



Installation Instructions

IMPORTANT: This installation instruction contains basic unit installation information including installation of field control devices. For information on unit start-up, service, and operation, refer to the unit Controls, Start-Up, Operation, Service, and Troubleshooting Instructions also enclosed in the unit literature packet.

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SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform the basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguishers available for all brazing operations.

WARNING

Before performing recommended maintenance, be sure main power switch to unit is turned off and lockout tag is installed. Electrical shock could cause personal injury.

CAUTION

Puron® refrigerant (R-410A) systems operate at higher pressures than standard R-22 systems. Do not use R-22 service equipment or components on Puron refrigerant equipment. If service equipment is not rated for Puron refrigerant, equipment damage or personal injury may result.

WARNING

1. Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life. Refer to the User's Information Manual provided with this unit for more details.
2. Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

What to do if you smell gas:

1. DO NOT try to light any appliance.
2. DO NOT touch any electrical switch, or use any phone in your building.
3. IMMEDIATELY call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.

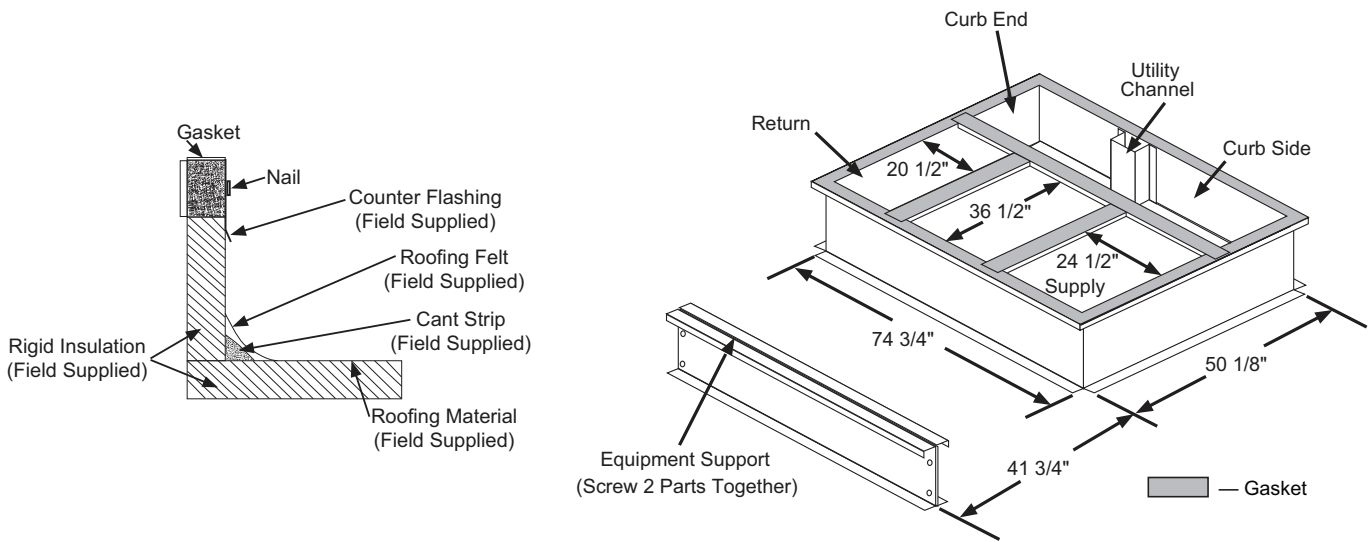
If you cannot reach your gas supplier, call the fire department.

INSTALLATION

Step 1 — Provide Unit Support

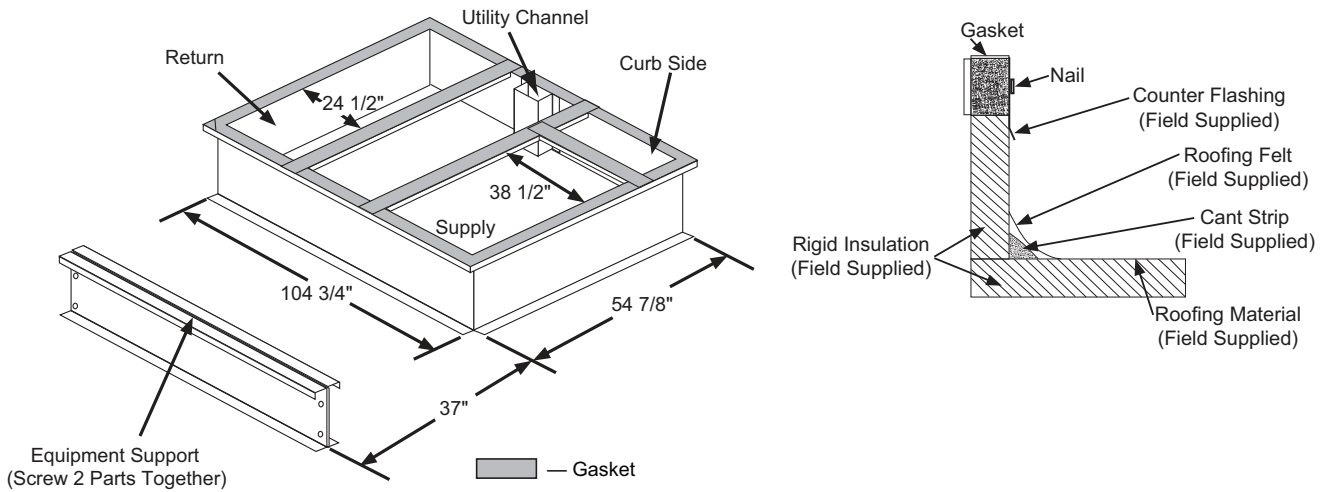
ROOF CURB — Assemble or install accessory roof curb in accordance with instructions shipped with this accessory. See Fig. 1 and 2. Install insulation, cant strips, roofing, and counter flashing, if required. For vertical supply and return connections, ductwork can be installed to roof curb before unit is set in place. Ductwork must be attached to curb and not to the unit. Curb must be level. This is necessary to permit unit drain to function properly. Unit leveling tolerance is $\pm 1/16$ in. per linear ft in any direction. Refer to Accessory Roof Curb Installation Instructions for additional information as required. When accessory roof curb is used, unit may be installed on class A, B, or C roof covering material. Carrier roof curb accessories are for flat roofs or slab mounting.

IMPORTANT: The gasketing of the unit to the roof curb is critical for a watertight seal. Install gasket with the roof curb. Improperly applied gasket can also result in air leaks and poor unit performance. Do not slide unit to position on roof curb.



- NOTES:
1. Dimensions are in inches.
 2. Field-assembled curbs are shown. Factory-assembled curbs are also available.
 3. Curbs are available in 14-in. and 24-in. heights.

Fig. 1 — Roof Curb Details — 62DA,DB,DC,DD07-20 Units (14-in. Accessory Roof Curb)



- NOTES:
1. Dimensions are in inches.
 2. Field-assembled curbs are shown. Factory-assembled curbs are also available.
 3. Curbs are available in 14-in. and 24-in. heights.

Fig. 2 — Roof Curb Details — 62DA,DB,DC,DD22-38 Units (14-in. Accessory Roof Curb)

Step 2 — Rig and Place Unit — Inspect unit for transportation damage. See Tables 1 and 2 for physical data. File any claim with transportation agency.

CAUTION

All panels must be in place when rigging. Damage to unit may result.

Do not drop unit; keep upright. Use wooden top skid or spreader bars over unit to prevent sling or cable damage. Rollers may be used to move unit across a roof. Level by using unit rail as a reference; leveling tolerance is $\pm 1/16$ in. per linear ft in any direction. See Fig. 3 for additional information. Unit weights are shown in Table 3. Unit dimensions are shown in Fig. 4-12.

POSITIONING — Maintain clearance around and above unit to provide minimum distance from combustible materials, proper airflow, and service access.

Do not install unit in an indoor location. Do not locate air inlets near exhaust vents or other sources of contaminated air. For proper unit operation, adequate combustion and ventilation air must be provided in accordance with Section 5.3 (Air for Combustion and Ventilation) of the National Fuel Gas Code, ANSI Z223.1 (American National Standards Institute).

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

For gas heat units, locate mechanical draft system flue assembly at least 4 ft from any opening through which combustion products could enter the building, and at least 4 ft from any adjacent building (or per local codes). When unit is located

adjacent to public walkways, flue assembly must be at least 7 ft above grade. Locate unit at least 10 ft away from adjacent units.

ROOF MOUNT — Check building codes for weight distribution requirements. Unit operating weight is shown in Table 3. When installing the equipment on top of a building, the following should be considered. Structural members supporting the unit must be sufficiently strong for the weight of the unit and mounting rails. Transmission of sound into the building is sometimes a problem when the structure is not strong enough.

SLAB MOUNT — When installed at ground level, the unit should be mounted on a level concrete slab which should extend at least 2-in. beyond the unit on all sides. The top of the slab should be 2-in. above the ground level. The depth of the slab below the ground level and its structural design is governed by the type of soil and climatic conditions. The slab must not be in contact with any part of the building wall or foundation. The space between the slab and building wall prevents the possibility of transmitting vibration to the building. The dimensions of the slab or roof mount should be checked and verified before the equipment arrives.

INSTALLATION ONTO CURB — Correct placement of the unit onto the curb is important to operating performance. Refer to Fig. 1 and 2 to assure proper duct opening alignment.

CAUTION

Do not slide unit to position it when it is sitting on the curb. Curb gasketing material may be damaged and leaks may result.

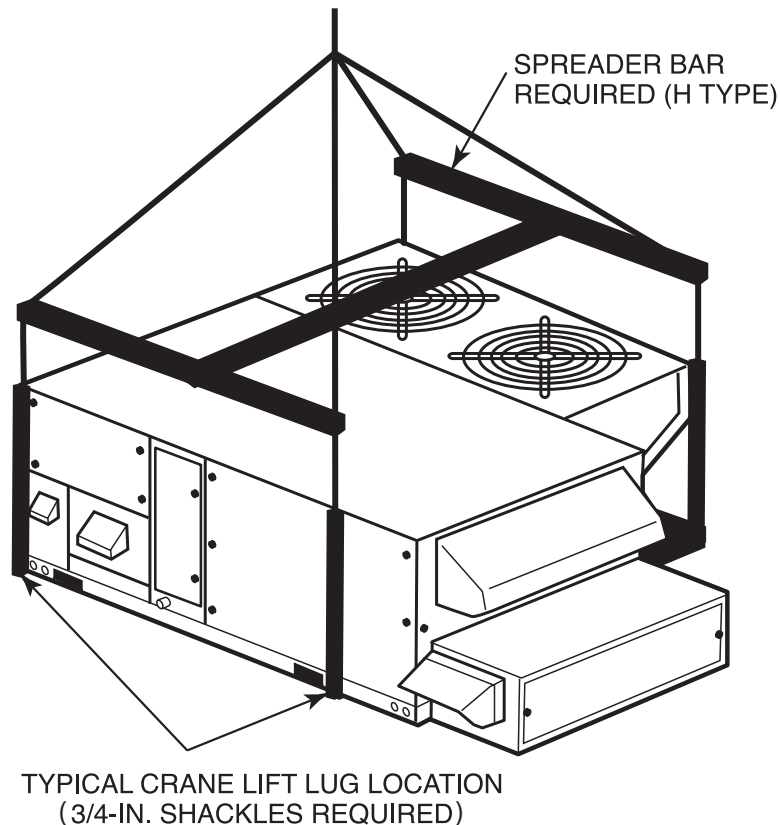
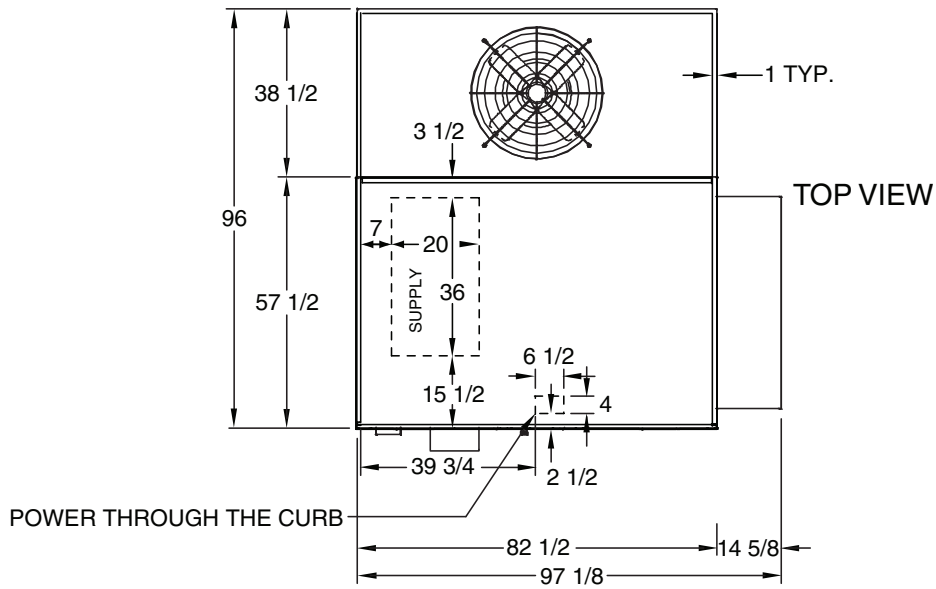
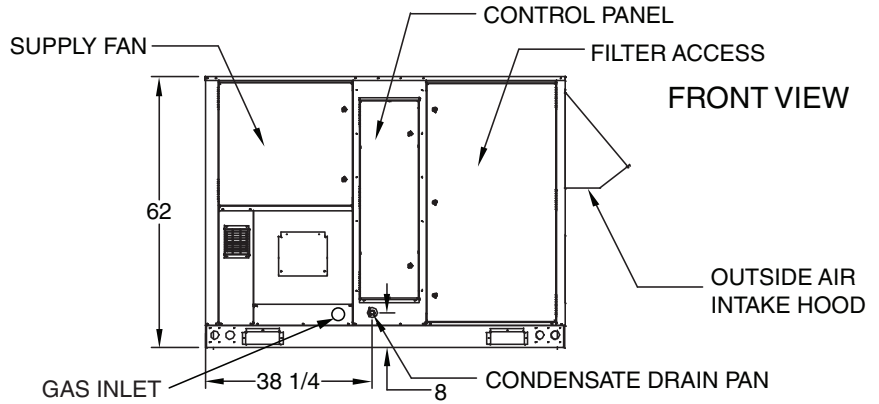
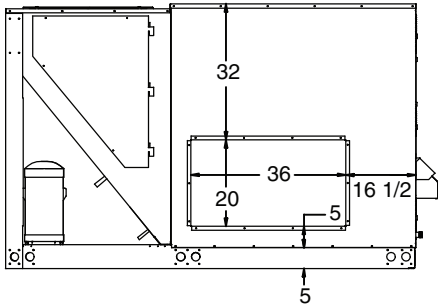


Fig. 3 — Unit Rigging



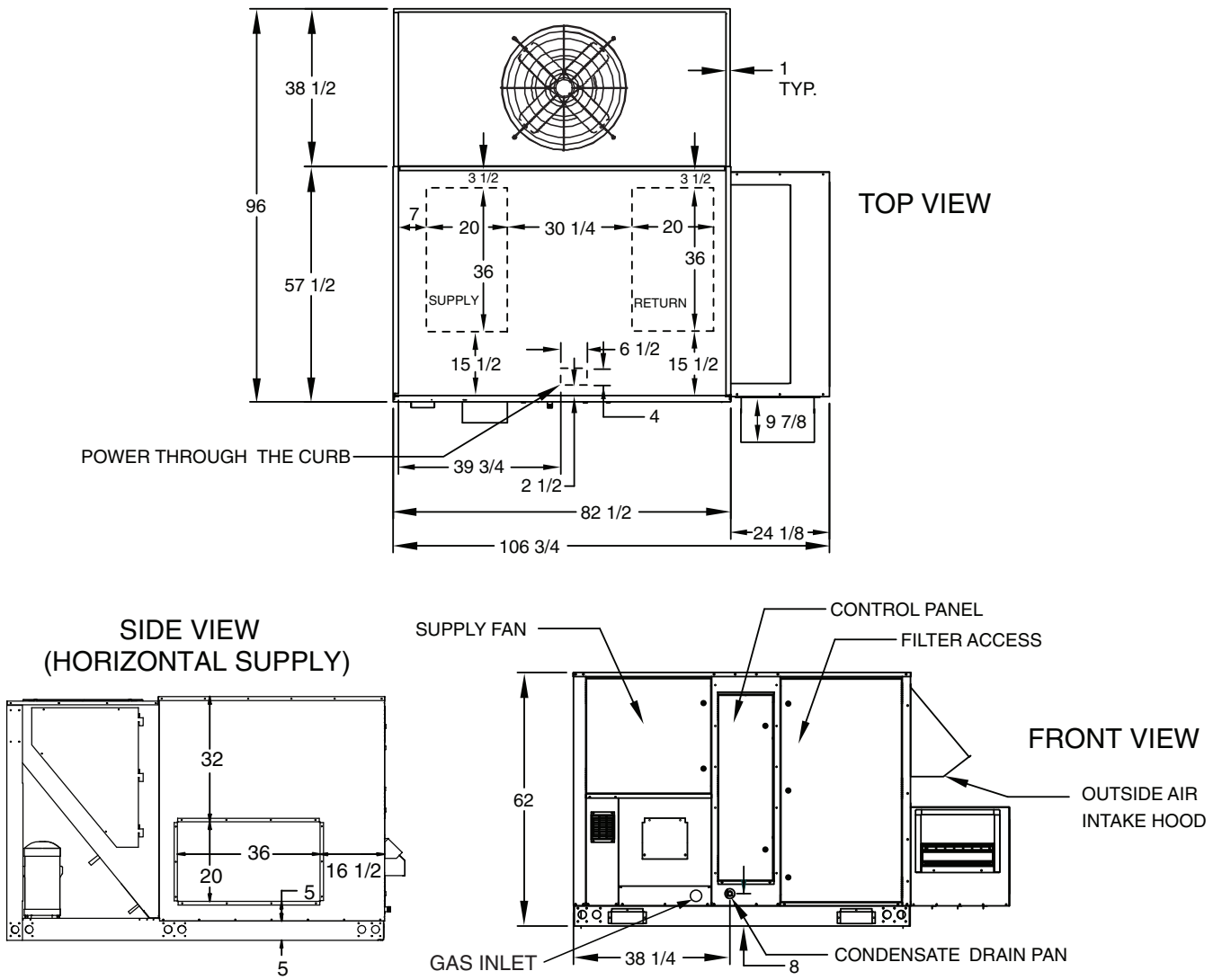
SIDE VIEW
(HORIZONTAL SUPPLY)



NOTES:

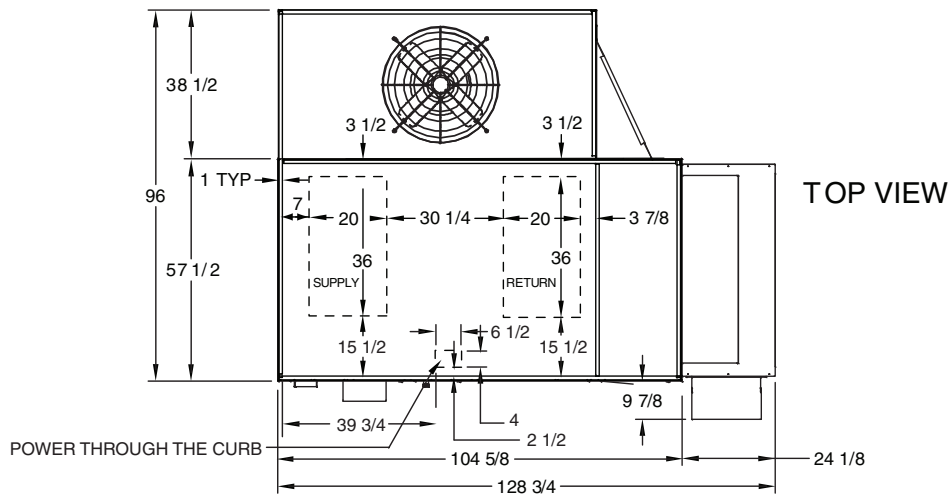
- Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
- Dimensions are in inches.

Fig. 4 — Unit Dimensions — 62DA,DB07-09 Standard Units

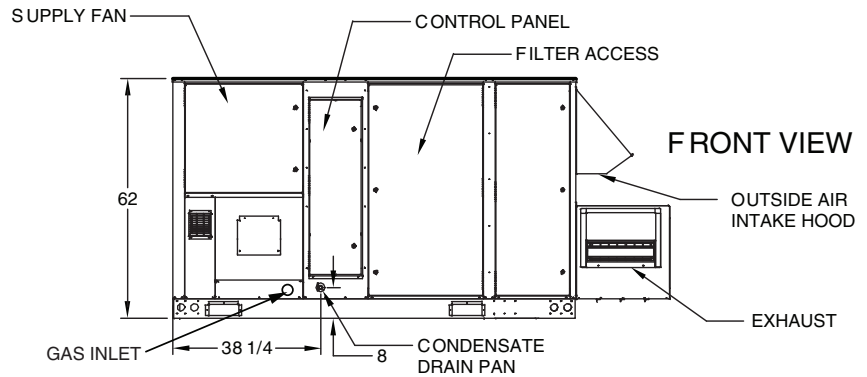
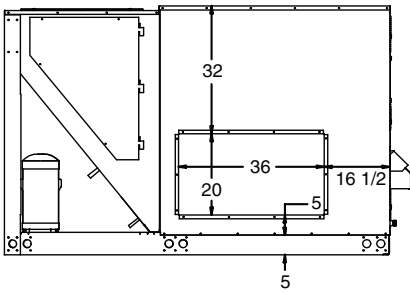


- NOTES:
- Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
 - Dimensions are in inches.

Fig. 5 — Unit Dimensions — 62DC, DD07-09 Units with Optional Exhaust



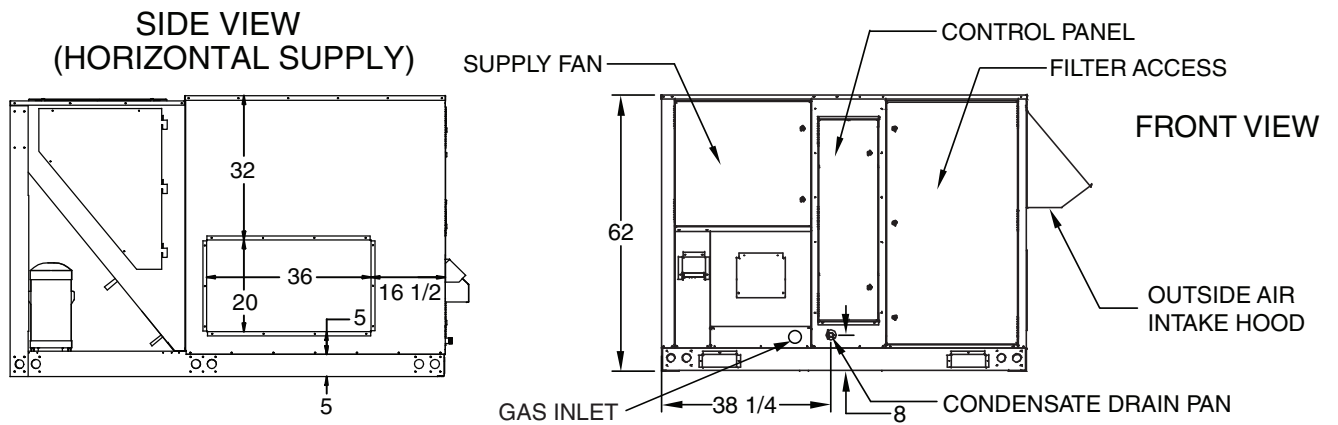
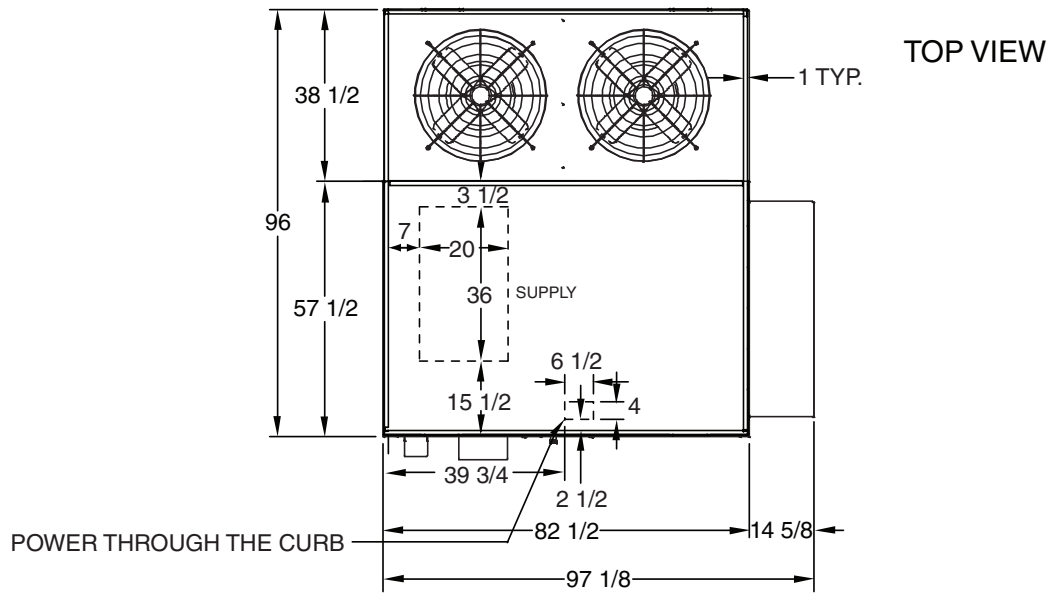
**SIDE VIEW
(HORIZONTAL SUPPLY)**



NOTES:

1. Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
2. Dimensions are in inches.

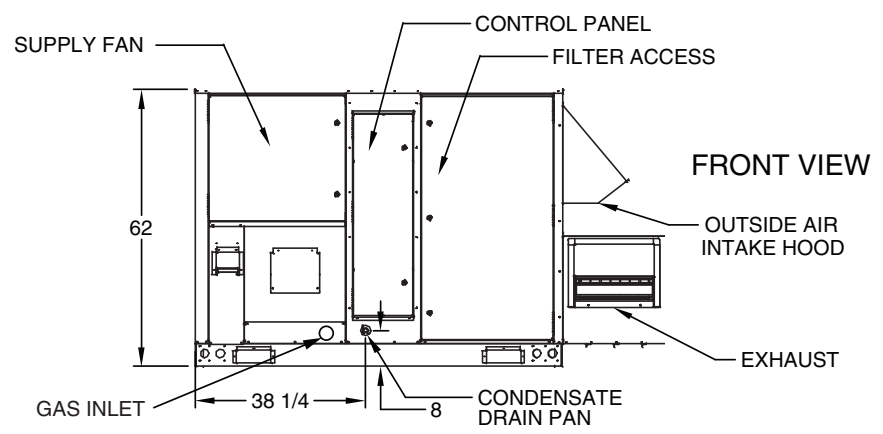
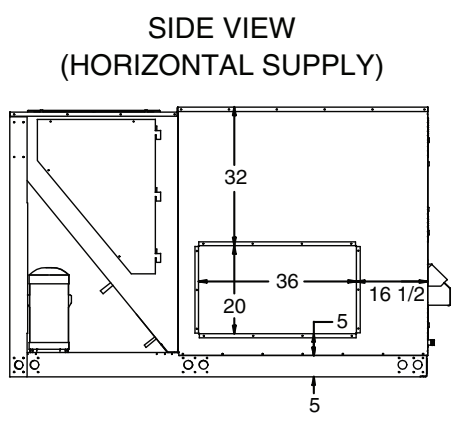
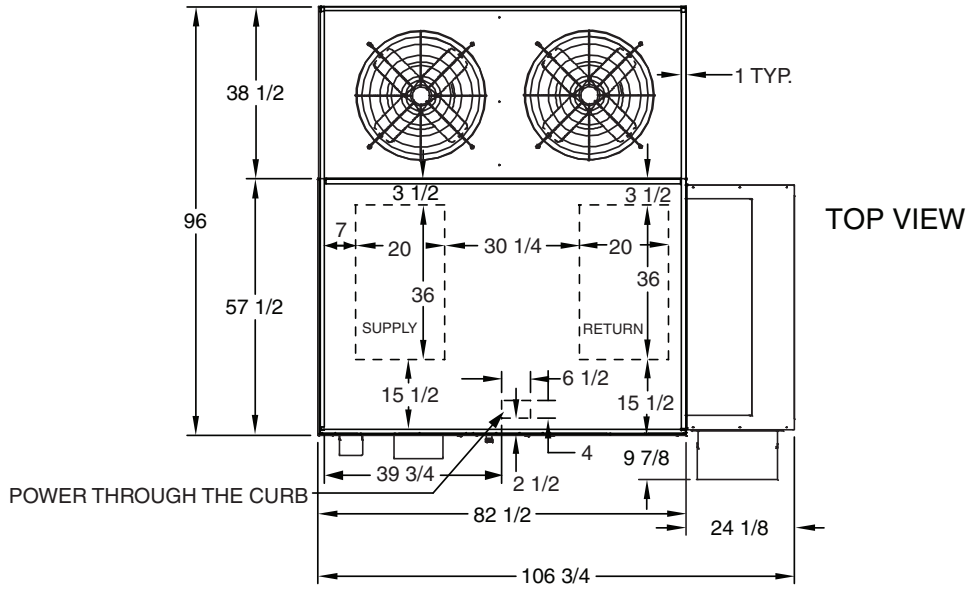
Fig. 6 — Unit Dimensions — 62DC,DD07-09 Units with Optional Energy Conservation Wheel



NOTES:

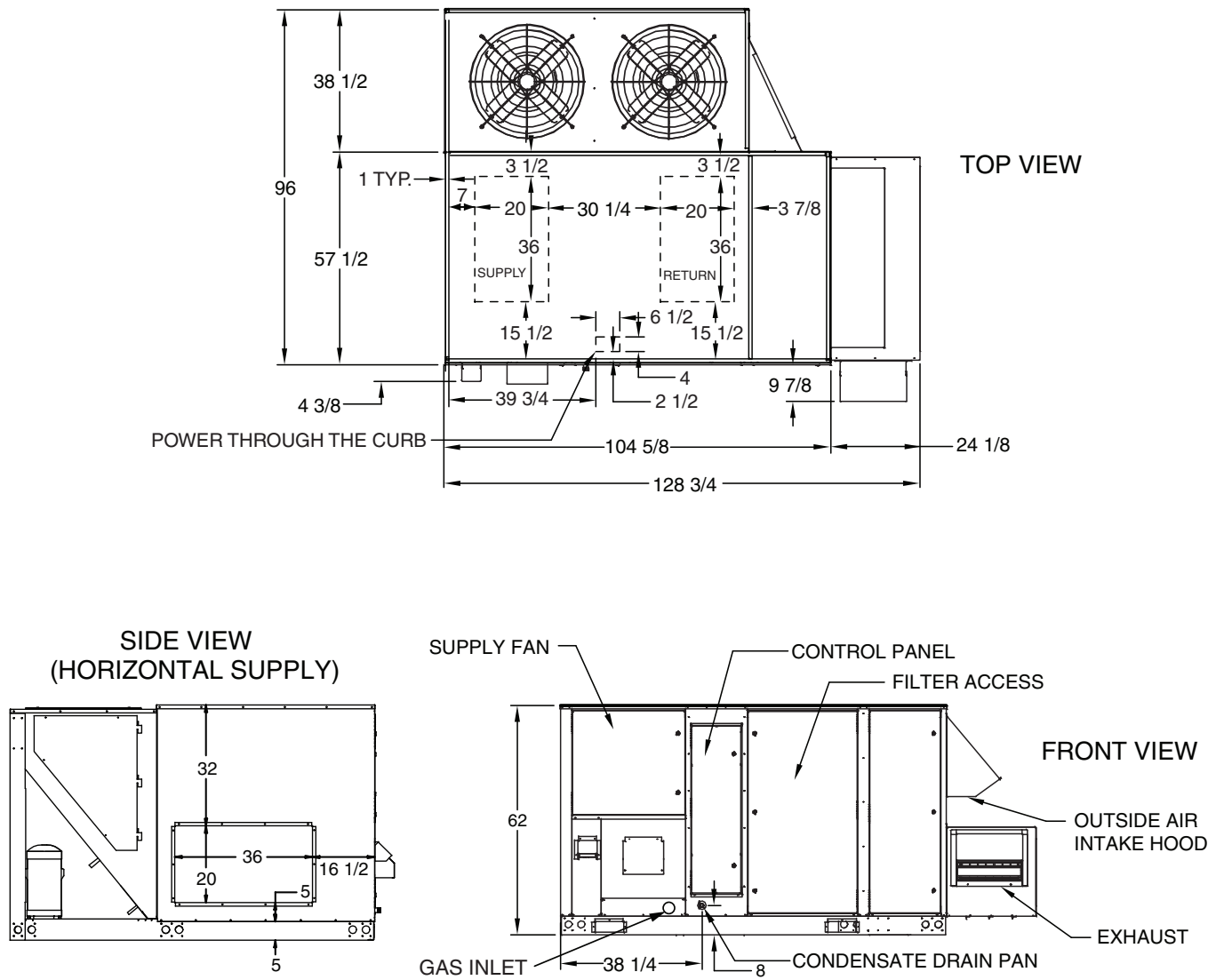
1. Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
2. Dimensions are in inches.

Fig. 7 — Unit Dimensions — 62DA,DB12-20 Standard Units



- NOTES:
- Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
 - Dimensions are in inches.

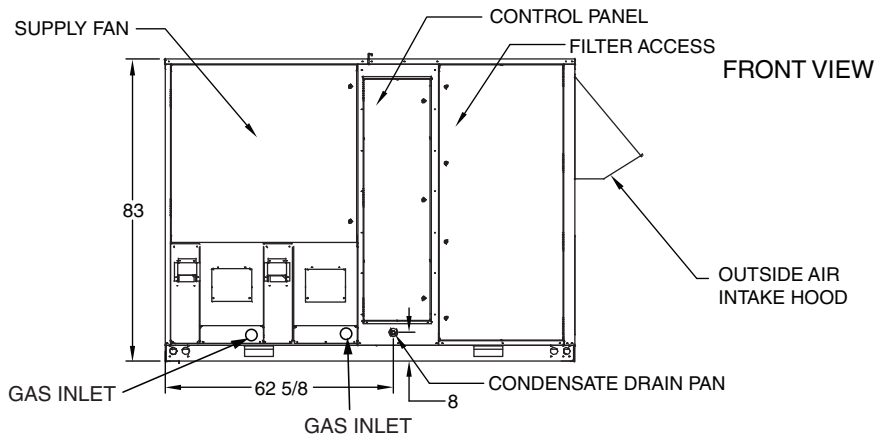
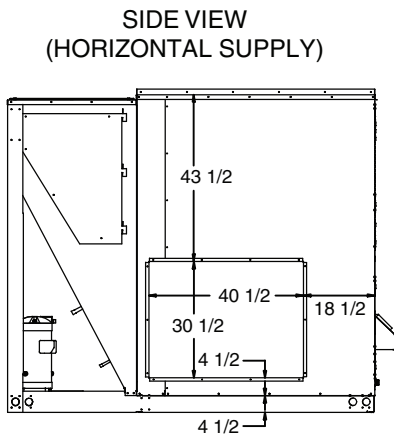
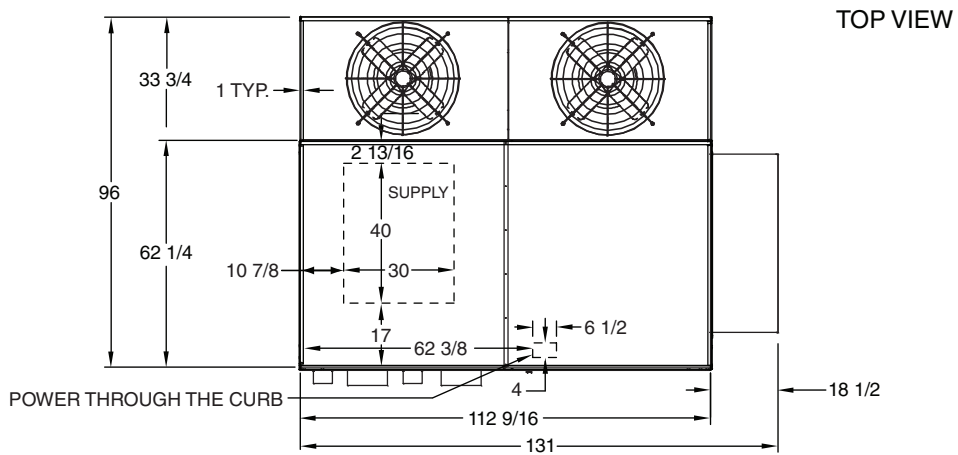
Fig. 8 — Unit Dimensions — 62DC,DD12-20 Units with Optional Exhaust



NOTES:

- Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
- Dimensions are in inches.

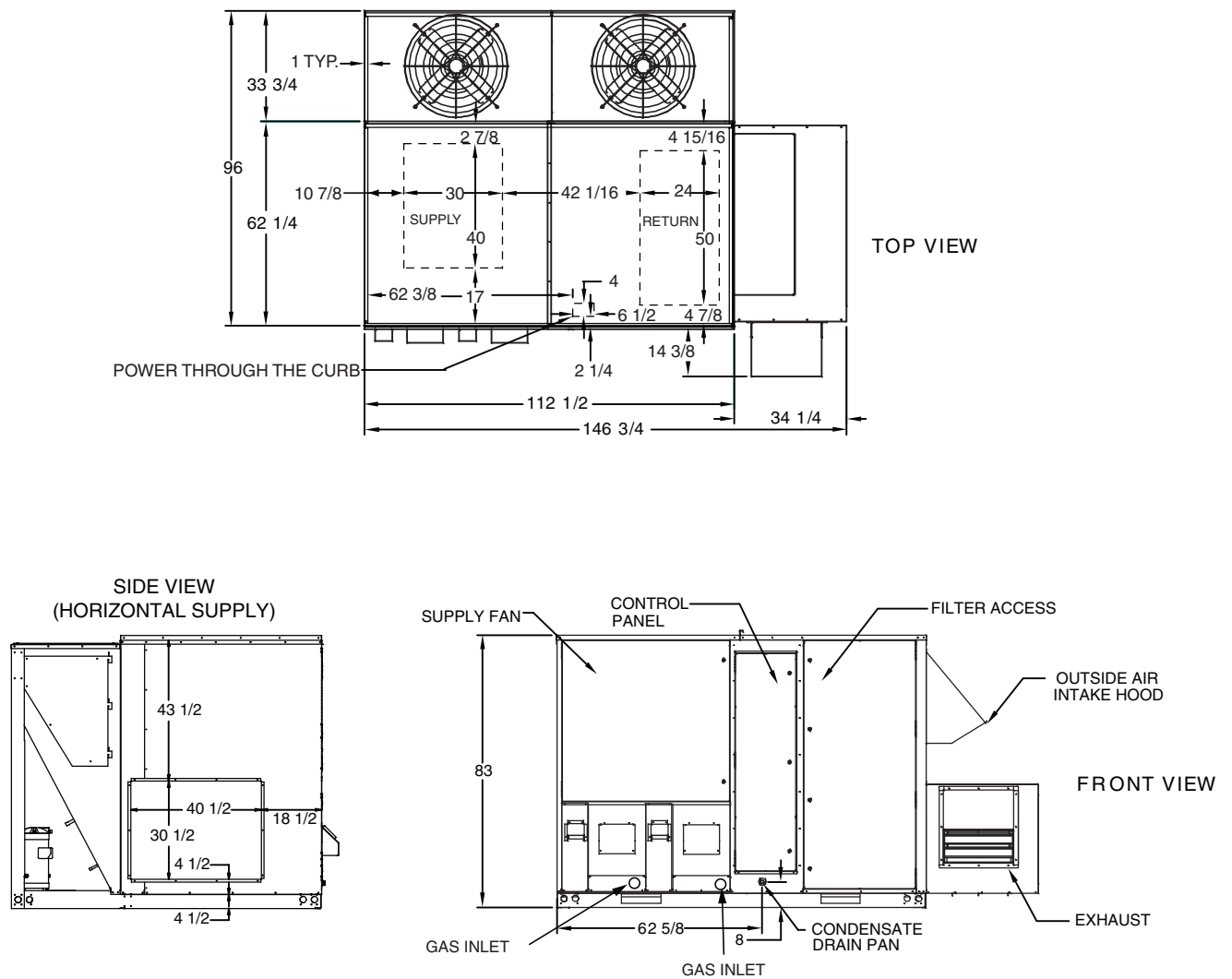
Fig. 9 — Unit Dimensions — 62DC,DD12-20 Units with Optional Energy Conservation Wheel



NOTES:

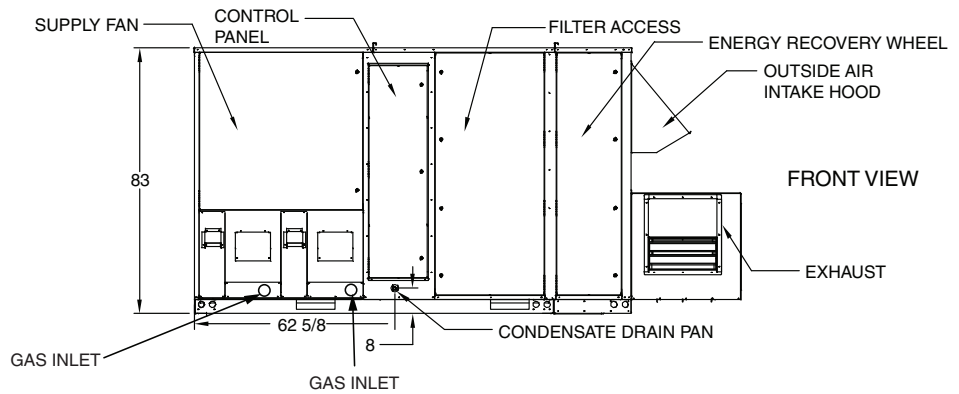
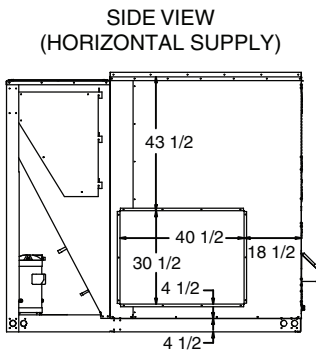
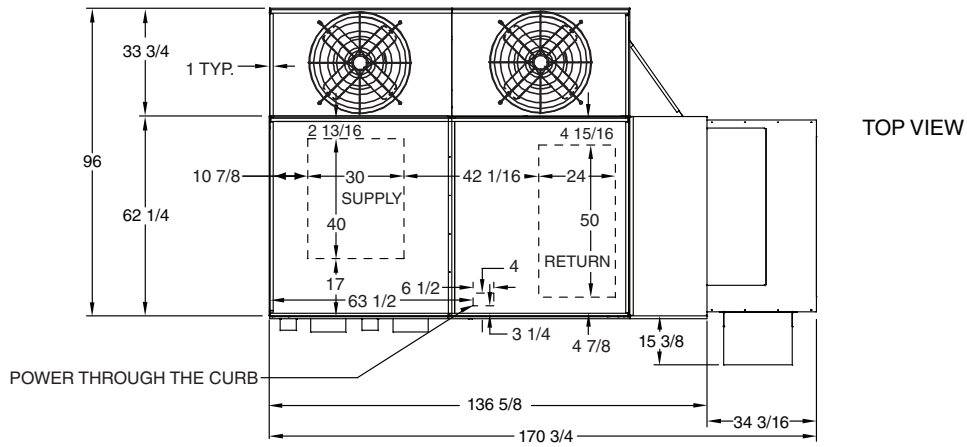
1. Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
2. Dimensions are in inches.

Fig. 10 — Unit Dimensions — 62DA,DB22-38 Standard Units



- NOTES:
- Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
 - Dimensions are in inches.

Fig. 11 — Unit Dimensions — 62DC,DD22-38 Units with Optional Exhaust



NOTES:

1. Carrier recommends a minimum of 24 to 36-in. of service clearance on all sides of unit except for the control panel side, which should have at least 48-in. clearance. Top should be unobstructed.
2. Dimensions are in inches.

Fig. 12 — Unit Dimensions — 62DC,DD22-38 Units with Optional Energy Conservation Wheel

Table 1 — Physical Data — 62DA,DB07-38 Units

UNIT 62DA,DB	07	08	09	12	14	15	16
NOMINAL CAPACITY (TONS)	6	7	8	10	12	14	15
COMPRESSOR Quantity/Unit ... Model Number of Refrigerant Circuits Oil	1 ... ZP51	1 ... ZP61	1 ... ZP72	2 ... ZP42	2 ... ZP51	2 ... ZP67	2 ... ZP83
	1 Pre Charged			2 Pre Charged			
REFRIGERANT TYPE Operating Charge per circuit (lb-oz)	12-13	R-410A 15-1	15-3	14-9	R-410A 14-8	16-8	16-3
CONDENSER COIL Rows ... Fins/in. Face Area (sq ft)	2 ... 16 12.38			2 ... 16 24.75			
CONDENSER FAN Nominal Cfm (total) Quantity ... Diameter (in.) Motor Hp	4000 1 ... 24 1/2	5500 1 ... 26 3/4		8000 2 ... 24 1/2		11,000 2 ... 26 3/4	
HIGH PRESSURE SWITCH (PSIG) Cutout Reset (Manual)	640 595			640 595			
EVAPORATOR COIL Tube Size (in.) Rows ... Fins/in. Face Area (sq ft)	3.00	3/8 6 ... 12 6.25	8.0		3/8 6 ... 12 12.0		
EVAPORATOR FAN Backward Curved (mm) Forward Curved (in.) Airfoil (in.) Oversize Airfoil (in.) Backward Inclined (in.) Oversize Backward Inclined (in.) Nominal Cfm 100% OA Motor Hp Range	1000	180 12 x 9 N/A	1400	12 x 12 15 18.5	1900	N/A N/A 15 x 15	2800 1 - 10
OPTIONAL REHEAT COIL	24 x 38 in., 1 Row, 12 FPI, with 3/8-in. Return Bends						
OPTIONAL SUBCOOLING COIL	24 x 38 in., 1 Row, 12 FPI, with 3/8-in. Return Bends						
LOW PRESSURE SWITCH (PSIG) Cutout Reset (Auto)	99 135			99 135			
CONDENSATE DRAIN CONNECTION (NPT) (in.)	1 1/4			1 1/4			
OPTIONAL GAS HEAT FURNACE SECTION Gas Input Sizes (Btuh x 1000) Control Type Staged (no. of stages) Modulating (% range) Efficiency (Steady State) (%) Supply Line Pressure Range (in. wg) Rollout Switch Cutout Temp (F) Gas Valve Quantity Manifold Pressure (in. wg) Natural Gas Std LP Gas Special Order	75, 100, 150, 200 2 25 - 100 82 5.0 min - 13.0 max. 350 1 Std - 2 with Modulating Option 3.5 10.0			150, 200, 250, 300 2 25 - 100 82 5.0 min - 13.0 max. 350 1 Std - 2 with Modulating Option 3.5 10.0			
OPTIONAL ELECTRIC HEAT Size Range (kW) Control Type Staged (no. of stages) SCR (% range)	7.5/10 - 30/40 2 0 - 100			7.5/10 - 45/60 2 0 - 100			
OPTIONAL HOT WATER HEAT COIL	24 x 38 in., 2 Row, 10 FPI, with 1/2-in. Return Bends and 1 1/8-in. OD Sweat Connections						
OPTIONAL STEAM HEAT COIL	24 x 38 in., 1 Row, 8 FPI, with 5/8-in. Return Bends and 2 1/8-in. MPT Connections						
OUTDOOR AIR FILTERS Quantity ... Size (in.) Standard 2 in. MERV 8 Optional 2 in. Metal Mesh Optional 4 in. MERV 8 MERV 11 MERV 15	4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24			4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24			

LEGEND

- LP — Liquid Propane
- OA — Outdoor Air
- SCR — Silicon-Controlled Rectifier

Table 1 — Physical Data — 62DA,DB07-38 Units (cont)

UNIT 62DA,DB	20	22	24	30	34	38
NOMINAL CAPACITY (TONS)	18	19	20	27	30	35
COMPRESSOR Quantity/Unit ... Model Number of Refrigerant Circuits Oil	2 ... ZP90	2 ... ZP90	2 ... ZP103	2 ... ZP137	2 ... ZP180	2 ... ZP90/2 ... ZP90
REFRIGERANT TYPE Operating Charge per circuit (lb-oz)	17-1	25-1	25-5	25-10	26-4	32-1
CONDENSER COIL Rows ... Fins/in. Face Area (sq ft)	2 ... 16 24.75	2 ... 16 42.6				3 ... 12
CONDENSER FAN Nominal Cfm (total) Quantity ... Diameter (in.) Motor Hp	11,000 2 ... 26 3/4	11,000 2 ... 26 1.0	20,000 2 ... 30 1.5			
HIGH PRESSURE SWITCH (PSIG) Cutout Reset (Manual)	640 595					
EVAPORATOR COIL Tube Size (in.) Rows ... Fins/in. Face Area (sq ft)	12.0	15.3	3/8 6 ... 12 23.0			
EVAPORATOR FAN Backward Curved (mm) Forward Curved (in.) Airfoil (in.) Oversize Airfoil (in.) Backward Inclined (in.) Oversize Backward Inclined (in.) Nominal Cfm 100% OA Motor Hp Range	12 x 12 15 x 15 15 18.5 3100 1 - 10	2900 1.5 - 10	3600 1.5 - 15	N/A N/A 15 x 15 18 x 18 24.5 27 4600 5300		6200 2.0 - 20
OPTIONAL REHEAT COIL	36 x 44 in., 1 Row, 12 FPI, with 3/8-in. Return Bends					
OPTIONAL SUBCOOLING COIL	36 x 44 in., 1 Row, 12 FPI, with 3/8-in. Return Bends					
LOW PRESSURE SWITCH (PSIG) Cutout Reset (Auto)	99 135					
CONDENSATE DRAIN CONNECTION (NPT) (in.)	1 1/4					
OPTIONAL GAS HEAT FURNACE SECTION Gas Input Sizes (Btuh x 1000) Control Type Staged (no. of stages) Modulating (% range) Efficiency (Steady State) (%) Supply Line Pressure Range (in. wg) Rollout Switch Cutout Temp (F) Gas Valve Quantity Manifold Pressure (in. wg) Natural Gas Std LP Gas Special Order	150, 200, 250, 300	300, 400, 500, 600 2 (Low Heat) / 4 (High Heat) 25 - 100 82 5.0 min - 13.0 max. 350 1 Std - 2 with Modulating Option 3.5 10.0				
OPTIONAL ELECTRIC HEAT Size Range (kW) Control Type Staged (no. of stages) SCR (% range)	7.5/10 - 45/60 2 0 - 100					
OPTIONAL HOT WATER HEAT COIL	45 x 38 in., 2 Row, 10 FPI, with 5/8-in. Return Bends and 2 1/2-in. OD Sweat Connections					
OPTIONAL STEAM HEAT COIL	45 x 38 in., 1 Row, 8 FPI, with 5/8-in. Return Bends and 2 1/8-in. MPT Connections					
OUTDOOR AIR FILTERS Quantity ... Size (in.) Standard 2 in. MERV 8 Optional 2 in. Metal Mesh Optional 4 in. MERV 8 MERV 11 MERV 15	4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24	2 ... 20x24, 2 ... 24x24 2 ... 20x24, 2 ... 24x24 2 ... 20x24, 2 ... 24x24 2 ... 20x24, 2 ... 24x24 2 ... 20x24, 2 ... 24x24				

LEGEND

- LP — Liquid Propane
- OA — Outdoor Air
- SCR — Silicon-Controlled Rectifier

Table 2 — Physical Data — 62DC,DD07-38 Units

UNIT 62DC,DD	07	08	09	12	14	15	16	20
NOMINAL CAPACITY (TONS)	6	7	8	10	12	14	15	18
COMPRESSOR Quantity/Unit ... Model Number of Refrigerant Circuits Oil	1 ... ZP51	1 ... ZP61 1 Pre Charged	1 ... ZP72	2 ... ZP42	2 ... ZP51	2 ... ZP67 2 Pre Charged	2 ... ZP83	2 ... ZP90
REFRIGERANT TYPE Operating Charge per Circuit (lb-oz)	12-13	R-410A 15-1	15-3	14-9	14-8	R-410A 16-8	16-3	17-1
CONDENSER COIL Rows ... Fins/in. Face Area (sq ft)		2 ... 16 12.38				2 ... 16 24.75		
CONDENSER FAN Nominal Cfm (total) Quantity ... Diameter (in.) Motor Hp	4000 1 ... 24 1/2	5500 1 ... 26 3/4		8000 2 ... 24 1/2			11,000 2 ... 26 3/4	
HIGH PRESSURE SWITCH (PSIG) Cutout Reset (Manual)		640 595				640 595		
EVAPORATOR COIL Tube Size (in.) Rows ... Fins/in. Face Area (sq ft)	3.00	3/8 4 ... 12 6.25		8.0	4 ... 12	3/8	12.0	6 ... 12
EVAPORATOR FAN Backward Curved (mm) Forward Curved (in.) Airfoil (in.) Oversize Airfoil (in.) Backward Inclined (in.) Oversize Backward Inclined (in.) Nominal Cfm 100% OA Motor Hp Range	1000	180 12 x 9 N/A 1200 1/2 - 3	1400	12 x 12 15 18.5 1500	1900	N/A N/A 15 x 15 2300 1 - 10	2800	3100
OPTIONAL REHEAT COIL	24 x 38 in., 1 Row, 12 FPI, with 3/8-in. Return Bends							
OPTIONAL SUBCOOLING COIL	24 x 38 in., 1 Row, 12 FPI, with 3/8-in. Return Bends							
LOW PRESSURE SWITCH (PSIG) Cutout Reset (Auto)		99 135				99 135		
CONDENSATE DRAIN CONNECTION (NPT) (in.)		1 1/4				1 1/4		
OPTIONAL GAS HEAT FURNACE SECTION Gas Input Sizes (Btuh x 1000) Control Type Staged (no. of stages) Modulating (% range) Efficiency (Steady State) (%) Supply Line Pressure Range (in. wg) Rollout Switch Cutout Temp (F) Gas Valve Quantity Manifold Pressure (in. wg) Natural Gas Std LP Gas Special Order		75, 100, 150, 200 2 25 - 100 82 5.0 min - 13.0 max. 350 1 Std - 2 with Modulating Option 3.5 10.0				150, 200, 250, 300 2 25 - 100 82 5.0 min - 13.0 max. 350 1 Std - 2 with Modulating Option 3.5 10.0		
OPTIONAL ELECTRIC HEAT Size Range (kW) Control Type Staged (no. of stages) SCR (% range)		7.5/10 - 30/40 2 0 - 100				7.5/10 - 45/60 2 0 - 100		
OPTIONAL HOT WATER HEAT COIL	24 x 38 in., 2 Row, 10 FPI, with 1/2-in. Return Bends and 1 1/8-in. OD Sweat Connections							
OPTIONAL STEAM HEAT COIL	24 x 38 in., 1 Row, 8 FPI, with 5/8-in. Return Bends and 2 1/8-in. MPT Connections							
OUTDOOR AIR FILTERS Quantity ... Size (in.) Standard 2 in. MERV 8 Optional 2 in. Metal Mesh Optional 4 in. MERV 8 MERV 11 MERV 15		4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24				4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24 4 ... 20x24		
OPTIONAL ECW Type Size (in.)		Molecular Sieve 36				Molecular Sieve 36 or 48		
OPTIONAL ECW FILTERS Quantity ... Size (in.) with 36 in. ECW with 42 in. ECW with 48 in. ECW with 54 in. ECW		2 ... 20x24, 2 ... 20x20 N/A N/A				2 ... 20x24, 2 ... 20x20 N/A 4 ... 20x24, 2 ... 12x24		
OPTIONAL POWER EXHAUST FAN Backward Curved (mm) Forward Curved (in.) Oversize Forward Curved (in.) Airfoil (in.) Oversize Airfoil (in.) Motor Hp Range		9 x 7 12 x 9 1/2 - 5		180 12 x 12 N/A		N/A N/A 1/2 - 10		

LEGEND

- ECW** — Energy Conservation Wheel
- LP** — Liquid Propane
- OA** — Outdoor Air
- SCR** — Silicon-Controlled Rectifier

Table 2 — Physical Data — 62DC,DD07-38 Units (cont)

UNIT 62DC,DD	22	24	30	34	38
NOMINAL CAPACITY (TONS)	19	20	27	30	35
COMPRESSOR					
Quantity/Unit ... Model	2 ... ZP90	2 ... ZP103	2 ... ZP137	2 ... ZP180	2 ... ZP90/2 ... ZP90
Number of Refrigerant Circuits			2		
Oil			Pre Charged		
REFRIGERANT TYPE			R-410A		
Operating Charge per Circuit (lb-oz)	25-1	25-5	25-10	26-4	32-1
CONDENSER COIL					
Rows ... Fins/in.		2 ... 16			3 ... 12
Face Area (sq ft)		42.6			
CONDENSER FAN					
Nominal Cfm (total)	11,000		20,000		
Quantity ... Diameter (in.)	2 ... 26		2 ... 30		
Motor Hp	1.0		1.5		
HIGH PRESSURE SWITCH (PSIG)					
Cutout			640		
Reset (Manual)			595		
EVAPORATOR COIL					
Tube Size (in.)			3/8		
Rows ... Fins/in.		4 ... 12			6 ... 12
Face Area (sq ft)	15.3			23.0	
EVAPORATOR FAN					
Backward Curved (mm)			N/A		
Forward Curved (in.)			N/A		
Airfoil (in.)			15 x 15		
Oversize Airfoil (in.)			18 x 18		
Backward Inclined (in.)			24.5		
Oversize Backward Inclined (in.)			27		
Nominal Cfm 100% OA	2900	3600	4600	5300	6200
Motor Hp Range	1.5 - 10		1.5 - 15		2.0 - 20
OPTIONAL REHEAT COIL	36 x 44 in., 1 Row, 12 FPI, with 3/8-in. Return Bends				
OPTIONAL SUBCOOLING COIL	36 x 44 in., 1 Row, 12 FPI, with 3/8-in. Return Bends				
LOW PRESSURE SWITCH (PSIG)					
Cutout			99		
Reset (Auto)			135		
CONDENSATE DRAIN CONNECTION (NPT) (in.)	1 1/4				
OPTIONAL GAS HEAT FURNACE SECTION					
Gas Input Sizes (MBtuh)	300, 400, 500, 600				
Control Type					
Staged (no. of stages)	2 (300 & 400) / 4 (500 & 600)				
Modulating (% range)	25 - 100				
Efficiency (Steady State) (%)	82				
Supply Line Pressure Range (in. wg)	5.0 min - 13.0 max.				
Rollout Switch Cutout Temp (F)	350				
Gas Valve Quantity	1 Std - 2 with Modulating Option				
Manifold Pressure (in. wg)					
Natural Gas Std	3.5				
LP Gas Special Order	10.0				
OPTIONAL ELECTRIC HEAT					
Size Range (kW)	7.5/10 - 45/60				
Control Type					
Staged (no. of stages)	2				
SCR (% range)	0 - 100				
OPTIONAL HOT WATER HEAT COIL	45 x 38 in., 2 Row, 10 FPI, with 5/8-in. Return Bends and 2 1/2-in. OD Sweat Connections				
OPTIONAL STEAM HEAT COIL	45 x 38 in., 1 Row, 8 FPI, with 5/8-in. Return Bends and 2 1/8-in. MPT Connections				
OUTDOOR AIR FILTERS					
Quantity ... Size (in.)					
Standard 2 in. MERV 8	2 ... 20x24, 2 ... 24x24				
Optional 2 in. Metal Mesh	2 ... 20x24, 2 ... 24x24				
Optional 4 in.					
MERV 8	2 ... 20x24, 2 ... 24x24				
MERV 11	2 ... 20x24, 2 ... 24x24				
MERV 15	2 ... 20x24, 2 ... 24x24				
OPTIONAL ECW					
Type	Molecular Sieve				
Size (in.)	42, 48, or 54				
OPTIONAL ECW FILTERS					
Quantity ... Size (in.)					
with 36 in. ECW	N/A				
with 42 in. ECW	4 ... 20x24, 2 ... 12x24				
with 48 in. ECW	6 ... 18x24				
with 54 in. ECW	6 ... 18x24				
OPTIONAL POWER EXHAUST FAN					
Backward Curved (mm)	180				
Forward Curved (in.)	N/A				
Oversize Forward Curved (in.)	N/A				
Airfoil (in.)	15 x 15				
Oversize Airfoil (in.)	18 x 18				
Motor Hp Range	1/2 - 20				

LEGEND

- ECW** — Energy Conservation Wheel
- LP** — Liquid Propane
- OA** — Outdoor Air
- SCR** — Silicon-Controlled Rectifier

Table 3 — Unit and Component Weights (lb)

COMPONENT	62D UNIT SIZE												
	07	08	09	12	14	15	16	20	22	24	30	34	38
Base Unit*	1650	1690	1710	1910	1960	2120	2060	2080	3375	3475	3575	3655	4075
Hot Gas Reheat	35	35	35	75	75	75	75	75	120	120	120	120	120
Liquid Subcooling Coil	25	25	25	55	55	55	55	55	100	100	100	100	100
Gas Furnace (Btuh)†													
75,000	140	140	140	—	—	—	—	—	—	—	—	—	—
100,000	150	150	150	—	—	—	—	—	—	—	—	—	—
150,000	160	160	160	160	160	160	160	160	—	—	—	—	—
200,000	170	170	170	170	170	170	170	170	—	—	—	—	—
250,000	—	—	—	210	210	210	210	210	—	—	—	—	—
300,000	—	—	—	250	250	250	250	250	250	250	250	250	250
400,000	—	—	—	—	—	—	—	—	275	275	275	275	275
500,000	—	—	—	—	—	—	—	—	420	420	420	420	420
600,000	—	—	—	—	—	—	—	—	500	500	500	500	500
Electric Heater	75	75	75	75	75	75	75	75	100	100	100	100	100
Steam Coil	60	60	60	60	60	60	60	60	120	120	120	120	120
Hot Water Coil	75	75	75	75	75	75	75	75	150	150	150	150	150
Wheel Bypass Dampers	60	60	60	60	60	60	60	60	125	125	125	125	125
Energy Conservation Wheel	350	350	350	420	420	420	420	420	470	470	470	470	470
Power Exhaust	345	345	345	375	375	375	375	375	525	525	525	525	525
Curb 14-in.	275	275	275	275	275	275	275	275	305	305	305	305	305
Curb 24-in.	375	375	375	375	375	375	375	375	425	425	425	425	425

*Aluminum Evaporator Coil/Aluminum Condenser Coil.

†For applications less than 2000 ft elevation.

Step 3 — Field Fabricate Ductwork — On vertical supply or return units, secure all ducts to roof curb and building structure. *Do not connect ductwork to unit.* Insulate and weatherproof all external ductwork, joints, and roof openings with counter flashing and mastic in accordance with applicable codes.

Ducts passing through an unconditioned space must be insulated and covered with a vapor barrier.

If a plenum return is used on a vertical unit, the return should be ducted through the roof deck to comply with applicable fire codes.

A minimum clearance is not required around ductwork. Cabinet return-air static pressure (a negative condition) shall not exceed 0.35 in. wg with economizer or 0.45 in. wg without economizer.

Step 4 — Make Unit Duct Connections — All 62DA and DB units bring in 100% outdoor air through the outdoor air intake hood and do not have a return air connection. The 62DA units have a vertical supply duct opening in the bottom of the unit. The 62DB units have a horizontal supply duct opening in the side of the unit.

All 62DC and DD units bring in 100% outdoor air through the outdoor air intake hood. They may also be equipped with factory-installed power exhaust and/or an energy conservation wheel. The return air to these units is not re-circulated or mixed with the incoming outdoor air. The return air may be used to transfer energy to the incoming air via the energy conservation wheel and is then exhausted. The 62DC units have a vertical supply and return duct opening in the bottom of the unit. The 62DD units have a horizontal supply duct opening in the side of the unit and a vertical return opening in the bottom of the unit.

VERTICAL SUPPLY/RETURN CONNECTIONS — For vertical supply or return connections, ductwork openings are shown in Fig. 4-12. Attach the ductwork to the roof curb. Do not attach duct directly to the unit.

⚠ WARNING

For vertical supply and return ductwork, tools or parts could drop into ductwork and cause an injury. Install a 90-degree turn in the return ductwork between the unit and the conditioned space. If a 90-degree elbow cannot be installed, then a grille of sufficient strength and density should be installed to prevent objects from falling into the conditioned space.

HORIZONTAL SUPPLY CONNECTIONS — For horizontal supply connections, ductwork openings are shown in Fig. 4-12. The 62D units do not have horizontal return connections.

Step 5 — Install Flue Hood and Inlet Hood (Gas Heat Units Only) — Flue hood (smaller hood), inlet hood (larger hood), and screens are shipped inside the unit in the gas section. To install, open the heat section door. The flue hood is attached to the heat section panel from the outside using the screws provided. See Fig. 13.

The inlet hood is installed by inserting the hood through the back of the heat panel. Attach the hood by inserting the screws provided through the clearance holes in the heat panel and into the intake hood.

NOTE: When properly installed, the flue hood will line up with the combustion fan housing.

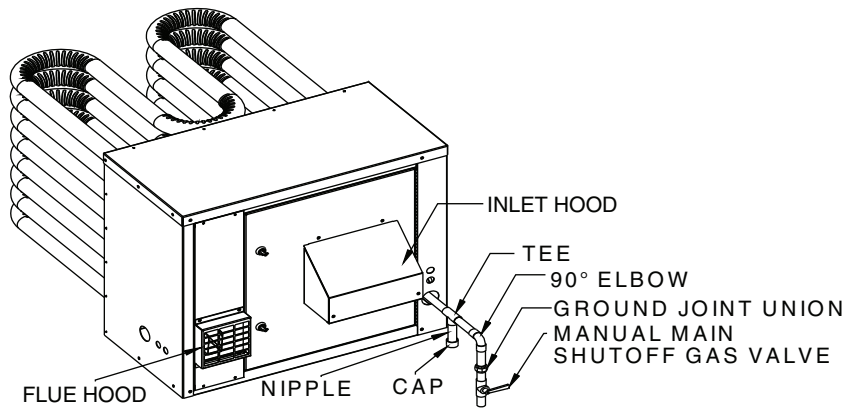


Fig. 13 — Gas Heat Section (Gas Heat Units Only)

Step 6 — Install External Trap for Condensate Drain — The unit's 3/4-in. condensate drain connection is located on the side of the unit. See Fig. 4-12 for locations.

All units must have an external trap for condensate drainage. Install a trap at least 4-in. deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the unit at 1 in. per 10 ft of run. Do not use a pipe size smaller than the unit connection (3/4-in.). See Fig. 14.

Step 7 — Install Gas Piping (Gas Heat Units Only) — Unit is equipped for use with natural gas. Refer to local building codes, or in the absence of local codes, to ANSI Z223.1-latest year and addendum Z223.1A-latest year entitled HFGC. In Canada, installation must be in accordance with the CAN1.B149.1 and CAN1.B149.2 installation codes for gas burning appliances.

Gas piping length and capacity is shown in Table 4. See Fig. 13 for typical pipe guide and locations of external manual gas shutoff valve.

Install field-supplied manual gas shutoff valve with a 1/8-in. NPT pressure tap for test gage connection at unit. The pressure tap is located on the gas manifold, adjacent to the gas valve. Field gas piping must include sediment trap and union. See Fig. 13. Install a field-supplied gas regulator.

block located within the unit main control section. Power wiring connections on units with factory disconnects should be made at the line side of the disconnect switch.

The internal power and control wiring of these units is factory installed and each unit is thoroughly tested prior to shipment. Contact the local service representative if assistance is required.

It is recommended that an independent 115-volt power source be brought to the vicinity of the rooftop unit for portable lights and tools used by the service mechanic.

Table 4 — Gas Piping Capacity (cubic ft per hr)

GAS PIPE LENGTH (ft)	PIPE SIZE (in.)				
	3/4	1	1 1/4	1 1/2	2
10	278	520	1050	1600	2700
20	190	350	730	1100	2100
30	152	285	590	890	1650
40	130	245	500	760	1450
50	115	215	440	670	1270
60	105	195	400	610	1105
70	96	180	370	560	1050
90	84	160	320	490	930
100	79	150	305	460	870
125	72	130	275	410	780
150	64	120	250	380	710
175	59	110	225	350	650
200	55	100	210	320	610

⚠ WARNING

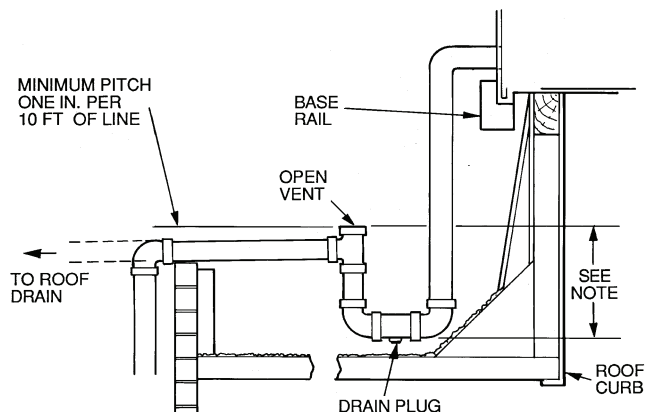
Do not pressure test gas supply while connected to unit. Always disconnect union before servicing. High pressures can cause gas valve damage resulting in a hazardous condition.

IMPORTANT: Natural gas pressure at unit gas connection must not be less than 5.0 in. wg or greater than 13.0 in. wg for all heat sizes.

Size gas-supply piping for 0.3-in. wg maximum pressure drop. Do not use supply pipe smaller than unit gas connection.

Step 8 — Install Hot Water or Steam Piping (Hot Water or Steam Heat Units Only) — Coils should be piped according to any relevant local codes. All external piping must be supported independently from the coil. See Tables 1 and 2 for coil connection size and type. See Fig. 15 for coil connection location.

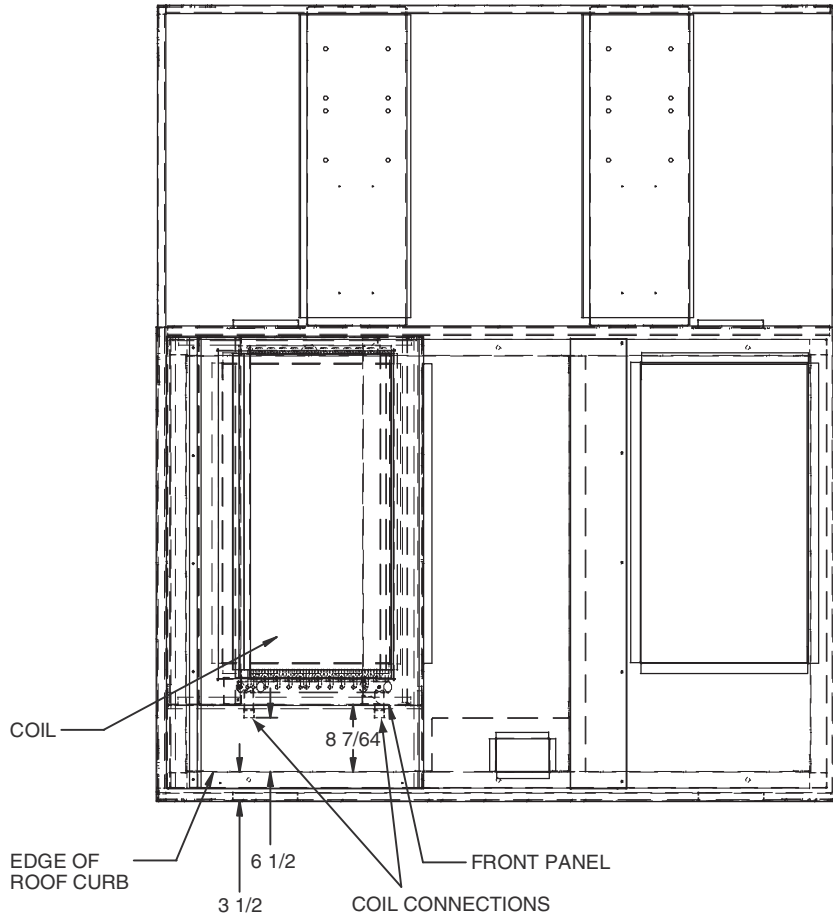
Step 9 — Make Electrical Connections — Power wiring should be connected to the main power terminal



NOTE: Trap should be deep enough to offset maximum unit static difference. A 4-in. trap is recommended.

Fig. 14 — Condensate Drain Piping Details

TOP VIEW OF UNIT



NOTE: Dimensions are in inches.

Fig. 15 — Hot Water and Steam Coil Connections

FIELD POWER SUPPLY — The units are factory wired for the voltage shown on the nameplate. Main power wiring should be sized for the minimum wire ampacity shown on the nameplate. An external weather-tight disconnect switch properly sized for the unit total load is required for each unit. Disconnect must be installed in accordance with local and/or national electric codes.

Power wiring may enter the rooftop unit through the through the unit base and roof curbs on all models. Install conduit connectors at the entrance locations. External connectors must be weatherproof.

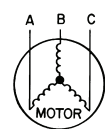
All units must be properly grounded. The ground lug is provided for this purpose. **DO NOT** use the ground lug for connecting a neutral conductor. The unit must be electrically grounded in accordance with local codes, or in the absence of local codes, with the NEC (National Electrical Code) ANSI/NFPA (National Fire Protection Association) 70 1981.

Once it is established that supply voltage is within the utilization range, check and calculate if an unbalanced condition exists between phases.

Use the following formula to determine the percent of voltage imbalance.

$$\% \text{ Voltage imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60.



AB = 452 v
BC = 464 v
AC = 455 v

$$\begin{aligned} \text{Average Voltage} &= \frac{452 + 464 + 455}{3} \\ &= \frac{1371}{3} \\ &= 457 \end{aligned}$$

Determine maximum deviation from average voltage.

(AB) 457 – 452 = 5 v
(BC) 464 – 457 = 7 v
(AC) 457 – 455 = 2 v

Maximum deviation is 7 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times (7 / 457) \\ &= 1.53\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

Unit failure as a result of operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components.

Consult the wiring diagram furnished with the unit. These units are custom designed for each application. The unit wiring diagram is located inside the control panel of each unit.

When installing units, provide disconnect per NEC Article 440 or local codes. For non-fused disconnects, size the disconnect according to the sizing data provided on unit nameplate. If a fused disconnect is used, determine the minimum size for the switch based on the disconnect sizing data and then coordinate the disconnect housing size to accommodate the maximum overcurrent protection (MOCP) device size as marked on the unit informative plate. All field wiring must comply with NEC and local codes. Size wire based on MCA (minimum circuit amps) on the unit informative plate.

See Tables 5-8 for unit component electrical data.

⚠ WARNING	
<p>Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground lug in control compartment, or conduit approved for electrical ground when installed in accordance with NEC; ANSI/NFPA, latest edition, and local electrical codes. <i>Do not use gas piping as an electrical ground.</i> Failure to follow this warning could result in the installer being liable for personal injury of others.</p>	

SENSOR WIRING

⚠ WARNING	
<p>Disconnect all power to the unit before performing maintenance or service. Unit may automatically start if power is not disconnected. Failure to follow this warning could cause personal injury, death, and/or equipment damage.</p>	

⚠ CAUTION	
<p>The correct power phasing is critical to the operation of the scroll compressors. An incorrect phasing will result in an alarm being generated and compressor operation lockout. Should this occur, power phase correction must be made to the incoming power. Damage to compressor could result.</p>	

Table 5 — Compressor Electrical Data

VOLTAGE		UNIT SIZE 62D												
		07	08	09	12	14	15	16	20	22	24	30	34	38
Number of Compressors		1	1	1	2	2	2	2	2	2	2	2	2	4
208-230/3-60	RLA (each)	16.0	19.0	23.2	13.7	16.0	22.4	25.0	29.5	29.5	30.1	48.1	55.8	29.5
	LRA	110.0	123.0	164.0	83.1	110.0	149.0	164.0	195.0	195.0	225.0	245.0	340.0	195.0
460/3-60	RLA (each)	7.8	9.7	11.2	6.2	7.8	10.6	12.2	14.8	14.8	16.7	18.6	26.9	14.8
	LRA	52.0	62.0	75.0	41.0	52.0	75.0	100.0	95.0	95.0	114.0	125.0	173.0	95.0
575/3-60	RLA (each)	5.7	7.4	7.9	4.8	5.7	7.7	9.0	12.2	12.2	12.2	14.7	23.7	12.2
	LRA	38.9	50.0	54.0	33.0	38.9	54.0	78.0	80.0	80.0	80.0	100.0	132.0	80.0

Table 6 — Condenser Fan Motor Electrical Data

VOLTAGE		UNIT SIZE 62D												
		07	08	09	12	14	15	16	20	22	24	30	34	38
Number of Fans		1	1	1	2	2	2	2	2	2	2	2	2	2
208/230-3-60	FLA	3.0	4.0	4.0	2.3	2.3	4.0	4.0	4.0	4.0	4.0	5.6	5.6	5.6
	LRA	1.5	2.0	2.0	1.2	1.2	2.0	2.0	2.0	2.0	2.0	2.8	2.8	2.8
460-3-60	FLA	1.5	2.0	2.0	1.2	1.2	2.0	2.0	2.0	2.0	2.0	2.8	2.8	2.8
575-3-60	FLA	0.8	1.8	1.8	0.8	0.8	0.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3

Table 7 — Supply and Exhaust Fan Motor Electrical Data

VOLTAGE		MOTOR HP										
		1/2	3/4	1	1 1/2	2	3	5	7.5	10	15	20
208/230-3-60	FLA	2.8	3.4	3.2	4.8	6.3	9.8	15.7	22.3	29.0	43.4	57.0
460-3-60	FLA	1.4	1.7	1.5	2.0	2.9	4.1	6.8	10.0	12.9	18.9	24.5
575-3-60	FLA	0.8	1.3	1.1	1.6	2.3	3.3	5.2	7.6	10.1	15.1	19.6

Table 8 — Energy Conservation Wheel Electrical Data

VOLTAGE		WHEEL SIZE (in.)			
		36	42	48	54
208/230-3-60	FLA	2.5	2.5	2.5	3.0
460-3-60	FLA	1.3	1.3	1.3	1.5
575-3-60	FLA	1.0	1.3	1.0	1.5

LEGEND FOR TABLES 5-8

- FLA — Full Load Amps
- LRA — Locked Rotor Amps
- RLA — Rated Load Amps

The 62D unit utilizes a variety of sensors for control purposes. The sensors provided will depend upon the features of the unit as detailed below:

1. All units are equipped with an outdoor air sensor (OAT), a leaving air temperature sensor (LAT), and a room temperature sensor (RS).
2. When the unit is equipped with a digital compressor and hot gas reheat (HGRH), the leaving air sensor is a combination temperature and humidity sensor.

The LAT (temperature sensor or combination sensor) should be installed in the supply duct downstream of the heat section. The sensor must be far enough downstream of the heat section so that the discharge air is adequately mixed for proper sensing. If the unit is not equipped with heat, the LAT sensor is factory installed in the cabinet. The sensor is connected to the unit controller as indicated in the wiring diagram with 18 AWG (American Wire Gage) shielded wire. Do not run the sensor wiring in the same conduit as high voltage wiring.

The room sensor (RS) should be installed in the space and connected to the unit controller at the Rnet connection as shown in the wiring diagram. See Tables 9 and 10 for Rnet wiring specifications.

Use the specified type of wire and cable for maximum signal integrity. See Table 9.

To wire the sensor to the controller:

1. Partially cut, then bend and pull off the outer jacket of the Rnet cable(s), being careful not to nick the inner insulation.
2. Strip about 1/4 in. of the inner insulation from each wire. See Fig. 16.
3. Wire each terminal on the sensor to the same terminal on the controller. Table 10 shows the recommended Rnet wiring scheme.

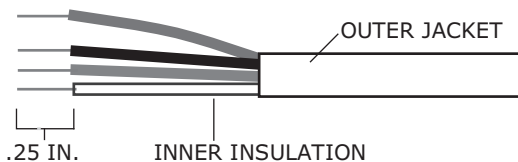


Fig. 16 — Rnet Cable Wire

Table 9 — Rnet Wiring Specifications

RNET WIRING SPECIFICATIONS	
Description	4 conductor, unshielded, CMP, plenum rated cable
Conductor	18 AWG
Maximum Length	500 ft
Recommended Coloring	Jacket: white Wiring: black, white, green, red
UL Temperature	32 to 167 F
Voltage	300-vac, power limited
Listing	UL: NEC CL2P, or better

LEGEND

- AWG — American Wire Gage
- CMP — Communications Plenum Cable
- NEC — National Electrical Code
- UL — Underwriters Laboratories

Table 10 — Rnet Wiring

WIRE	TERMINAL
Red	+12-v
Black	Rnet-
White	Rnet+
Green	Gnd

NOTE: The wire should be connected to the terminal shown.

Step 10 — Open Exhaust Damper (Units with Optional Exhaust or Energy Conservation Wheel Only)

— The optional exhaust damper is secured to the exhaust assembly for shipping. Remove the two screws holding the damper to the panel. Damper should be free to swing open during operation. See Fig. 17.

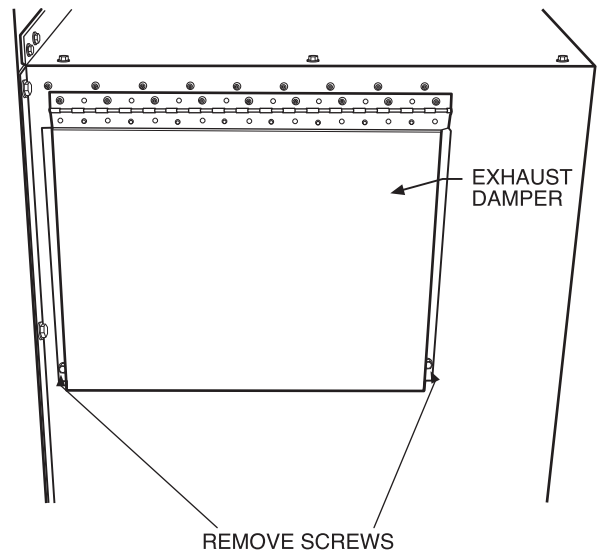


Fig. 17 — Optional Exhaust Damper

Step 11 — Install All Accessories — After all of the factory-installed options have been adjusted, install all field-installed accessories. Refer to the accessory installation instructions included with each accessory.

Step 12 — Configure Controls — The unit controller is pre-configured with default set points as detailed below. If changes to the set points are desired, this may be accomplished via BACview display or by using a computer equipped with Virtual BACview. See Fig. 18. The password is 1111. See the Controls and Troubleshooting Book.

COOLING MODE — If OAT > 60 F, first stage compressor is started.

If OAT ≥ 75 F, second stage compressor is started (size 12 and larger).

If OAT falls to ≤ 70 F, second stage compressor will be turned off after a 3-minute time delay.

If OAT < 59 F, first stage compressor will be turned off.

Units with a digital compressor will modulate the digital compressor's capacity to maintain a 70 F (default value) leaving-air temperature.

NOTE: Compressors have a 5-minute time delay for restart.

HOT GAS REHEAT (HGRH) MODE — If the unit is equipped with an optional hot gas reheat system, when the supply fan is running and the unit is in Cooling mode the system monitors the leaving-air temperature. If the leaving-air temperature is < 72 F, then the HGRH mode will be enabled. If LAT > (72 F + 1° F), HGRH is disabled.

NOTE: Units with a digital compressor and HGRH must use modulating HGRH control.

HEAT

Set Points — The control set points are the same for gas or electric heat.

Staged Heating — Heating mode will be initiated based upon the outdoor air temperature (OAT) heating set point (default is 55 F).

If OAT < 55 F, first stage heat is initiated. The heat type may be a gas furnace or electric heater.

If LAT < 69 F, second stage heat is initiated.

If LAT ≥ 73 F, second stage heat turns off.

If OAT ≥ 56 F, first stage heat turns off.

NOTE: The system monitors the leaving-air temperature and will turn off the heating stages if the LAT is greater than 120 F for electric heat or 130 F for gas heat or the value of the LAT sensor is out of limits.

MODULATING GAS OR SCR ELECTRIC HEAT — If the OAT is below OAT heating set point (default is 55 F), heating will be initiated. The modulating heat valve(s) or SCRs will control to a LAT of 72 F.

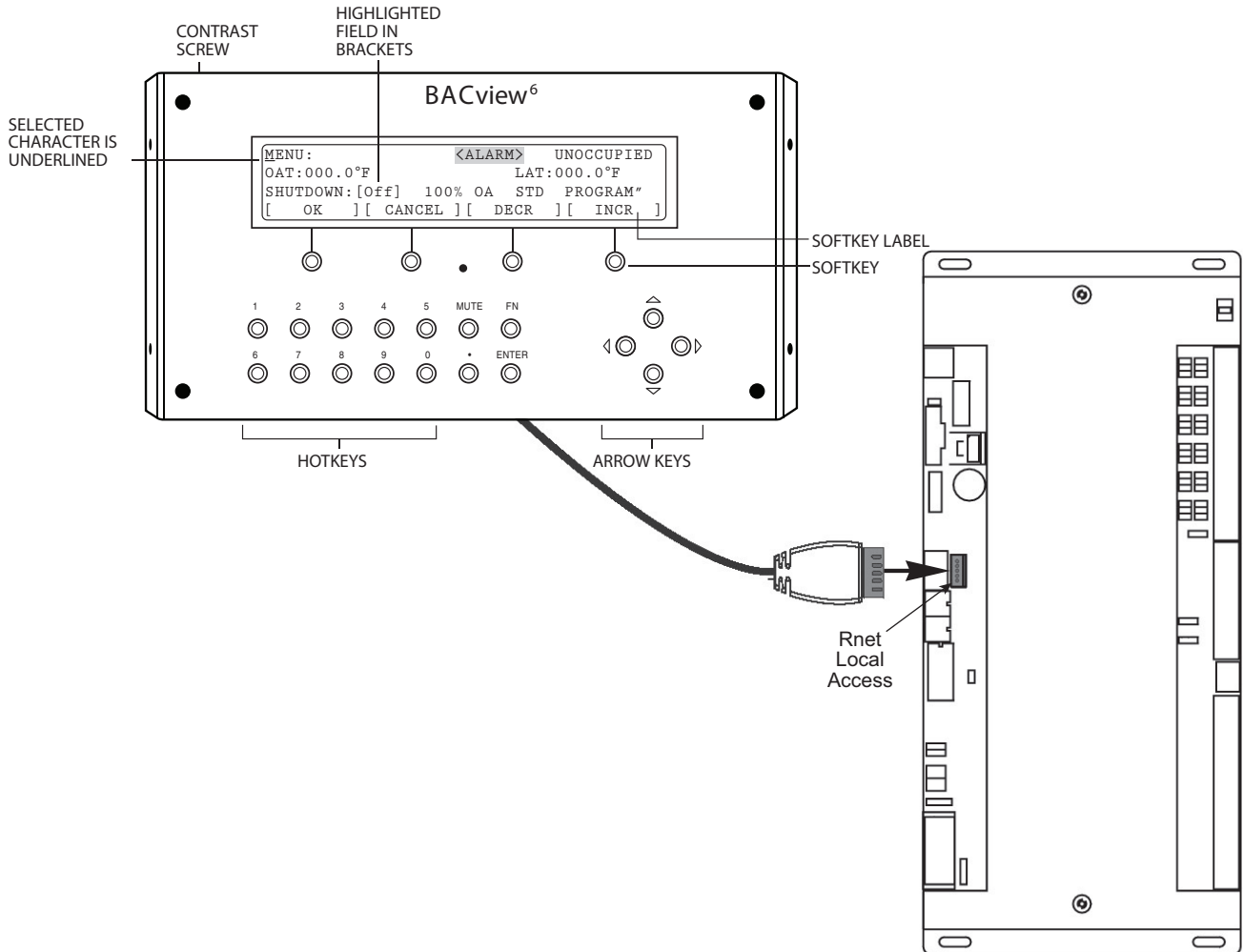


Fig. 18 — BACview Connection to Unit Controller

