

# Installation Instructions

## Roof Curb

### Foundation™ Packaged Rooftop Units 15 to 25 Tons

**Model Number:** BAYCURB027\*  
**Used With:** E/GCC180-300  
E/GDK180-300

#### SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# Introduction

Read this manual thoroughly before operating or servicing this unit.

## Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

- ⚠ 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, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
- NOTICE** Indicates a situation that could result in equipment or property-damage only accidents.

## Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

## Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

### ⚠ WARNING

#### Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in **NEC** and your local/state/national electrical codes.

### ⚠ WARNING

#### Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST** follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians **MUST** put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). **ALWAYS** refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians **MUST** put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit. **NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

**⚠ WARNING**

**Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

**⚠ WARNING**

**R-454B Flammable A2L Refrigerant!**

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.

The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

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## Revision History

- Used with information updated to meet A2L standards.
- Model unit, corner weights (lb), and center of gravity table is updated.

# General Information

Carefully review installation instructions.

- This manual describes the layout and installation procedures required to properly assemble and install the roof curb.
- See [Figure 1](#) dimensional data regarding roof opening construction.
- Each curb package ships un-assembled, along with the required hardware and gasketing material.
- Roof insulation, cant strips, flashing (if desired), and nails must be furnished by the installing contractor.

## Inspection

1. Unpack all components of the kit.
2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

## Parts List

**Table 1. Parts list**

Qty	Description
2	Side rails
2	End rails
2	Side curb flanges
1	End curb flange
4	Insulated block-off panels on BAYCURB027
–	Gasketing material
–	Sheet metal screws
3	Insulated divider/support panels

## Roof Opening

For safety and sound considerations, do not cut out the entire roof deck within the curb area.

## Roof Support

**⚠ WARNING**

**Risk of Roof Collapsing!**

**Failure to ensure proper structural roof support could cause the roof to collapse, which could result in death or serious injury and property damage. Confirm with a structural engineer that the roof structure is strong enough to support the combined weight of the roofcurb, the unit, and any accessories.**

Refer to [Table 3](#) and [Table 4](#) for typical unit and curb weights.

- The roof must support the weight of the unit, accessories, and the curb. See [Figure 2](#) and [Table 3](#) for center-of-gravity and corner weight information.
- Units may be set perpendicular or parallel to roof support members. The combined weight of the unit, accessories, and curb should be evenly spaced between a minimum of two supports.
- Confirm the curb position on the roof support does not interfere with the clearance required for the supply/return ductwork. See [Figure 8](#) for ductwork location.

# Clearances

Recommended clearances for single-unit installation are shown in Figure 1. These minimum requirements are an important consideration when determining unit placement and essential for adequate serviceability, maximum capacity, and peak operating efficiency.

Any reduction of the unit clearances indicated in Figure 1 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 sales engineer.

**Note:** Unit weights are the maximum value of horizontal and downflow configuration.

Figure 1. Clearances

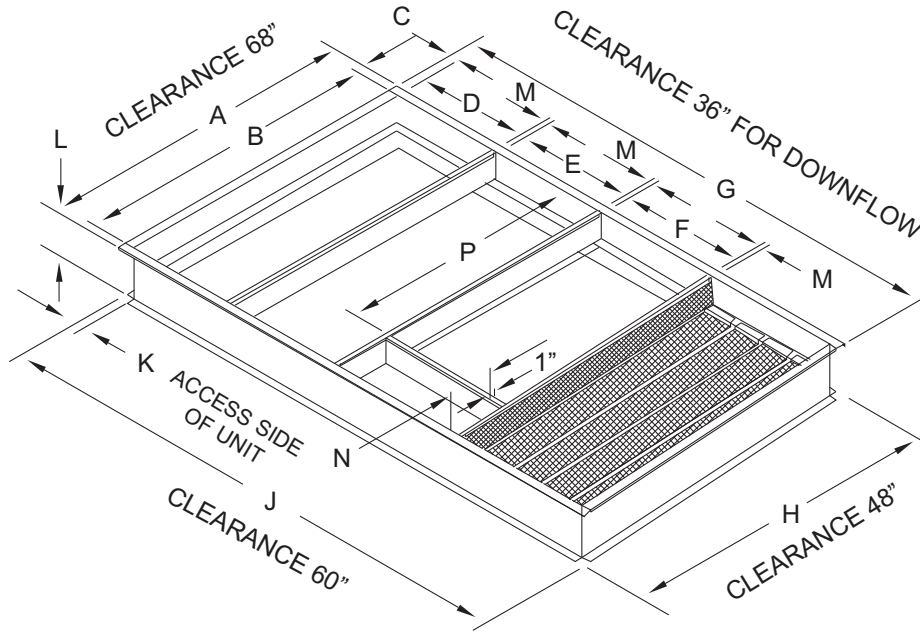
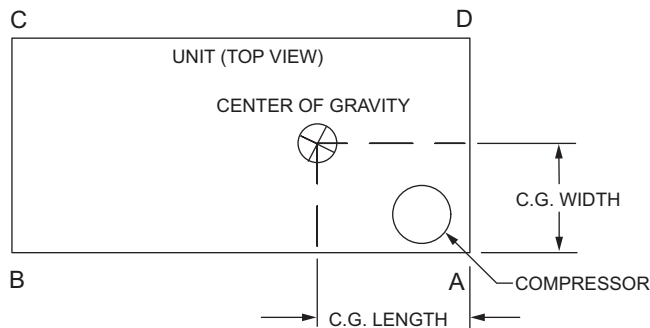


Table 2. Dimensional data (inches)

Units	A	B	C	D	E	F	G	H	J	K	L	M	N	P
BAYCURB027*	80 5/8	77	1 13/16	22 1/4	23 1/4	28 9/16	116 7/8	81	117 3/16	2	14 1/16	1	7 1/2	69 1/2

Figure 2. Center of gravity



**Note:** Corner weights are given for information only. Unit should be supported continuously by a curb or equivalent frame support.

## Clearances

**Table 3. Maximum unit and corner weights (lb) and center of gravity dimensions (in.) roof curb packaged rooftop units.**

Tons	Unit Model No.	Weights (lb) <sup>(a), (b)</sup>		Corner Weights <sup>(c)</sup>				Center of Gravity (in.)	
		Shipping	Net	A	B	C	D	Length	Width
15	ECC180A	2175	1850	638	477	367	367	56	35
	GCC180A	2339	2013	649	508	398	459	55	37
	EDK180A	2216	1891	629	513	337	413	55	34
	GDK180A	2380	2054	683	557	366	448	55	34
17.5	ECC210A	2180	1855	637	479	369	369	56	35
	GCC210A	2353	2028	653	511	399	464	55	37
	EDK210A	2221	1896	630	514	338	414	55	34
	GDK210A	2394	2069	688	561	369	452	55	34
20	ECC240A	2185	1860	632	484	372	372	55	37
	GCC240A	2350	2025	643	512	403	466	55	37
	EDK240A	2227	1902	628	495	343	435	54	36
	GDK240A	2392	2067	683	538	373	473	54	36
25	ECC300A	2221	1896	644	492	379	379	55	36
	GCC300A	2386	2061	671	524	393	472	55	36
	EDK300A	2263	1938	640	505	350	444	54	36
	GDK300A	2428	2103	695	548	379	481	54	36

(a) Weights are approximate. Horizontal and downflow unit and corner weights may vary slightly.

(b) Weights do not include additional factory or field installed options/accessories. For option/accessory additional weights, refer to ordering system.

(c) Corner weights are given for information only.

**Table 4. Curbs weight (net lbs.)**

Curb	Weight
BAYCURB027*	235

# Installation

1. Carefully review installation instructions.
2. If the roof curb will be mounted on a new building, assemble the curb before roof support components are in place.
3. Place the curb directly on the roof support components.
4. Use tack welding or other suitable fastening method to secure the roof curb in place.

**Note:** *If the curb will be mounted on a roof deck, additional nailing plates must be provided directly below the flanges of the curb for additional support, and to minimize vibration.*

5. See [Figure 3](#) and [Figure 4](#).

## Roof Curb Assembly

1. Break the bands and remove the wood holding the curb assembly together.
2. Set the four perimeter pieces, (two end rails and two side rails), together to form the curb.
3. Using screws provided, attach the corners by allowing the angle of the side rail to fit inside the end rail. Insert three screws in each corner (see [Figure 5](#)).
4. Insert screws through the end rails and into the corner angle of the side rails.
5. Mount duct flanges on the two side rails and one of the end rails. Mount with screws provided through the exterior panel and into the flange. The duct flanges should be mounted with the flange next to the rails pointing down (see [Figure 6](#)).

**Important:** *The end of the curb with curb flange attached must be used as the return air end.*

6. Locate the cross support pieces (with the curb flange down) according to the dimensional drawings in [Figure 1](#). The flanges on the cross supports must match the duct.
7. Use three screws at the end of each cross support. Screws must enter from the exterior of the curb.

**Note:** *Measure supply and return dimensions to confirm that the correct holes in the side rails are used.*

8. Lay the three or four insulated block-offs, (with the insulation side up), cross ways in the section of the curb that will support the compressor end of the unit. They will rest on the duct flanges.

**Important:** *If the cross members have been located on the wrong end of the curb, the insulated block-off next to the end of the curb will not lie flat. Apply the gasket material (provided) directly to the rails and cross members as shown in [Figure 7](#). Gasket should be cut and put together at the corners.*

**Note:** *Do not round the corners with the gasket material.*

9. Curb is now ready to be installed around the roof opening.

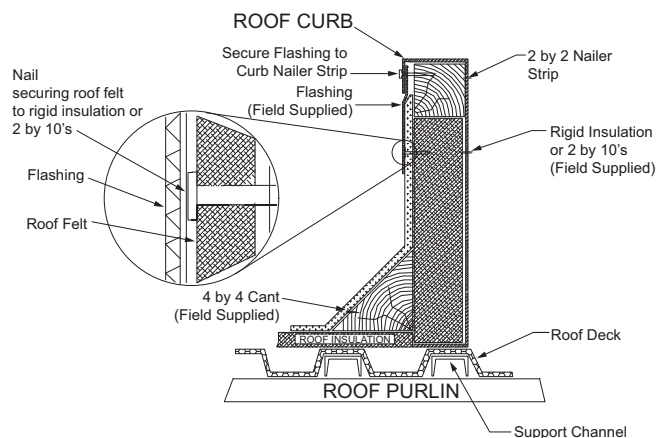
## Curb Installation

1. Set the curb in the proper position around the roof opening.
2. The curb must be leveled to confirm proper flow of condensate from the unit. The maximum pitch of the roof curb down from the access side of the unit (See [Figure 1](#)) is 1/16 inch per foot. To check the flatness of the curb, stretch lines diagonally between opposite corners of the assembled curb. The distance between the lines (at their point of intersection) should not exceed 1/4 inch. If the lines touch, reverse them (place the top line on the bottom and the bottom line on top), and recheck the point of intersection. Shim under the curb as necessary.
3. Check the curb assembly for squareness by measuring diagonally between opposite corners of the curb. The distance indicated by these measurements should be the same.
4. Fasten the curb to the roof support members, or roof deck. See [Figure 3](#) and [Figure 4](#).
5. Bring the roof material up to the curb as shown in [Figure 3](#) and [Figure 4](#). Place a piece of rigid insulation around the curb and fasten it (from the inside), with nails.
6. Install cant strips as shown in [Figure 3](#) of either 4-inch x 4-inch wood (cut diagonally in half), or other suitable material. With the cant strips in place, bring the roofing felts up to the top of the curb nailing strips. Push the felts up under the lip of the curb and nail them tightly into position.

**Note:** *Any pipes or electrical conduits which extend through the roof must be flashed with a sleeve and roof flange extending a minimum of eight inches above the roof surface.*

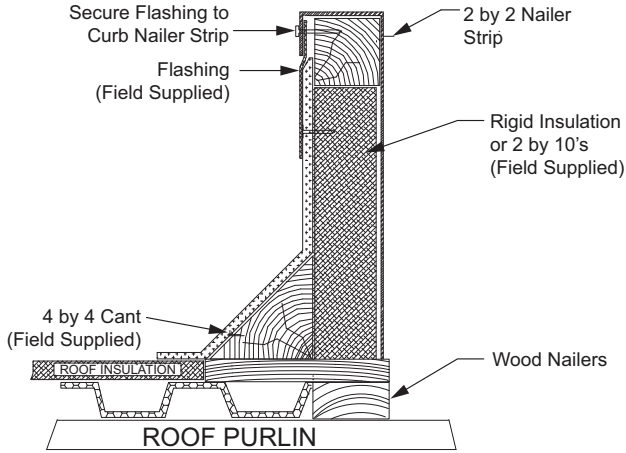
7. The roof curb installation is now complete and ready for ductwork and unit installation.

**Figure 3. Typical installation on new construction**

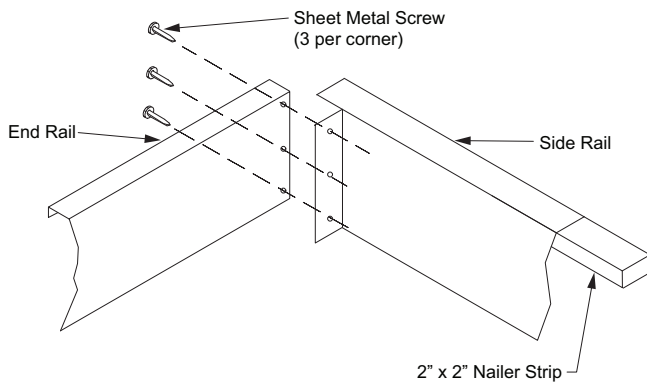


# Installation

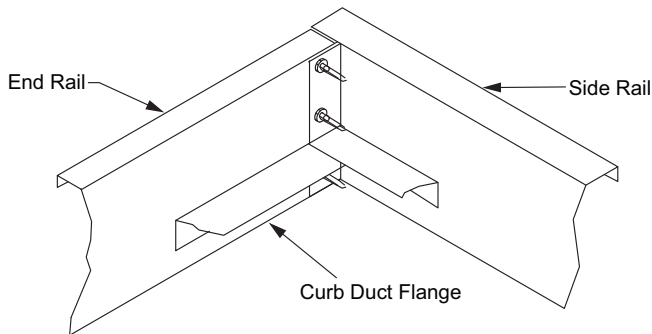
**Figure 4. Typical installation on existing construction**



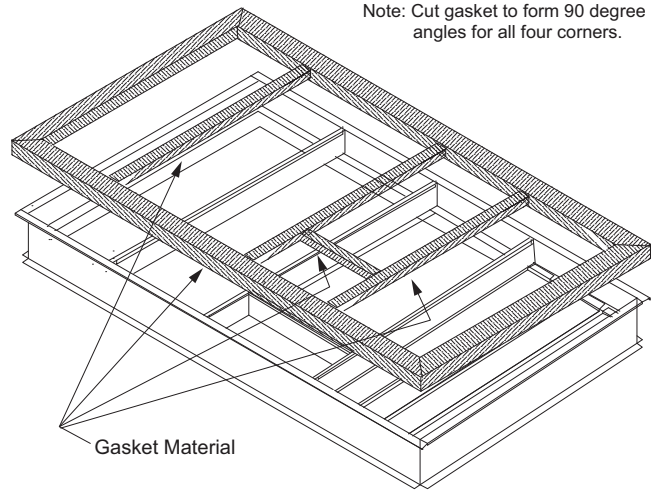
**Figure 5. Curb rail assembly A**



**Figure 6. Curb rail assembly B**



**Figure 7. Installing gasket material**



## Supply and Return Air Ductwork

- When flexible duct is not desired, metal or fiberboard duct may be installed.
- The metal of fiberboard duct must conform to all local building codes.
- The duct must be hung from the curb flanges inside the curb walls.

**Important:** *Ductwork must be hung from the curb flanges. It must not be installed over the top edges of the curb.*

- When the duct is fabricated it should be large enough to cover the openings for the return and supply sides of the unit, but the flanges must be narrow enough to slide down inside the curb.

**Important:** *All ductwork attached to the curb, must be in place and secured before the unit is set.*

- To verify proper duct construction and installation, follow SMACNA recommendations.

**Notes:**

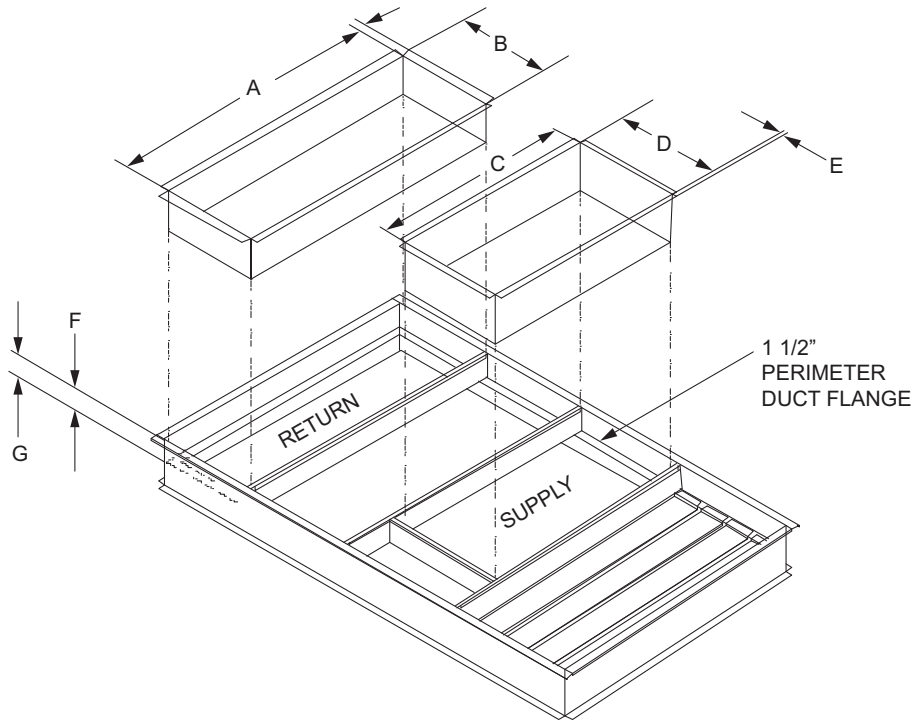
- *Field fabricated panels used must be insulated.*
- *Fabricated duct flange must rest on inside of curb on flange, as shown, after installation.*

**Table 5. Supply and return air ductwork dimensions**

Units	A	B	C	D	E	F	G
BAYCURB027*	73 7/16	19 5/16	66 1/2	26 5/16	1	14 1/16	7 7/16



Figure 8. Duct dimensions



## Notes

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