

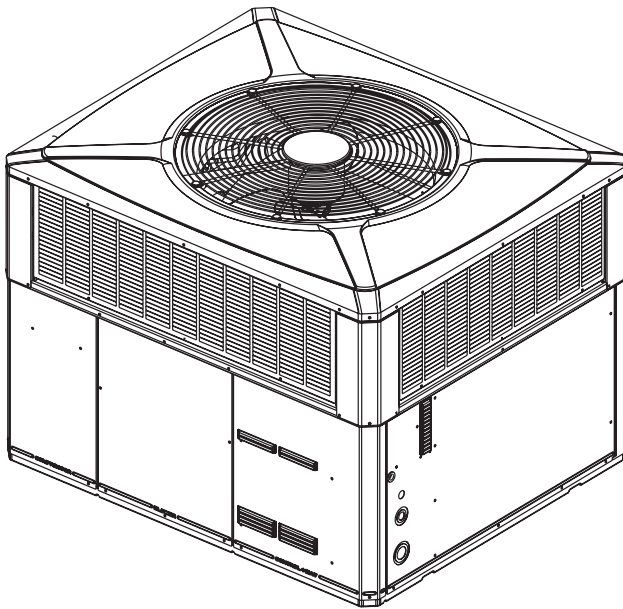
Installer's Guide

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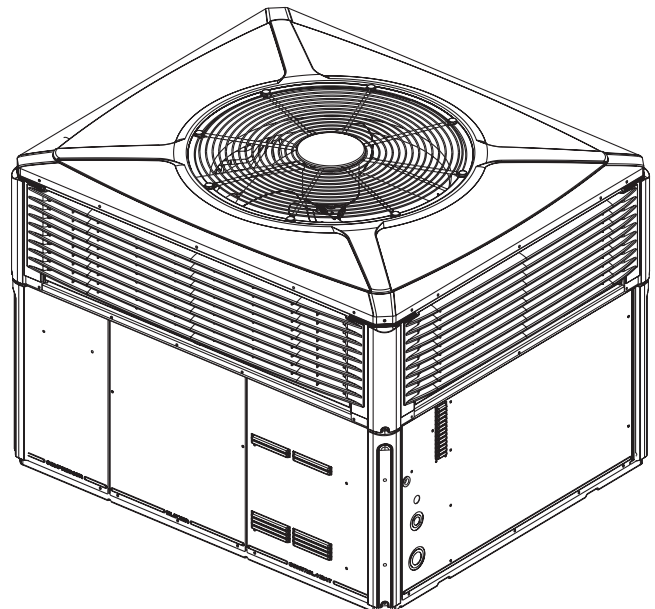
Single Packaged Heat Pump, 13 SEER Convertible, 1½ - 5 Ton, R-410A

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

Important — This Document is customer property. Please return to service information pack and give this Installer's Guide to the homeowner upon completion of work.



4WCC3018 through 4WCC3060



4WCX3018 through 4WCX3060

⚠ WARNING: HAZARDOUS VOLTAGE - DISCONNECT POWER and DISCHARGE CAPACITORS BEFORE SERVICING

Installer's Guide

Safety Considerations

IMPORTANT: Read this entire manual before beginning installation procedures.

Read this manual carefully before attempting to install, operate, or perform maintenance on this unit. Installation and maintenance should be performed by qualified service technicians only.

NOTE: "Warnings" and "Cautions" appear at appropriate places in this manual. Your personal safety and the proper operation of this air conditioning product require that you follow them carefully. The manufacturer assumes no liability for installations or servicing performed by unqualified personnel.

NOTICE

Warning and Cautions appear at appropriate locations throughout this guide. Read these carefully.

⚠ WARNING: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠ CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices and where property-damage-only accidents could occur.

⚠ WARNING

SAFETY HAZARD!

This information is for use by individuals having adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

⚠ WARNING

SAFETY HAZARD!

Bodily injury can result from high voltage electrical components, fast moving fans, and combustible gas. For protection from these inherent hazards during installation and service, the electrical supply must be disconnected and the main gas valve must be turned off. If operating checks must be performed with the unit operating, it is the technicians responsibility to recognize these hazards and proceed safely.

⚠ WARNING

SAFETY HAZARD!

Do not operate the unit without the evaporator fan or coil access panels in place. Reinstall the access panels after performing maintenance procedures on the fan. Operating the unit without the access panels properly installed may result in severe personal injury or death.

⚠ CAUTION

CONTAINS REFRIGERANT!

SYSTEM CONTAINS OIL AND REFRIGERANT UNDER HIGH PRESSURE. RECOVER REFRIGERANT TO RELIEVE PRESSURE BEFORE OPENING SYSTEM. Failure to follow proper procedures can result in personal illness or injury or severe equipment damage.

⚠ CAUTION

RECONNECT ALL GROUNDING DEVICES.

All parts of this product that are capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

⚠ CAUTION

Unit contains R-410A Refrigerant!

R-410A operating pressure exceeds the limit of R-22. Proper service equipment is required. Failure to use proper service tools may result in equipment damage or personal injury.

SERVICE

Use only R-410A Refrigerant and approved POE compressor oil.

⚠ CAUTION

Hot Surface!

Do Not touch top of compressor. May cause minor to severe burning.

⚠ CAUTION

Caution must be taken at all times to avoid personal injuries and/or damage to equipment.

IMPORTANT: Wear appropriate gloves, arm sleeve protectors, and eye protection when servicing or maintaining this equipment.

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Introduction

Read this manual carefully before attempting to install, operate, or perform maintenance on this unit. Installation and maintenance should be performed by qualified service technicians only. This unit is listed by Underwriters Laboratory.

Model 2/4WC*3 heat pump units are designed for outdoor mounting with a vertical condenser discharge. They can be located either at ground level or on a roof in accordance with local codes. Each unit contains an operating charge of refrigerant as shipped.

Extreme mounting kits are available for slab (BAYEX-MK003A), utility curb (BAYEXMK002B) and perimeter curb (BAYEXMK001A) mountings.

This guide is organized as follows:

- Step 1 - Inspect Shipment
- Step 2 - Determine Unit Clearances
- Step 3 - Review Location & Recommendation Information
- Step 4 - Unit Installation
- Step 5 - Unit Startup
- Sequence of Operation
- Maintenance

Step 1—Inspect Shipment

1. Check for damage after the unit is unloaded. Report promptly to the carrier any damage found to the unit. Do not drop the unit.

IMPORTANT: To prevent damage to the sides and top of the unit when hoisting, retain the top shipping skid on the unit or use "spreader bars" as shown on page 20.

2. Check the unit's nameplate to determine if the unit is correct for the intended application. The power supply must be adequate for both the unit and all accessories.
3. Check to be sure the refrigerant charge has been retained during shipment. Remove the Compressor access panel to access the 1/4" flare pressure taps.
4. If this unit is being installed on a curb, verify that the correct curb is provided with the unit.
 - 4WC*3018-036 use model BAYCURB050A.
 - 4WC*3042-060 use model BAYCURB051A.

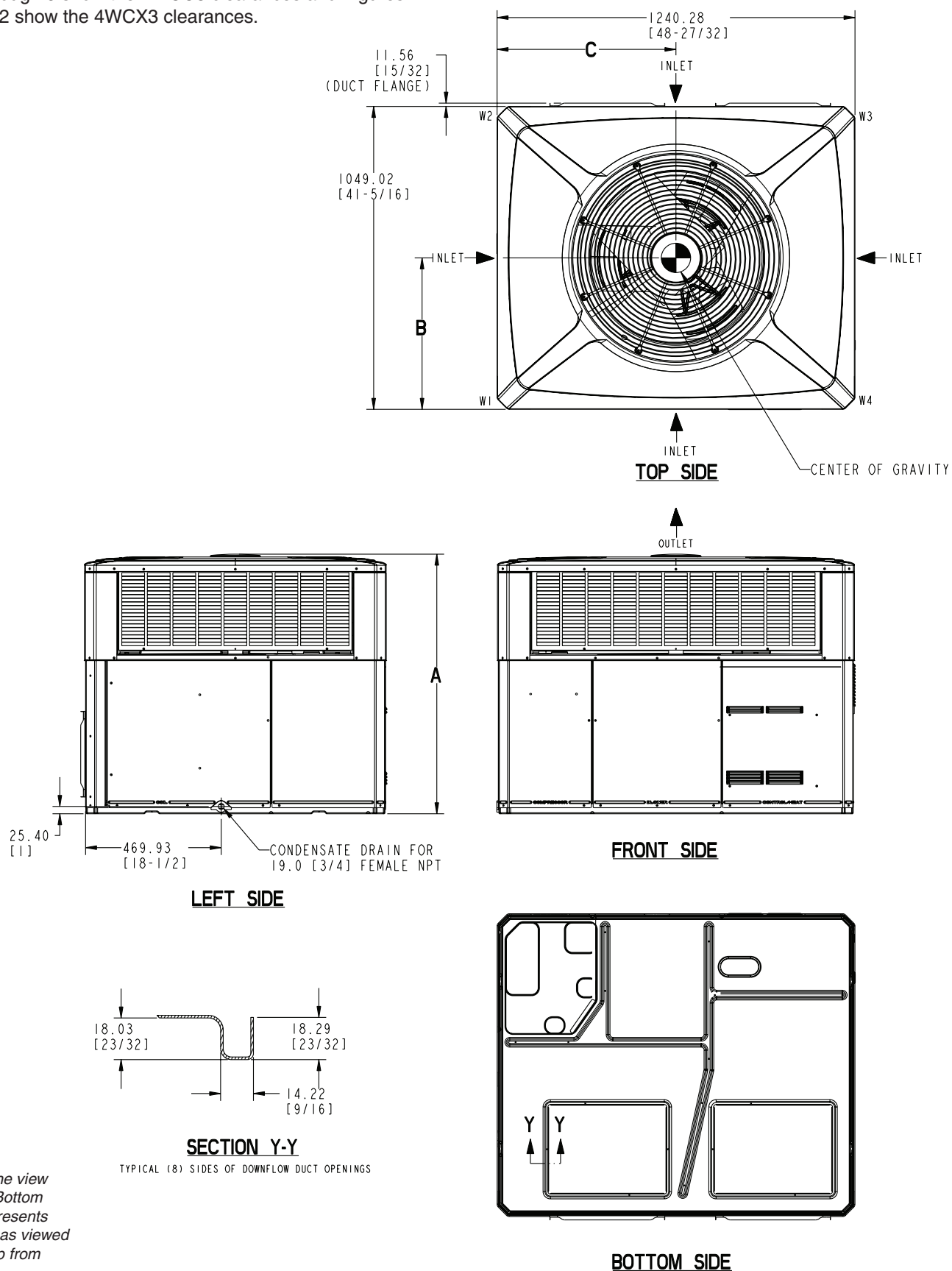
5. If the unit is being hoisted, accessory kit BAYLIFT002A is recommended. It includes a kit of four (4) lifting lugs and instructions.

NOTE: If practical, install any internal accessories to the unit at the shop.

Installer's Guide

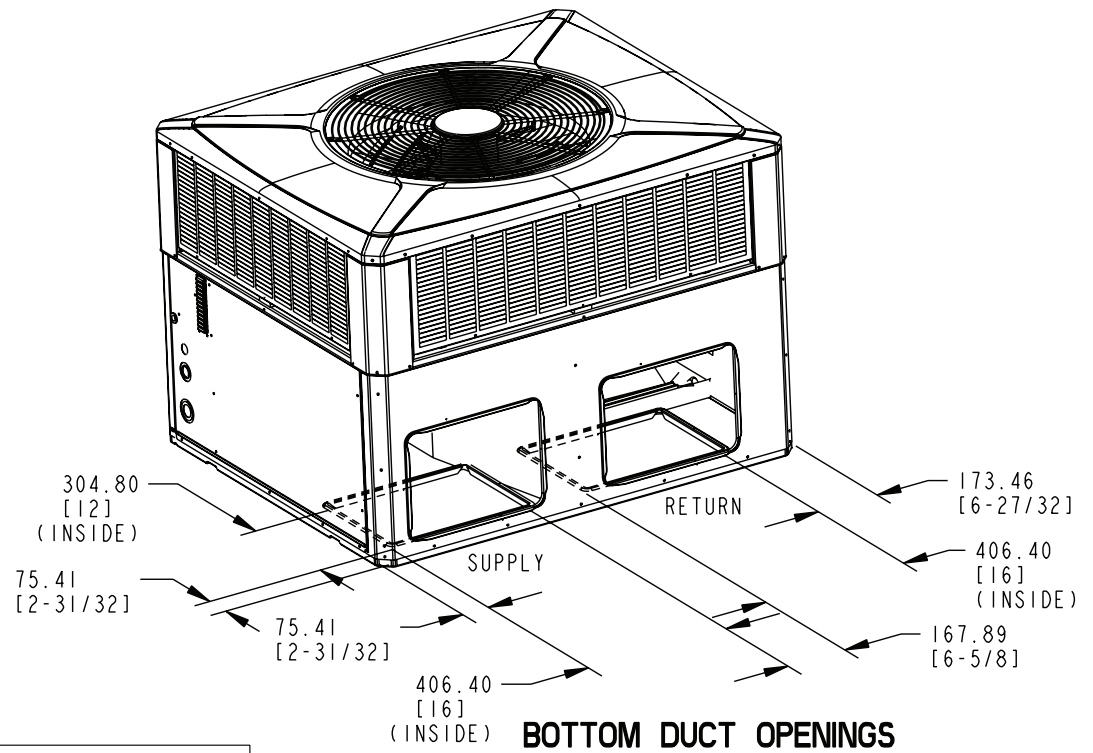
Step 2—Determine Unit Clearances

Figures 1 through 12 show the unit critical dimensions. Figures 1 through 6 show the 4WCC3 clearances and Figures 7 through 12 show the 4WCX3 clearances.



NOTE: The view labeled "Bottom Side" represents the Base as viewed looking up from underneath the unit.

Figure 1. 4WCC3018 through 4WCC3036 (1 of 3)



| RECOMMENDED SERVICE CLEARANCE MM/IN. | | |
|--------------------------------------|-------------|-----------------|
| | | WITH ECONOMIZER |
| BACK SIDE | 304.8 [12] | 762.0 [30] |
| LEFT SIDE | 762.0 [30] | 914.4 [36] |
| RIGHT SIDE | 609.6 [24] | - |
| FRONT SIDE | 1066.8 [42] | - |

| CLEARANCE TO COMBUSTIBLE MATERIAL MM/IN. | |
|--|------------|
| BOTTOM | 0 |
| BACK SIDE | 25.4 [1] |
| LEFT SIDE | 152.4 [6] |
| RIGHT SIDE | 152.4 [6] |
| FRONT SIDE | 304.8 [12] |
| TOP | 914.4 [36] |

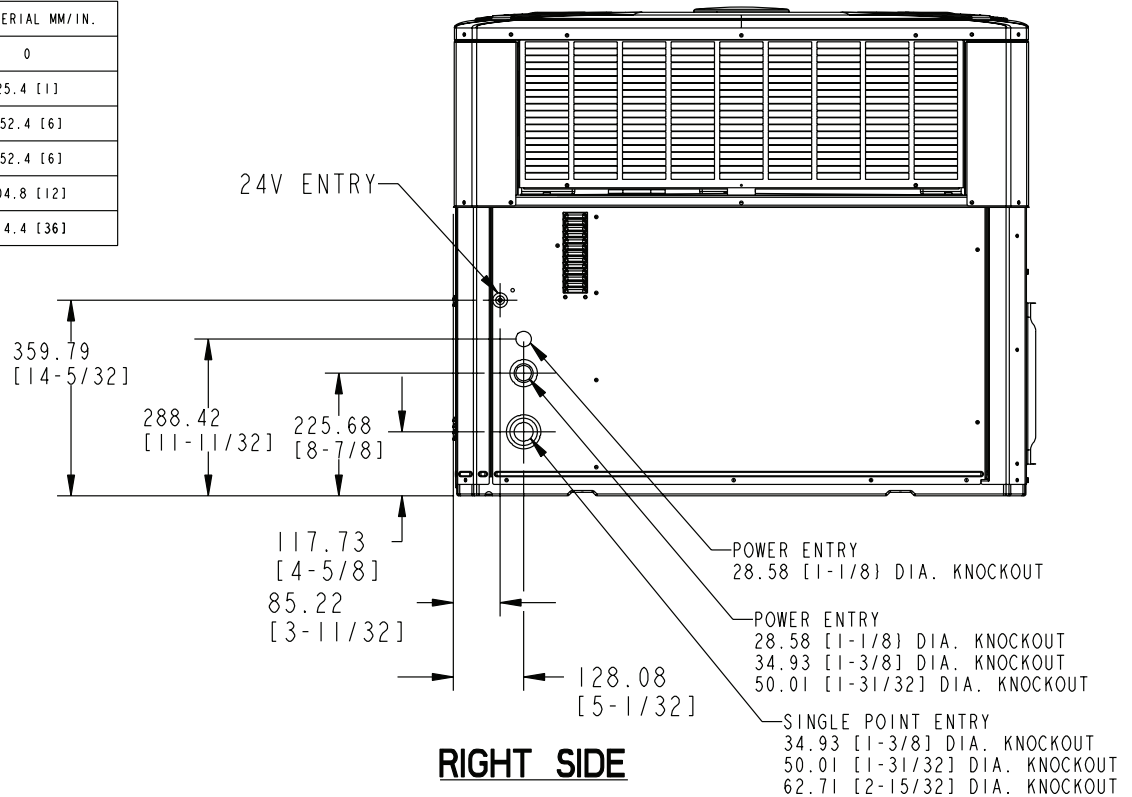
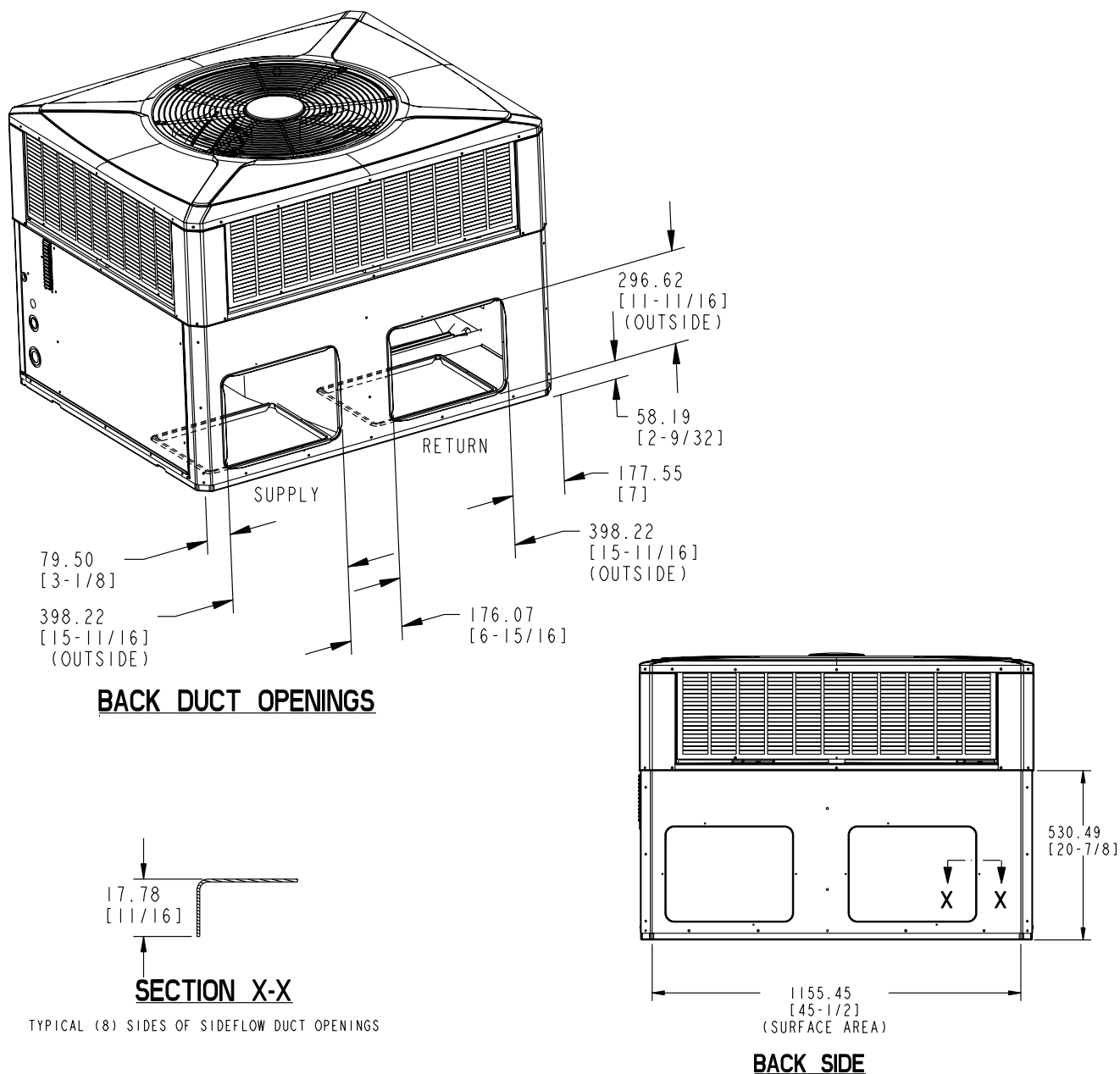


Figure 2. 4WCC3018 through 4WCC3036 (2 of 3)



| MODEL | HEIGHT MM/IN. | APPROX. CORNER WEIGHT - KG/LBS | | | | SHIPPING WEIGHT KG/LBS | TOTAL UNIT WEIGHT KG/LBS | CENTER OF GRAVITY MM/IN. | |
|----------|-----------------|--------------------------------|------------|-----------|-----------|------------------------|--------------------------|--------------------------|--------------|
| | A | W1 | W2 | W3 | W4 | | | B | C |
| 4TCC3018 | 898.53 [35-3/8] | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCC3024 | | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCC3030 | | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 202.0 (445) | 158.3 [349] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCC3036 | | 57.6 [127] | 36.3 [80] | 25.9 [57] | 40.8 [90] | 204.3 (450) | 160.6 [354] | 401.3 [15.8] | 508.0 [20.0] |
| 4WCC3018 | | 56.2 [124] | 35.4 [78] | 25.4 [56] | 40.4 [89] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCC3024 | | 57.6 [127] | 36.3 [80] | 26.3 [58] | 41.7 [92] | 205.7 [453] | 161.9 [357] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCC3030 | | 49.9 [110] | 45.4 [100] | 15.0 [33] | 35.4 [78] | 189.1 [417] | 145.6 [321] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCC3036 | | 60.8 [134] | 38.1 [84] | 27.2 [60] | 42.6 [94] | 212.5 (468) | 168.7 [372] | 401.3 [15.8] | 508.0 [20.0] |

Figure 3. 4WCC3018 through 4WCC3036 (3 of 3)

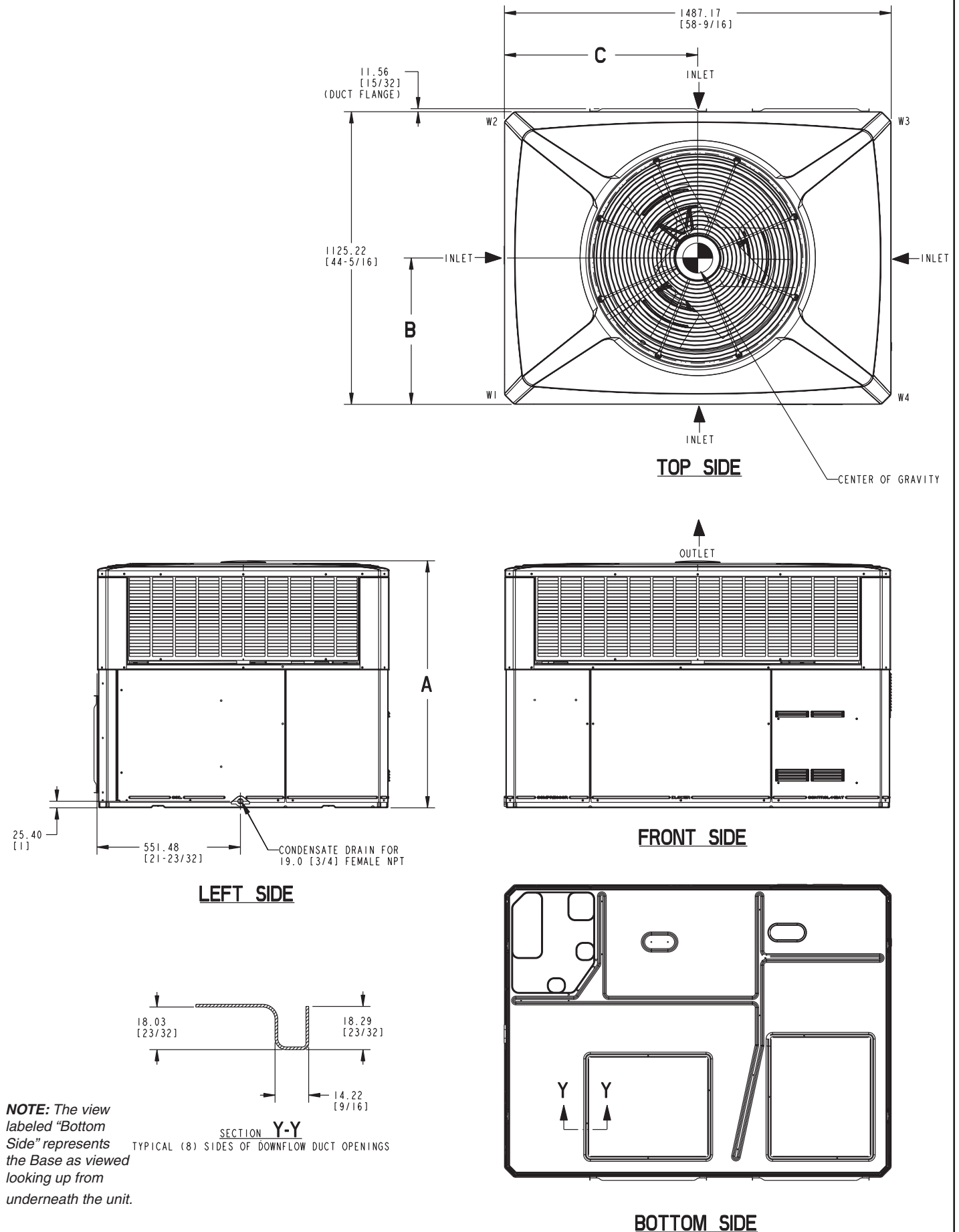
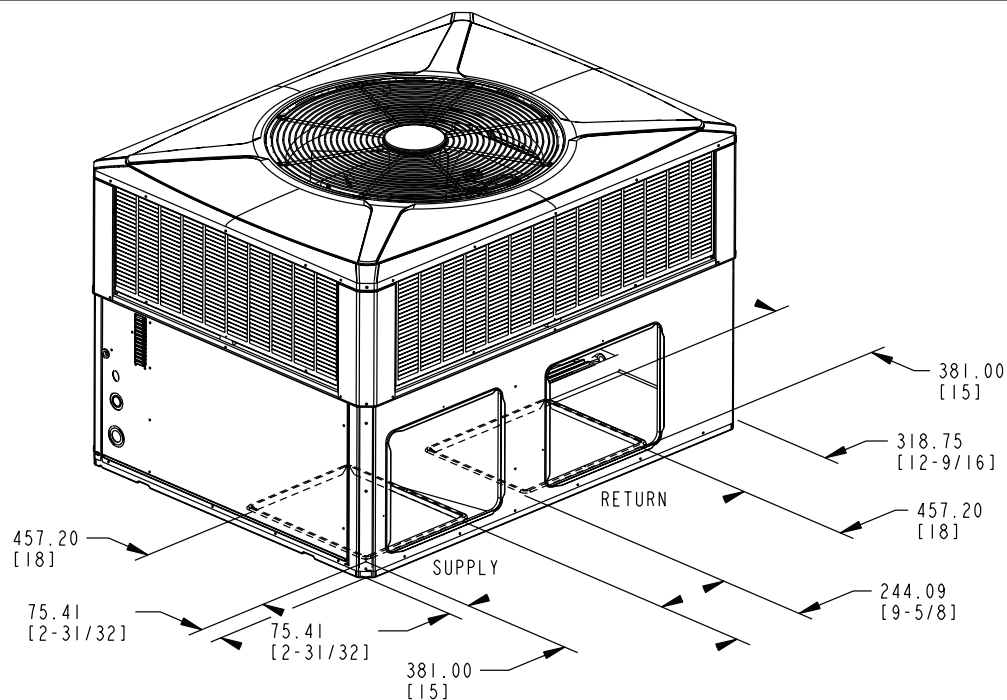


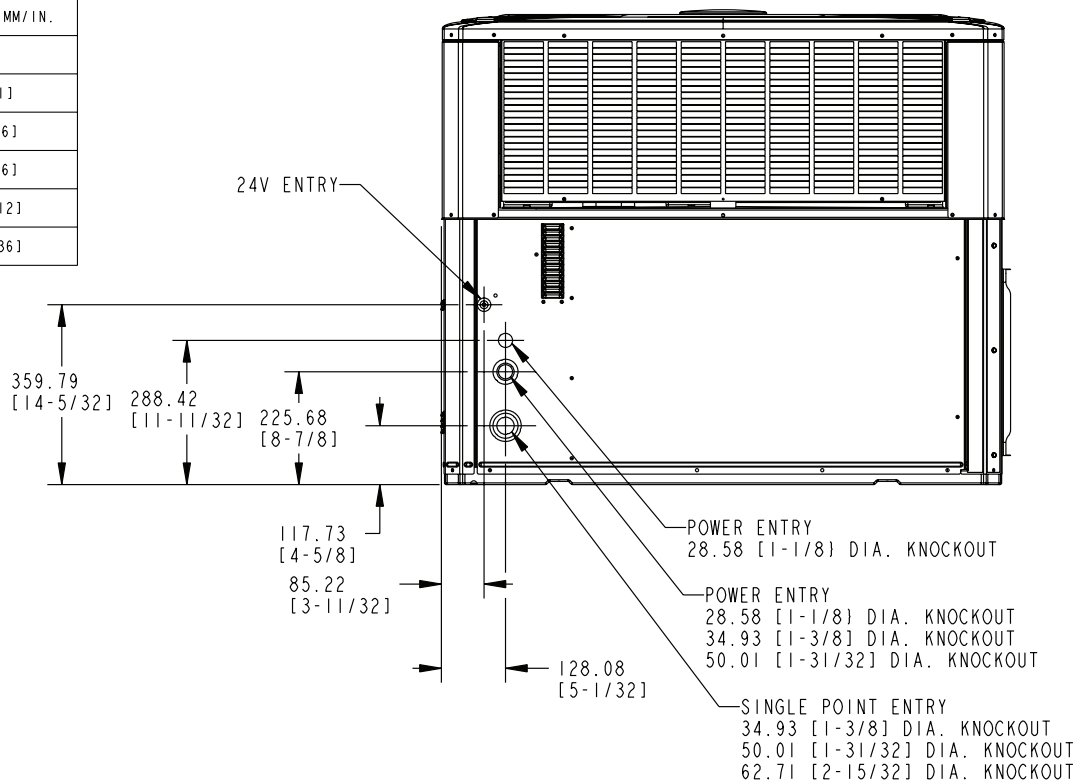
Figure 4. 4WCC3042 through 4WCC3060 (1 of 3)



BOTTOM DUCT OPENINGS

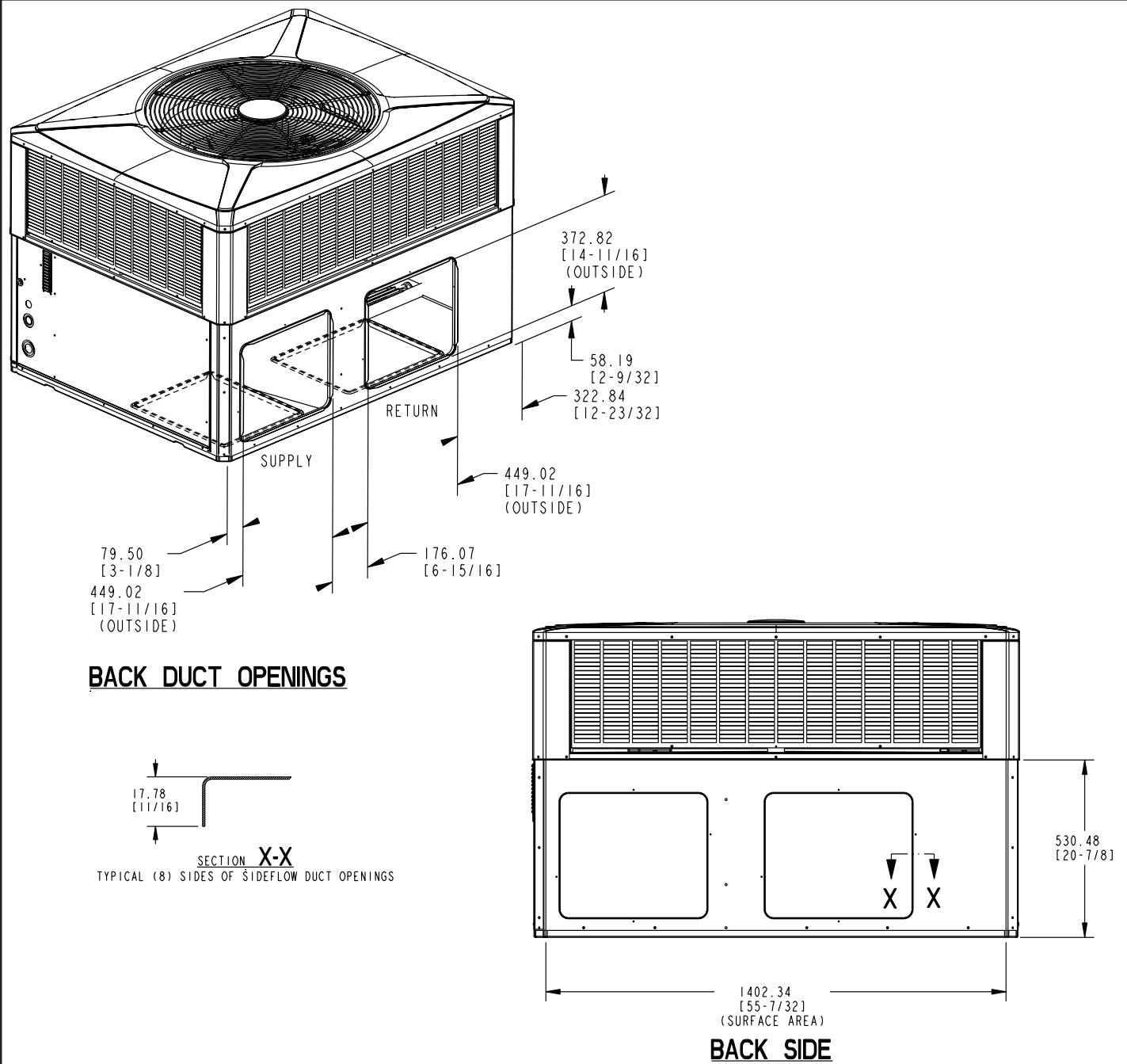
| RECOMMENDED SERVICE CLEARANCE MM/IN. | | |
|--------------------------------------|------------|-----------------|
| | | WITH ECONOMIZER |
| BACK SIDE | 304.8 [12] | 762.0 [30] |
| LEFT SIDE | 914.4 [36] | 1066.8 [42] |
| RIGHT SIDE | 609.6 [24] | - |
| FRONT SIDE | 762.0 [30] | - |

| CLEARANCE TO COMBUSTIBLE MATERIAL MM/IN. | |
|--|------------|
| BOTTOM | 0 |
| BACK SIDE | 25.4 [1] |
| LEFT SIDE | 152.4 [6] |
| RIGHT SIDE | 152.4 [6] |
| FRONT SIDE | 304.8 [12] |
| TOP | 914.4 [36] |



RIGHT SIDE

Figure 5. 4WCC3042 through 4WCC3060 (2 of 3)



| MODEL | HEIGHT MM/IN. | APPROX. CORNER WEIGHT - KG/LBS | | | | SHIPPING WEIGHT KG/LBS | TOTAL UNIT WEIGHT KG/LBS | CENTER OF GRAVITY MM/IN. | |
|----------|------------------|--------------------------------|------------|-----------|------------|------------------------|--------------------------|--------------------------|--------------|
| | A | W1 | W2 | W3 | W4 | | | B | C |
| 4TCC3042 | 949.89 [37-3/8] | 62.1 [137] | 40.8 [90] | 30.4 [67] | 46.3 [102] | 237.4 (523) | 179.2 [395] | 439.4 [17.3] | 629.9 [24.8] |
| 4TCC3048 | | 76.2 [168] | 47.6 [105] | 35.8 [79] | 57.6 [127] | 275.6 (607) | 217.3 [479] | 426.7 [16.8] | 635.0 [25.0] |
| 4TCC3060 | 1000.68 [39-3/8] | 78.0 [172] | 46.3 [102] | 34.9 [77] | 59.0 [130] | 276.9 (610) | 218.6 [482] | 414.0 [16.3] | 635.0 [25.0] |
| 4WCC3042 | 949.89 [37-3/8] | 64.4 [142] | 47.6 [105] | 39.5 [87] | 49.9 [110] | 259.5 [572] | 201.4 [444] | 449.6 [17.7] | 641.8 [25.3] |
| 4WCC3048 | | 68.9 [152] | 40.8 [90] | 30.8 [68] | 52.2 [115] | 251.1 (553) | 192.8 [425] | 414.0 [16.3] | 635.0 [25.0] |
| 4WCC3060 | 1000.68 [39-3/8] | 79.4 [175] | 47.2 [104] | 35.8 [79] | 59.9 [132] | 280.6 (618) | 222.3 [490] | 414.0 [16.3] | 635.0 [25.0] |

Figure 6. 4WCC3042 through 4WCC3060 (3 of 3)

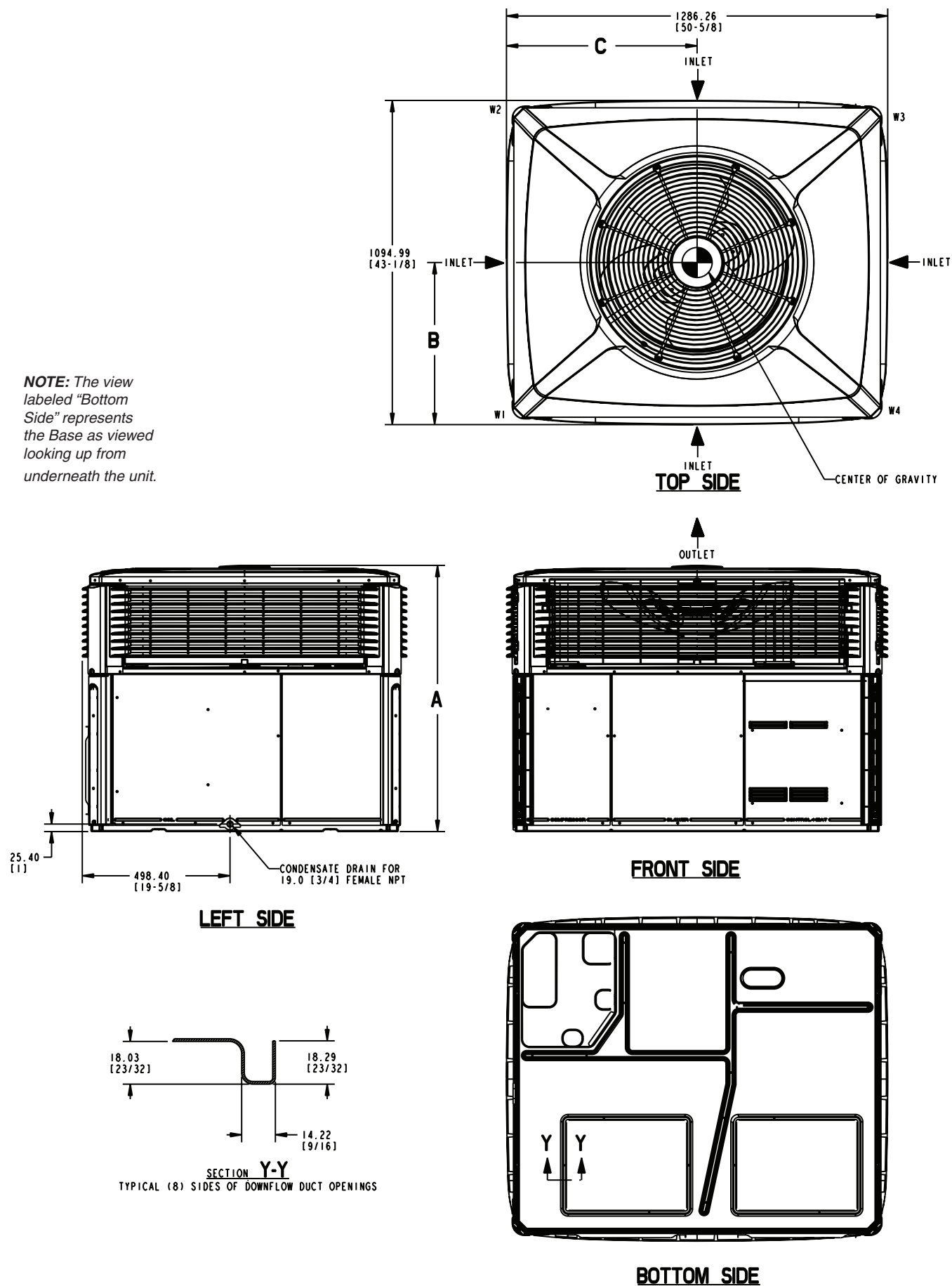
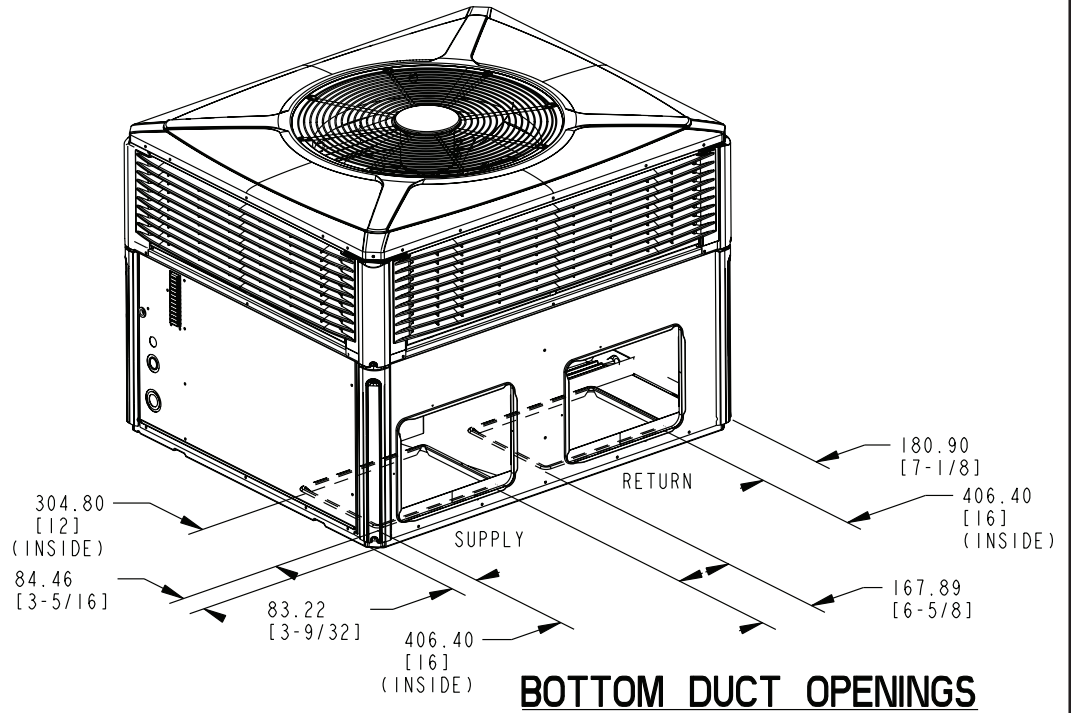


Figure 7. 4WCX3018 through 4WCX3036 (1 of 3)



| RECOMMENDED SERVICE CLEARANCE MM/IN. | | |
|--------------------------------------|-------------|-----------------|
| | | WITH ECONOMIZER |
| BACK SIDE | 304.8 [12] | 762.0 [30] |
| LEFT SIDE | 762.0 [30] | 914.4 [36] |
| RIGHT SIDE | 609.6 [24] | - |
| FRONT SIDE | 1066.8 [42] | - |

| CLEARANCE TO COMBUSTIBLE MATERIAL MM/IN. | |
|--|------------|
| BOTTOM | 0 |
| BACK SIDE | 25.4 [1] |
| LEFT SIDE | 152.4 [6] |
| RIGHT SIDE | 152.4 [6] |
| FRONT SIDE | 304.8 [12] |
| TOP | 914.4 [36] |

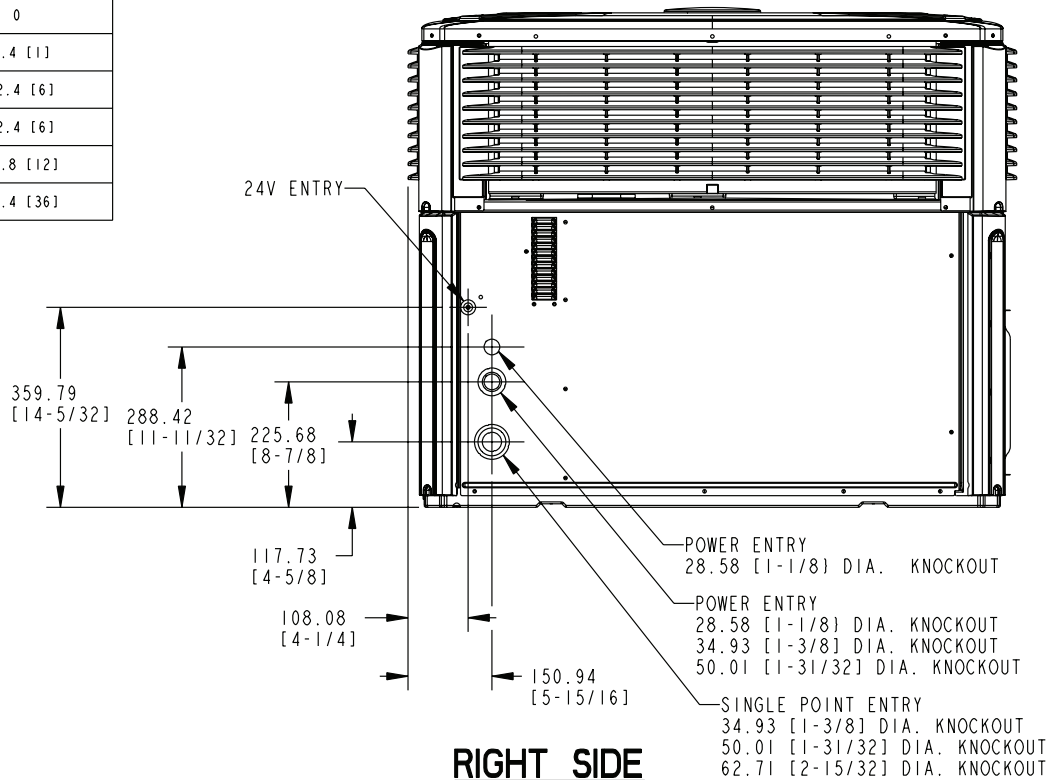
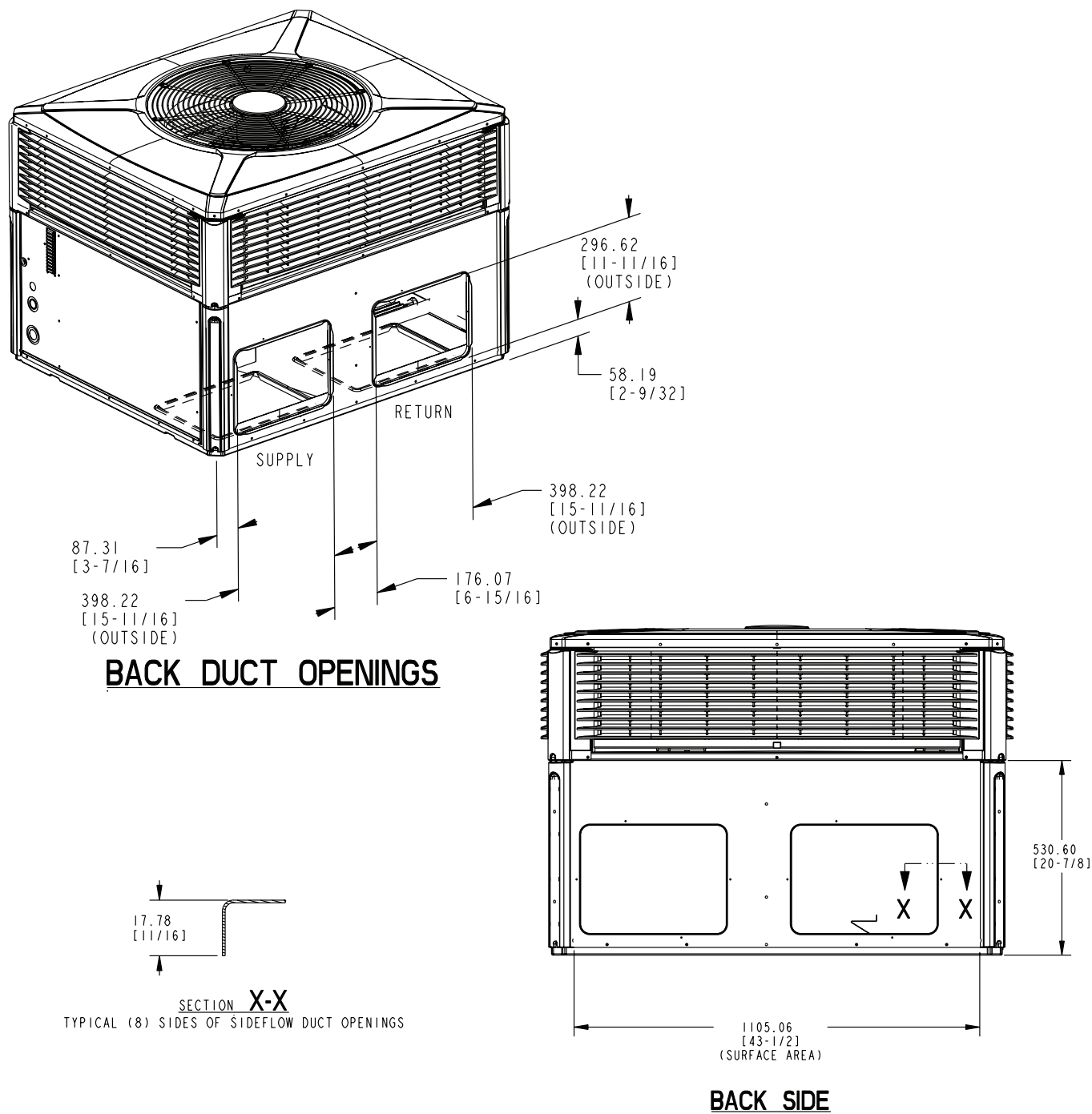


Figure 8. 4WCX3018 through 2/4WCX3036 (2 of 3)



| MODEL | HEIGHT MM/IN. | APPROX. CORNER WEIGHT - KG/LBS | | | | SHIPPING WEIGHT KG/LBS | TOTAL UNIT WEIGHT KG/LBS | CENTER OF GRAVITY MM/IN. | |
|----------|-----------------|--------------------------------|------------|-----------|-----------|------------------------|--------------------------|--------------------------|--------------|
| | A | W1 | W2 | W3 | W4 | | | B | C |
| 4TCX3018 | 898.53 [35-3/8] | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCX3024 | | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCX3030 | | 56.7 [125] | 35.8 [79] | 25.4 [56] | 39.9 [88] | 202.0 (445) | 158.3 [349] | 401.3 [15.8] | 508.0 [20.0] |
| 4TCX3036 | | 57.6 [127] | 36.3 [80] | 25.9 [57] | 40.8 [90] | 204.3 (450) | 160.6 [354] | 401.3 [15.8] | 508.0 [20.0] |
| 4WCX3018 | | 56.2 [124] | 35.4 [78] | 25.4 [56] | 40.4 [89] | 201.6 (444) | 157.9 [348] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCX3024 | | 57.6 [127] | 36.3 [80] | 26.3 [58] | 41.7 [92] | 205.7 [453] | 161.9 [357] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCX3030 | | 49.9 [110] | 45.4 [100] | 15.0 [33] | 35.4 [78] | 189.1 [417] | 145.6 [321] | 401.3 [15.8] | 515.6 [20.3] |
| 4WCX3036 | | 60.8 [134] | 38.1 [84] | 27.2 [60] | 42.6 [94] | 212.5 (468) | 168.7 [372] | 401.3 [15.8] | 508.0 [20.0] |

Figure 9. 4WCX3018 through 4WCX3036 (3 of 3)

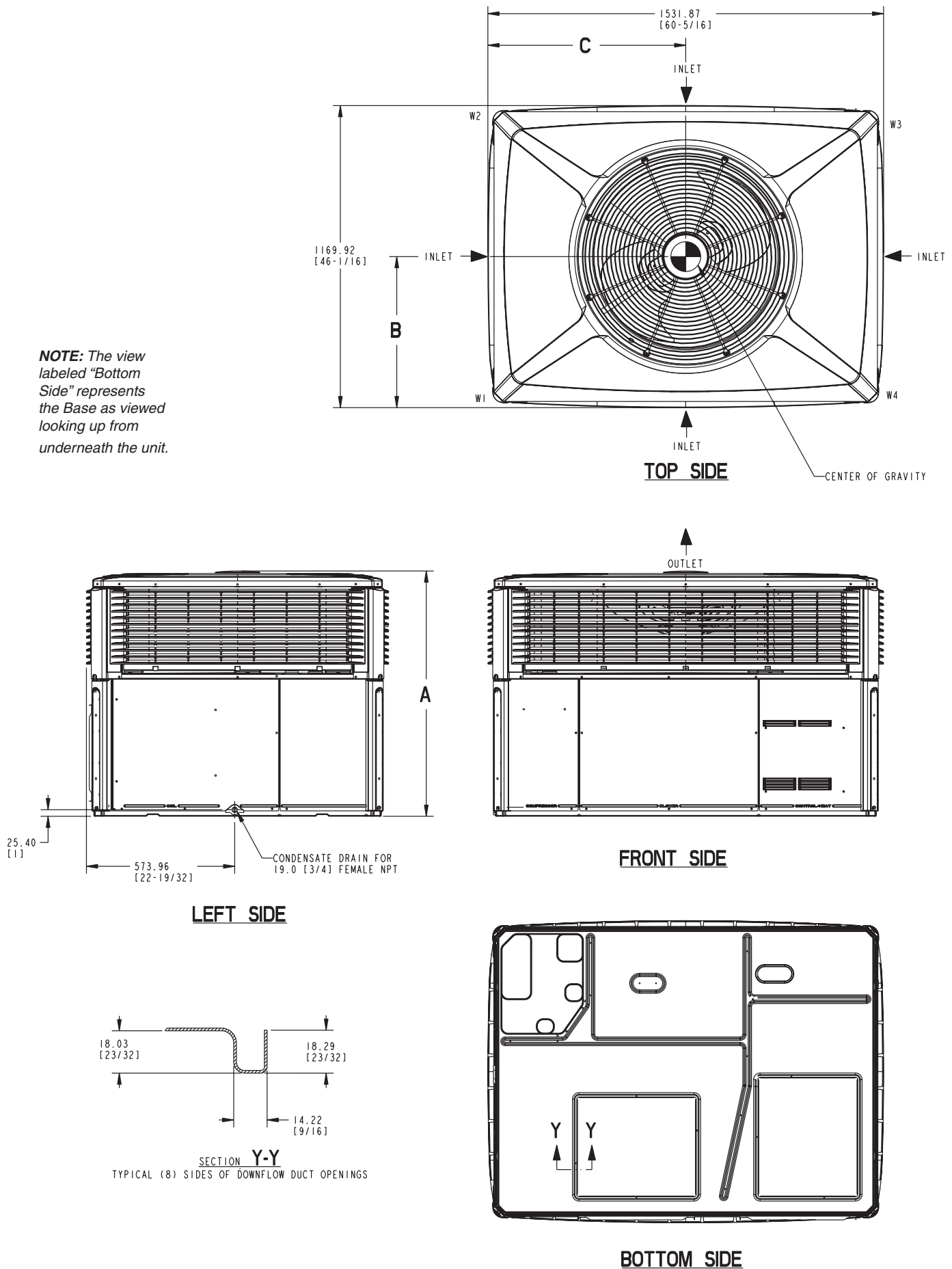
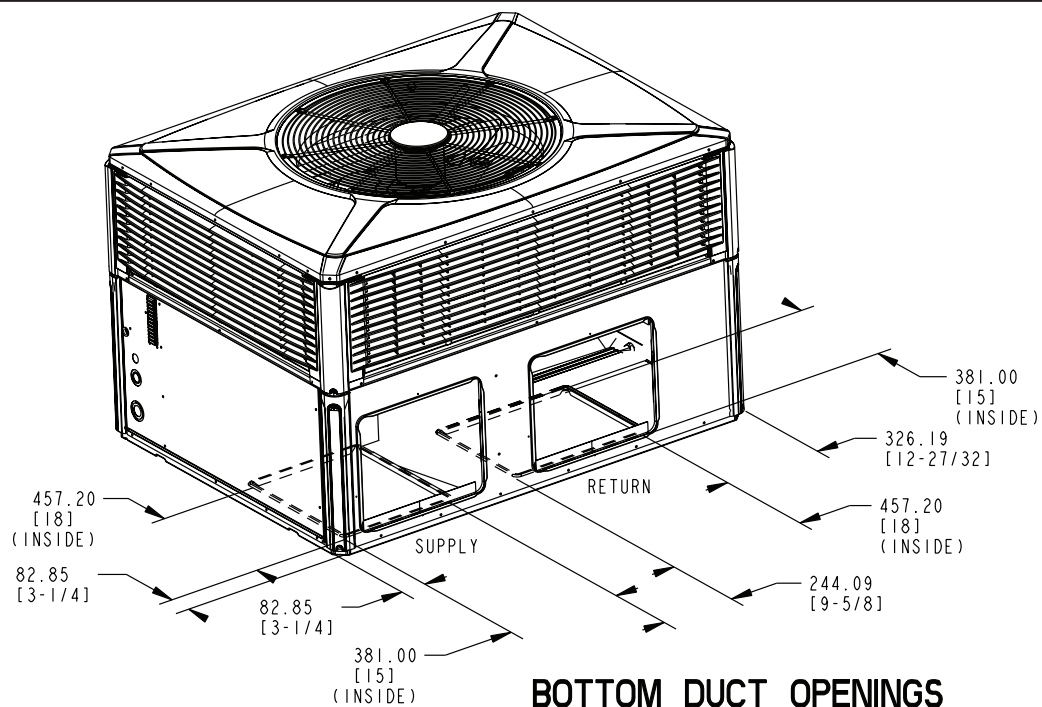


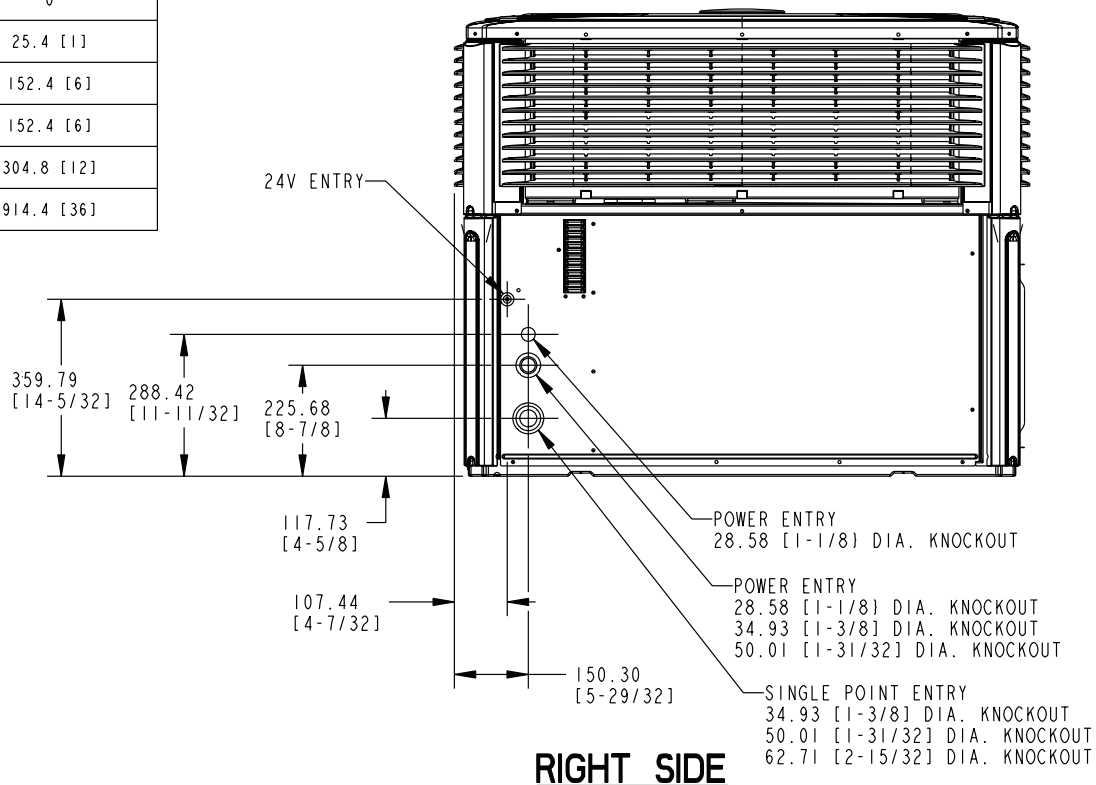
Figure 10. 4WCX3042 through 4WCX3060 (1 of 3)



BOTTOM DUCT OPENINGS

| RECOMMENDED SERVICE CLEARANCE MM/IN. | | |
|--------------------------------------|------------|-----------------|
| | | WITH ECONOMIZER |
| BACK SIDE | 304.8 [12] | 762.0 [30] |
| LEFT SIDE | 914.4 [36] | 1066.8 [42] |
| RIGHT SIDE | 609.6 [24] | - |
| FRONT SIDE | 762.0 [30] | - |

| CLEARANCE TO COMBUSTIBLE MATERIAL MM/IN. | |
|--|------------|
| BOTTOM | 0 |
| BACK SIDE | 25.4 [1] |
| LEFT SIDE | 152.4 [6] |
| RIGHT SIDE | 152.4 [6] |
| FRONT SIDE | 304.8 [12] |
| TOP | 914.4 [36] |



RIGHT SIDE

Figure 11. 4WCX3042 through 4WCX3060 (2 of 3)

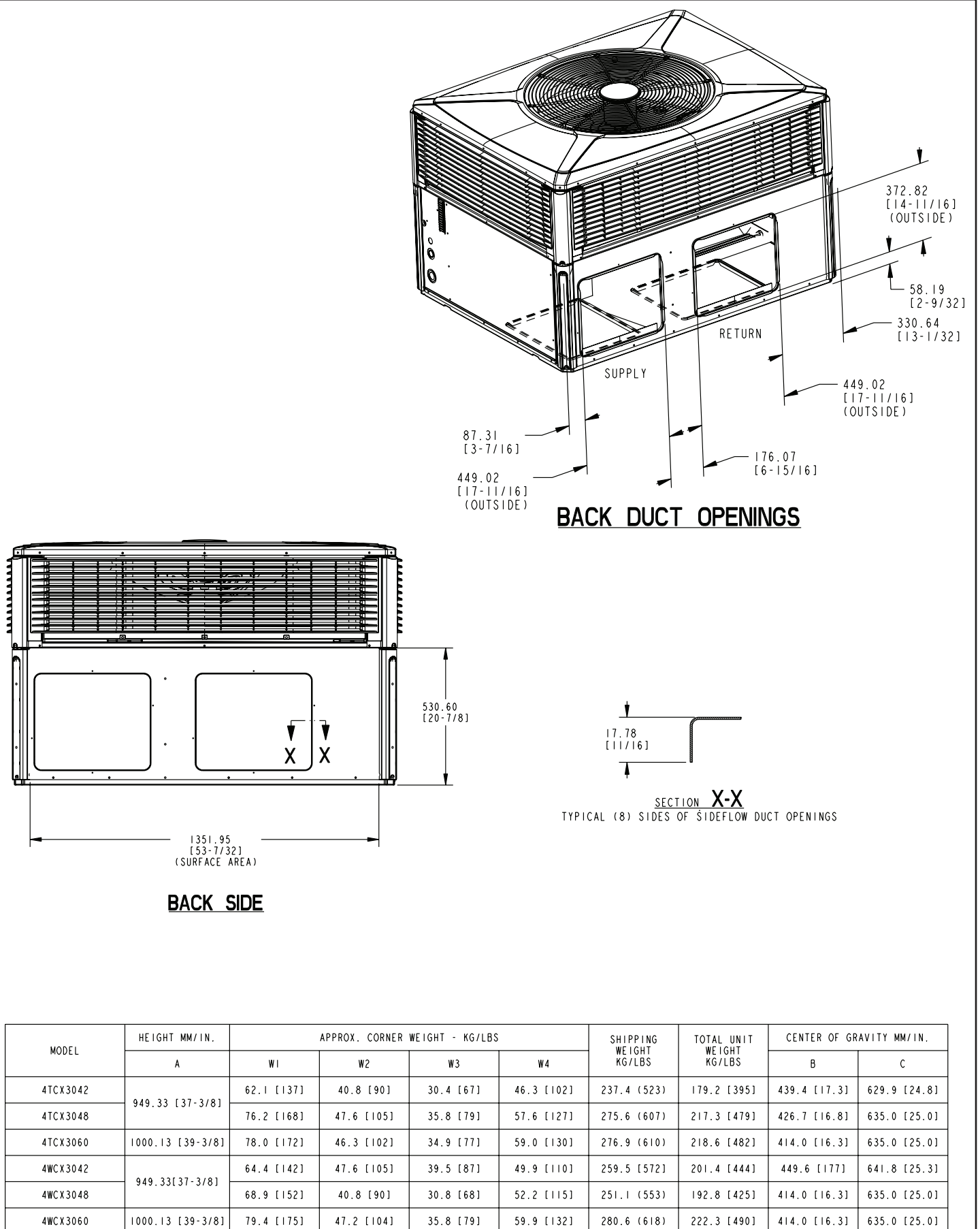


Figure 12. 4WCX3042 through 4WCX3060 (3 of 3)

Installer's Guide

Step 3—Review Location and Recommendation Information

CAUTION

Caution must be taken at all times to avoid personal injuries and/or damage to equipment.

NOTE: The unit is shipped for horizontal installation.

Horizontal Airflow Units

1. Location of the unit must allow service clearance around it to ensure adequate serviceability, maximum capacity, and peak operating efficiency.
2. These units are design certified for outdoor installation. They may be installed directly on a slab, wood flooring, or on Class A, B, or C roof covering material. The discharge air from the condenser fans must be unrestricted for a minimum of 3 feet above the unit.
3. Check the handling facilities to ensure the safety of personnel and the unit(s).
4. The unit must be mounted level for proper drainage of water through the drain holes in the base pan.
5. The unit should not be exposed to direct roof water runoff.
6. Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
7. Holes through exterior walls or roof must be sealed in accordance with local codes.
8. All fabricated outdoor ducts should be as short as possible.

Clearances

1. The recommended clearances for single-unit installations are illustrated in Figures 1 to 12, pages 4-15.
2. Any reduction of the unit clearances indicated in these figures may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances, which appear to be inadequate should be reviewed with a local engineer.
3. See the unit's nameplate for the absolute minimum clearance between the unit and any combustible surfaces.

Down Airflow Units

1. Location of the unit must allow service clearance around it to ensure adequate serviceability, maximum capacity, and peak operating efficiency.
2. Refer to the Installation section for instruction on converting the supply and return airflow covers to down airflow.
3. The field assembled Roof Mounting Curb (BAYCURB050A or BAYCURB051A) or a field fabricated curb should be in place before the unit is hoisted to the roof top.

The Roof Mounting Curb (frame) must be installed on a flat, level section of the roof (maximum of 1/4" per foot pitch) and provide a level mounting surface for the unit. Also, be sure to provide sufficient height above the roof to prevent water from entering the unit.
4. Be sure the mounting curb spans structural members (trusses) of the roof, thereby providing sufficient support for the weight of the unit, the curb, the duct(s), and any factory or field installed accessories.
5. The unit must be mounted level for proper drainage of water through the drain holes in the base pan.
6. Be sure the hole in the structure for the ducts is large enough to accommodate the fabricated ducts and the insulation surrounding them. Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
7. Holes through exterior walls or roof must be sealed in accordance with local codes.
8. These units are design certified for outdoor installation. They may be installed directly on a slab, wood flooring, or on Class A, B, or C roof covering material. The discharge air from the condenser fans must be unrestricted for a minimum of 3 feet above the unit.
9. Check the handling facilities to ensure the safety of personnel and the unit(s).

Clearances

1. The recommended clearances for single-unit installations are illustrated in Figures 1 to 12, pages 4-15.
2. Any reduction of the unit clearances indicated in these figures may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances, which appear to be inadequate should be reviewed with a local engineer.
3. See the unit's nameplate for the absolute minimum clearance between the unit and any combustible surfaces.

Step 4—Unit Installation

NOTE: The factory ships this unit for horizontal installation.

Ground Level Installation

To install the unit at ground level:

1. Place the unit on a pad the size of the unit or larger. The unit must be mounted level for proper drainage of water through the holes in the base pan. To attach the unit securely to the slab, use extreme mounting kit, BAYEXMK003A.

The pad must not come in contact with the structure (see Figure 13.) Be sure the outdoor portion of the supply and return air ducts are as short as possible.

Unit requires vibration support as indicated in Figure 13 below and in Figure 15 on page 19.

2. Location of the unit must allow service clearance around it. Clearance of the unit must be given careful consideration. See Figures 1 to 12, pages 4-15.

NOTE: Any reduction of the unit clearances indicated in these illustrations may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances, which appear to be inadequate should be reviewed with a local engineer.

IMPORTANT: A minimum 0" clearance to combustible material shall be maintained on air outlet duct.

3. Attach the supply and return air ducts to the unit as explained in the following Ductwork Installation section on page 22.
4. Flexible duct connectors must be of a flame retardant material. Insulate any ductwork outside of the structure with at least two (2) inches of insulation and weatherproof. There must be a weatherproof seal where the duct enters the structure.
5. Do not expose the unit to direct roof water runoff.
6. Seal all holes through exterior walls in accordance with local codes.
7. Continue with the following installation sections to complete the installation: Ductwork on page 22, Filter on page 22, and Electrical Wiring on page 23.

Rooftop Installation -- Curb Mounting

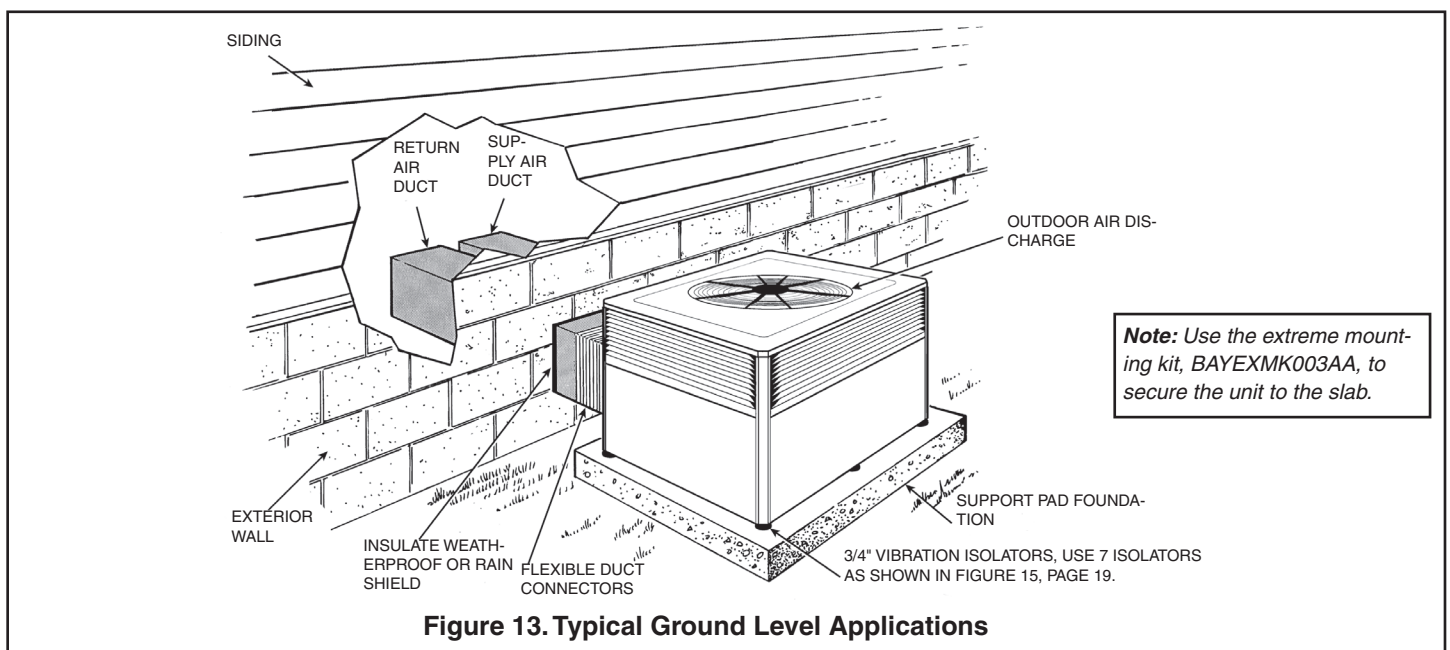
Convert Horizontal Airflow to Down Airflow

The factory ships the unit for horizontal airflow. Perform this procedure to convert it to down airflow:

1. Remove the three (3) sheet metal screws securing the supply air cover and the four (4) sheet metal screws securing the return air cover from the base of the unit. Remove the covers from the base. See Figure 14, page 18.
2. Place the covers over the horizontal supply and return openings (painted side out). Align the screw holes, and secure using the same screws removed in step 1.

Install Full Perimeter Roof Mounting Curb

1. Verify that the roof mounting curb is correct for the unit. There are two Installer's Guides depending on the cabinet sizes:
 - 2/4WC*3018 through 2/4WC*3036 use model BAYCURB050A.
 - 2/4WC*3042 through 2/4WC*3060 use model BAYCURB051A.
2. Assemble and install the curb following the instructions in the appropriate Installer's Guide.



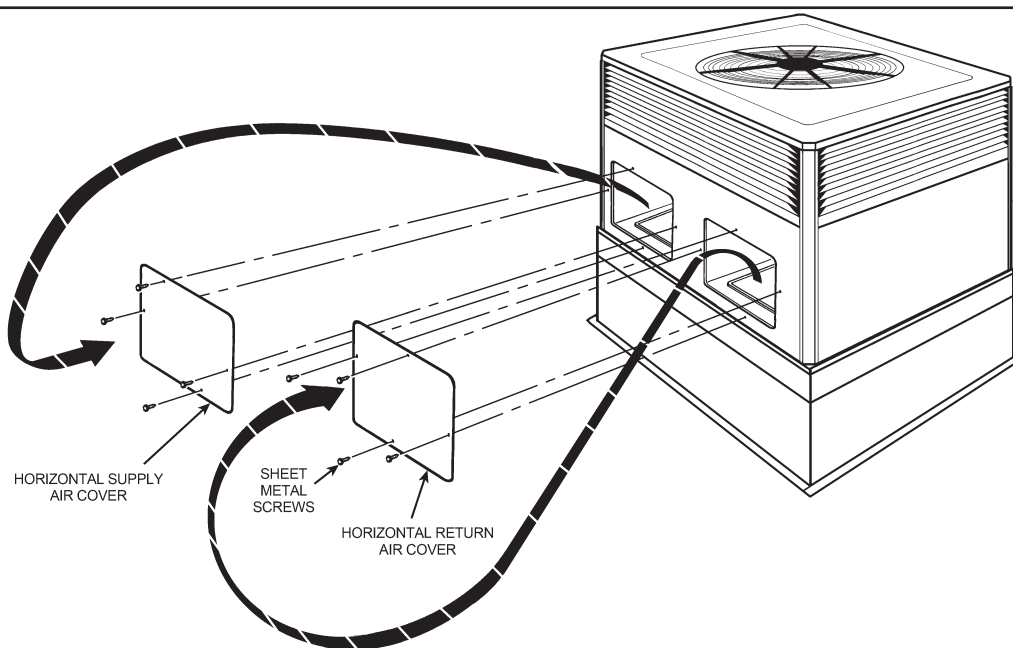


Figure 14. Converting Horizontal to Down Airflow

Lifting and Rigging

IMPORTANT: Do not lift the unit without test lifting for balance and rigging. Do not lift the unit in windy conditions or above personnel. Do not lift the unit by attaching clevis, hooks, pins, or bolts to the unit casing, casing hardware, corner lugs, angles, tabs, or flanges. Failure to observe these warnings may result in equipment damage.

1. Before preparing the unit for lifting, check the unit dimension drawings for center of gravity for lifting safety (Figures 1 to 12, page 4-15). Because of placement of internal components, the unit's weight may be unevenly distributed. Approximate unit weights are also provided in the unit drawings.

NOTE: Unit rigging and hoisting requires accessory kit BAY-LIFT002A. It includes a kit of four (4) lifting lugs. See Figure 16 inset B, on page 20.

2. Insert the four lifting lugs in the openings provided in the drip lip on each end of the unit. See Figure 16 inset B on page 20. A tap or jerk to the lug will overcome the interference that arises due to the dimple on the lug.
3. When hoisting the unit, be sure that a proper method of rigging is used. Use either the unit's top shipping skid and straps or slings and spreader bars for protection during lifting. Always test-lift the unit to determine the exact unit balance and stability before hoisting it to the installation location.
4. When the curb and air ducts have been properly installed, the unit is ready to be hoisted to the roof and set in position.

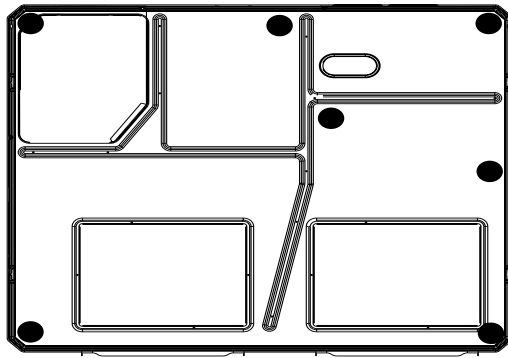
IMPORTANT: To prevent damage to the sides and top of the unit when hoisting, retain the top shipping skid on the unit or use "spreader bars" as shown on page 20.

IMPORTANT: The unit must be lowered into position. The P.V.C. rubber tape on the curb flange permits the unit to be repositioned if required without destroying the P.V.C. rubber seals affixed to the mounting curb.

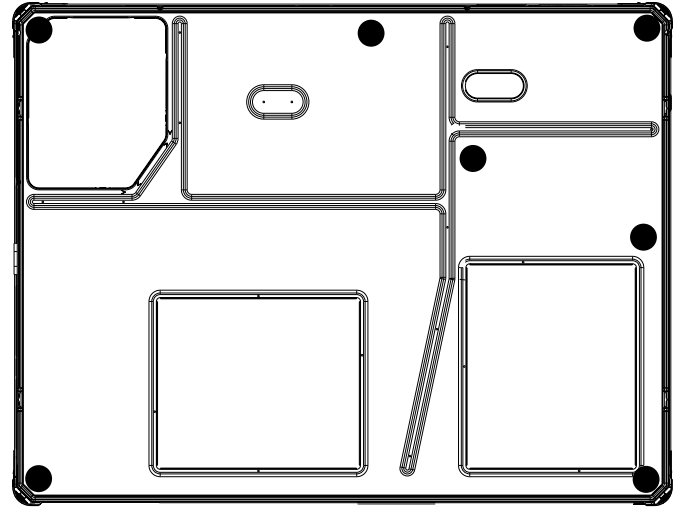
Placing the Unit on the Mounting Curb

1. The unit is designed with a perimeter drip lip that is lower than the unit base pan, see Figure 16, inset A, on page 20.
2. Position the unit drip lip down over and in contact with the outside corner of the curb, as illustrated in Figure 16, inset A, on page 20. Continue to lower the unit on top of the curb, with the unit drip lip astraddle, and in contact with, both the end and side rail of the curb. The unit should now rest on top of the curb. Use the extreme mounting kit, BAYEXMK001A, to add additional hold down strength to the mounting.

NOTE: The ductwork is installed as part of the curb installation. Do not attach ductwork to the unit and lower the unit with ductwork onto the curb.



Small Cabinet
*****018-036



Medium Cabinet
*****042-060

NOTE: These views represent the base as viewed looking up from underneath the unit.

IMPORTANT: Unit requires vibration isolator support in the general areas shown. Locate 3/4" thick vibration isolators on the bottom of the basepan as illustrated by black dots for ground level pad applications. Modify vibration isolator location as necessary for frame and rail applications. All vibration isolators must be located on basepan, do not locate on drip lip.

Figure 15. Vibration Isolators/Snow Feet Locations

Rooftop Installation -- Frame Mounting

For roof top applications using field fabricated frame and ducts, use the following procedure:

1. Locate and secure the frame to the roof by bolting or welding. Frame must provide adequate center support via a cross member centrally located channel rail. See Figures 18 and 19 on page 21. Vibration isolators should be installed as indicated in Figure 15, adjust as necessary for your frame. The isolators must be placed on base pan, not drip lip. Add flashing as required. Flashing must conform to local building codes.
2. Prepare the hole in the roof in advance of installing the unit.
3. Secure the horizontal or down airflow ducts to the roof. Refer to the previous Convert from Horizontal Airflow to Down Airflow section on page 17, if conversion is needed.
4. All fabricated outdoor ducts should be as short as possible.
5. Place the unit on the frame. Refer to Figures 18 or 19 on page 21.
6. The unit must be mounted level for proper drainage of water through the holes in the base pan.
7. Secure the unit to the frame.
8. Insulate any ductwork outside of the structure with at least two (2) inches of insulation and then weatherproof. There must be a weatherproof seal where the duct enters the structure.
9. The unit should not be exposed to direct roof water runoff.
10. Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
11. Access and service clearances for the unit must be given careful consideration when locating the duct entrance openings. Figures 1 to 12, on pages 4-15, provide unit dimensions.
12. Continue with the following installation sections to complete the installation: Ductwork on page 22, Filter on page 22, and Electrical Wiring on page 23.

Rooftop Installation -- Flat Roof - No Curb/Frame

For roof top applications using field fabricated ducts and sleeper rails rather than a curb or frame, use the following procedure:

1. Locate and secure the sleeper rails to the roof by bolting. Three (3) sleeper rails are required. One on each end to support the edges of the unit and one across the center of the unit. The center rail must run inside both drip lips. Vibration isolators should be installed as indicated on Figure 15, adjust as necessary for your sleeper rails. The isolators must be placed on base pan, not drip lip. Add flashing as required. Flashing must conform to local building codes.
2. Prepare the hole in the roof in advance of installing the unit.
3. Secure the horizontal or down airflow ducts to the roof. Refer to the previous Convert from Horizontal Airflow to Down Airflow section on page 17, if conversion is needed.
4. All fabricated outdoor ducts should be as short as possible.
5. Place the unit on the rails.
6. The unit must be mounted level for proper drainage of water through the holes in the base pan.
7. Secure the unit to the rails.
8. Insulate any ductwork outside of the structure with at least two (2) inches of insulation and then weatherproof. There must be a weatherproof seal where the duct enters the structure.
9. The unit should not be exposed to direct roof water runoff.
10. Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.
11. Access and service clearances for the unit must be given careful consideration when locating the duct entrance openings. Figures 1 to 12, on pages 4-15, provide unit dimensions.
12. Continue with the following installation sections to complete the installation: Ductwork on page 22, Filter on page 22, and Electrical Wiring on page 23.

IMPORTANT: To prevent damage to the sides and top of the unit when hoisting, retain the top shipping skid on the unit or use "spreader bars" as shown in these illustrations.

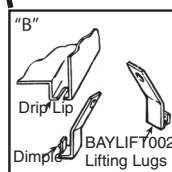
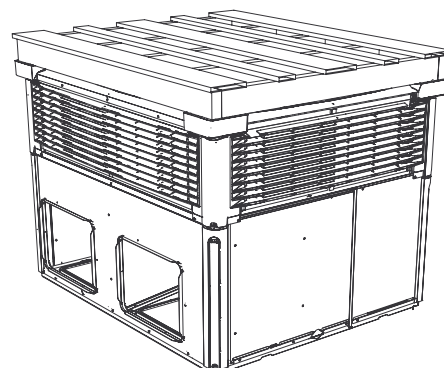
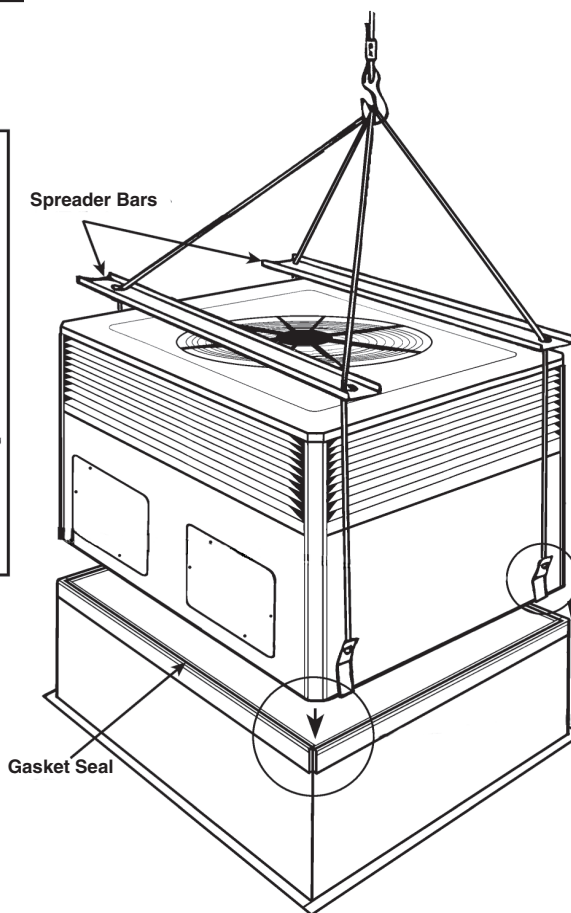
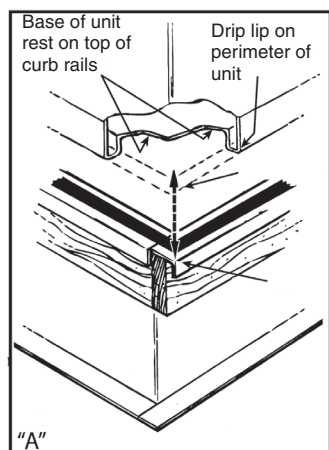
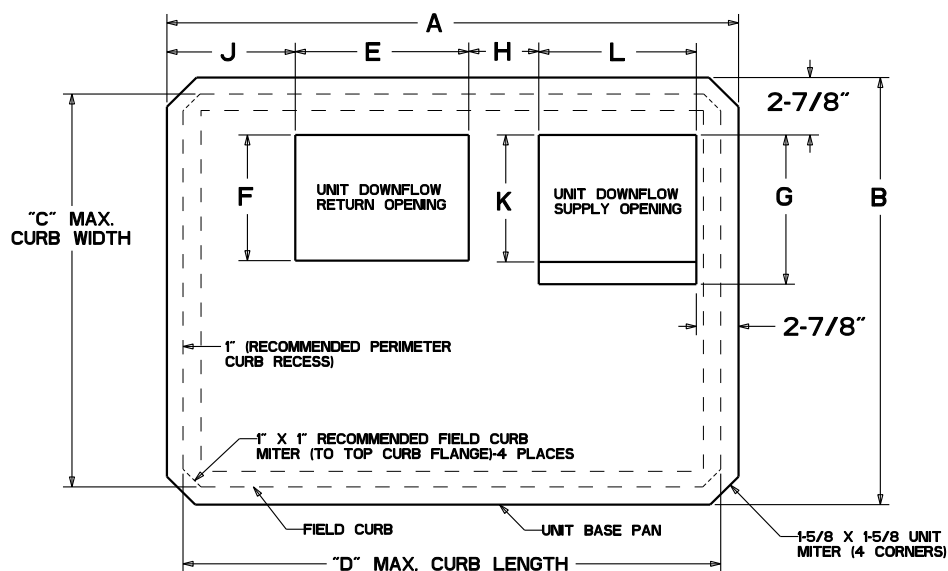


Figure 16. Lifting and Rigging



**TOP VIEW OF UNIT BASE PAN WITH FIELD CURB BELOW
REFERENCE ILLUSTRATION FOR A CUSTOMER SUPPLIED ROOF CURB**

PRINTED FROM D674152

| MODEL | A | B | C | D | E | F | G | H | J | K | L |
|----------------------------------|--------|--------|--------|--------|----|----|----|-------|--------|----|----|
| 4 TC*,YC*,WC*,DC*018,024,030,036 | 48-3/8 | 40-7/8 | 38-7/8 | 46-3/8 | 16 | 12 | 18 | 6-5/8 | 6-7/8 | 12 | 16 |
| 4 TC*,YC*,WC*,DC*042,048,060 | 58 | 43-7/8 | 41-7/8 | 56 | 18 | 15 | 18 | 9-5/8 | 12-1/2 | 15 | 15 |

This drawing was prepared by the manufacturer in order to provide detail regarding job layout only. This drawing is not intended to be used as a basis to construct, build or modify the item depicted in the drawing. The manufacturer is not responsible for the unauthorized use of this drawing and expressly disclaims any liability for damages resulting from such unauthorized use.

Figure 17. Curb Dimensions

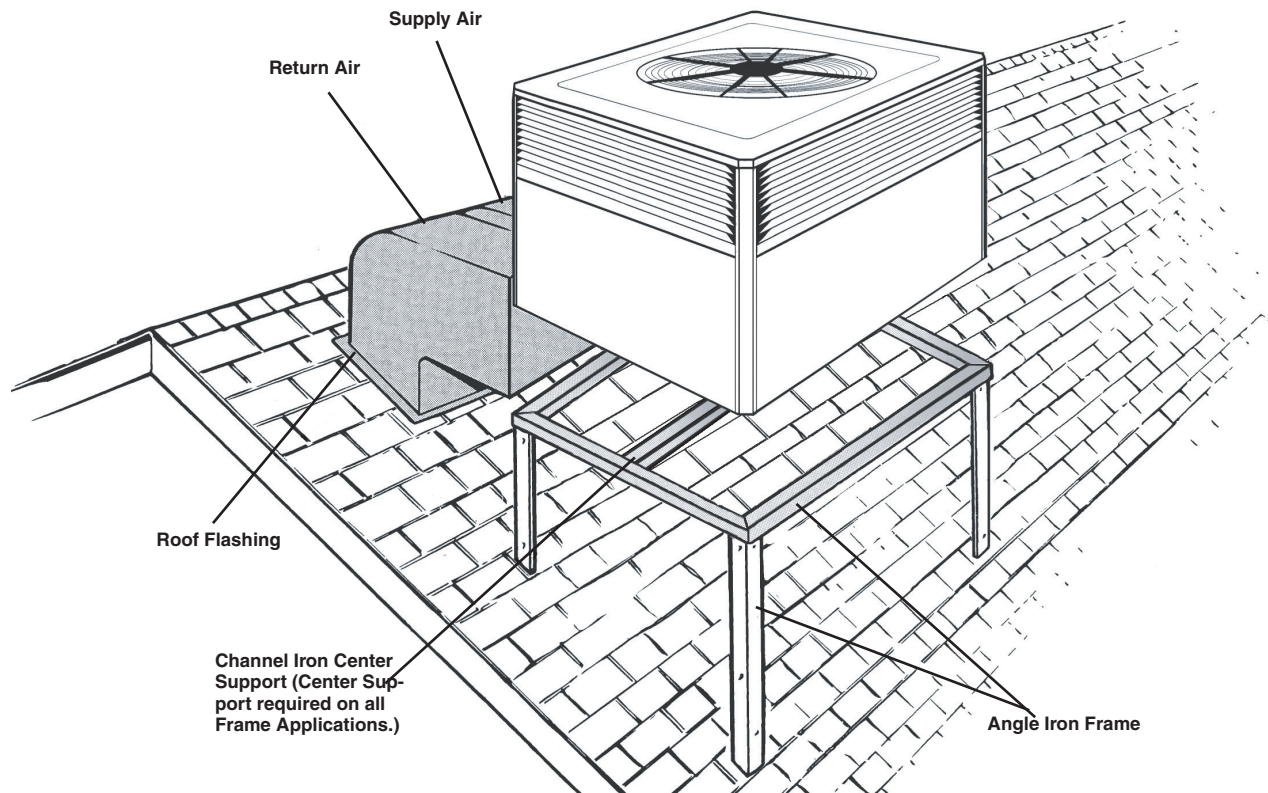


Figure 18. Typical Rooftop Horizontal Airflow Application with Frame

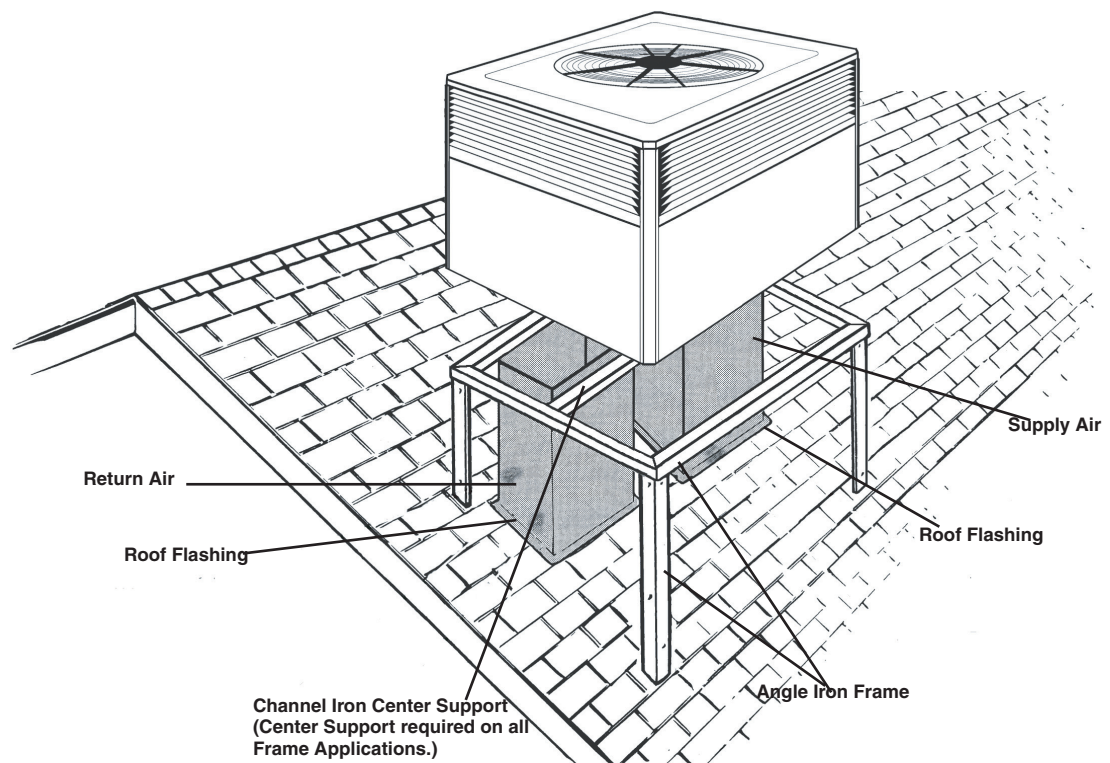


Figure 19. Typical Rooftop Down Airflow Application with Frame

Installer's Guide

Ductwork Installation

Attaching Downflow Ductwork to Roof Curb

Supply and return air flanges are provided on the roof curb for easy duct installation. All ductwork must be run and attached to the curb before the unit is set into place.

Attaching Downflow Ductwork to Roof Frame

Follow these guidelines for ductwork construction:

Connections to the unit should be made with three (3) inch canvas connectors to minimize noise and vibration transmission.

Elbows with turning vanes or splitters are recommended to minimize air noise and resistance.

The first elbow in the ductwork leaving the unit should be no closer than two (2) feet from the unit, to minimize noise and resistance.

To prevent leaking, do not attach the ductwork to the bottom of the unit base. Refer to the bottom example in Figure 20, below.

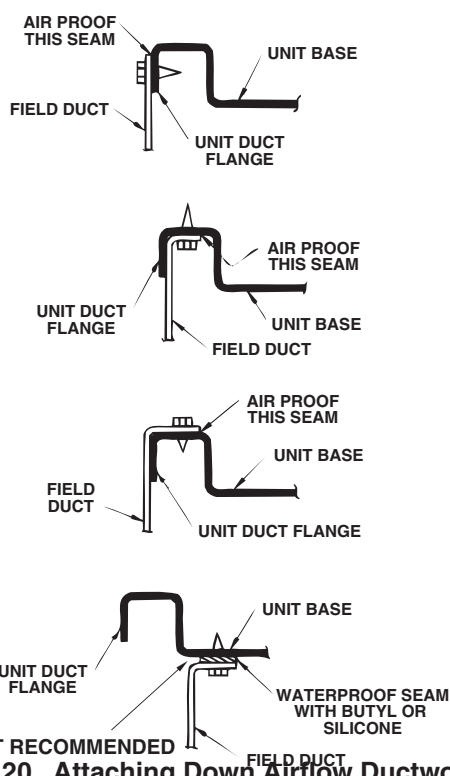


Figure 20. Attaching Down Airflow Ductwork

Attaching Horizontal Ductwork to Unit

All conditioned air ductwork should be insulated to minimize heating and cooling duct losses. Use a minimum of two (2) inches of insulation with a vapor barrier. The outside ductwork must be weatherproofed between the unit and the building.

When attaching ductwork to a horizontal unit, provide a flexible watertight connection to prevent noise transmission from the unit to the ducts. The flexible connection **must** be indoors and made out of heavy canvas.

NOTE: Do not draw the canvas taut between the solid ducts.

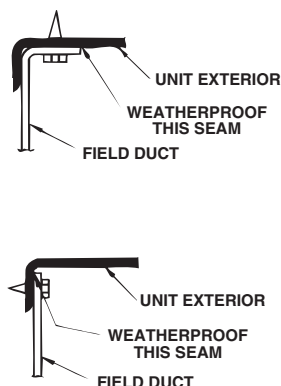


Figure 21. Attaching Horizontal Airflow Ductwork

Condensate Drain Piping

A 3/4-inch female NPT condensate drain connection is provided on the evaporator access panel end of the unit. Provide a trap and fill it with water before starting the unit to avoid air from being drawn through. Follow local codes and standard piping practices when running the drain line. Pitch the line downward away from the unit. Avoid long horizontal runs. See Figure 22, below.

NOTE: Do not use reducing fittings in the drain lines.

The condensate drain must be:

- Made of 3/4" pipe size.
- Pitched 1/4" per foot to provide free drainage to convenient drain system.
- Trapped.
- Must not be connected to a closed drain system unless the trap is properly vented.

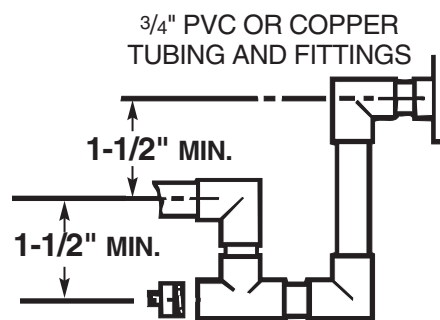


Figure 22. Typical Condensate Drain Piping

Air Filter Installation

The packaged unit requires an air filter. The unit does not come with a factory installed filter rack in it, however, two filter frame accessories are offered that will allow the installation of a filter within the unit, BAYFLTR101 & BAYFLTR201. Otherwise a field supplied filter rack must be installed by the installer in the return duct work. Refer to Table 1 to determine filter sizes for field supplied filter racks.

Table 1. Filter Sizes (field supplied filter rack)

| UNIT | NOMINAL CFM | FILTER SIZE (Sq Ft) | FILTER RESISTANCE ("W.C.) |
|---------|-------------|------------------------|------------------------------|
| WC~3018 | 600 | 2.00 | 0.08 |
| WC~3024 | 800 | 2.67 | 0.08 |
| WC~3030 | 1000 | 3.33 | 0.08 |
| WC~3036 | 1200 | 4.00 | 0.08 |
| WC~3042 | 1400 | 4.67 | 0.08 |
| WC~3048 | 1600 | 5.33 | 0.08 |
| WC~3060 | 2000 | 6.67 | 0.08 |

*Filters must be installed in the return air system. The above square footages are based on 300 F.P.M. face velocity. If permanent filters are used, size per manufacturer recommendation with clear resistance of 0.05" W.C.

Electrical Wiring

Note: This unit is factory wired for 230V. See wiring diagram for 208V conversion.

Electrical Connections

Electrical wiring and grounding must be installed in accordance with local codes or, in the absence of local codes, with the National Electrical Code ANSI/NFPA 70, Latest Revision.

Electrical Power

It is important that proper electrical power be available for the unit. Voltage variation should remain within the limits stamped on the unit nameplate.

Disconnect Switch

Provide an approved weatherproof disconnect within close proximity and **within sight of the unit**. If disconnect must be mounted to the cabinet, the location shown in Figure 25 should be the only one considered.

Over Current Protection

The branch circuit feeding the unit must be protected as shown on the unit's rating plate.

Power Wiring

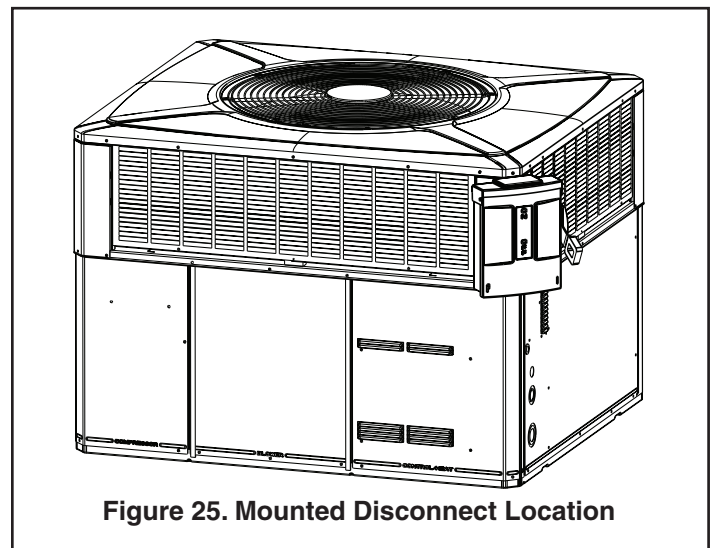
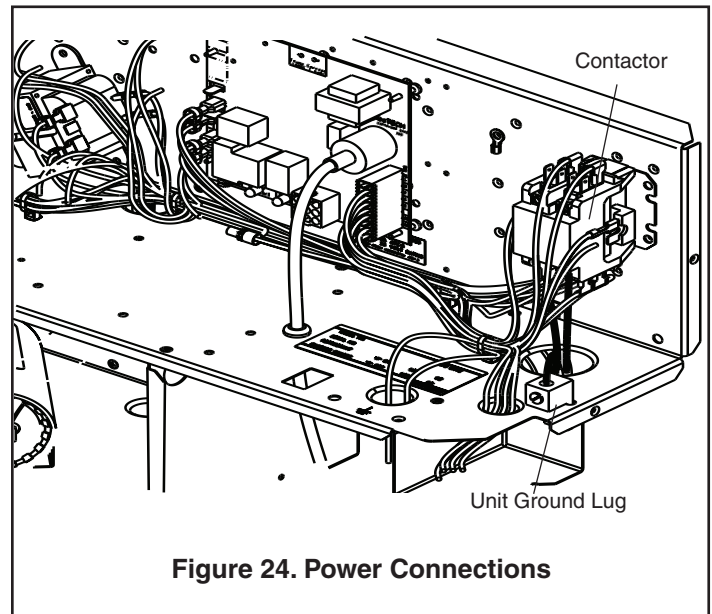
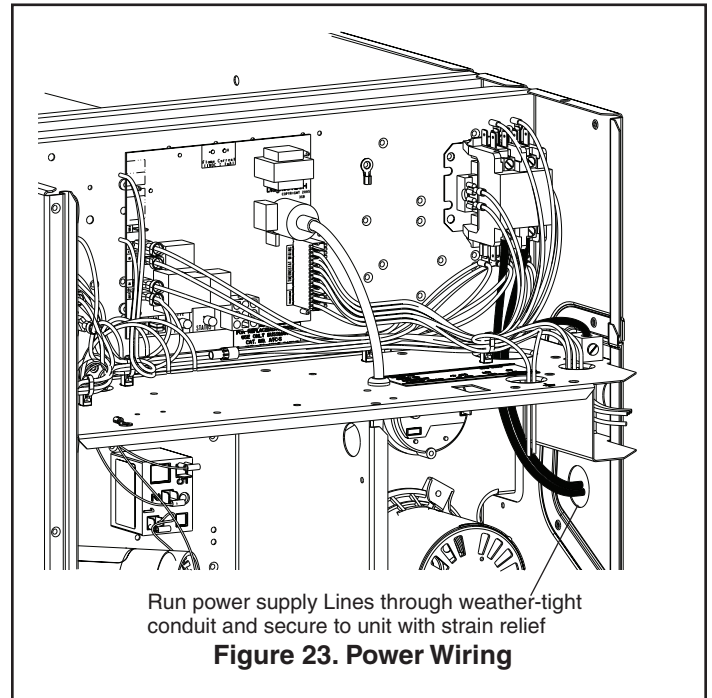
The power supply lines must be run in weather-tight conduit to the disconnect and into the side of the unit control box. Provide strain relief for all conduit with suitable connectors.

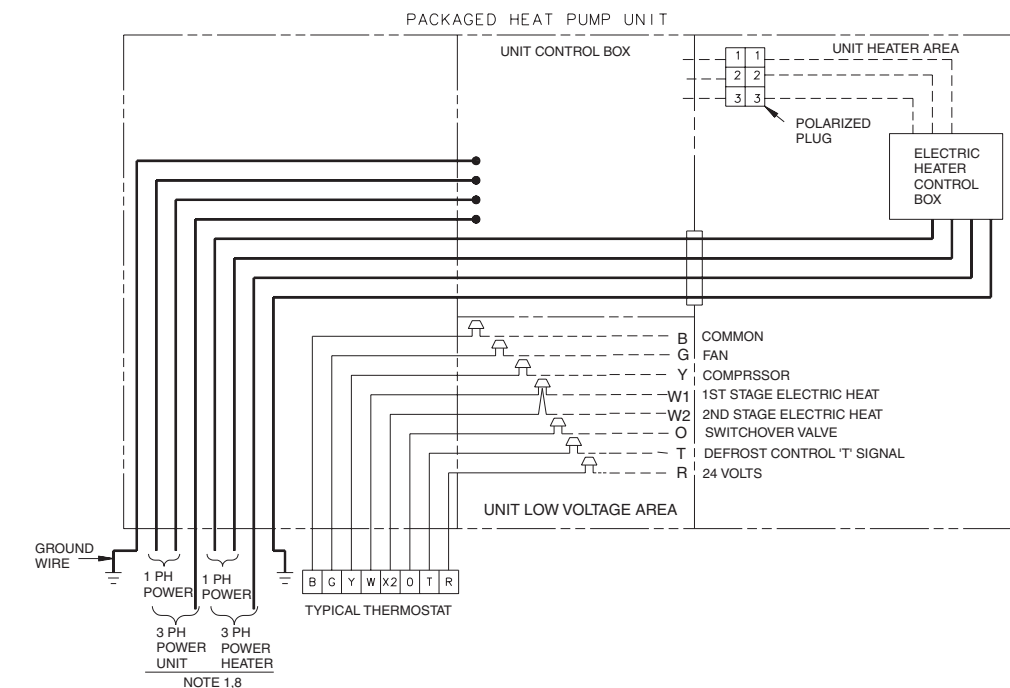
Provide flexible conduit supports whenever vibration transmission may cause a noise problem within the building structure.

1. Remove the Control/Heat access panel. Pass the power wires through the Power Entry hole in the end of the unit. See Figure 23.
2. Connect the high voltage wires to the appropriate contactor terminals. Single phase units use a two (2) pole contactor and three phase units use three (3) pole contactor. Connect the ground to the ground lug on the chassis. See Figure 25.

Be sure all connections are tight.

GROUNDING: THE UNIT MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES OR THE NATIONAL ELECTRIC CODE.



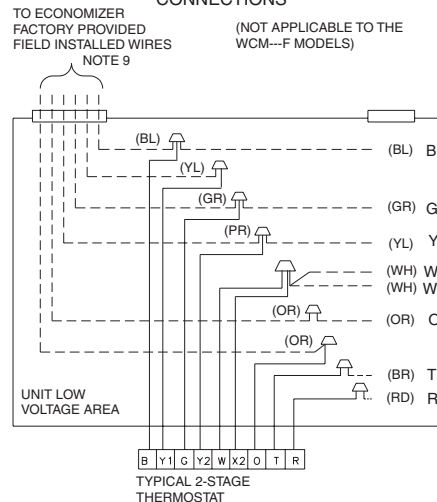


NOTES:

1. FUSED DISCONNECT SIZE, POWER WIRING AND GROUNDING OF EQUIPMENT MUST COMPLY WITH CODES.
2. BE SURE POWER SUPPLY AGREES WITH EQUIPMENT AND HEATER NAMEPLATE.
3. LOW VOLTAGE WIRING TO BE 18 AWG MINIMUM CONDUCTOR.
4. SEE HEATER NAMEPLATE FOR CURRENT RATING OF HEATER USED.
5. SEE UNIT AND HEATER DIAGRAM FOR ELECTRICAL CONNECTION DETAILS.
6. IF ELECTRIC HEATER ACCESSORY IS NOT INSTALLED OMIT THE ELECTRIC HEATER, ASSOCIATED POWER WIRES AND THE 'W' AND 'X2' THERMOSTAT WIRES.
7. FIG. 3 DEMONSTRATES CONNECTION OF THE OUTDOOR THERMOSTAT ACCESSORY ONLY. FOR FURTHER UNIT CONNECTION DETAILS REFER TO THE OTHER FIGURES.
8. THE W1 WIRE IS FIRST STAGE ELECTRIC HEAT. IF THE ELECTRIC HEATER ACCESSORY HAS TWO HEATING STAGES THE W2 WIRE IS SECOND STAGE ELECTRIC HEAT.
9. WHEN THE BAYECON101A/102A or BAYECON200A/201A ECONOMIZER IS INSTALLED, THE BAYRLAY004A RELAY ACCESSORY KIT IS REQUIRED TO INTERFACE THE ECONOMIZER TO THE HEAT PUMP FOR PROPER SYSTEM OPERATION.
10. THE BAYSTAT033A OUTDOOR THERMOSTAT ACCESSORY KIT CONTAINS A THERMOSTAT AND A RELAY. THE RELAY IS NOT REQUIRED TO BE USED IN THIS APPLICATION.

FIG. 1 SINGLE POWER ENTRY ACCESSORY CONNECTIONS

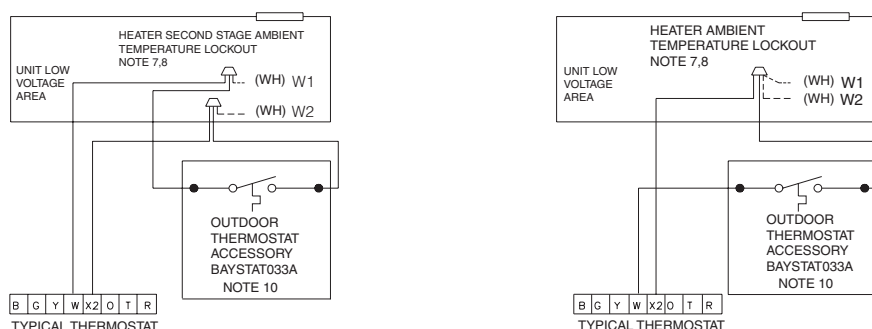
FIG. 2 ECONOMIZER ACCESSORY CONNECTIONS



INTER-COMPONENT WIRING

--- 24V. LINE V. } FACTORY WIRING
 --- 24V. LINE V. } FIELD WIRING

FIG. 3 OUTDOOR THERMOSTAT ACCESSORY CONNECTIONS



| WIRE | COLOR | DESIGNATION |
|------|--------|-------------|
| ABBR | COLOR | ABBR COLOR |
| BK | BLACK | PR PURPLE |
| BL | BLUE | RD RED |
| BR | BROWN | WH WHITE |
| GR | GREEN | YL YELLOW |
| OR | ORANGE | |

Figure 26. 4WC*3 Field Wiring Diagram

Control Wiring (Class II)

Low voltage control wiring should not be run in conduit with power wiring unless Class 1 wire of proper voltage rating is used. Route the thermostat cable or equivalent single leads of No. 18 AWG colored wire from the thermostat subbase terminals through the rubber grommet on the unit. See Figures 1-12 (pages 4-15) for the control entry (24V Entry) location. Make connections as shown on the field wiring diagram Figure 26, page 24.

Do not short thermostat wires since this will damage the control transformer.

Refer to Table 2 for recommended wire sizes and lengths for installing the unit thermostat. The total resistance of these low voltage wires must not exceed one (1) ohm. Any resistance in excess of 1 ohm may cause the control to malfunction because of the excessive voltage drop.

Table 2. Thermostat Wire Size and Maximum Length

| WIRE SIZE | MAXIMUM LENGTH (Ft) |
|-----------|---------------------|
| 18 | 75 |
| 16 | 125 |
| 14 | 200 |

IMPORTANT: Upon completion of wiring, check all electrical connections, including factory wiring within the unit, and make sure all connections are tight. Replace and secure all electrical box covers and access panels before leaving the unit or turning on the power to the unit.

Step 5—Unit Startup

Pre-Start Quick Checklist

- ☐ Is the unit properly located and level with the proper clearance? See Figures 1-12, pages 4-15. See Step 2-Review Location and Clearances on page 4.
- ☐ Is the duct work correctly sized, run, taped, insulated, and weatherproofed with proper unit arrangement? See Ductwork Installation section on page 22.
- ☐ Is the condensate line properly sized, run, trapped, and pitched? See Condensate Drain Piping section on page 22.
- ☐ Is the filter of the correct size and quantity? Is it clean and in place? See Air Filter Installation section on page 22.
- ☐ Is the wiring properly sized and run according to the unit wiring diagram? See Electrical Wiring section on page 23.
- ☐ Are all the wiring connections, including those in the unit, tight? See Electrical Wiring section on page 23.
- ☐ Has the unit been properly grounded and fused with the recommended fuse size? See Electrical Wiring section on page 23.
- ☐ Is the thermostat well located, level, and correctly wired? See Electrical Wiring section on page 23.
- ☐ Have the air conditioning systems been checked at the service ports for charge and leak tested if necessary?

- ☐ Do the condenser fan and indoor blower turn free without rubbing, and are they tight on the shafts?
- ☐ Has all work been done in accordance with applicable local and national codes?
- ☐ Are all covers and access panels in place to prevent air loss and safety hazards?

Starting the Unit in Cooling Mode

WARNING

Safety Hazard. Do not operate the unit without the evaporator fan access panel or evaporator coil access panel in place. Reinstall the access panels after performing maintenance procedures on the fan. Operating the unit without the access panels properly installed may result in severe personal injury or death.

CAUTION

Before starting the system on the cooling cycle, turn the thermostat switch to **OFF** and close the unit disconnect switch. This is a precaution against foaming at startup which could damage the compressor bearings.

NOTE: See the section on *Sequence of Operation*, page 26 for a description of the cooling operating sequence.

To start the unit in the cooling mode, set the comfort control to **COOL** and to a setting below room temperature. The condenser fan motor, compressor and evaporator fan motor will operate automatically. Continuous fan mode during Cooling operation may not be appropriate in humid climates. If the indoor air exceeds 60% relative humidity or simply feels uncomfortably humid, it is recommended that the fan only be used in the **AUTO** mode.

Operating Pressure Checks

After the unit has operated in the cooling mode for a short period of time, install pressure gauges on the gauge ports of the discharge and suction line valves (behind the Compressor access panel). Check the suction and discharge pressures and compare them to the normal operating pressures provided in the unit's **SERVICE FACTS**.

NOTE: Do not use the pressures from the unit's **SERVICE FACTS** to determine the unit refrigerant charge. The correct charge is shown on the unit nameplate. To charge the system accurately, weigh in the charge according to the unit nameplate.

Voltage Check

With the compressor operating, check the line voltage at the unit (contactor is located behind the Control access panel). The voltage should be within the range shown on the unit nameplate. If low voltage is encountered, check the size and length of the supply line from the main disconnect to the unit. The line may be undersized for the length of the run.

Cooling Shut Down

Set the comfort control to **OFF** or to a setting above room temperature.

IMPORTANT: De-energize the main power disconnect **ONLY** when servicing the unit. Power may be required to keep the heat pump compressor warm and to boil off refrigerant in the compressor.

Installer's Guide

Starting the Unit in Heating Mode

NOTE: See the section on Sequence of Operation for a description of the heat pump heating operating sequence.

Check that all grills and registers are open and all unit access panels are closed before start-up.

Set the comfort control above room temperature until achieving a first stage call for heat and set the fan to **AUTO** or **ON**.

Heating Shut Down

Set the comfort control to **OFF** or at a setting below room temperature.

Sequence of Operation

General

Operation of the unit heating and cooling cycles is automatic when the system is in the **HEAT** or **COOL** functions (the optional automatic changeover thermostat, when in the **AUTO** position, automatically changes to heat or cool with an appropriate room temperature change). The fan can be set to **ON**, causing continuous evaporator (indoor) fan operation or set to **AUTO** causing fan operation to coincide with heating or cooling run cycles. Continuous fan mode during Cooling operation may not be appropriate in humid climates. If the indoor air exceeds 60% relative humidity or simply feels uncomfortably humid, it is recommended that the fan only be used in the **AUTO** mode.

Cooling Mode

Note that the **TSH** and **TSC** are contacts that are internal to the indoor comfort control.

With the disconnect switch in the **ON** position, current is supplied to the compressor crankcase heater and control transformer (the outdoor fan relay (**ODF**) relay is energized through normally closed contacts on the defrost timer control (**DFC**) on the 460V units only.). The cooling cycle is enabled through the low voltage side of the control transformer to the "**R**" terminal on the indoor thermostat. With the comfort control set to **AUTO** and **TSC-1** contacts closed, power is supplied to the "**O**" terminal on the indoor thermostat to the switchover valve coil (**SOV**). This energizes the switch-over valve (**SOV**) and places it in the cooling position (it is in the heating position when de-energized).

When the indoor temperature rises 1-1/2 degrees, **TSC-2** contacts close, supplying power to the "**Y**" terminal on the indoor thermostat, and to the compressor contactor (**CC**). This starts the outdoor fan motor and compressor. The **TSC-2** contacts also provide power to the "**G**" terminal which provides power to the fan relay (**F**) starting the indoor fan motor.

Heating Mode

With the comfort control set to **ON**, current is supplied to the compressor crankcase heater and control transformer. (The outdoor fan relay (**ODF**) is energized through normally closed contacts on the defrost timer control (**DFC**) on the 460V units). Starting at the "**R**" terminal on the indoor comfort control, current goes through the system switch (which is in "**AUTO**" position) to the **TSH-1** contacts. When closed, these contacts supply power to terminal "**Y**" on the indoor thermostat as well as to the heating anticipator. The switch-over valve will not energize because of the high resistance of the heating anticipator in the thermostat. Power is provided from "**Y**" to the compressor contactor (**CC**) which starts the compressor

and outdoor fan motor. The indoor thermostat contact **TSH-1** also provides power to "**G**" terminal on the indoor thermostat energizing the fan relay (**F**), which starts the indoor fan motor.

Supplementary Heat

The supplementary electric heat is brought on when the indoor temperature drops 1-1/2 degrees below the thermostat setting. **TSH-2** contacts close providing power to the "**W**" terminal on the indoor thermostat and to the supplementary heater control circuit. Note that the fan relay (**F**) must have been energized. An outdoor thermostat may have been added to disallow the second stage (if provided) of electric heat above a selected outdoor temperature. If the outdoor temperature falls below the setting on the outdoor thermostat, this additional heater stage will come on. When the outdoor air temperature rises, and the outdoor T-stat setpoint is reached, the system will revert back to first stage electric heating.

When the indoor ambient is satisfied, **TSH-2** contacts will open and the unit will revert back to the compressor only heating mode and then off. For **emergency heat** (use of supplementary electric heat only), an emergency (**EMERG**) heat switch is provided within the comfort control. When placed in the emergency heat position, it will disable the compressor, bypass the outdoor thermostats, if provided, and engage the supplementary electric heaters and indoor fan.

Demand Defrost Operation

During the heating cycle, the outdoor coil may require a defrost cycle which is determined by the demand defrost control (**DFC**). This control continuously measures the outdoor coil temperature (**CBS**) and the outdoor ambient temperature (**ODS-B**) and calculates the difference or delta-T measurement. When the calculated delta-T is met, the demand defrost control (**DFC**) opens the circuit to the outdoor fan motor (**ODM**) and energizes the switch-over valve (**SOV**), placing the unit in the cooling mode to defrost the outdoor coil (on SCROLL bearing units only, the control will stop the compressor for a minimum of thirty (30) seconds). The outdoor coil temperature sensor (**CBS**) terminates the defrost cycle, or times off after twelve minutes in defrost, the (**DFC**) energizes the outdoor fan motor (**ODM**) and twelve seconds later de-energizes the (**SOV**), which returns the unit to the heating mode. Supplementary electric heat, if provided, is brought on to control indoor temperature during the defrost cycle.

Defrost Control

The demand defrost control measures heat pump outdoor ambient temperature with a sensor located outside the outdoor coil. A second sensor located on the outdoor coil is used to measure the coil temperature. The difference between the ambient and the colder coil temperature is the difference or delta-T measurement. This delta-T measurement is representative of the operating state and relative capacity of the heat pump system. Measuring the change in delta-T determines the need for defrost. The coil sensor also senses outdoor coil temperature for termination of the defrost cycle.

NOTE: Refer to the *SERVICE FACTS* for fault detecting, test sensor, and checkout procedures.

Final Installation Checklist

- ☐ Does the unit run and operate as described in the section on Sequence of Operation, page 26, in response to the room thermostat?
- ☐ Are the condenser fan and indoor blower operating correctly with proper rotation and without undue noise?
- ☐ Is the compressor operating correctly and has the system been checked with a charging chart?
- ☐ Has the voltage and running current been checked to determine if it is within limits?
- ☐ Has the thermostat been checked for calibration and the air discharge grills adjusted to balance the system?
- ☐ Has the ductwork been checked for air leaks and condensation?
- ☐ Has the furnace manifold pressure been checked and adjusted if necessary?
- ☐ Has the heating air temperature rise been checked?
- ☐ Has the unit been checked for tubing and sheet metal rattles? Are there any other unusual noises to be checked?
- ☐ Are all covers and panels in place and properly fastened?
- ☐ Has the owner been instructed on the proper operation and maintenance of the unit? Be sure to leave this manual with the owner.

Maintenance

Owner Maintenance

Some of the periodic maintenance functions of the unit can be performed by the owner; this includes replacing the disposable or cleaning the permanent air filters, cleaning the unit cabinet, cleaning the condenser coil, and conducting a general unit inspection on a regular basis.

Filters

When the system is in constant operation, inspect the filters at least once each month.

If the unit has disposable-type filters, replace them with new filters of the same type and size. **Do not attempt to clean disposable filters.**

Permanent-type filters can be cleaned by washing them with a mild detergent and water. Make sure that the filters are thoroughly dry before reinstalling them in the unit (or duct system).

NOTE: It may be necessary to replace permanent filters annually if washing fails to clean the filter or if the filter shows signs of deterioration. Be sure to use the same type and size as was originally installed.

Condenser Coil

Be sure to keep all vegetation and debris away from the condenser coil area.

Service Maintenance

Cooling Season

To keep the unit operating safely and efficiently, the manufacturer recommends that a qualified service technician check the entire system at least once each year or sooner if needed. The service technician should examine these areas of the unit:

- filters (for cleaning or replacement)
- motors and drive system components
- economizer gaskets (for possible replacement)
- safety controls (for mechanical cleaning)
- electrical components and wiring (for possible replacement and connection tightness)
- condensate drain (for proper sealing and cleaning)
- unit duct connections (to see that they are physically sound and sealed to the unit casing)
- unit mounting support (for structural integrity)
- the unit (for obvious unit deterioration)

Heating Season

Complete the following unit inspections and service routines at the beginning of each heating season.

- Visually inspect the unit to ensure that the airflow required for combustion and condenser coil is not obstructed from the unit.
- Inspect the control panel wiring to verify that all electrical connections are tight and that the wire insulation is intact.

Indoor Fan Motor Speed Tap Setting

The 208/230 and 460 Volt units are factory set to high speed with one exception. The 4WC*3030 is factory set to low speed.

208/230 Volt Motor Tap Settings (Figure 25, page 28)

High speed setting: On the IGN board:

1. Connect the "RD" wire to the "PARK" terminal.
2. Connect the (IDM) PR wire to the "BLOWER LOAD" terminal.

Low speed setting: On the IGN board:

1. Connect the "RD" wire to the "BLOWER LOAD" terminal.
2. Connect the (IDM) PR wire to the "PARK" terminal.

460 Volt Motor Tap Settings (Figure 26, page 28)

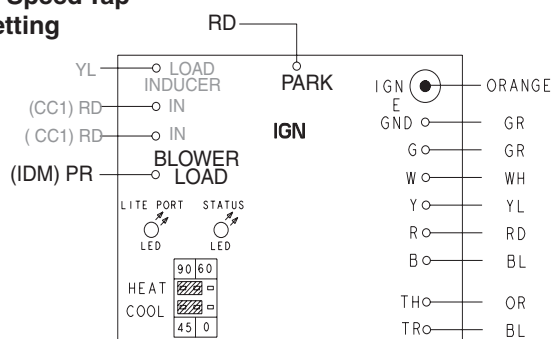
High speed setting (460V):

1. At the "FTBA", connect the "PR" wire from the IGN board to the "HI" (B) terminal.
2. Connect the "PR" wire from the "HI" (B) terminal on the "FTBA" to the "H" terminal on the IDM.
3. Connect the Orange wire on the IDM to the "P" terminal on the IDM.

Low speed setting (460V):

1. At the "FTBA", connect the "PR" wire from the IGN board to the "LOW" (D) terminal.
2. Connect the "PR" wire from the "HI" (B) terminal on the "FTBA" to the "P" terminal on the IDM.
3. Connect the Orange wire on the IDM to the "H" terminal on the IDM.

Hi Speed Tap Setting



Low Speed Tap Setting

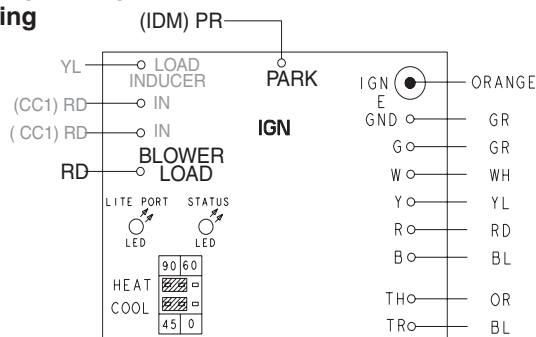
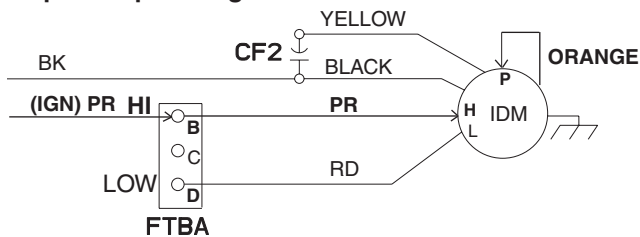


Figure 25. 208/230 Volt Speed Taps

Hi Speed Tap Setting



Low Speed Tap Setting

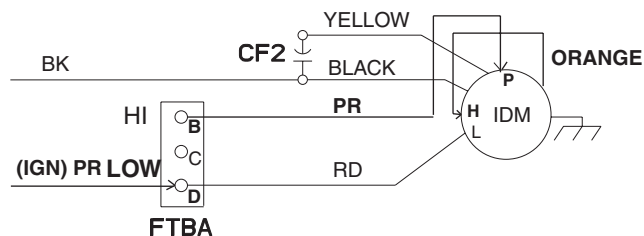


Figure 26. 460 Volt Speed Taps

Limited Warranty
Packaged Air Conditioner and Packaged Heat Pump
4TCY4, 4TCX3, 4WCY4, 4WCX3, 4TCC, 4WCC (Parts Only) Models Less Than 20 Tons

Subject to the terms and conditions of this limited warranty, Trane U.S., Inc. ("Company") extends a limited warranty against manufacturing defects for the product(s) identified in **Table 1, 1A, 1B** attached hereto ("Products") that are installed in a residential application (personal, family or household purposes) under normal use and maintenance in the United States and Canada.

This limited warranty applies to Products manufactured on or after August 1, 2012.

In order to maximize the available benefits under this limited warranty, the Purchaser (as defined below) should read it in its entirety. All repairs of Product parts covered under this limited warranty must be made with authorized service parts and by a licensed HVAC service provider. Additionally, commercial applications are treated differently under this limited warranty as stated in **Table 1, 1A, 1B** attached hereto. For purposes of this limited warranty, "commercial applications" shall mean any application other than for personal, family, or household use.

TERM: The limited warranty period for Products is as stated in **Table 1, 1A, 1B** attached hereto. If the Purchaser properly registers the Products, the limited warranty period shall be extended as stated in **Table 1, 1A, 1B** attached hereto. Regardless of registration, the Commencement Date for a limited warranty period shall be the date that the original installation is complete and all Product start-up procedures have been properly completed and verified by an installer's invoice. If the installation and start-up date cannot be verified by the installer's invoice, the Commencement Date shall be sixty (60) days after the factory manufacture date which is verified by the Product serial number. Where a Product is installed in a newly constructed home, the Commencement Date is the date the Purchaser purchased the residence from the builder. Proof of Product purchase, installation, and/or closing date of the residence may be required to confirm the Commencement Date.

The installation of Product replacement parts under this limited warranty shall not extend the original warranty period. The warranty period for any Product part replaced under this limited warranty is the applicable warranty period remaining under the original Product warranty.

WHO IS COVERED: This limited warranty is provided only to the original owner and his or her spouse ("Purchaser") of the residence where the Products are originally installed. This warranty is not transferable except according to terms stated on the applicable website identified below under Registration Requirements. Company has the right to request any and all proof of Product purchase or installation and/or closing date of the residence.

WHAT COMPANY WILL DO: Company may request proof of Product purchase and/or installation in order to provide Product parts under this limited warranty. As Company's only responsibility and Purchaser's only remedy under this limited warranty, Company will furnish a replacement part to the licensed HVAC service provider, without charge for the part only, to replace any Product part that fails due to a manufacturing defect under normal use and maintenance. The Purchaser must pay for any and all shipping and handling charges and other costs of warranty service for the replacement part. If a Product part is not available, Company will, at its option, provide a free suitable substitute part or provide a credit in the amount of the then factory selling price for a new suitable substitute part to be used by the Purchaser towards the retail purchase price of a new Company product. Any new Product purchase shall be at Purchaser's sole cost and expense including, but not limited to, all shipping, removal, and installation costs and expenses.

REGISTRATION REQUIREMENTS: All Products must be properly registered online by the Purchaser within sixty (60) days after the Commencement Date to receive the registered limited warranty terms. To register online, go to:

<http://www.trane.com/Residential/Trane/Owners/Warranty-Information> or

<http://www.americanstandardair.com/servicesupport/pages/warranty.aspx>

and click "Begin Online Registration." If a Purchaser does not register within this stated time period, the base limited warranty terms shall apply.

ELIGIBILITY REQUIREMENTS: The following items are required in order for the Products to be covered under this limited warranty:

- The Products must be in the same location where they were originally installed.
- The Products must be properly installed, operated, and maintained by a licensed HVAC service provider in accordance with the Product specifications or installation, operation, and maintenance instructions provided by Company with each Product. Failure to conform to such specifications and/or instructions shall void this limited warranty. Company may request written documentation showing the proper preventative maintenance.
- All Product parts replaced by Company under this limited warranty must be given to the servicing provider for return to Company.
- Air handlers, air conditioners, heat pumps, cased or uncased coils and stand-alone furnaces must be part of an Air Conditioning, Heating, and Refrigeration Institute rated and matched system or a specification in a Company provided bulletin or otherwise approved in writing by a Company authorized representative.

EXCLUSIONS: The following are not covered by this limited warranty:

- Labor costs including, but not limited to, costs for diagnostic calls or the removal and reinstallation of Products and/or Product parts.
- Shipping and freight expenses required to ship Product replacement parts.
- Failures, defects, or damage (including, but not limited to, any loss of data or property) caused by (1) any third party product, service, or system connected or used in conjunction with the Products; (2) any use that is not designed or intended for the Products; (3) modification, alteration, abuse, misuse, negligence, or accident; (4) improper storage, installation, maintenance, or operation including, but not limited to, operation of electrical equipment at voltages other than the range specified on the Product nameplate; (5) any use in violation of written instructions or specifications provided by Company; (6) any acts of God including, but not limited to, fire, water, storms, lightning, or earthquakes; or any theft or riots; or (7) a corrosive atmosphere or contact with corrosive materials such as, but not limited to, chlorine, fluorine, salt (provided that indoor and outdoor coils will only be covered if a Sea Coast Kit is installed), sulfur, recycled waste water, urine, fertilizers, rust, or other damaging substances or chemicals.
- Products purchased direct including, but not limited to, Internet or auction purchases and purchases made on an uninstalled basis.
- 3 phase models, cabinets or cabinet pieces that do not affect product performance, air filters, refrigerant, refrigerant line sets, belts, wiring, fuses, surge protection devices, non-factory installed driers, and Product accessories.
- Increased utility usage costs.

REFRIGERANT POLICY: Beginning on January 1, 2010, R-22 refrigerant will no longer be used as a manufacturer-installed refrigerant as required by federal regulation. Any and all expenses or costs associated with replacing Product parts that are not R-410A compatible will not be covered by the terms and conditions of this limited warranty. In addition, all Products containing R-410A refrigerant include a liquid line filter drier which must be replaced when a compressor replacement is necessary. A suction line filter drier must be added for compressors defined as burnouts. Failure to comply with such filter drier requirements or the use of contaminated or alternate refrigerant or any non-approved refrigerant system additives including, but not limited to, dyes, will void this limited warranty.

ADDITIONAL TERMS:

THIS LIMITED WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESS OR IMPLIED, IN LAW OR IN FACT. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE APPLICABLE PRODUCT WARRANTY. COMPANY DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE PRODUCTS.

NOTWITHSTANDING ANYTHING IN THIS LIMITED WARRANTY TO THE CONTRARY, COMPANY SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL AND/OR PUNITIVE DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, TORT (INCLUDING, BUT NOT LIMITED TO, STRICT LIABILITY OR NEGLIGENCE), PATENT INFRINGEMENT, OR OTHERWISE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. COMPANY'S MAXIMUM LIABILITY HEREUNDER IS LIMITED TO THE ORIGINAL PURCHASE PRICE OF THE PRODUCTS.

No action arising out of any claimed breach of this limited warranty may be brought by a Purchaser more than one (1) year after the cause of action has arisen.

This limited warranty gives you specific legal rights, and you may also have other rights as otherwise permitted by law. If this Product is considered a consumer product, please be advised that some local laws do not allow limitations on incidental or consequential damages, how long a warranty lasts based on registration, or how long an implied warranty lasts, so that the above limitations may not fully apply. Refer to your local laws for your specific rights under this limited warranty.

Residential Systems
6200 Troup Highway, Tyler, TX 75707
Attn: Customer Relations

Or visit our website at www.trane.com or www.americanstandardair.com

GW-658-4911

Installer’s Guide

TABLE 1: Warranty Time Periods for Outdoor Units, Air Handlers, Packaged Air Conditioners and Heat Pumps, Furnaces and Cased and Uncased Coils

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the base time periods as stated below ("Base Limited Warranty Period"). If registered, the Base Limited Warranty Periods for certain Products will be extended as stated below ("Registered Limited Warranty Period").

SINGLE PHASE R410 OUTDOOR UNITS:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts: five (5) years.
Registered Limited Warranty Period:
TRANE: 4TMM3, ASD*: 4A7M3: Compressor, Outdoor Coil, Parts – ten (10) years.
TRANE: 4TTB3, 4TTB4, 4TWB4, 4TWB3, ASD: 4A7B4, 4A6B4, 4A7B3, 4A6B3: Compressor, Outdoor Coil, Parts – ten (10) years.
TRANE: 4TTR5, 4TTR3, 4TWR5, 4TWR3, ASD: 4A7A5, 4A7A3, 4A6H5, 4A6H3: Compressor, Outdoor Coil, Parts – ten (10) years.
TRANE: 4TTZ0, 4TTX6, 4TTX5, 4TWZ0, 4TWX6, 4TWX5, ASD: 4A7Z0, 4A7A6, 4A6Z0, 4A6H6: compressor – twelve (12) years, Outdoor Coil, Parts –ten (10) years.

SINGLE PHASE R22 OUTDOOR UNITS:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts - one (1) year.
Registered Limited Warranty Period:
TRANE: 2TTB3, 2TWB3, ASD: 2A7B3, 2A6B3: Compressor, Outdoor Coil, Parts– five (5) years.

3- PHASE OUTDOOR UNITS (models up to 5 Ton):
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts - one (1) year.
Registered Limited Warranty Period:
TRANE: 4TTA, 4TWA, ASD: 4A7C, 4A6C: Compressor, Outdoor Coil, Parts - five (5) years.

AIR HANDLERS:
Base Limited Warranty Period: Indoor Coil and Parts – five (5) years.
Registered Limited Warranty Period:
TRANE and ASD: GAM5, *AM4, *AM7, *AM8, GAT2, GAF2: Indoor Coil and Parts – ten (10) years.

Base Limited Warranty Period: Indoor Coil and Parts – one (1) year.
Registered Limited Warranty Period:
TRANE and ASD: 2/4TEE, 2/4TFE, 2/4TEC, Indoor Coil and Parts – five (5) years.

PACKAGED AIR CONDITIONERS and PACKAGED HEAT PUMPS:
TRANE and ASD: 4WCZ6:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts – five (5) years.
Registered Limited Warranty Period: Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years.

TRANE and ASD: 4DCZ6, 4YCZ6:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years.

TRANE and ASD: 4DCY4, 4YCY4, 4YCX3:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Compressor, Outdoor Coil, and Parts – ten (10) years.

TRANE and ASD: 4TCY4, 4TCX3, 4WCY4, 4WCX3:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts – five (5) years.
Registered Limited Warranty Period: Compressor, Outdoor Coil, and Parts – ten (10) years.

TRANE and ASD: 4YCC3:
Base Limited Warranty Period: Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – ten (10) years.
Registered Limited Warranty Period: Compressor, Outdoor Coil, Parts – ten (10) years.

TRANE and ASD: 4TCC3, 4WCC3:
Base Limited Warranty Period: Compressor, Outdoor Coil, and Parts – five (5) years .
Registered Limited Warranty Period: Compressor, Outdoor Coil, Parts – ten (10) years.

TRANE and ASD: 4WHC3:
Base Limited Warranty Period: Compressor, Outdoor Coil, and Parts – five (5) years.

FURNACES:
TRANE and ASD: *UE1/*DE1:
Base Limited Warranty Period: Parts – five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Parts – ten (10) years, Heat Exchanger: twenty (20) years.

TRANE and ASD: *UD1/*DD1; *UD2/*DD2; *UD1-H/ *DD1-H:
Base Limited Warranty Period: Parts: five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Parts – ten (10) years, Heat exchanger– twenty (20) years,

TRANE and ASD: *UD2-V/*DD2-V; *UD2-C-V/*DD2-C-V:
Base Limited Warranty Period: Parts: five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Parts – ten (10) years, Heat exchanger– Lifetime

TRANE and ASD: *UC1/*DC1:
Base Limited Warranty Period: Parts – five (5) years, Heat Exchanger – twenty (20) years.
Registered Limited Warranty Period: Parts – ten (10) years, Heat Exchanger - Lifetime.

TRANE and ASD: *UH1/*DH1; *UX1/*DX1; *UH2/*DH2; *UHM/*DHM:
Base Limited Warranty Period: Parts – five (5) years, Heat Exchanger – twenty (20) Years.
Registered Limited Warranty Period: Parts– ten (10) years, Heat Exchanger– Lifetime.
*Note: First digit may be a "T" or an "A"
Note Regarding Heat Exchanger: If a heat exchanger fails because of a manufacturing defect within the sixth through twentieth year of the applicable warranty period, Company will, at its sole option, provide either a replacement heat exchanger without charge, or allow a credit in the amount of the then factory selling price of an equivalent heat exchanger toward the retail purchase price of a new heating unit.

CASED AND UNCASED COILS:
Base Limited Warranty Period: Coil, Parts –five (5) years.
Registered Limited Warranty Period:
TRANE and ASD: 2/4 TXG, 2/4 TXA, 4CXC, 4TXF-CC/CZ: Coil, Parts– ten (10) years.

SPECIFIC TERMS FOR COMMERCIAL APPLICATIONS (Models listed in Tables 1, 1A, 1B)
Base Limited Warranty Period: Coil, Parts- one (1) year.
Base Limited Warranty Period: Compressor- five (5) years.
Base Limited Warranty Period for Packaged Unit Heat Exchanger: five (5) years.
Base Limited Warranty Period For All Heat Exchangers on All Other Furnace: twenty (20) years.
**ASD – American Standard Models

Table 1A: Warranty Time Periods for Controls, Zoning Products, Humidifiers, Energy Recovery Ventilators, Air Cleaners and Oil Furnaces (Variable and Non-Variable Speed)

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the base time periods as stated below ("Base Limited Warranty period"). If registered, the Base Limited Warranty Periods for certain products will be extended as stated below ("Registered Limited Warranty Period").

CONTROLS: *CONT200,*CONT401,*CONT402,*CONT600 &*CONT602
Base Limited Warranty Period: one (1) year
Registered Limited Warranty Period: five (5) years

CONTROLS: *ZEMT500 *CONT800,*CONT802,*CONT803,*CONT900. *ZONE950
Base Limited Warranty Period: five (5) years
Registered Limited Warranty Period: ten (10) years

ZONING PRODUCTS: *ZONE950, *ZONE940, *ZONE930, ZZONEPNLAC52Z, ZZONEEXPAC52Z, ZZSENSAL0400, BAYSEN01ATEMPA, BAY24VRP, ZDAMP RD, ZDAMP SM, ZDAMP BM, ZDAMP RR
Base Limited Warranty Period: five (5) years
Registered Limited Warranty Period: ten (10) years

HUMIDIFIERS: *HUMD200, *HUMD300 & *HUMD500
Base Limited Warranty Period: five (5) years
Registered Limited Warranty Period: ten (10) years

ENERGY RECOVERY VENTILATOR (ERV): *ERV R100, *ERV R200 & *ERV R300
Base Limited Warranty Period: five (5) years
Registered Limited Warranty Period: ten (10) years

AIR CLEANERS: TFD & AFD
Base Limited Warranty Period: five (5) years
Registered Limited Warranty Period: ten (10) years

VARIABLE SPEED OIL FURNACE: *HV-V, *LF-V, *LR-V,*DF-V
Base Limited Warranty Period: Parts- five (5) years, Heat Exchanger - twenty (20) years
Registered Limited Warranty Period: Parts - ten (10) years, Heat Exchanger - Lifetime

NON-VARIABLE SPEED OIL FURNACE: *HV, *LF, *LR,*DF
Base Limited Warranty Period: Parts- five (5) years. Heat Exchanger - twenty (20) years
Registered Limited Warranty Period: Parts - ten (10) years, Heat Exchanger - Lifetime

SPECIFIC TERMS FOR COMMERCIAL APPLCIATIONS:
Base Limited Warranty Period Applies for all controls, zoning products, humidifiers and ERV's
All Oil Furnaces: Parts - one (1) year, Heat Exchanger - twenty (20) years.

*(First letter may be A or T)

Table 1B: Warranty Time Periods for Installed Accessories in Air Handlers and Packaged Units

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the time periods as stated below.

Electric Heaters for Multi-Position Air Handlers
HEATERS, Installed in GAT2, 4 & 5 Series Air Handlers: BAYEA
Limited Warranty Period: ten (10) years

HEATER, Installed in 7 & 8 Series Air Handlers: BAYEV
Limited Warranty Period: ten (10) years

HEATER, Installed in GAF2 Air Handlers: BAYEC
Limited Warranty Period: five (5) years

Optional Accessories for Multi-Position Air Handlers
UVC LIGHTS, Installed in GAT2, GAF2, 4, 5, 7 & 8 Series Air Handlers: BAYUVC
Limited Warranty Period: Ballast - ten (10) years, Bulbs - one (1) year

COMPRESSOR CONTROL MODULE, Installed in 8 Series Air Handlers: BAY24CCVK
Limited Warranty Period: ten (10) years

Hydronic Heaters for Multi-Position Air Handlers
HOT WATER COIL, Installed in 5 Series Air Handlers: BAYWAAA05, BAYWABB07 or BAYWACC08
Limited Warranty Period: ten (10) years

HOT WATER COIL, Installed in 7 Series Air Handlers: BAYWV & BAYWA
Limited Warranty Period: ten (10) years

HOT WATER COIL, Installed in 8 Series Air Handlers: BAYWV
Limited Warranty Period: ten (10) years

Electric Heaters for Spit Systems and Convertible Air Handlers
HEATERS, Installed in 4TEE & 4TEC Air Handlers: BAYHTR14
Limited Warranty Period: ten (10) years

Electric Heaters for Packaged Units
HEATERS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6 Packaged Units: BAYHTRV
Limited Warranty Period: ten (10) years

HEATERS, Installed in 4WHC Packaged Units: BAYHTRC
Limited Warranty Period: ten (10) years

Optional Accessories for Packaged Units
UVC LIGHTS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYUV
Limited Warranty Period: Ballast - ten (10) years, Bulbs - one (1) year

ECONOMIZERS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYECON
Limited Warranty Period: ten (10) years

MOTORIZED DAMPER, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYDMPR
Limited Warranty Period: ten (10) years

*(First letter may be A or T)

Notes:

Installer's Guide

Important Product Information

Registering your products helps provide you with one of the strongest manufacturer limited warranties available. To register, go to the manufacturer's website or contact your dealer. You will need the serial number, model number, and installation date for each product being registered. Your dealer may have included these on your invoice or can provide a list for you to use. Please take a few moments to record the following information to ensure your product registration process is quick and easy:

Packaged Unit Serial Number _____

Packaged Unit Model Number _____

Date of Installation _____

Dealer _____

Service Information

Call your installing dealer if the unit is inoperative. Before you call, always check the following to be sure service is required:

- a. Be sure the main switch that supplies power to the unit is in the ON position.
- b. Replace any burned-out fuses or reset circuit breakers.
- c. Be sure the thermostat is properly set.

Service Phone _____

