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Critical Environment Solutions

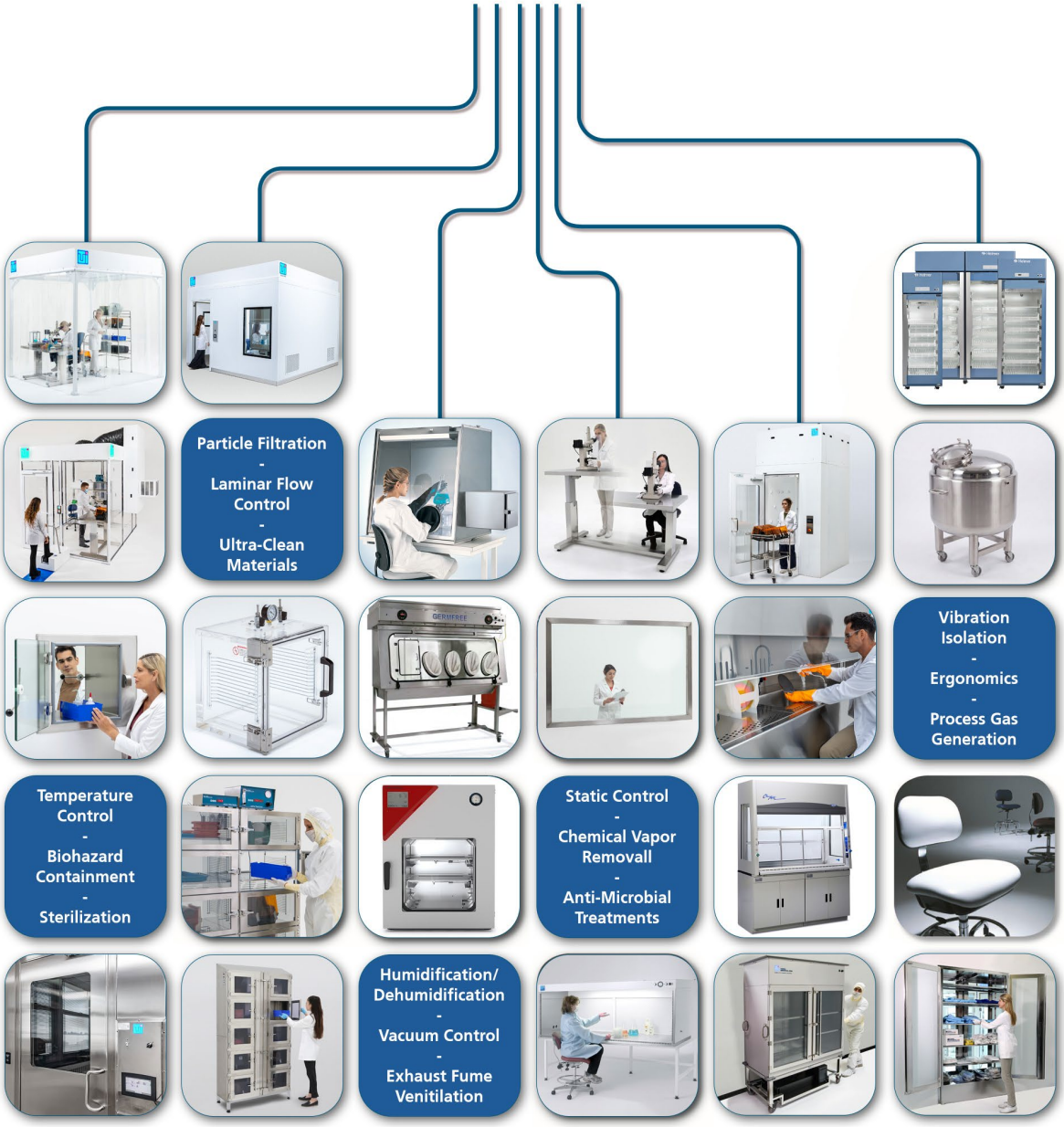


Installation Guide *Document No. 1788-20*

BioSafe® Cleanroom Windows

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Your Single Source For Controlled Environment Solutions



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Installation Guide

BioSafe® Cleanroom Windows

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Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death.

The following symbols are intended to call your attention to two levels of hazard involved in operation:

CAUTION

Cautions are used when failure to observe instructions could result in significant damage to equipment.



WARNING

Warnings are used when failure to observe instructions or precautions could result in injury or death.

The information presented here is subject to change without notice.

1.0 Introduction

Terra Universal's BioSafe® Cleanroom Windows feature a flush-mount frame design that minimizes horizontal surfaces and crevices where contaminants can collect. The 304 stainless steel frame seals tightly against the interior wall surface to allow for easy cleaning and sterilizing.

Choices for window materials include tempered glass, fire-rated glass, static-dissipative PVC, polycarbonate, and acrylic. Static-dissipative PVC (SDPVC) has dissipative material molecularly embedded in the layers of PVC for long-lasting performance. Polycarbonate is shatter-resistant and offers greater resistance to common acids, solvents, and cleaning solutions. Acrylic is economical, but it can be damaged by alcohol and other strong cleaning agents.

Note: SDPVC is recommended for most cleanroom applications due to its ability to avoid static build-up, which normally causes oppositely charged particles to cling to the surface as a result of electrostatic attraction.

Each window material can be specified as either single-pane or double-pane. A double-pane window uses a stainless steel frame that mounts flush on both sides, making it ideal for adjoining cleanrooms. A single-pane window includes a flush-mounted cover for only one side.

2.0 Specifications

Standard Size Windows

The following specifications apply to a standard size BioSafe® Cleanroom Window when preinstalled in a Terra cleanroom:

BioSafe® Cleanroom Window Specifications	
Standard Placement	39” from floor to window bottom
Wall Cut-Out	46.75”W x 36.25”H
Window Pane Cut Size	45.875”W x 35.375”H
Finished Visible Opening	44.75”W x 34.125”H
Frame Material	304 Stainless Steel

Custom Size Windows

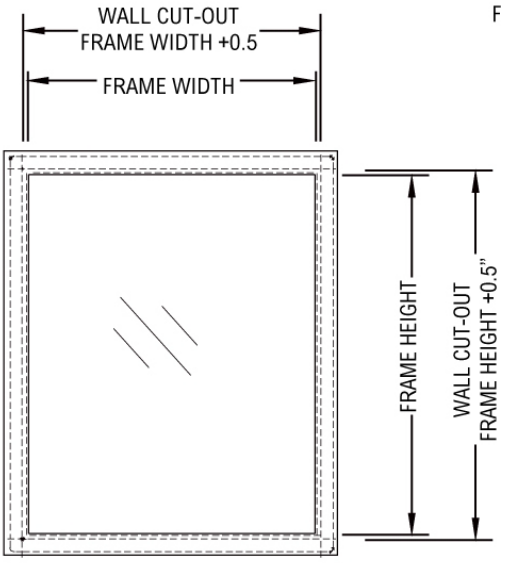
For custom windows, the frame is built to the specifications outlined in the original order form.
Refer to **Section 4** on the following page for installation instructions.

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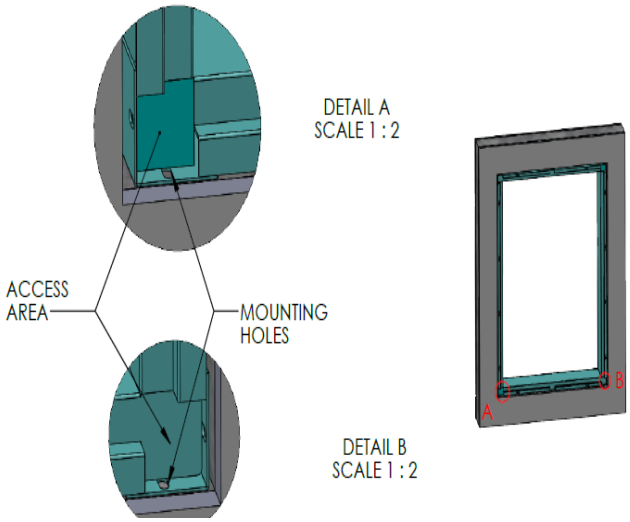
3.0 Installation

Single-Pane Framed Window Installation

Frame components are fabricated to fit the wall thickness specified in the order.
Minimum wall thickness: 3”



Step 1



Step 2, 3

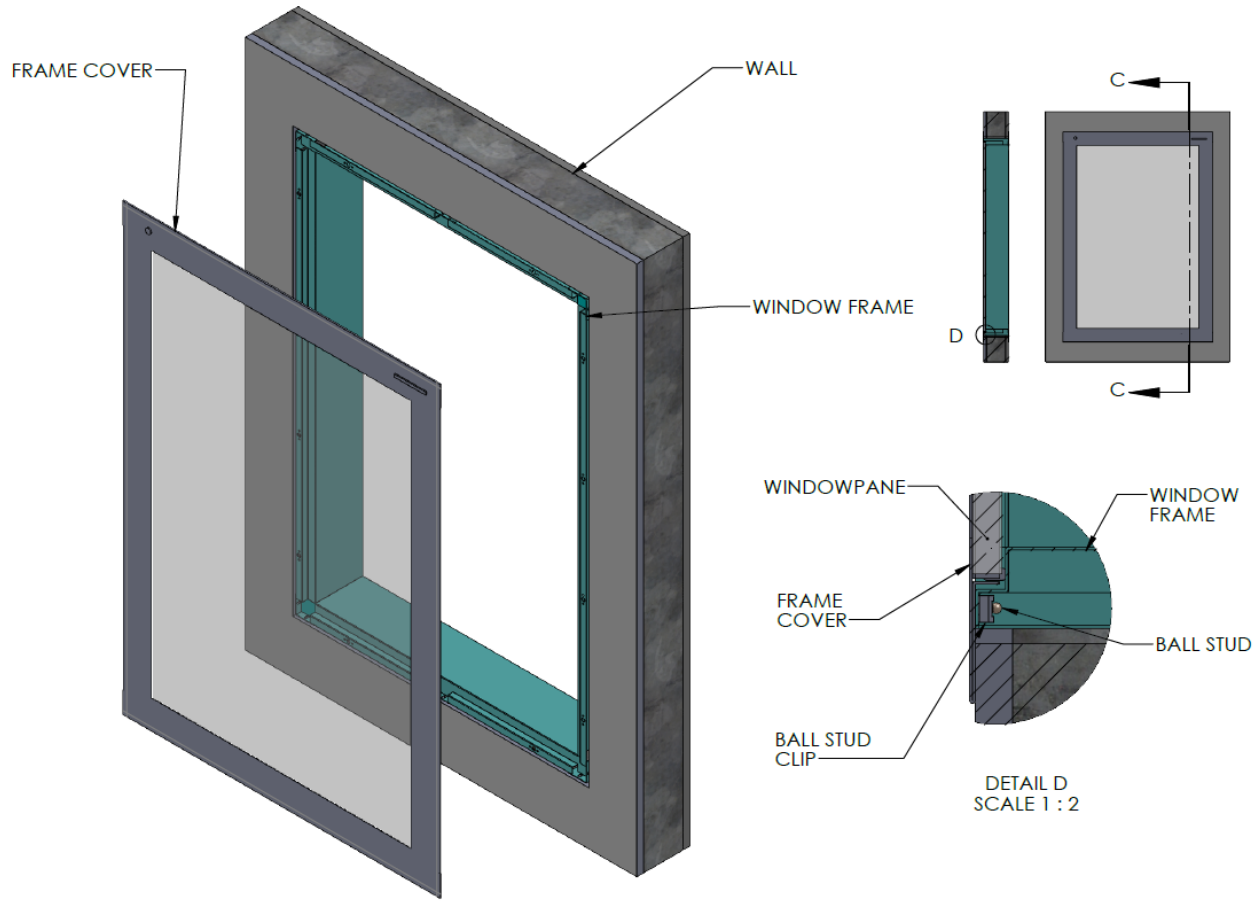
1. Make the wall cutout and frame it with a rigid material. Use the wall cutout dimensions specified in the drawing if you have one. If not, use the diagram above.

2. Unsnap the clean side frame cover from the frame and carefully remove the glass from the frame.

3. Slide the frame into the wall cutout from the “dirty” side.

4. Fasten the frame to the wall with screws through the access areas in the four corners. There should be two screws on each access areas. Depending on the size of the window, there may be mounting holes on the top and bottom of the frame as well.

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Step 4

5. Place the glass inside the frame cover. With one person making sure the glass does not fall, carefully place the frame cover close to the window frame from the “clean” side.

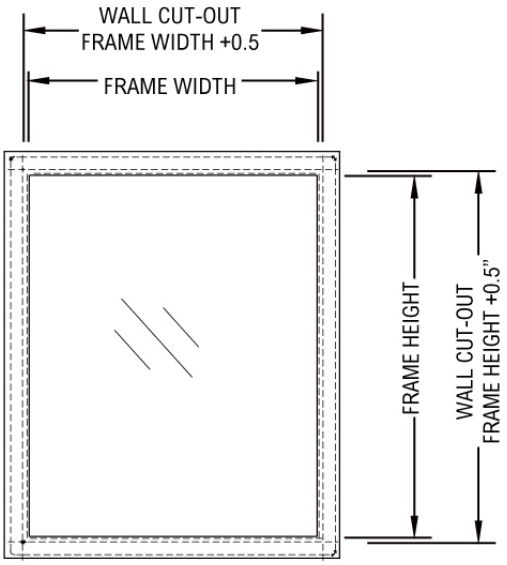
6. Align the ball studs on the frame cover and the clips on the window frame and push them to snap them together on all four sides.

7. Although it is not required for positive pressure cleanrooms, an appropriate sealant can be applied along the flush-mount edges of the window, if desired.

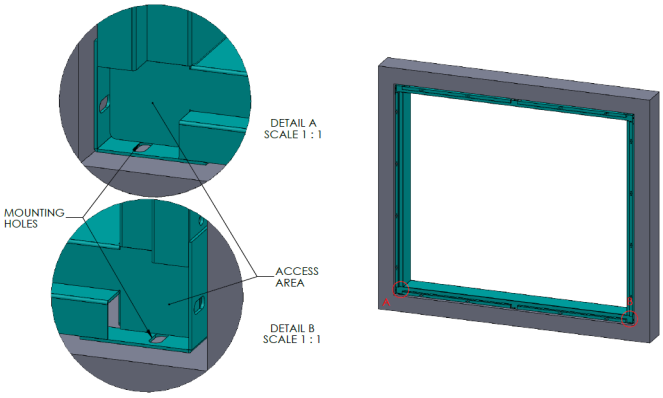
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Double-Sided Framed Flush-Mount Window Installation

Frame components are fabricated to fit the wall thickness specified in the order.
Minimum wall thickness: 3”



Step 1



Step 2, 3

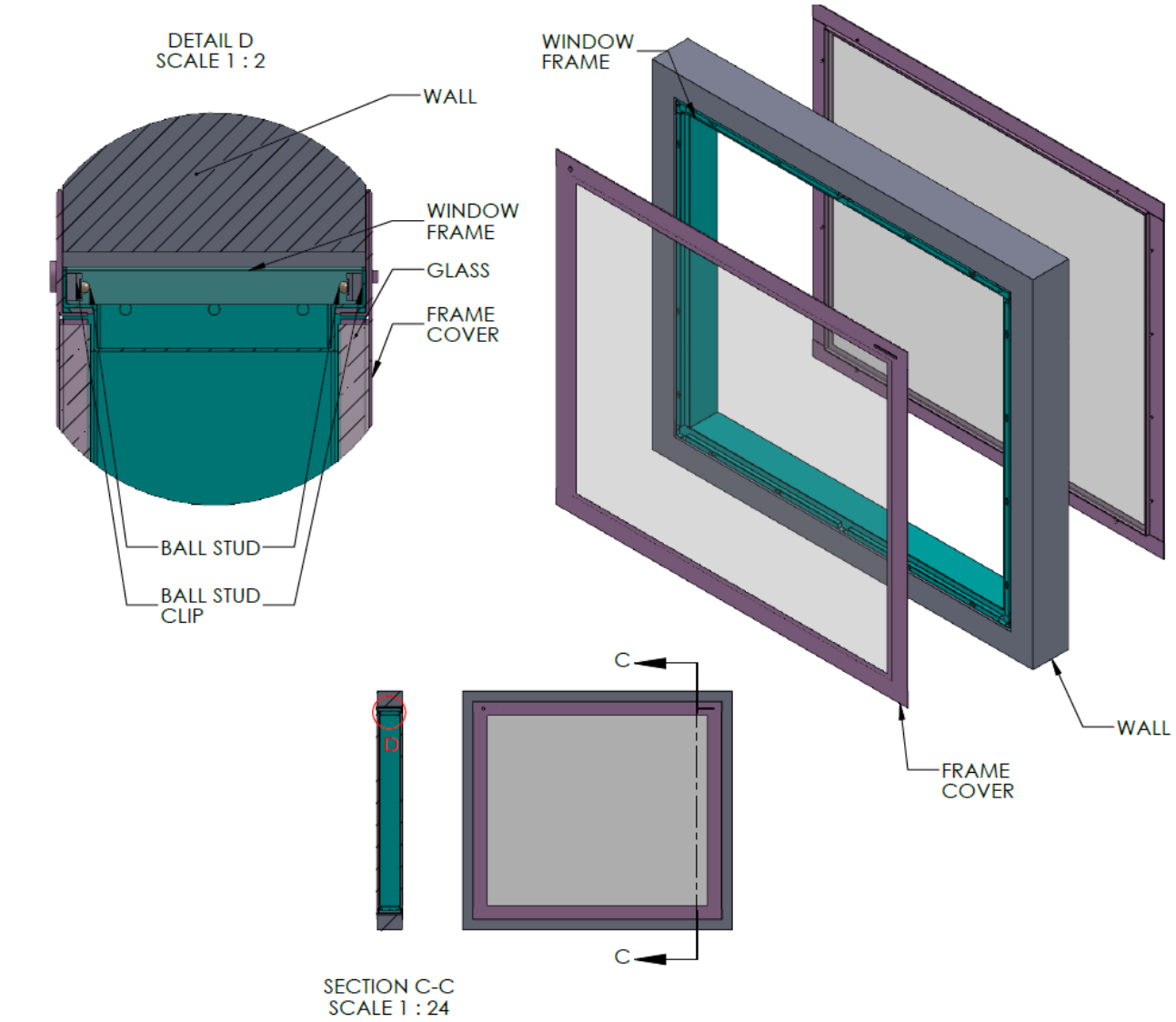
1. Make the wall cutout and frame it with a rigid material. Use the wall cutout dimensions specified in the drawing if you have one. If not, use the diagram above.

2. Unsnap the “clean” side frame cover from the frame and carefully remove the glass from the frame. Repeat for the “dirty” side.

3. Slide the window frame into the wall cutout and center the window frame.

4. Fasten the frame to the wall with screws through the access areas in the four corners. Depending on the size of the window, there may be additional mounting holes on the top and bottom of the frame as well.

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Step 4,5

5. Place the glass inside the frame cover. With one person making sure the glass does not fall, carefully place the frame cover close to the window frame from the “clean” side.

6. Align the ball studs on the frame cover and the clips on the window frame and push them to snap them together on all four sides.

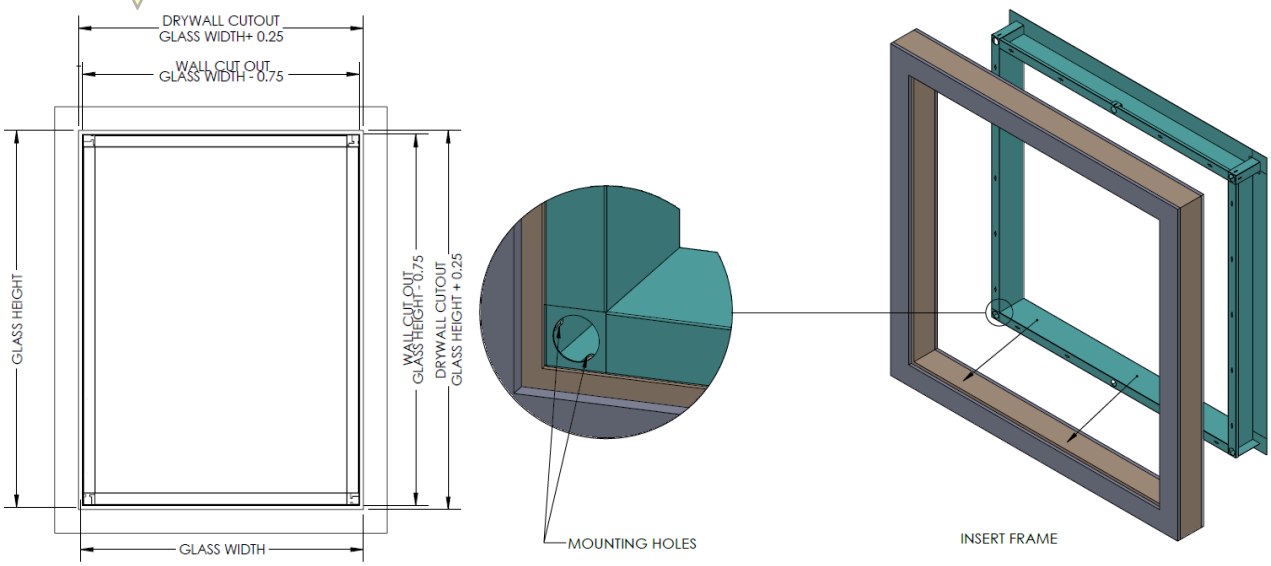
7. Repeat for the windowpane on the other side. Once snapped in, the edges of the frame covers should be tight against with the wall surface.

8. Although it is not required for positive pressure cleanrooms, an appropriate sealant can be applied along the flush-mount edges of the window, if desired.

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Single-Sided Frameless Flush-Mount Window Installation

Frame components are fabricated to fit the wall thickness specified in the order.
Minimum wall thickness: 3”



Step 2, 3

Installation Steps

1. If available, please refer to the drawings specific to your window order for the most accurate dimensions for cutting and framing.

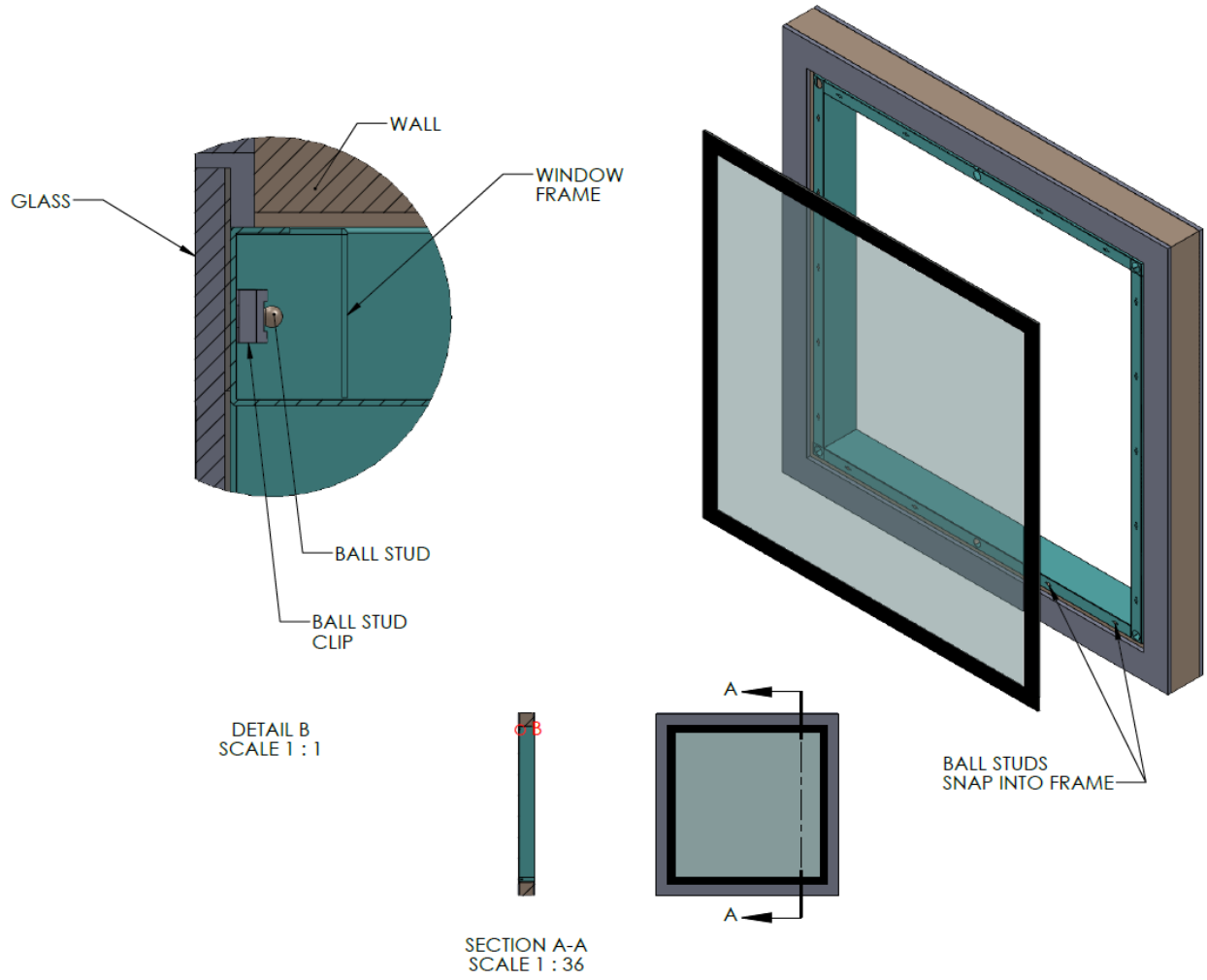
   General Wall Cut-Out Procedure:
   Build the internal framing for the window so that the opening is 1” wider and 1” taller than the steel frame. Cut the wall surface material (either drywall or FRP) so that there is a ¼” ledge around the entire opening (¼” of the internal framing should be visible).

   Check the wall cutout by inserting the glass, making sure that the glass fits within the opening, is flush with the wall surface, and can be pressed securely against the ¼” of exposed trimming.

2. Unsnap the glass from the clean side and carefully remove it.

3. Insert the steel frame into the finished wall cutout.

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Step 5

4. Fasten the steel frame to the wall using the predrilled mounting holes inside each corner. Depending on the size of the window, there may be a mounting hole on the top and bottom as well. A 1”-diameter access hole is provided to allow a right-angle drill bit to be used to drill pilot holes and insert the screws.

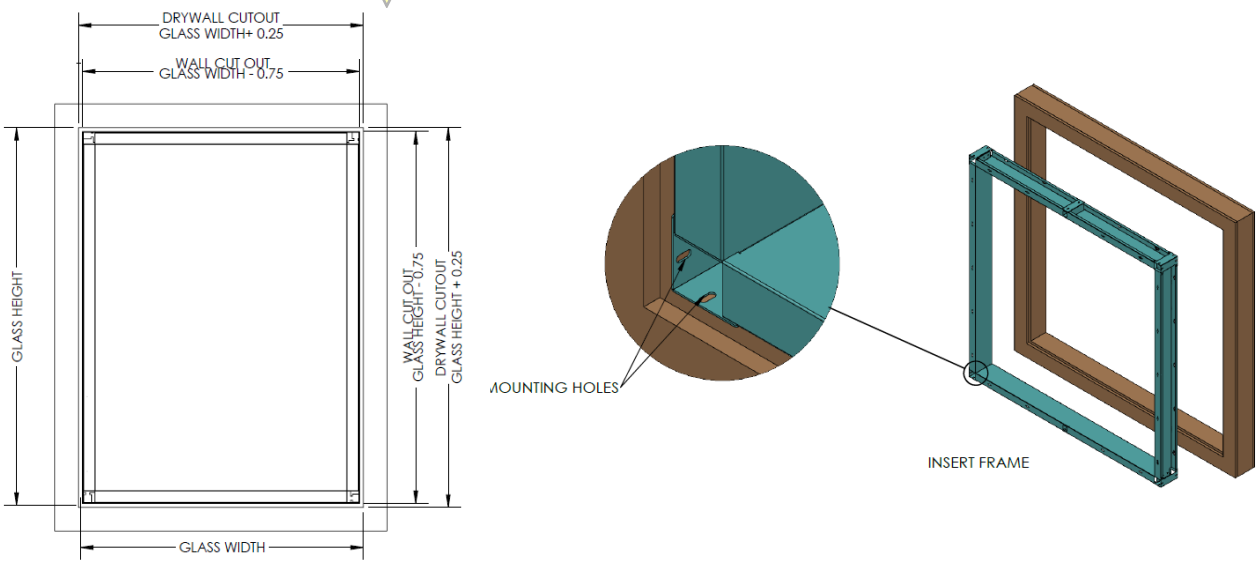
5. Snap the glass into the frame by aligning the ball studs with the frame’s sockets. Ensure that all studs are fully inserted and the glass is completely flat against the frame before proceeding.

6. Apply an appropriate sealant around the edges of the windows to create an airtight seal and clean finish.

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Double-Sided Frameless Flush-Mount Window Installation

Frame components are fabricated to fit the wall thickness specified in the order.
Minimum wall thickness: 3”



Step 3, 4

Installation Steps

1. If available, please refer to the drawings specific to your window order for the most accurate dimensions for cutting and framing.

   General Wall Cut-Out Procedure:
   Build the internal framing for the window so that the opening is 1” wider and 1” taller than the steel frame. Cut the wall surface material (either drywall or FRP) so that there is a ¼” ledge around the entire opening (¼” of the internal framing should be visible).

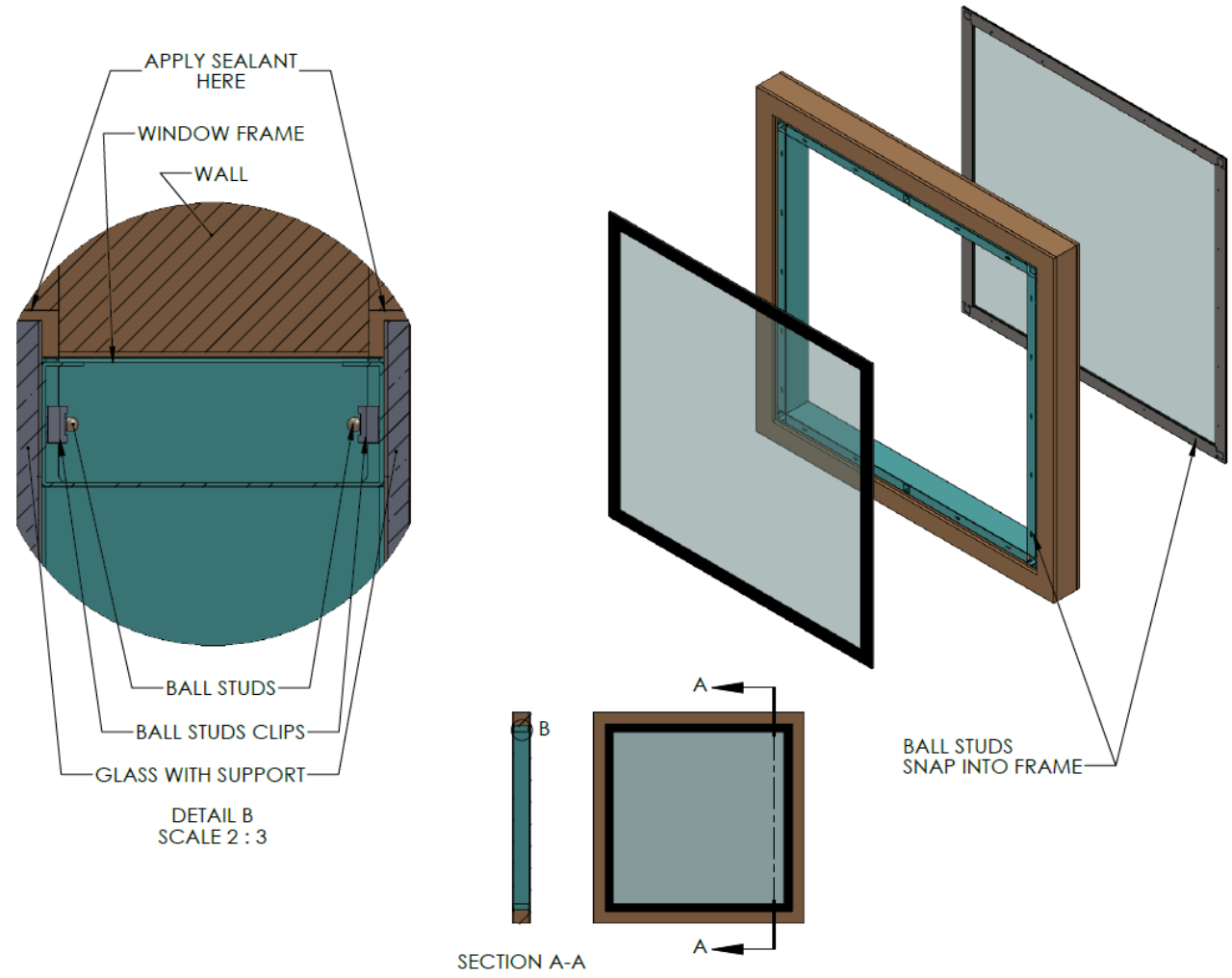
   Check the wall cutout by inserting the glass, making sure that the glass fits within the opening, is flush with the wall surface, and can be pressed securely against the ¼” of exposed trimming.

2. Unsnap the glass from the “clean” side and carefully remove. Repeat for the “dirty” side.

3. Insert the steel frame into the finished wall cutout.

4. Fasten the steel frame to the wall using the predrilled mounting holes inside each corner. Depending on the size of the window, there may be a mounting hole on the top and bottom as well. A 1”-diameter access hole is provided to allow a right-angle drill bit to be used to drill pilot holes and insert the screws.

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Step 5

5. Snap the "clean" glass into the frame by aligning the ball studs with the frame's sockets. Ensure that all studs are fully inserted and the glass is completely flat against the frame before proceeding. Repeat for the glass on the opposite "dirty" side.

6. Apply an appropriate sealant around the edges of the windows to create an airtight seal and clean finish.

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4.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products that it manufactures to be free from defects for a period of 12 months for parts and 90 days for labor, commencing from the date of shipment. Terra's sole responsibility is to repair or replace, at its option, any part of the product that proves defective or malfunctioning during this time limit. In some cases, components incorporated in Terra Universal products are covered by additional warranties from component manufacturers; obtain specific information from Terra sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Terra's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, breakage of quartz baths after 60 days, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

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Freight Shortage or Damage: Upon receipt of any equipment from Terra Universal, Inc., customer shall immediately unpack and inspect for damage or shortage. The customer shall not accept a damaged package or a short shipment until the carrier makes a "damage or shortage" notation on both the carrier's and customer's copy of the freight bill or delivery receipt. Service title passes when the shipment is loaded, so customer is responsible for filing and collecting a freight claim. Any replacement products must be ordered and paid for separately. For Terra's "Policy and Procedures for Returning Goods," see Terra's Internet site: www.TerraUniversal.com.

Generally, customers can improve the chance of collecting on a freight claim by following these procedures: 1) formally requesting that the carrier inspect the shipment immediately upon suspecting damage or shortage to verify condition; 2) notifying the carrier upon discovery of concealed damage and requesting an inspection within 15 days of receipt, both in person or phone and following up via mail; 3) keeping the shipment as intact as possible, including retaining original packaging materials and keeping the product as close to the original receiving location as possible; 4) holding salvage for disposition by the carrier.

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Warranty Returns: All warranty returns must be authorized in advance by Terra Universal and approved under an RMA. Unless approved in advance for good reason, all returns must be in original condition, including all manuals, and must be packaged in original packaging materials. All returned goods are to be shipped to Terra Universal, freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods."

Thank you for ordering from
Terra Universal!