MicroMetl

Since 1965

Knockdown Curb Install Guide



Foremost HVAC Accessory Manufacturer

MicroMetl

Since 1965

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IMPORTANT: Please read all installation instructions and safety precaustions before beginning. These installation instructions are to be used as a general quideline only!

GENERAL

The MicroMetl Knockdown Curb ships unassembled, can be easily stored in your inventory, and is your least expensive option when it comes to rooftop curbs. With the use of some basic tools, it is easily field assembled.

The most common curb height is fourteen inches. MicroMetl offers other standard heights, as well as your choice of any pitch, or custom height variation, to best fit your rooftop requirements. Please contact Customer Service with your special requests and requirements.

SAFETY PRECAUTIONS

Improper installation, adjustment(s), alteration(s), service or maintenance can cause property damage, injury or death. Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

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

To avoid any property damage or personal injury, it is the installer's responsibility to be certain that the installation will not impair the function of this curb, or the unit to be installed.

Check and disconnect all gas and electrical connections before installing your new curb and rooftop unit.

⚠ WARNING

To prevent injuries and rain damage, do not leave roof opening uncovered. If installation is not completed immediately after roof opening is cut and framed, provide an adequate temporary cover for the roof opening.

TOOLS NEEDED



Rubber Mallet



Level



5/16" Hex Head Driver or Socket



Tape Measure



7/16" Socket



7/16" Combination Wrench

UNPACK & INSPECT

Reference the Product Submittal for your specific part number and an illustration of all necessary parts. Unpack, locate all parts, and inspect curb for missing parts or damages. Contact MicroMetl's Customer Service Department immediately with any questions or concerns.

All hardware used for these assembly procedures is included with your curb. Do not tighten any hardware until the curb is completely level, square, and installed in a suitable position on the roof with proper alignment to the roof/unit opening(s).

OBSERVE PROPER CLEARANCES AND OBSTRUCTIONS

Before installing your roof curb, check unit nameplate or RTU manufacturer's weight, and observe their requirement(s) for correct and proper clearances. Additionally, check the clearances of the new unit to other items on the roof, exhaust fans, walls, and other roof top units.

Secure any wiring or pipes arising through the curb to be connected to the new rooftop unit. Be certain to identify any possible obstructions which could interfere with a crane's path if required.

ASSEMBLE SIDES AND ENDS USING MICROLOCK TABBED ENDS

The tabbed ends were developed at MicroMetl allowing the curb to be assembled with just a rubber mallet. Bring together a curb side, and a curb end. Simply fit the tab into the slot, and with minimum pressure, the corners securely lock into place. Be certain not to join incorrect pieces. This style curb requires much more effort to disassemble. Do not strike with too much force and damage the curb. Repeat for the assembly of all corners.

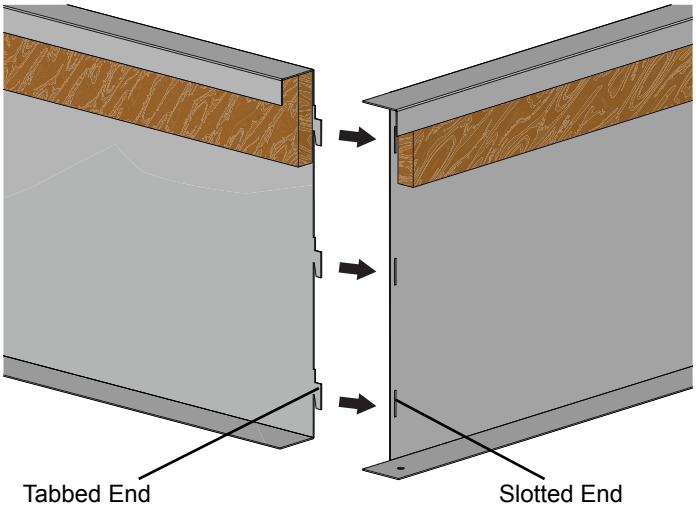


Illustration - Sides & Ends Assembly

JOINING BRACKETS

Some long curb sides and ends may require a joining bracket which combines long pieces together using the factory provided flat bracket as shown in illustration - Joining Brackts. It is designed to align with the pre-punched holes in the knockdown curbs where the seams join, and must be installed on the inside of the curb. Insert supplied bolts from the outside of the curb and secure. Insert wood screws at the top of the bracket and insert from the inside of the curb.

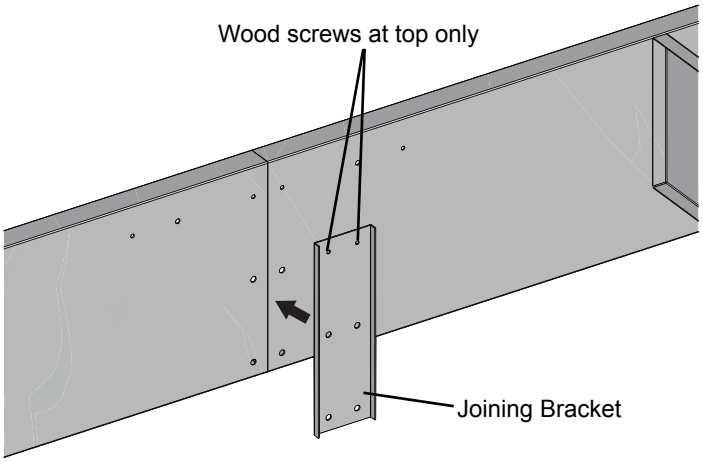


Illustration - Joining Brackets

90 DEGREE JOINING BRACKETS

Some long curb sides and ends may require a joining bracket. The joining bracket combines long pieces together using the provided 90 degree corner bracket as shown in Illustration - 90 Degree Joining Brackets. Place and secure the metal brackets on the inside of the curb. It is designed to align with the pre-punched holes in the knockdown curbs where the seams join, and must be installed on the inside of the curb. Insert supplied bolts from the outside of the curb, and through the brackets where the two flanges meet, secure into place. Insert wood screws at the top of the bracket and insert from the inside of the curb.

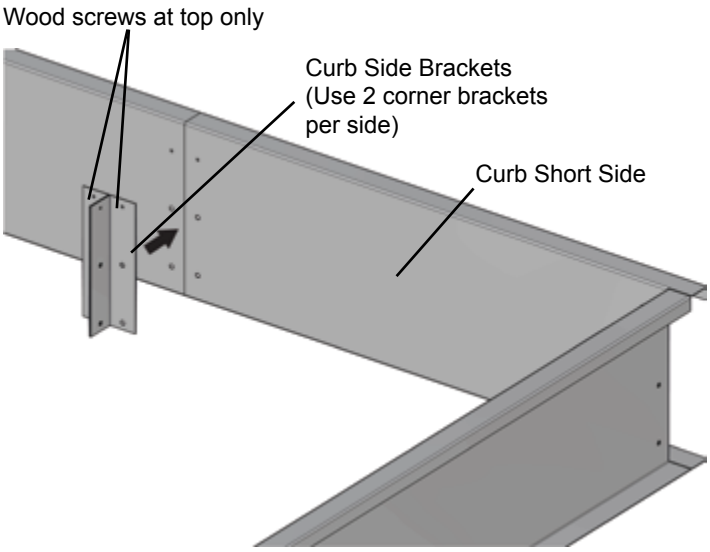


Illustration - 90 Degree Joining Brackets

ASSEMBLE SIDES & ENDS 90 DEGREE CORNER BRACKET

Bring together curb side and curb end. Place the small corner bracket on the inside of your new knockdown curb and align with the pre-punched holes. Insert the bolts from the outside of the curb. Repeat for the assembly of all corners.

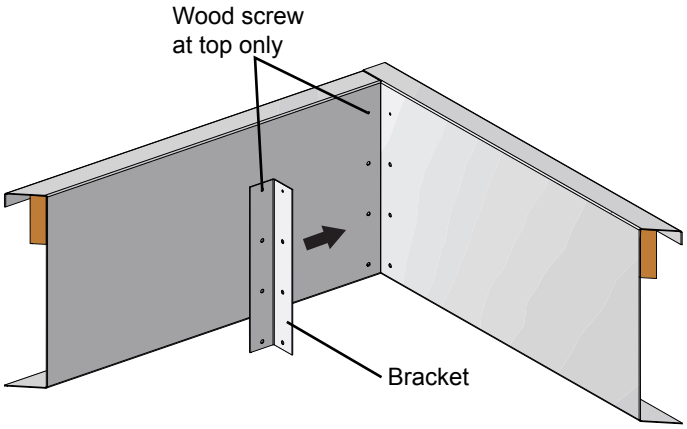


Illustration - Sides & Ends Corner Bracket Assembly

OPTIONAL CHASE

Does your new curb require a chase? Bring together chase sides and end. Insert supplied bolts from the outside of the curb and secure. Repeat for the assembly of all corners. When attaching the chase to the outside of the curb, the upper section of the adjoining end is notched for the additional clearance necessary for the wood nailer. Refer to the curb submittal for chase location.

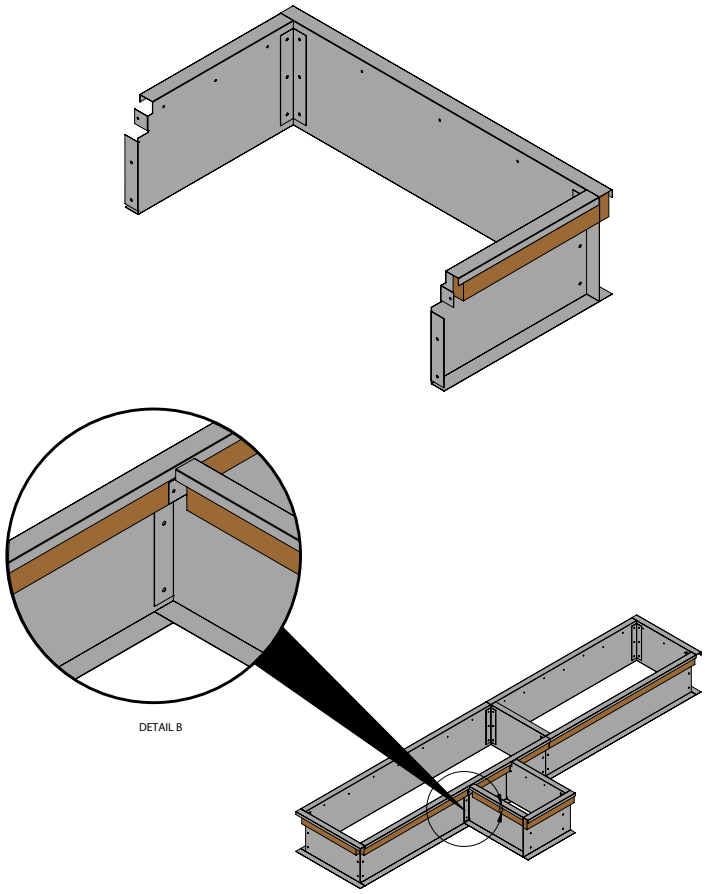


Illustration - Chase

CUTTING AN OPENING

For standard roof curbs, you have several options and methods available to you concerning the roof opening for your ductwork.

It is not necessary to cut out the entire area of the roof curb. When cutting the openings for your new curb, first consider whether you are installing a concentric duct package to the curb, or just individual supply & return ducts connected directly to the curb.

When using a concentric duct package, refer to the installation guide provided for your specific package.

EXAMPLE ONE

Create two roof opening cuts in the roof to the approximate size of the return and supply openings on your curb, as per the dimensions displayed on your submittal.

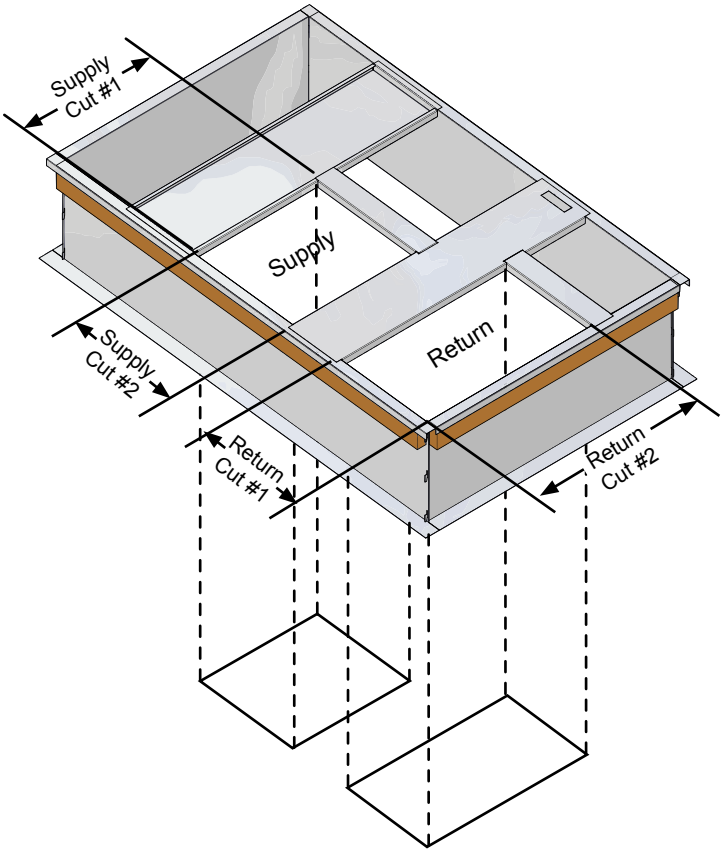


Illustration - Cutting An Opening - Example 1

EXAMPLE TWO

Measure from the furthest distance of each opening. Your first cut should be “Cut #1” as shown in illustration - Cutting An Opening - Example 2, and is the distance from the far edges of the supply and return opening.

Because in the example the return air opening is the longest, most far reaching dimension perpendicular to Cut #1, Cut #2 will equal the dimension of the return air opening. See illustration - Cutting An Opening - Example 2.

If utility connections are to be made through the curb, cut out the access space near the location of the utility plate connector.

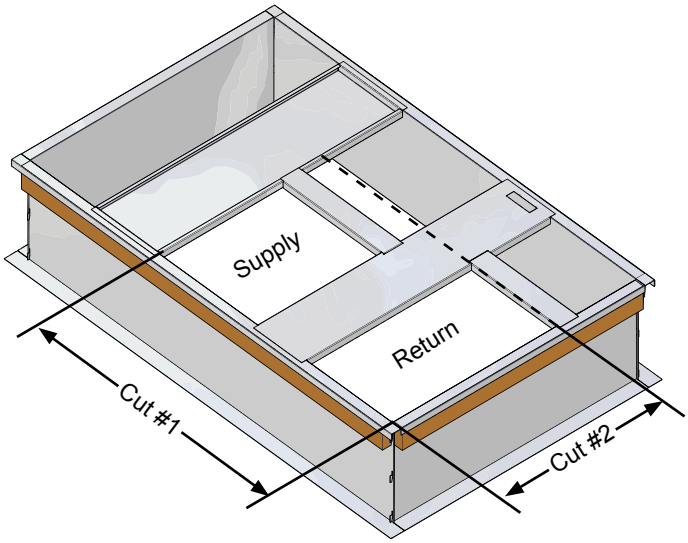


Illustration - Cutting An Opening - Example 2

EXAMPLE THREE

Similar to Example #1, measure from the furthest distance of each opening. Create your first cut noted as “Cut #1”, the distance from the far edges of the supply and return opening. See Illustration - Cutting An Opening - Example 3.

Due to the supply and return being unevenly spaced, you will again measure from the furthest distance of each opening and perform your second cut noted here as “Cut #2.” See Illustration - Cutting An Opening - Example 3.

If utility connections are to be made through the curb, cut out the access space near the location of the utility plate connector.

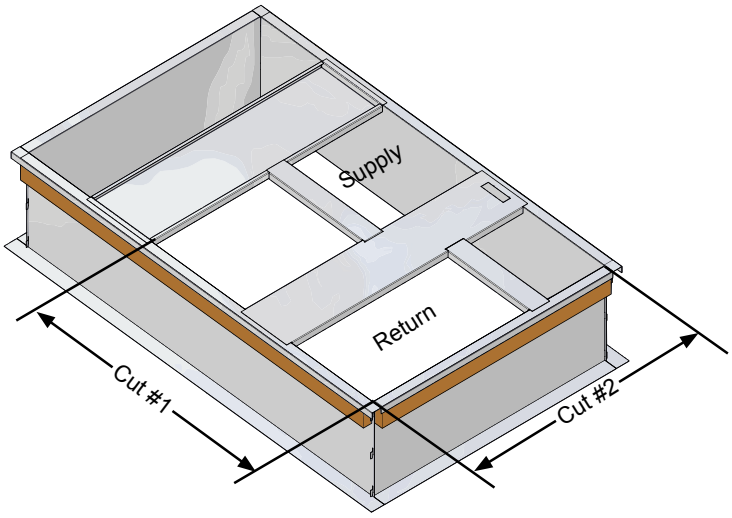


Illustration - Cutting An Opening - Example 3

Position and install the curb around the roof opening location(s), and square your new curb. You can assure the curb is square by matching the measurements from corner to corner. Match both measurements as shown in Illustration - Corner to Corner Measurement. They must be identical.

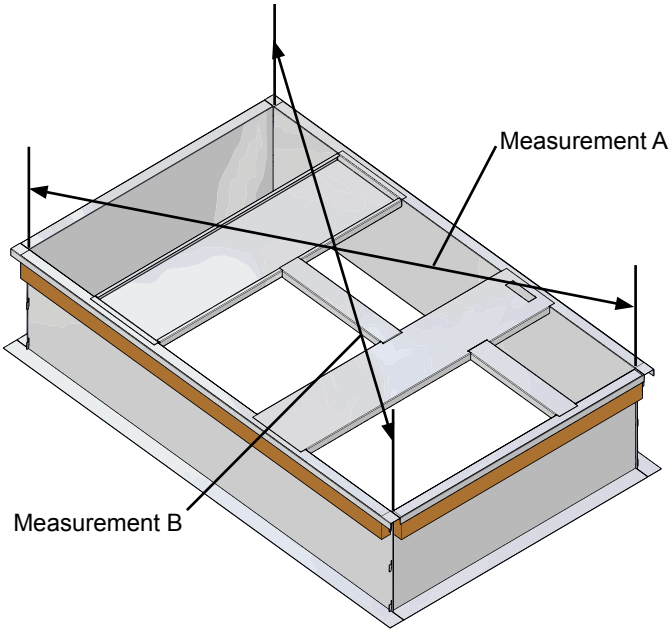


Illustration - Corner to Corner Measurement

FLASHING THE CURB

The roof curb and unit must be sealed completely to prevent any water or air leakages.

Definitions:

MicroMetl Gasket – The gasket material is factory provided to seal the area between the top flange of your new roof curb and the rooftop unit or the like. See “Apply the Gasket Material” for more detailed instruction.

Rigid Insulation – This can be factory or field provided, and offers thermal protection preventing moisture from forming on the inside of the curb, and sound attenuation.

Cant Strip – Must be field provided. The Cant Strip prevents the roofing material from being forced into a ninety degree angle where the roof surface joins the perpendicular wall of the knockdown curb, avoiding a sharp bend in the roofing material. It additionally aids in roof drainage by providing a slope to prevent ponding water.

Counterflashing - The formed metal secured to the top of the curb is field provided and used to cover and protect the upper edge of a base flashing, fasteners, and to prevent moisture entry.

All Knockdown curbs are furnished with a full perimeter wood nailer. This wood strip allows the roofer to nail the roofing material up to the top of the curb when sealing the roof. Insulate the outside of the curb using rigid insulation between the roof material and the roof curb.

Insert the top edge of roofing and flashing material between wood nailer strip and roof curb flange. Nail material to wood nailer on roof curb as required. See illustration - Detail and illustration - Curb Unit.

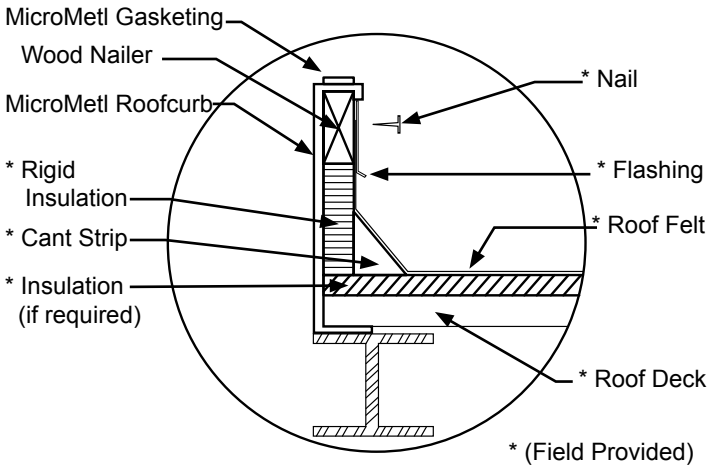


Illustration - Detail

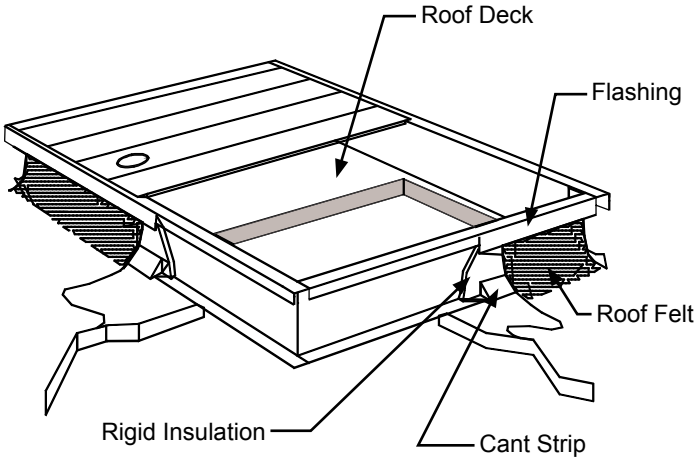


Illustration - Curb Unit

SECURE THE CURB

Frame the roof opening to provide proper and adequate structural support. The roof must be suitable to support the weight of both the curb and the unit to be mounted.

Level the curb by placing shims (thin pieces of wood or metal) under the bottom flange of the curb. Secure curb in place by welding or screwing the curb to the roof.

The curb must be leveled to ensure the proper flow of condensate from the unit.

ASSEMBLE DECK PANS & SUPPORTS

Not all curbs contain deck pans as displayed in Illustration - Deck Pans & Supports Assembled. However, if they are included in your curb design, install them on the compressor end of curb. All deck pans and duct support must be installed as defined by the proper submittal.

Some roofcurbs require duct angles and recessed deck pans to meet design requirements of specific RTU's. If roofcurb shipped with duct angles, please refer to Section - Duct Angle Assembly for further instructions.

Most deck pans and supports do not require tools to install. The deck pans are designed to simply lay on top of the edge flanges, and are easily positioned into place.

Supports will either lie over the edge flanges or secure into other supports and deck pans with the use of mated slots.

If your curb contains sloped deck pans please refer to Section - Sloped Deck Pans.

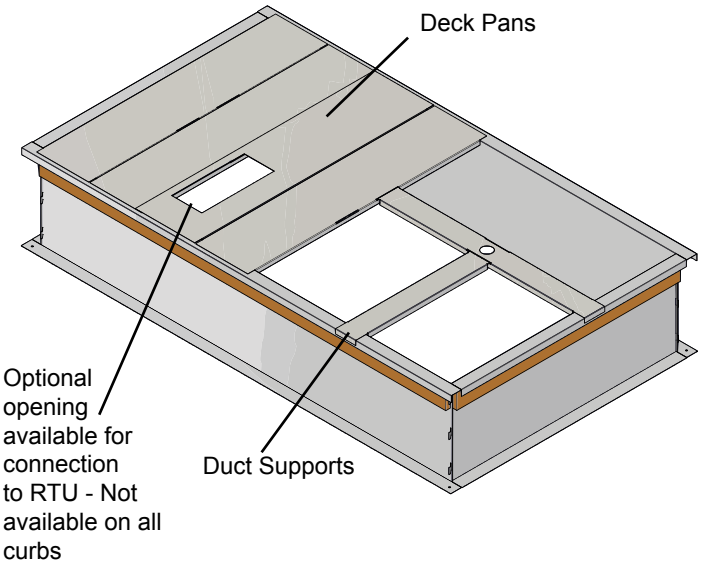


Illustration - Deck Pans & Supports Assembled

ATTACHING DUCTWORK

Ductwork MUST be installed before RTU is placed on roof curb. Ensure the curb's position on the roof support does not interfere with the clearance required for the supply/return ductwork.

The ductwork for your supply and return should attach to the existing roof curb. Use caution if connecting the ductwork directly to the Rooftop Unit (RTU). Serious damage may occur in the future when the RTU is removed or replaced with the ductwork connected.

Duct Angle Assembly

Some roofcurbs require duct angles and recessed deck pans to meet design requirements of specific RTU's. Please read instructions before assembly.

Install (4) duct angles on the interior perimeter of curb. Align holes on the duct angles with the holes on curb sides and ends. Secure in place with screws provided. See Illustration - Duct Angle Assembly and Illustration - Duct Angle Detail.

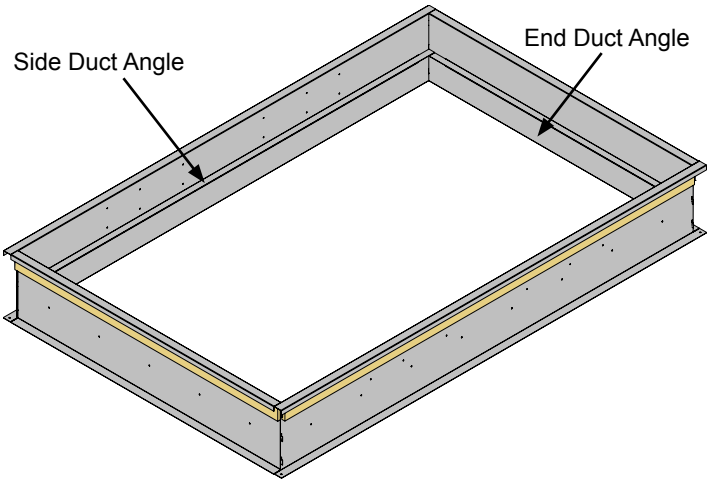


Illustration - Duct Angle Assembly

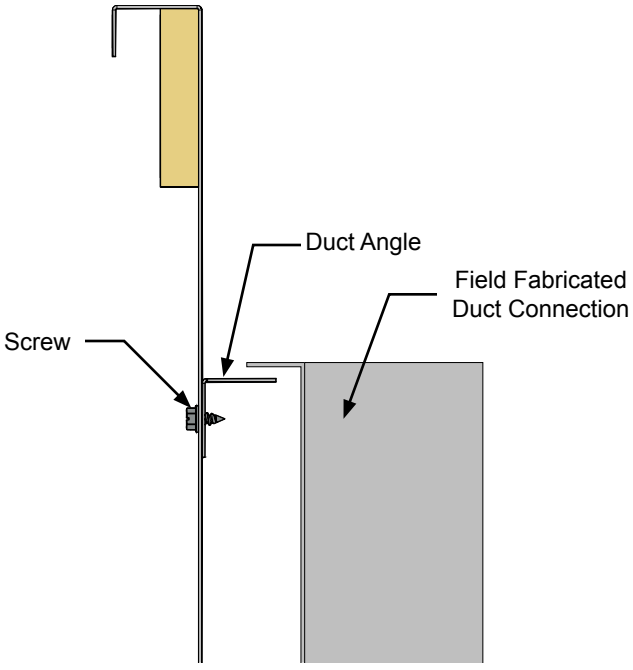


Illustration - Duct Angle Detail

Divider Assembly

Install (4) dividers on duct end of curb. Reference submittal for dimensions. Align holes on divider ends with holes on curb sides Secure in place with screws provided. See Illustration - Divider Assembly.

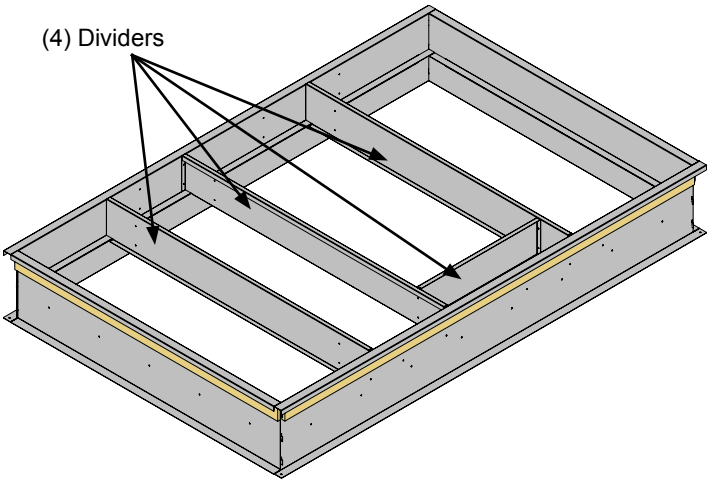


Illustration - Divider Assembly

Recessed Deck Pan Assembly

Install (3) deck pans on compressor end of curb. Deck pans are recessed into curb and lay on duct angles. See Illustration - Deck Pan Assembly.

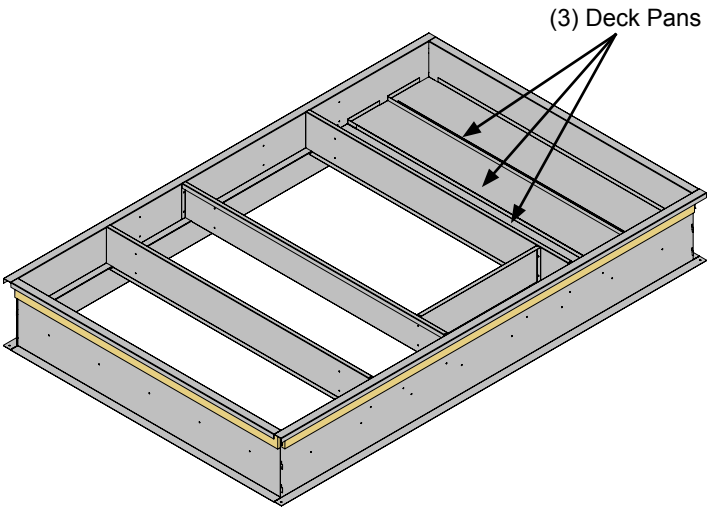


Illustration - Deck Pan Assembly

APPLY THE GASKET MATERIAL

To avoid property damage or personal injury, it is the installer's responsibility that the roof curb and unit are to be completely sealed, preventing any water or air leakage/damage.

IT IS CRITICAL TO MAINTAIN A WATER AND AIR TIGHT SEAL. IMPROPERLY INSTALLED GASKET CAN RESULT IN AIR LEAKS, WATER PENETRATION, AND POOR UNIT PERFORMANCE.

Install sealing gasket on top of the curb perimeter flanges and duct supports. See Illustration - Apply Gasket. Properly clean the top surface to remove dirt or contaminates which could affect the placement of the new gasket.

Use caution when applying the gasket. Under extreme hot and cold conditions, the gasket cannot be lifted or repositioned without tearing.

Layout the gasket, measure, and cut. Remove adhesive paper on back of gasket and apply to the curb.

The gasket should be butted together at the corners. Gasket strips must fit tightly together to leave no gaps for leakage. The weight of the unit will compress the gasket to seal the joint between the unit and the roof curb. Do not slide unit into position when it is sitting on the curb. The curb gasket material may be damaged and leaks may result.

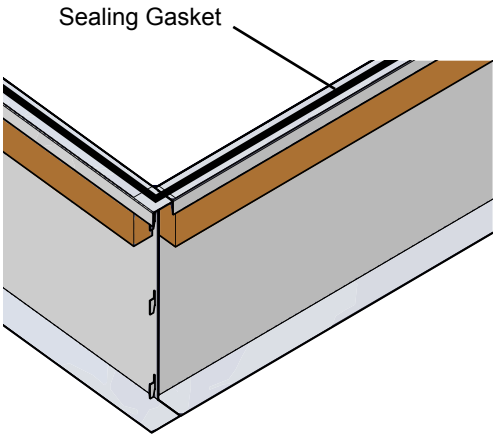


Illustration - Apply Gasket



Note: Visit our website at www.MicroMetl.com or contact customer service for offered sizes

Illustration - Gaskets

OPTIONAL EQUIPMENT SUPPORT

If you purchased a partial perimeter curb for your rooftop unit, you will receive an equipment support. The equipment support must be installed at a very specific location and distance from the roof curb - See submittal for specific location(s). The equipment support must be properly secured to the roof and permanently installed – See “Flashing The Curb.”

EQUIPMENT SUPPORT TYPE ONE ASSEMBLY

This support type requires the two support pieces be bolted together. See illustration - Supports & Cap. Bolts can be inserted from either direction. Be certain both pieces are flush at the top flanges, insert bolts, secure with nuts, and tighten. Once assembled and in place, place the cap over the top – no need to secure cap in place. See illustration - Placing Cap.

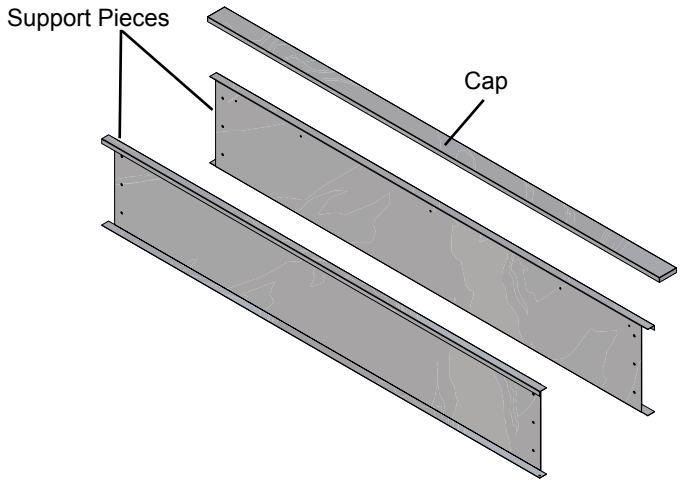


Illustration - Supports & Cap

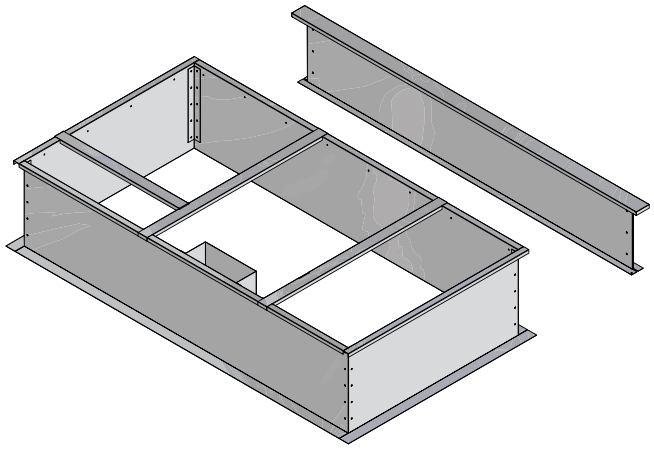


Illustration - Placing Cap

EQUIPMENT SUPPORT TYPE TWO ASSEMBLY

Requires the assembly of many internal pieces.

If the support pieces are long enough to require “Flat Joining Brackets,” assemble those first. Place the brackets on the inside of Support “Side A”, so once the entire support is assembled, the brackets will be hidden from view.

Attach the Center Supports to the inside of Support “Side A” (Side opposite of the direction of the top flange), using nuts and bolts provided and secure into place. Attach Support “Side B” to the exposed end of the Center Supports. We recommend you insert the bolts from inside the center support, and through Support “Side B” provided holes. Using a 7/16 combination wrench, manipulate the wrench over the hex end of the bolt while aligning and tightening the nuts. Be certain that the top flanges of both support sides are flush with each other. See illustration - Support Side “B”.

Once assembled and in place, place the cap over the top – no need to secure in place.

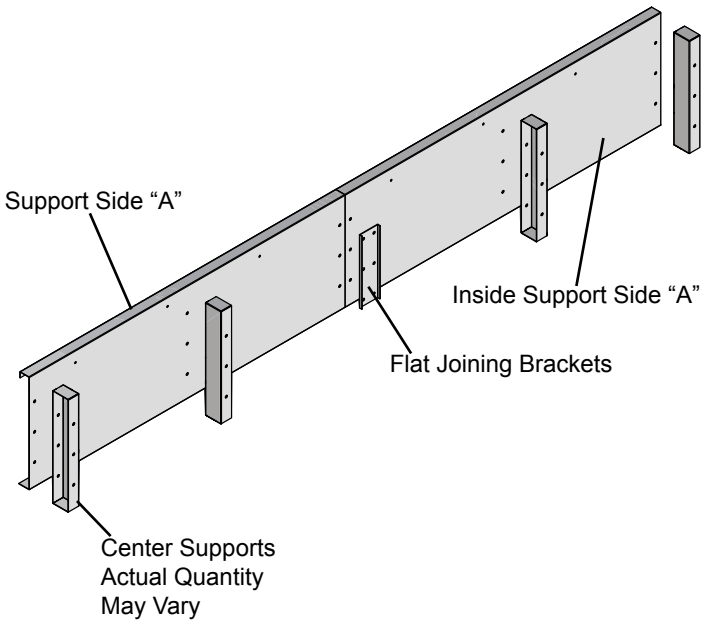


Illustration - Support Side “A”

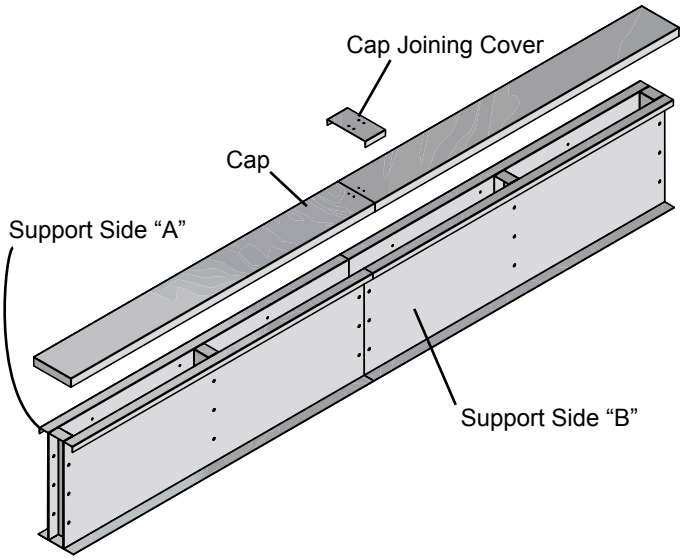


Illustration - Support Side “B”

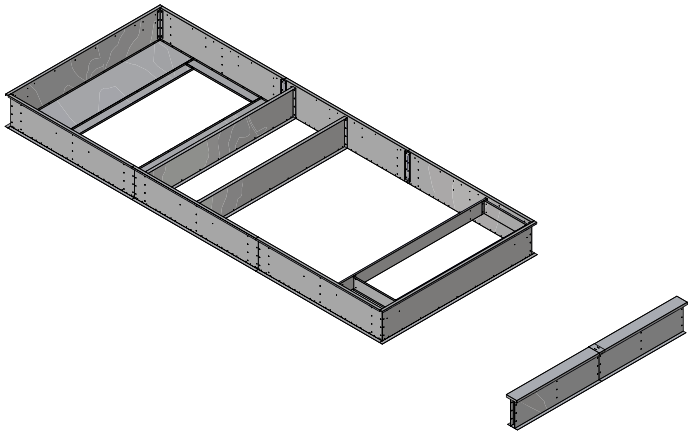


Illustration - Full Assembly

OPTIONAL SLOPED DECK PANS

The tabbed ends were developed at MicroMetl allowing the curb to be assembled with just a rubber mallet. Bring together a curb side, and a curb end. Simply fit the tab into the slot, and with minimum pressure, the corners securely lock into place. Be certain not to join incorrect pieces. This style curb requires much more effort to disassemble. Do not strike with too much force and damage the curb. Repeat for the assembly of all corners.

INSTALLING SLOPED DECK PANS ON LARGE CURBS

INSTALL DECK PAN CROSS SUPPORTS

The Deck Pan Cross Supports must be first installed into place. Holes are factory provided to install each support. However, each side piece is most often mirrored to allow easier assembly. The deck pan when assembled is designed to slope allowing optimal water runoff. The cross support pieces when installed properly will support the deck pans at the designed angle. Please reference the curb submittal as a visual guide for proper Cross Support placement. Self-drilling screws to secure Cross Supports are factory provided.

INSTALL SLOPED DECK PANS

Depending upon the design and manufacturing facility, your sloped deck pans may have all deck pans factory welded with continuous welds on all seams.

Install factory provided gasket prior to installing the first sloped deck pan. Place gasket on the center top flange of the low end piece, and upper cross supports, extend from edge to edge.

NOTICE: Install all deck pans to assure proper placement and fit BEFORE screwing them into place!

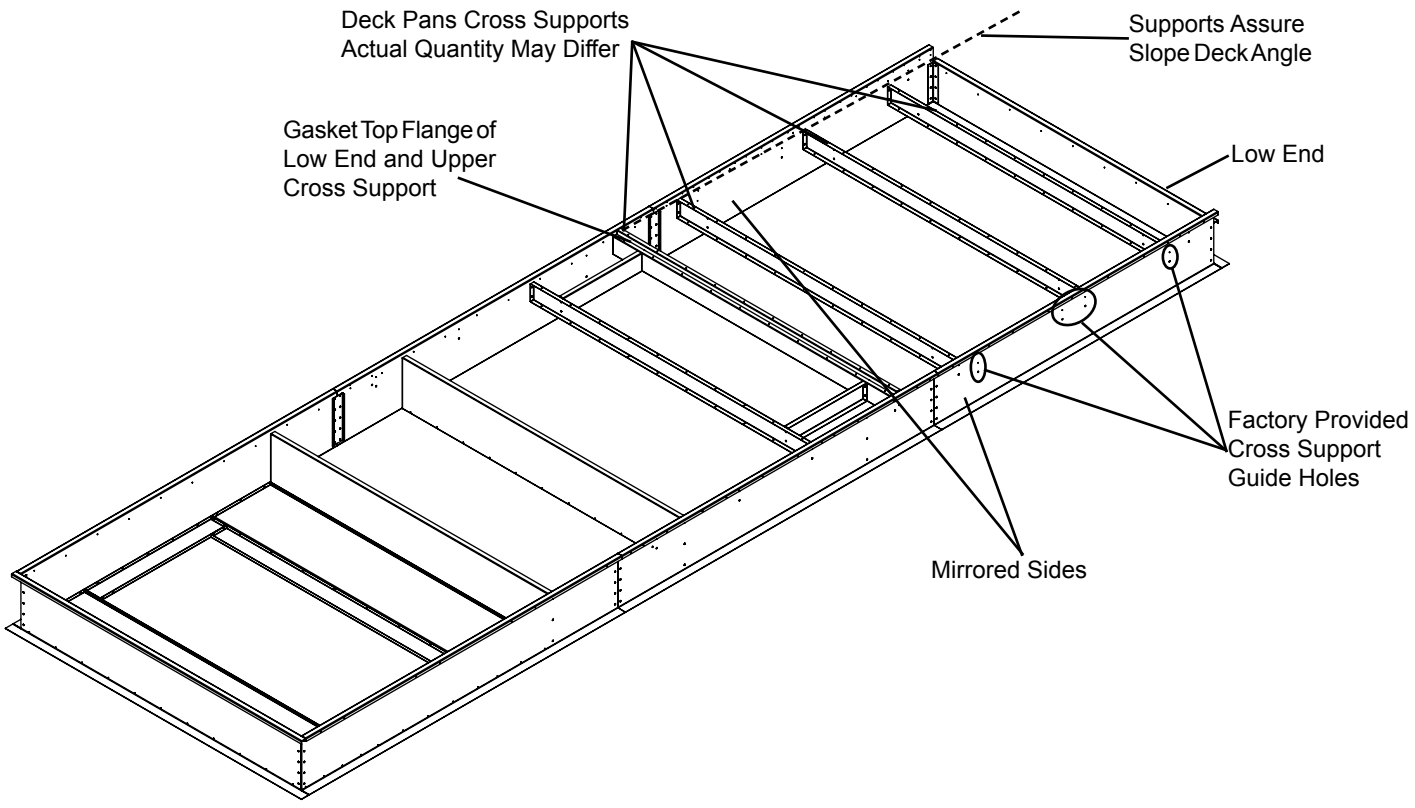


Illustration - Step 1. Sloped Deck Pans Installation

Install the first Deck Pan. All deck pans are factory angled on two sides. The first piece contains the deepest side sections. Do not screw this piece into place at this time. The end of the deck pan is designed to fit over the top flange of the low end piece, and cross support piece.

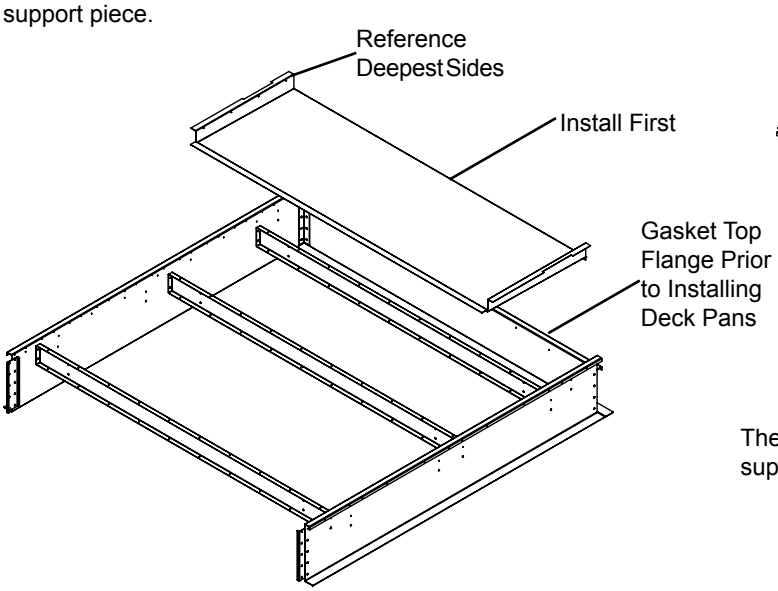


Illustration - Step 2
Sloped Deck Pans Installation

Continue to lay each piece as displayed in Illustration - Step 3. Install gasket on the bottom of flange for each deck pan from edge to edge.

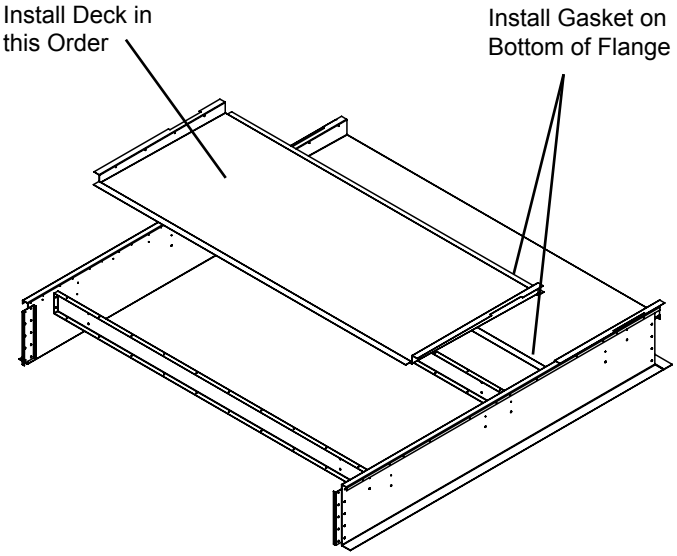


Illustration - Step 3
Sloped Deck Pans Installation

Following the installation deck pan order as noted in Illustration - Step 4. As you install each new deck pan, assure that each new piece is installed to fit over top of the previous piece as shown in Illustration - Step 4A Detail.

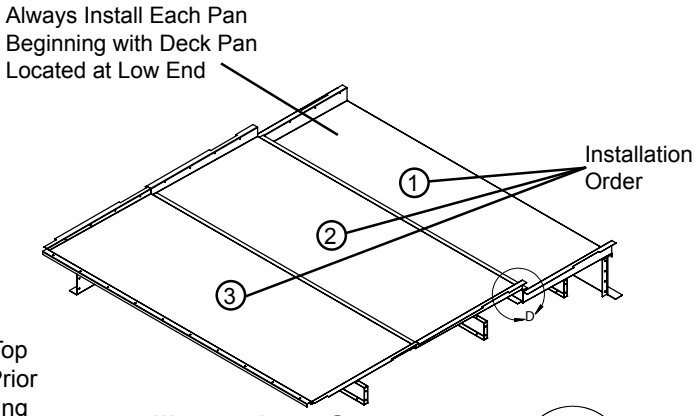


Illustration - Step 4
Sloped Deck Pans Installation

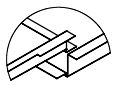


Illustration -
Step 4A Detail

The final deck pan piece is designed to fit over the upper cross support as shown in Illustration - Step 5 and Step 6.

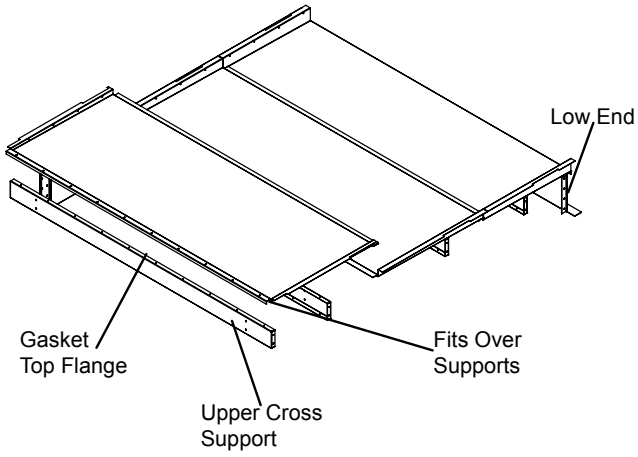


Illustration - Step 5
Sloped Deck Pans Installation

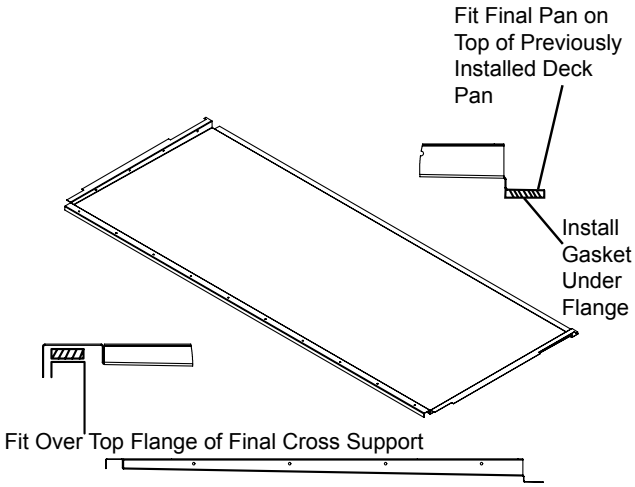


Illustration - Step 6
Sloped Deck Pans Installation

Once all deck pans are in place, begin to insert factory provided self-drilling screws into the first installed deck pan at the low end. Follow the sequence to secure the deck pans to the curb using factory provided self-drilling screws. Firmly hold each panel into place when inserting screws.

Guide holes may, or may not always be provided depending upon design.

When inserting into the first deck pan into the low end piece, insert the screws into the side flange of the low end section, not the top flange.

When installing the sides of deck pans, do not secure the deck pan into the top flange of the curb perimeter, insert all screws through the sides.

If your deck pans have been factory welded, it is not necessary to secure the panels together as illustrated as steps 3, 5, and 7. When inserting self-drilling screws to join each panel to each other, insert the screws into the end of each panel as show in illustration - Securing Panel.

If factory holes are provided for deck pans, and screws have not been inserted, be certain to caulk or seal before installing RTU. After all deck pans have been secured, you are required to caulk and seal all holes, seams and overlapping flanges… No Exceptions!

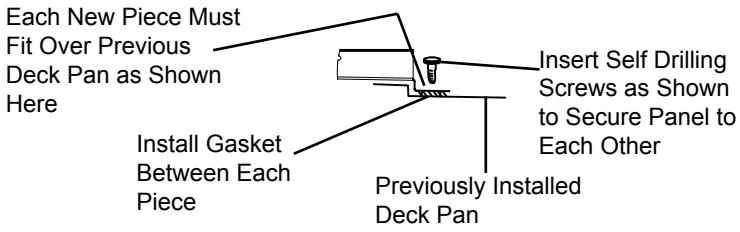


Illustration - Securing Panel

ATTACHING DUCTWORK

Ductwork MUST be installed before RTU is placed on roof curb. Ensure the curb's position on the roof support does not interfere with the clearance required for the supply/return ductwork.

The ductwork for your supply and return should attach to the existing roof curb. Use caution if connecting the ductwork directly to the Rooftop Unit (RTU). Serious damage may occur in the future when the RTU is removed or replaced with the ductwork connected.

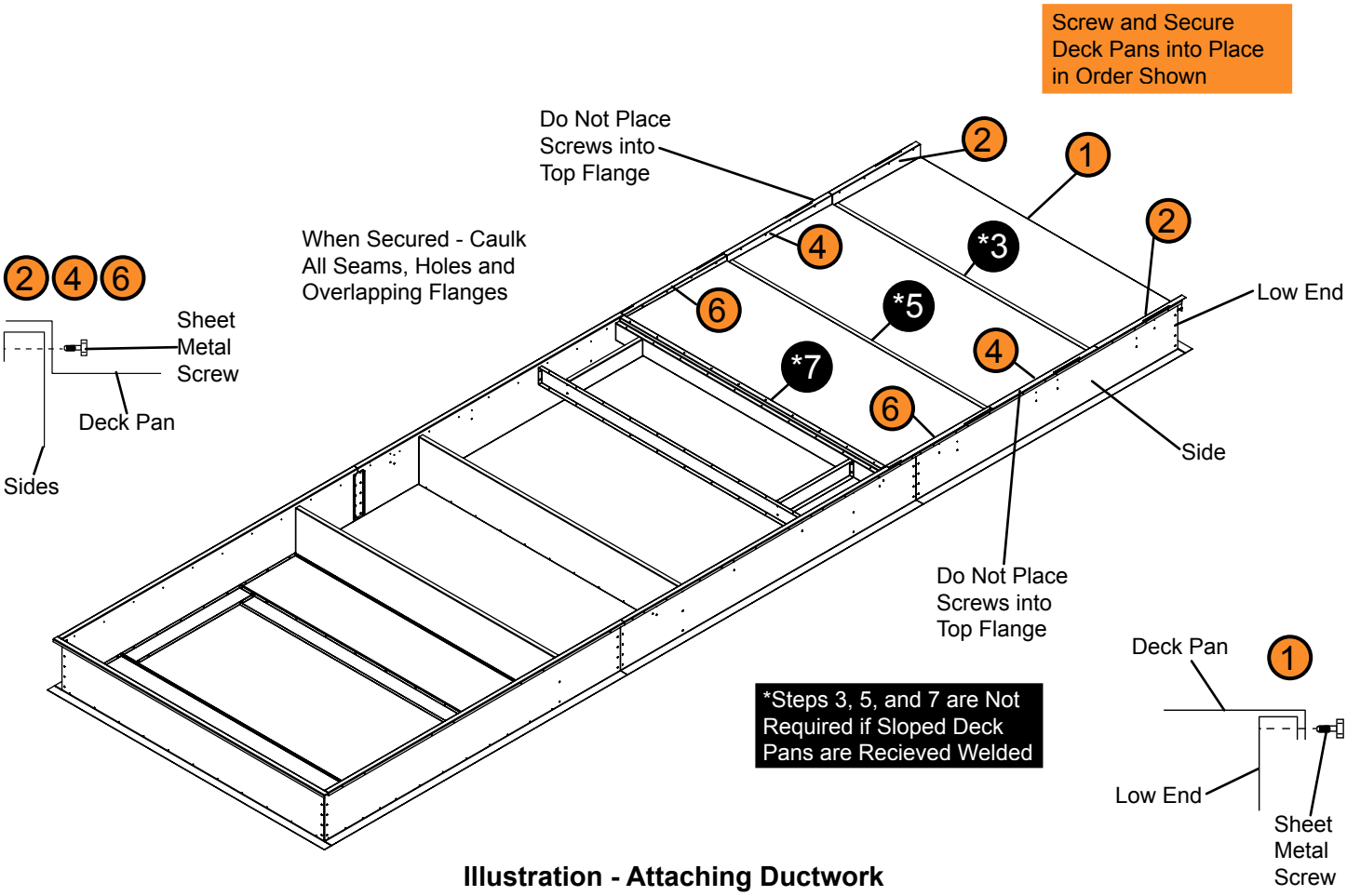


Illustration - Attaching Ductwork

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