	22.4	10.6	7.7	25.0	12.2	9.0	33.3	17.9	12.8	
Locked rotor amps (each) <sup>1</sup>	149	83	164	100	225	240	130	75	54	164	100	78	239	125	80	
<b>Condenser Fan Motors</b>																
Voltage	208/230	460	208/230	460	208/230	460	208/230	460	575	208/230	460	575	208/230	460	575	
Phase	Single															
Full load amps (each)	5.3	2.2	5.3	2.2	3.5	1.6	2.4	1.4	1.0	2.4	1.4	1.0	2.4	1.1	0.8	
<b>System Characteristics</b>																
Unit full load amps <sup>2</sup>	27.7	15.9	30.3	17.5	34.9	19.5	49.6	24.0	17.4	57.2	28.6	21.0	73.8	39.1	28.0	
Minimum circuit ampacity	34.0	19.0	37.0	21.0	48.0	22.0	56.0	27.0	20.0	64.0	32.0	24.0	83.0	44.0	32.0	
Maximum fuse size (amps) or HACR circuit breaker ampacity <sup>3</sup>	50	25	60	30	80	40	70	35	25	80	40	30	110	60	40	
Disconnect size	60	30	60	30	100	60	60	30	30	100	60	60	200	60	60	

**NOTE:**

1. Each compressor
2. Conditions at 45° suction and 95° ambient
3. Local codes take precedent over recommended fuse size



Figure 13: Typical Wiring Schematic - RCS 10G



<b>WIRE COLOR CODE</b>		<b>ELECTRICAL WIRING DIAGRAM</b>	
BK.....BLACK	G.....GREEN	PR.....PURPLE	
BR.....BROWN	GY.....GRAY	R.....RED	
BL.....BLUE	O.....ORANGE	W.....WHITE	
	Y.....YELLOW		
<b>CONDENSING UNIT</b>			
<b>10 TON</b>			
<b>208-230, 380, 460 3PH 60Hz &amp;</b>			
<b>200-220, 380-415 3PH 50Hz &amp;</b>			
<b>- 575 3PH 60Hz</b>			
APPROVED:	CHECKED:	ORIGINAL RELEASE NO.:	
MODELED BY:	JHB	DATE:	11/14/2017
PART NO.:	90-42663-13		
			REV: 00

**COMPONENT CODES**

LPC	LOW PRESSURE CONTROL
OFM	OUTDOOR FAN MOTOR
RC	RUN CAPACITOR
R	RELAY
TB	TERMINAL BLOCK
TDC	TIME DELAY CONTROL
TS	TERMINAL STRIP
▲	WIRE NUT

AUX.	AUXILIARY CONTACTOR
CB	CIRCUIT BREAKER
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
GND	GROUND
HPC	HIGH PRESSURE CONTROL
LAC	LOW AMBIENT CONTROL

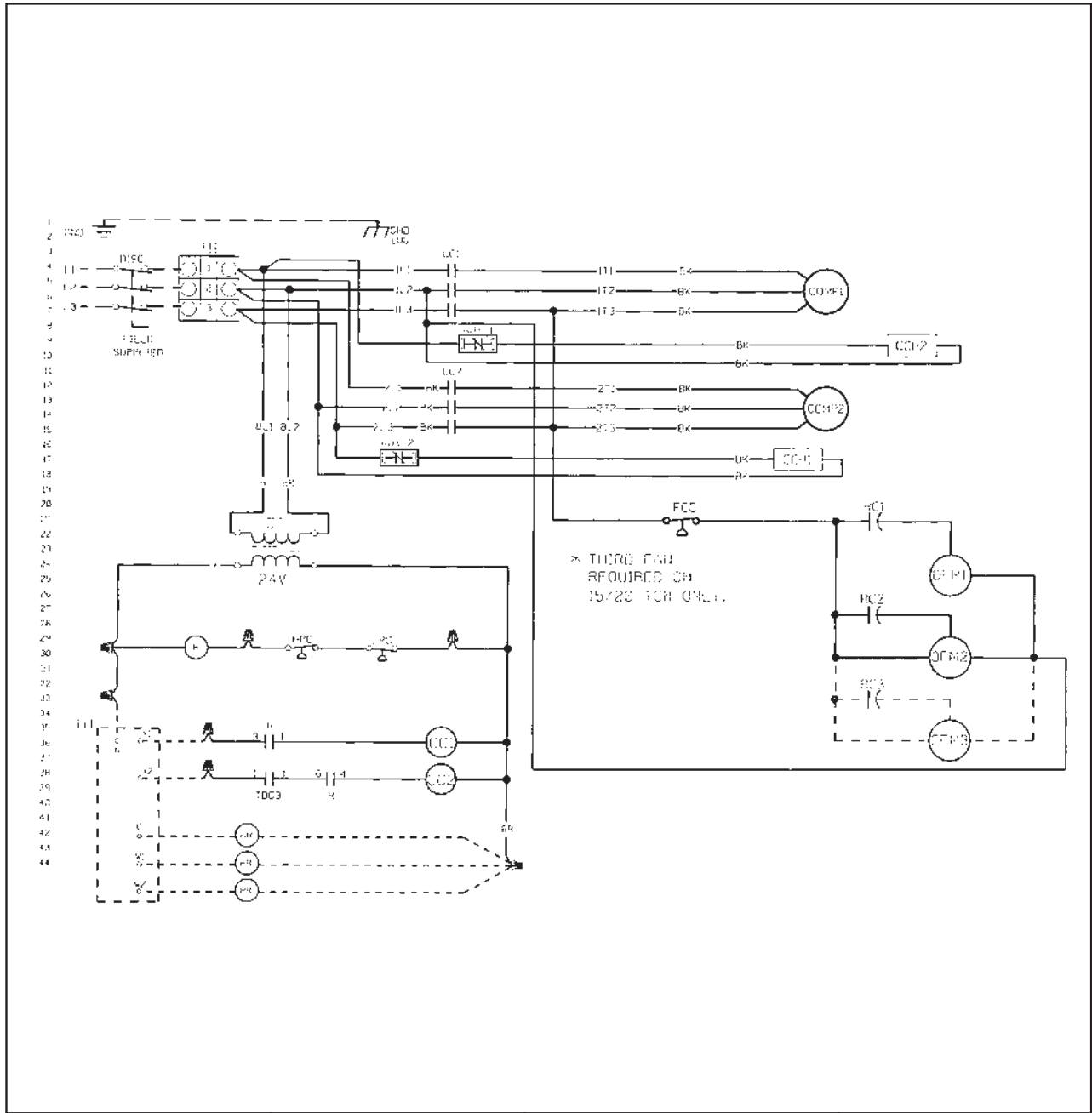
**NOTES**

- ALL THREE-PHASE MOTORS ARE INTERNALLY PROTECTED AGAINST PRIMARY SINGLE-PHASING CONDITIONS.
- MAIN UNIT TRANSFORMER PRIMARY SHOWN WIRED FOR 230V OPERATION. FOR OTHER VOLTAGE APPLICATIONS WIRE TO COMMON & APPLICABLE VOLTAGE TAP. 208, 460, 575, & ETC.

**WIRING INFORMATION**







- LINE VOLTAGE \_\_\_\_\_
- FACTORY STANDARD \_\_\_\_\_
- FACTORY OPTION \_\_\_\_\_
- FIELD INSTALLED \_\_\_\_\_
- LOW VOLTAGE \_\_\_\_\_
- FACTORY STANDARD \_\_\_\_\_
- FIELD INSTALLED \_\_\_\_\_
- REPLACEMENT WIRE \_\_\_\_\_
- MUST BE THE SAME SIZE AND TYPE \_\_\_\_\_
- OF INSULATION AS ORIGINAL (105C. MIN.) \_\_\_\_\_
- WARNING \_\_\_\_\_
- CABINET MUST BE PERMANENTLY GROUNDED \_\_\_\_\_
- AND CONFORM TO I.E.C., N.E.C., C.E.C. \_\_\_\_\_
- NATIONAL WIRING REGULATIONS, AND LOCAL \_\_\_\_\_
- CODES AS APPLICABLE \_\_\_\_\_

Figure 14: RCS 12F – 20F Wiring Diagram



COMPONENT CODE	
AH	SUPPLY FAN
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DISC	DISCONNECT SWITCH
FC	FAN MOTOR CONTACTOR
FCC	FAN CYCLE CONTROL
GND	GROUND
HR	HEATER RELAY AS NEEDED
HPC	HIGH PRESSURE CONTROL
LPC	LOW PRESSURE CONTROL
MS	METAL STRIP
OFM	OUTDOOR FAN MOTOR
RC	RUN CAPACITOR
RL	RELAY
TB	TERMINAL BLOCK
TH	THERMOSTAT HEATING
TDC	TIME DELAY CONTROL
THM	MOTOR SAFETY THERMOSTAT
TOR	THERMAL OVERLOAD RELAY
▲	WIRE NUT

- NOTES:
1. REPLACEMENT WIRE & FUSES MUST BE SAME TYPE & SIZE AS ORIGINAL.
  2. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.
  3. MAXIMUM IN RUSH VA NOT TO EXCEED 92 VA.
  4. MINIMUM WIRE SIZE BASED ON 75 DEGREES C INSULATION COPPER WIRE.

- WIRING INFORMATION
1. LINE VOLTAGE  
 FACTORY STANDARD   
 FACTORY OPTION   
 FIELD INSTALLED 
  2. LOW VOLTAGE  
 FACTORY STANDARD   
 FACTORY OPTION   
 FIELD INSTALLED 
  3. REPLACEMENT WIRE  
 MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105°C MIN.)  
**WARNING**  
 CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C. (C.E.C.-CANADA) AND LOCAL CODES AS APPLICABLE.

WIRE COLOR CODE	
BK — BLACK	O — ORANGE
BR — BROWN	PR — PURPLE
BL — BLUE	R — RED
G — GREEN	W — WHITE
GY — GRAY	Y — YELLOW

**WIRING SCHEMATIC  
CONDENSING UNIT**

208-230,  
460, 575, 3 PH, 50 & 60 Hz  
380, 3 PH, 60 Hz

90-42663-08-03

## Part 1: General

### 1.01 Summary:

- A. Section includes design, performance criteria, refrigerants, and installation requirements for air-cooled split condensing units

### 1.02 References

- A. ARI-365 Commercial and Industrial Unitary Air-cooled Condensing Units
- B. ANSI / ASHRAE 15 Safety Standard for Refrigerated Systems

### 1.03 Submittals

- A. Submit Shop drawings and product data in accordance with the specifications.
- B. Submittals shall include the following:
  1. Dimensioned drawings with required clearances and location of all field connections.
  2. Summary of all auxiliary utility requirements, such as electricity, water, compressed air, etc. Summary shall indicate quality and quantity of each required utility.

### 1.04 Qualifications

- A. Qualifications: Equipment manufacturer must specialize in the manufacture of the type of products specified and have five years experience with similar equipment and refrigerant offered.
- B. Regulatory Requirements: Comply with the codes and standards specified.
- C. Manufacturer's plant must be ISO Registered.

### 1.05 Delivery and Handling

- A. Condensing units shall be delivered to the job site assembled and charged with a holding charge of dry nitrogen.
- B. Comply with the manufacturer's instructions for rigging and handling equipment.

### 1.06 Warranty

- A. The refrigeration equipment manufacturer's initial warranty shall be within 12 months from start-up or 18 months from shipment, whichever occurs first. The warranty shall provide for repair or replacement due to material and workmanship that proves defective within the above period, excluding refrigerant.

### 1.07 Maintenance

- A. Include instructions for installation, maintenance and service.
- B. Maintenance of the units shall be the responsibility of the owner and performed in accordance with the manufacturer's instructions.

## Part 2: Products

### 2.01 Acceptable Manufacturers

- A. Basis of design: Daikin
- B. (Approved Equal)

### 2.02 Unit Description

- A. Provide and install as shown on the plans factory-assembled, air-cooled scroll compressor, R410A condensing units in the size and quantity specified. Each unit shall consist of hermetic scroll compressor air-cooled condenser section.
- B. The complete unit shall be UL listed.

### 2.03 Design Requirements

- A. General: Provide a complete condensing unit as specified herein and as shown on the drawings. The unit shall be in accordance with the standards referenced in section 1.02 and any local codes in effect.
- B. Performance: Refer to the schedule of performance on the drawings.

## 2.04 Condensing Section (Scroll)

- A. Air-cooled Condenser
  - 1. Exterior panels shall be constructed of pre-painted steel with a 1000-hour ASTM B117 salt spray test.
  - 2. The condensing section shall be open on the sides and bottom to provide access and to allow airflow through the coils. Condenser coils shall be constructed with 3/8" copper tubing mechanically bonded to aluminum fins for maximum heat transfer. Each condenser coil shall be factory leak tested with high-pressure air under water.
  - 3. Condenser fans shall be direct drive, propeller type designed for low tip speed, vertical air discharge, and include service guards. Fan blades shall be constructed of steel and riveted to a steel center hub. Condenser fan motor shall be direct drive, single phase permanently lubricated "PSC" motors with inherent thermal overload.
  - 4. Units 10 tons or larger shall have standard pressure controls that cycle the condenser fan motors to maintain condensing pressures for operation down to 0°F ambient. Units 6 and 7.5 tons shall be rated down to 55°F ambient and capable of accepting a low ambient kit to cycle the condenser fan motor to maintain condensing pressures for operation down to 0°F ambient.
  - 5. Unit shall be equipped with full-face louvers for hail protection.
- B. Scroll Compressors
  - 1. Unit shall have heavy-duty Copeland scroll compressors.
  - 2. Compressor shall be equipped with thermal overload protection.
  - 3. Compressors shall be isolated with resilient rubber isolators to decrease noise transmission.
  - 4. Compressor circuit shall be complete with low pressure control, liquid line shut off valve, and manual reset high pressure safety switch.
- C. Refrigerant Circuit: Capped connections shall be external to the unit providing for field connection of refrigerant piping.
- D. Unit shall have a liquid line and suction line service valve.

## 2.05 Controls

- A. Unit shall be equipped with a 24 V terminal strip for field supplied and installed controls.

## 2.06 Electrical

- A. All wiring shall comply with UL requirements. The unit shall be provided with a factory wired weatherproof control panel. Unit shall have a single point power terminal block for main power connection. A terminal board shall be provided for low voltage control wiring.
- B. Unit shall be equipped with low voltage transformers and motor starters.

## Part 3: Execution

### 3.01 Installation

- A. Install in strict accordance with manufacturer's requirements, shop drawings, and contract documents.
- B. Adjust and level unit in alignment on supports.
- C. Coordinate electrical installation with electrical contractor.
- D. Coordinate controls with control contractor.

### 3.02 Start-Up

- A. Install proper charge of refrigerant and oil.
- B. Provide testing and starting of machine, and instruct the owner in its proper operation and maintenance.



### ***Daikin Applied Training and Development***

Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at [www.DaikinApplied.com](http://www.DaikinApplied.com) and click on Training, or call 540-248-9646 and ask for the Training Department.

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