

# Installation Instructions

## Roof Curb 12½ - 25 Ton Packaged Rooftop Units

**Model Number:** BAYCURB026B  
BAYCURB027B  
**Used With:** T/YSD150F  
T/Y\*D180-300F  
WSD150-240E

### 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.

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### 1 Cautions, Warnings and Notices

**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 may 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-including industry replacements for CFCs such as HCFCs and HFCs.*

*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. 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.*

### 2 WARNING

**Personal Protective Equipment Required!**

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

### Model Number Description

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit. When ordering replacement parts or requesting service, be sure to refer to the specific model number and serial number printed on the unit nameplate.

### General

This manual describes the layout and installation procedures required to properly assemble and install the roof curb. Illustrations in Figure 1 are provided for 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.

### 3 Parts List

- 2 Side rails
- 2 End rails
- 2 Side curb flanges
- 1 End curb flange
- 3 Insulated block-off panels on BAYCURB026
- 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!**

Confirm with a structural engineer that the roof structure is strong enough to support the combined weight of the roofcurb and the unit. Refer to Table 2 and Table 3 for typical unit and curb weights. Failure to ensure proper structural roof support could cause the roof to collapse, which could result in death or serious injury and property damage.

The roof must be capable of adequately supporting the weight of the rooftop unit and accessories, as well as that of the curb; refer to Figure 2 and Table 2 for specific center-of-gravity and corner weight information. Units may be set either 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 (2) supports. Ensure that the curb's position on the roof support does not interfere with the clearance required for the supply/return ductwork. See Figure 8 for ductwork location.

### 4 Clearances

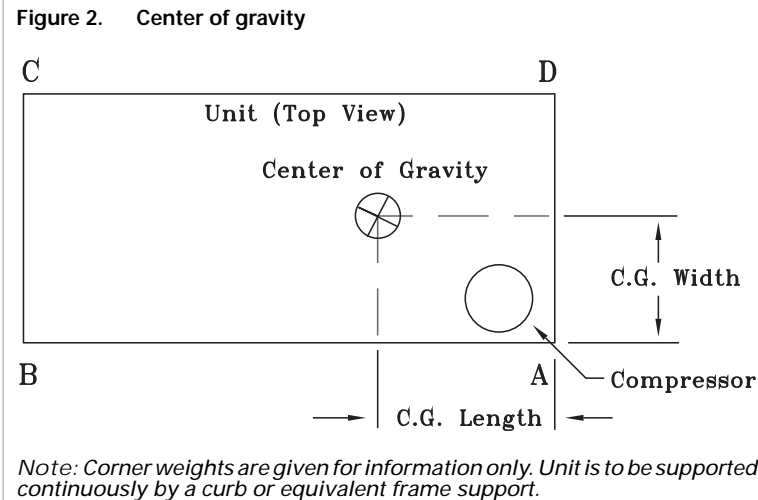
The recommended clearances for single-unit installation are illustrated in Figure 1. These minimum requirements are not only an important consideration when determining unit placement, but are also essential to ensure adequate serviceability, maximum capacity, and peak operating efficiency. Any reduction of the unit clearances indicated in this illustration 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 maximum valve of horizontal and downflow configuration, with oversized motor installed and largest heater for YC units.*

**Figure 1. Clearances**

### 5 Table 1. Dimensional data (inches)

UNITS	A	B	C	D	E	F	G	H	J	K	L	M	N	P
BAYCURB026B	66 5/8	63 13/16	1 7/8	20 7/8	17 1/8	28 1/2	101 7/8	67	102 1/4	2	14 1/16	1	7 1/2	55 1/2
BAYCURB027B	80 5/8	77 13/16	1 3/4	22 3/4	23 3/4	28 9/16	116 7/8	81	117 3/16	2	14 1/16	1	7 1/2	69 1/2



### 6 Table 2. Maximum unit & corner weights (lb) and center of gravity dimensions (in.)

Unit Model No.	Weights (lb) <sup>(a)</sup> , <sup>(b)</sup>		Corner Weights <sup>(c)</sup>				Center of Gravity (in.)	
	Net		A	B	C	D	Length	Width
TS*150F	1413		475	368	263	308	50"	29"
TH*150F	1981		630	517	378	454	56"	36"
THD150F (Reheat Units)	2000		636	522	382	458	56"	36"
YS*150F	1508		506	390	275	337	55"	34"
YH*150F	2126		676	555	406	487	56"	36"
YHD150F (Reheat Units)	2146		682	560	410	491	56"	36"
TS*180F	1822		618	493	336	378	57"	33"
TH*180F	1984		631	518	379	454	56"	36"
THD180F (Reheat Units)	2002		637	523	382	458	57"	36"
YS*180F	1925		666	505	343	410	56"	33"
YH*180F	2129		677	556	407	488	56"	36"
YHD180F (Reheat Units)	2149		683	561	410	492	57"	36"
TS*210F	1863		591	510	372	388	61"	35"
TH*210F	2051		652	535	392	470	57"	35"
YS*210F	2007		639	547	399	419	60"	34"
YH*210F	2201		700	574	420	504	57"	35"
TS*240F	1925		614	514	375	422	57"	35"
TH*240F	2053		653	536	392	470	57"	35"
THD240F (Reheat Units)	2071		659	541	396	474	58"	35"

### 7 Table 2. Maximum unit & corner weights (lb) and center of gravity dimensions (in.)

YS*240F	2069	659	551	402	455	57"	35"
YH*240F	2203	701	575	421	504	57"	35"
YHD240F (Reheat Units)	2223	707	580	425	509	58"	35"
TS*300F	1878	595	510	372	402	60"	35"
TH*300F	2027	640	532	390	465	57"	35"
YS*300F	2054	655	555	403	442	60"	35"
YH*300F	2207	702	579	422	507	57"	35"
WS*150E	1978	633	514	376	455	56	36
WS*180E	1982	634	515	377	456	56	36
WS*240E	2107	674	485	400	590	57	35

(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 unit catalog.  
 (c) Corner weights are given for information only. 12½-25 ton models must be supported continuously by a curb or equivalent frame support.  
 \* Indicates both downflow and horizontal units.

### Table 3. Curbs weight (net lbs.)

Curb	Weight
BAYCURB026B	205
BAYCURB027B	235

### Installation

Read the entire manual carefully to become familiar with the roof curb installation procedures. If the roof curb will be mounted on a new building, it can be assembled at any convenient location and installed as soon as the roof support members are in place. As a general rule, the curb should be placed directly on the roof support members.

Use tack welding or other suitable fastening method to secure the roof curb in place. The curb can also be mounted on a roof deck. In this case, additional nailing plates must be provided directly below the flanges of the curb to give further support, and to minimize vibration. 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 4 perimeter pieces, (2 end rails and 2 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 3 screws in each corner. (see Figure 5)
4. Screws are to be inserted through the end rails and into the corner angle of the side rails.
5. Duct flanges are to be mounted 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 3 screws at the end of each cross support. Screws must enter from the exterior of the curb.

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

8. Lay the 3 or 4 insulated blockoffs, (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 blockoff 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 butted 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 ensure 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" by 4" 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 8 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

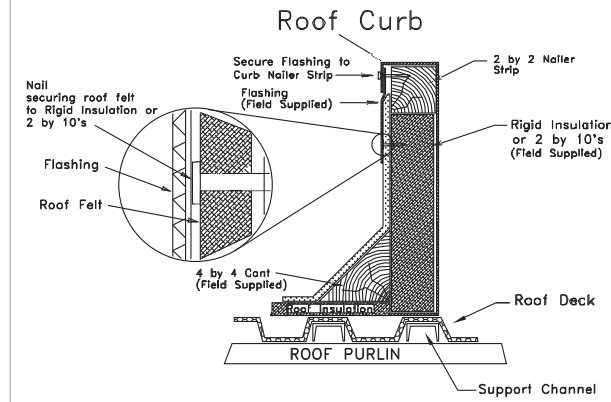


Figure 4. Typical installation on existing construction

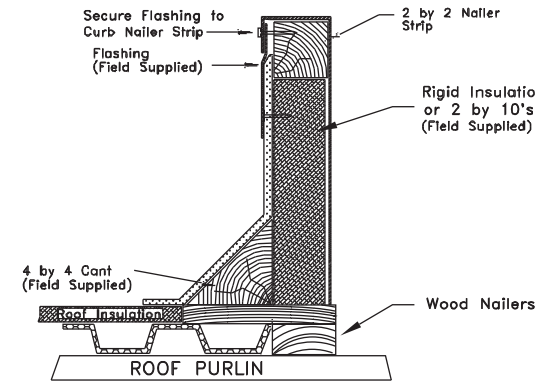


Figure 5. Curb rail assembly A

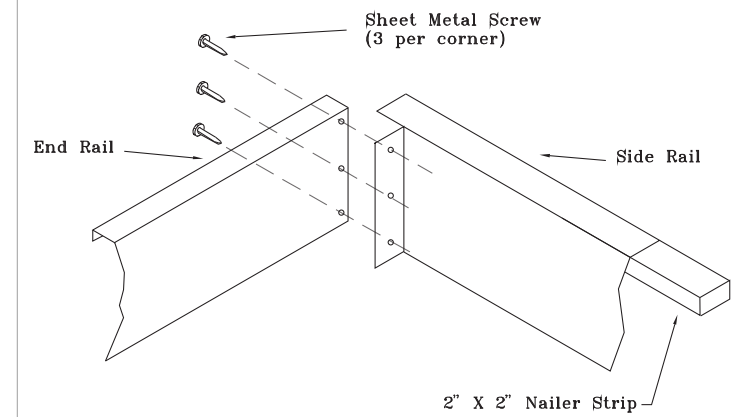


Figure 6. Curb rail assembly B

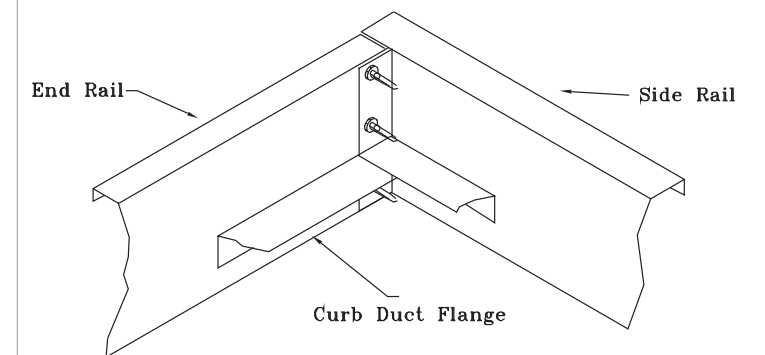
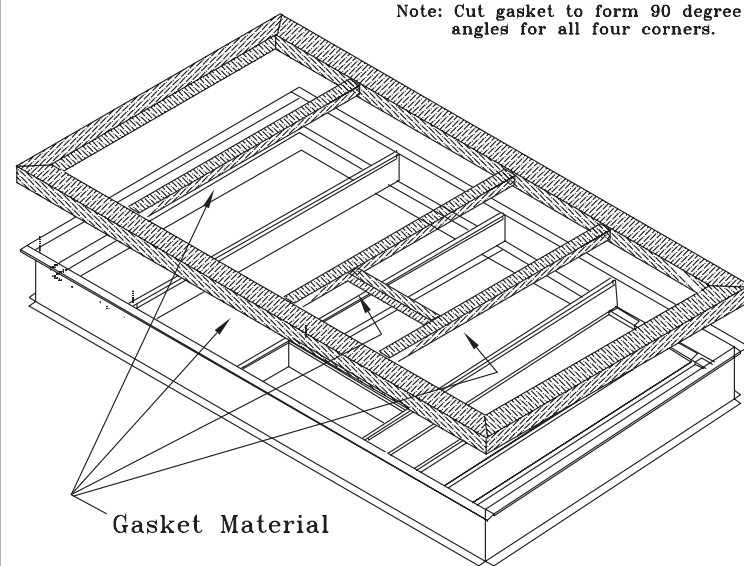


Figure 7. Installing gasket material

*Note: Cut gasket to form 90 degree angles for all four corners.*



CURBGASKET.DWG

### Supply and Return Air Ductwork

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

*Important: DUCT WORK 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 duct work that attaches to the curb, must be in place and secured before the unit is set.*

- To ensure proper duct construction and installation, SMACNA recommendations should be closely followed.

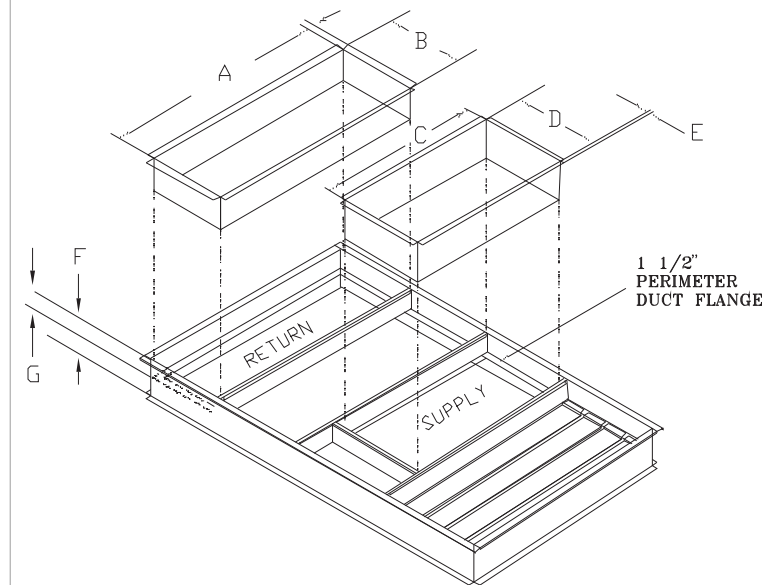
*Note: All field fabricated panels used must be insulated.*

*Note: Fabricated Duct Flange must rest on inside of Curb on Flange, as shown, after installation.*

Table 4. Supply and return air ductwork dimensions

UNITS	A	B	C	D	E	F	G
BAYCURB026B	59 7/16	17 7/8	52 1/2	26 5/16	1	14 1/16	7 7/16
BAYCURB027B	73 7/16	19 5/16	66 1/2	26 5/16	1	14 1/16	7 7/16

Figure 8. Duct dimensions



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