



OUTBACK
IN-WALL SLIDE-OUT
OEM INSTALLATION MANUAL

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Introduction

The In-Wall® Slide-out System extends and retracts the caravan's slide-out room. Its function should not be used for any purpose or reason other than to actuate the slide-out room.

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts may differ.

Safety

Read and fully understand all instructions before operating this product. Adhere to all safety labels.

This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the Lippert limited warranty.

WARNING

The “WARNING” symbol above is a sign that a service or maintenance procedure has a safety risk involved and may cause serious injury or death if not performed safely and within the parameters set forth in this manual.

WARNING

The In-Wall Slide-out System is intended for the sole purpose of extending and retracting the slide-out room. It should not be used for any purpose other than to actuate the slide-out room. To use the system for any reason other than what it is designed for may result in death, serious injury or damage to the caravan.

WARNING

Do not work on the slide-out system unless the battery is disconnected. Failure to act in accordance with the following may result in death or serious personal injury.

WARNING

Always make sure the slide-out room path is clear of people and objects before and during operation of the slide-out. Always keep away from the gear racks when the room is being operated.

CAUTION

The "CAUTION" symbol above is a sign that a procedure has a safety risk involved and may cause personal injury, product or property damage if not performed safely and within parameters set forth in this manual.

CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

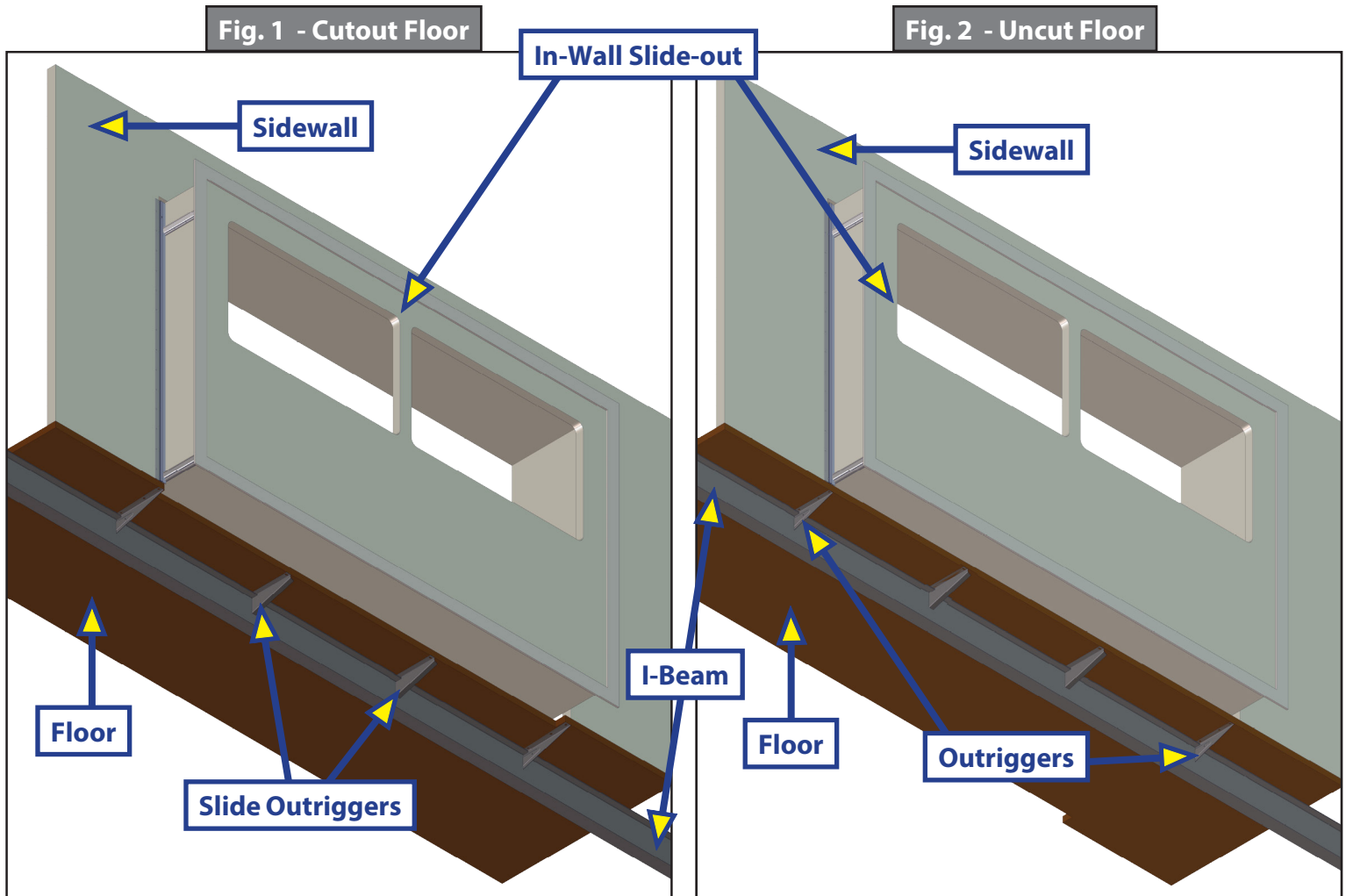
In-Wall Slide-out Chassis Specification

In-Wall Slide-Outs

For laminate caravans with rollers mounted to the floor, one standard outrigger is to be placed at the beginning and end of each slide room opening (Fig. 2). A minimum of two slide outriggers will be required under each slide room (Fig. 1).

Slide outriggers should be placed under the heaviest points of the room. If the slide room is at least 3658 mm, a third slide outrigger will be required.

Add an additional slide outrigger for every 1219 mm thereafter.



Standard outrigger placement will apply every 1219 mm for laminate caravans with at least 152 mm of wall structure under the slide-room floor and rollers mounted on the wall (Fig. 3).

For stick and tin caravans (Fig. 4), one standard outrigger is to be placed at the beginning and end of each slide-room opening. A minimum of two slide outriggers will be required under each slide-room.

Slide outriggers should be placed under the heaviest points of the room. If the slide-room is at least 2743 mm, a third slide outrigger will be required. Add an additional slide outrigger for every 914 mm thereafter.

NOTE: For stick and tin caravans, Lippert Components recommends that the header and footer mirror each other in size if mounting rollers on the sidewall. Reference the supplier's span table for header size and length.

Fig. 3 - Laminate

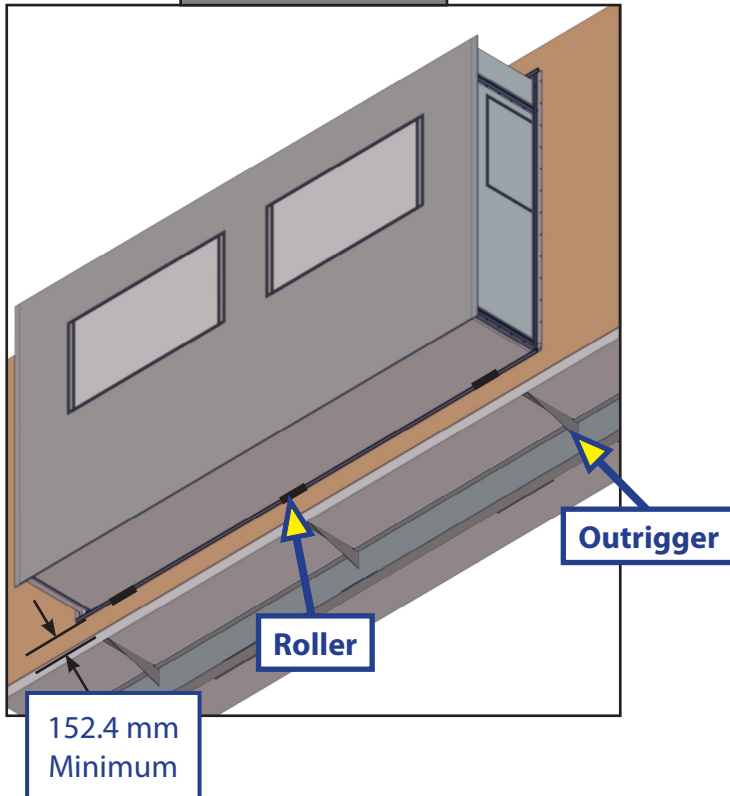
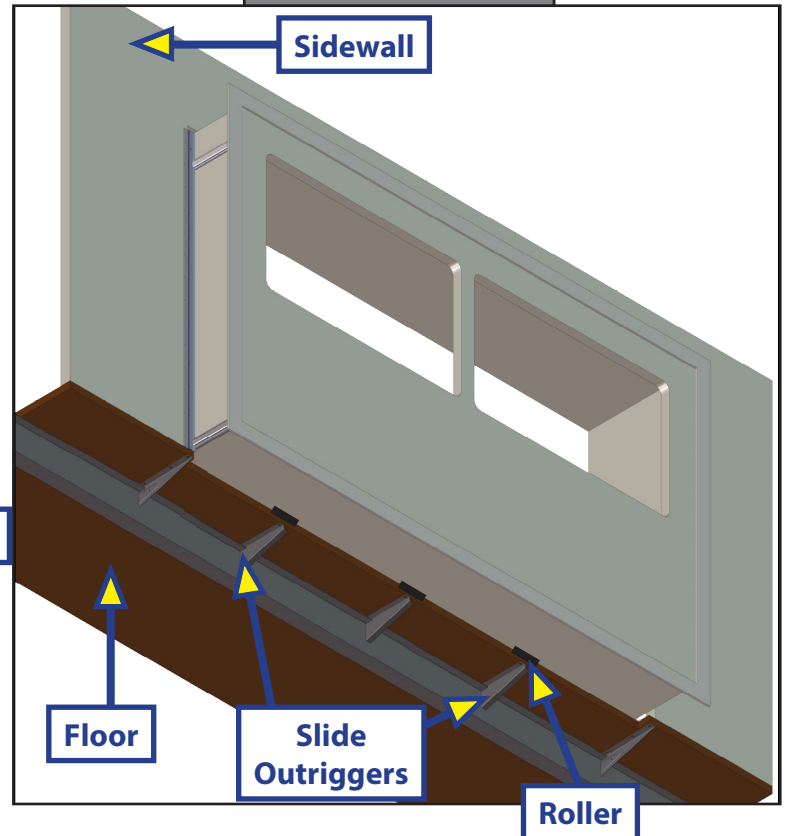


Fig. 4 - Stick and Tin



Recommended Wall Construction or Equivalent

Caravan Lippert In-Wall

Opening perimeter needs to be 25 mm x 76 mm x 2 mm aluminum for the header and vertical uprights. The header (Fig. 5) should extend 610 mm beyond the vertical uprights for extra support.

The vertical uprights need to be stuffed with wood for securing. If the vertical uprights have a minimum wall thickness of 3 mm, the uprights do not need to be stuffed with wood.

If uprights are not stuffed and wall thickness is below 3 mm, interior clamps need to be added to the system. Upright wall thickness below 1 mm is not acceptable. See Wall Chart.

Wall Chart	
Upright Tube Thickness	Structure
Greater than or equal to 3 mm	Non-stuffed
Less than 3 mm to 1 mm	Stuffed or Inside Clamp
Less than 1 mm	Not Approved

Supports on The Top of The Slide Room on The Main Frame Only

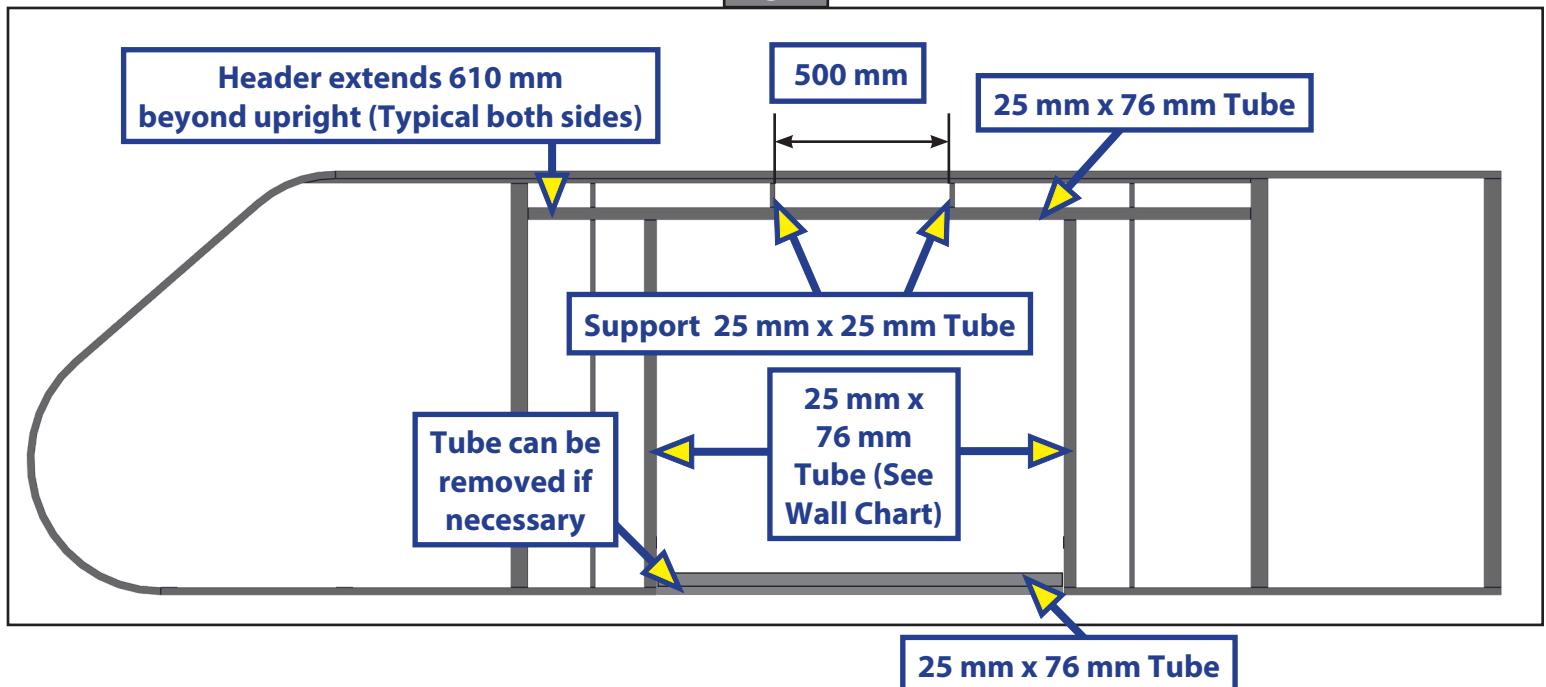
Supports need to be at least 1 mm aluminum and 25 mm x 25 mm aluminum tube and should extend from the header up into a cross tube. If the room size in the slide wall is less than 1219 mm in width, no vertical supports are needed above the header.

Any room that is more than 1219 mm and up to under 2438 mm needs to have one support centered on the room.

Every room that is over 2438 mm up to 3657 mm needs to have two vertical supports evenly spaced over the top of the room. For example, a 2743 mm opening would have a vertical support 500 mm from each upright (See Fig. 5 for reference). So for every 1219 mm in room width, one additional vertical support will be needed.

NOTE: These instructions are based on a 25 mm sidewall thickness. For example, a 38 mm x 76 mm tube may be used if walls are 38 mm thick.

Fig. 5



Slide Room Opening Bottom Section

The bottom tube in the slide room can be 1 mm aluminum unless it falls into the wheel well. This piece is typically removed when installing the Lippert In-Wall slide, depending on how the side wall sets in relation to the floor (Fig. 6).

When the bottom support tube is left in place, it is because wall openings may fall into a wheel well area that sets higher than the floor (Fig. 7). The bottom tube needs to be 2 mm aluminum for caravans.

NOTE: If slide room is in wheel well area, the slide wall structure should start at least 152 mm above the bottom of the rest of the wall (Fig. 8A). Slide outriggers will not be recommended in this case.

Fig. 6 - Slide Not in Wheel Well Area

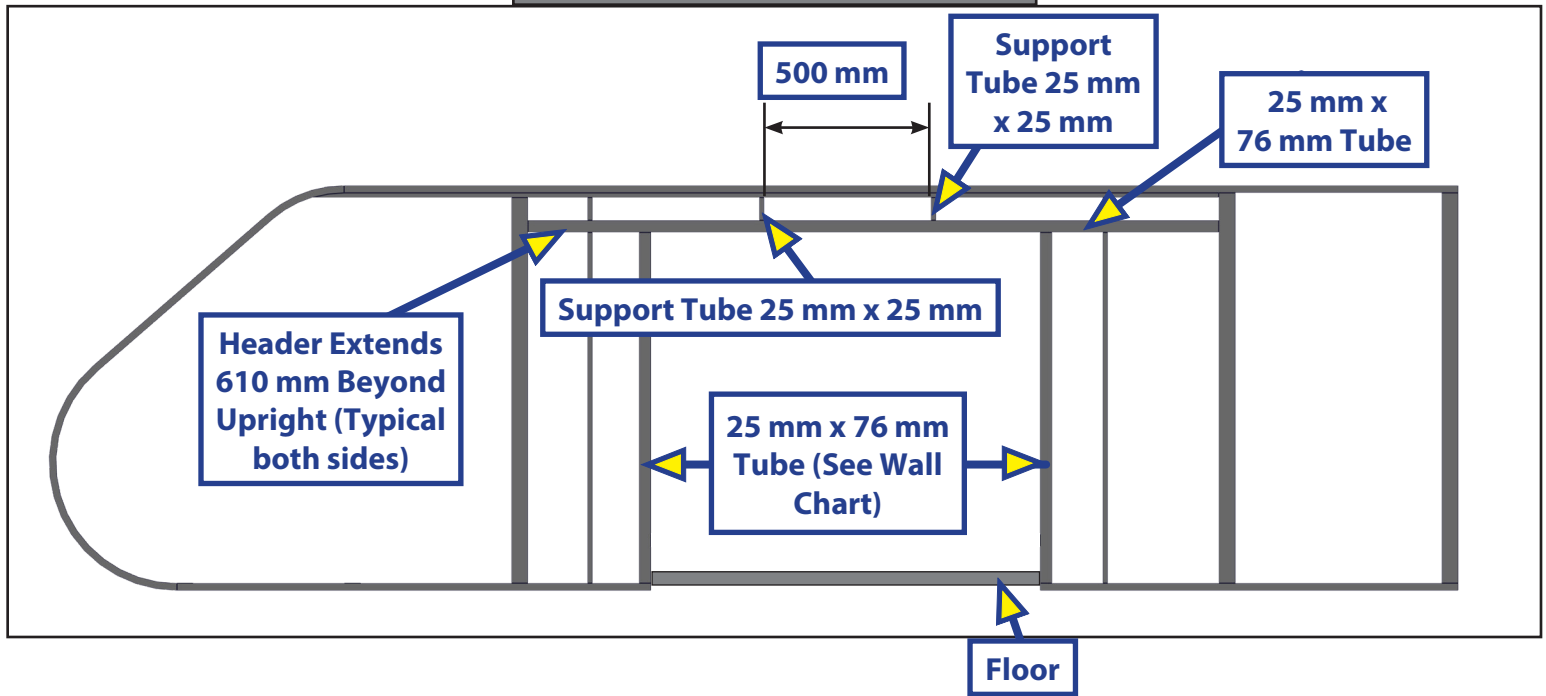
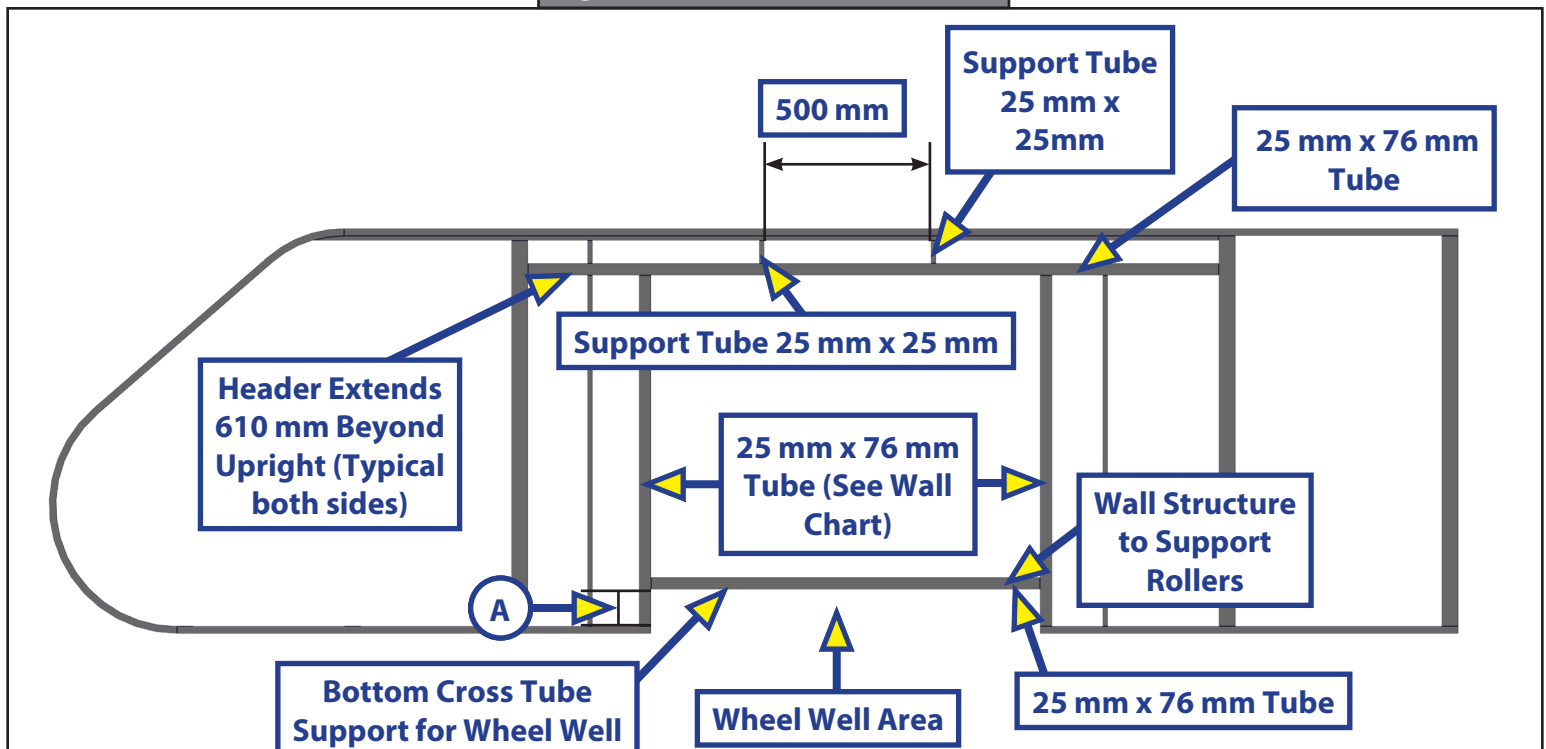


Fig. 7 - Slide in Wheel Well Area



Square

The sidewall cutout and slide box should be no more than 13 mm out-of-square total.

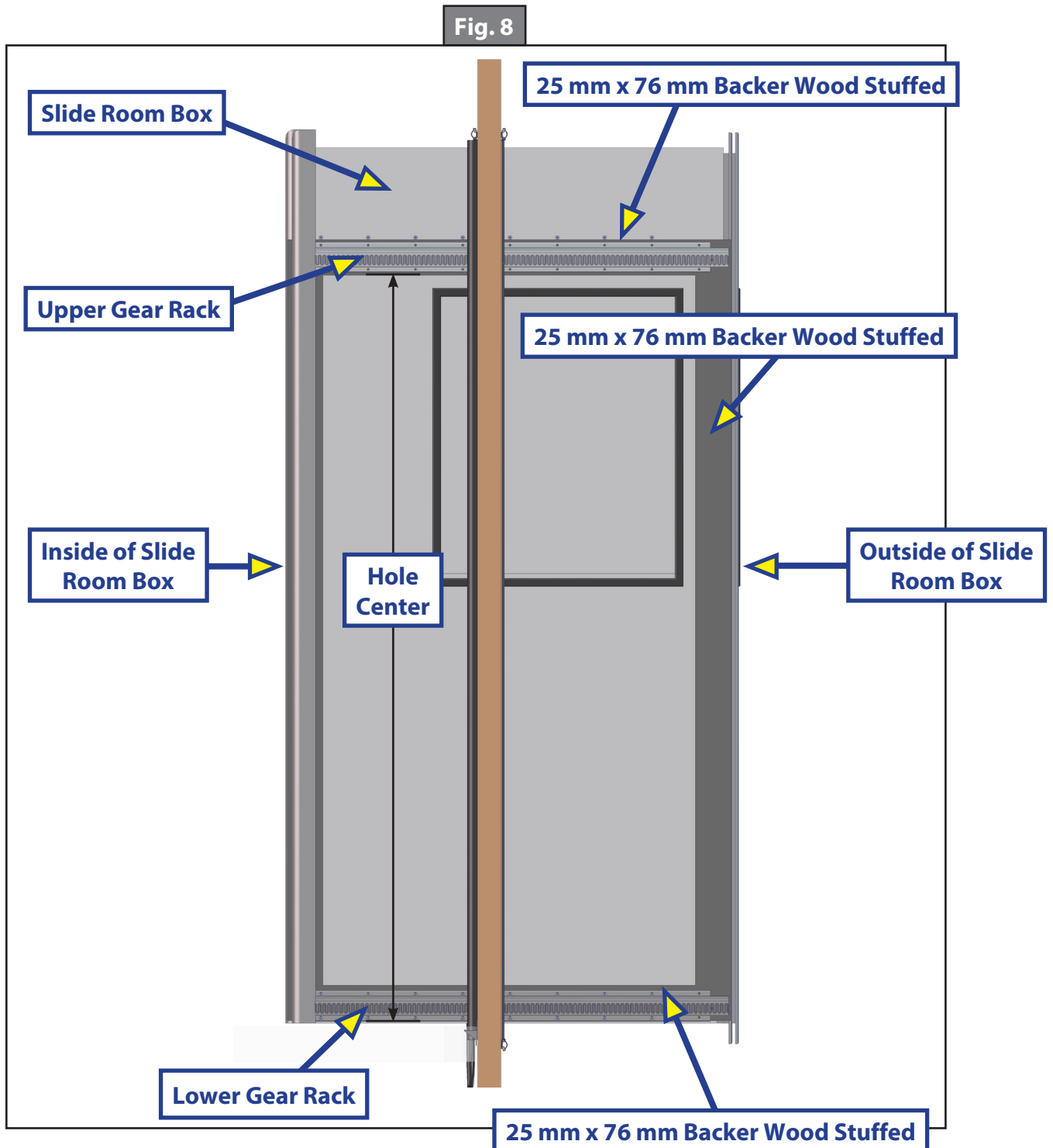
Backers

Backers are to be incorporated into slide room construction, positioned where the In-Wall gear racks will be mounted. LCI recommends the backers be a 25 mm x 76 mm x 2 mm aluminum that is wood stuffed. See diagram (Fig. 8) of slide room with backers.

The backers do not need to be stuffed with wood if the aluminum wall thickness being used is at least 3 mm.

Backer location is determined by hole center from the slide system. Measure from the bottom of the bottom rack to the bottom of the top rack.

NOTE: The same wall opening construction principles will apply for all slide-out applications.



Required Resources

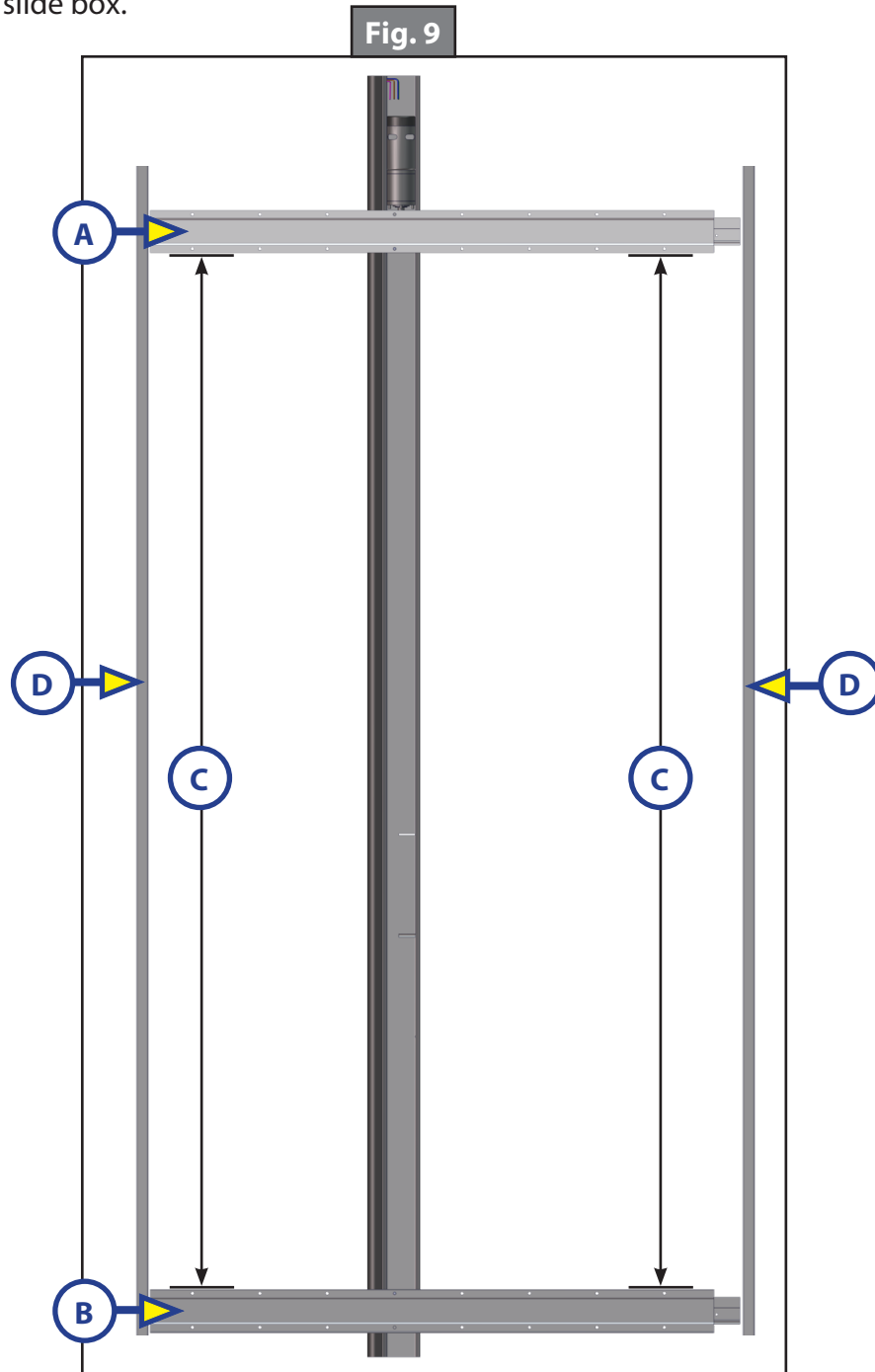
- Cordless or electric drill or screw gun
- #10 pan head screws
- Razor knife
- Appropriate drive bits
- Glue
- Sealant

Prior To Installation

Inspect Slide-Out Mechanism

1. Check the back side of each gear rack to ensure there is foam sealant tape running the entire length of the gear rack (Figs. 9A and 9B).
2. Measure the distance between the upper and lower gear racks to make sure racks are parallel (Fig. 9C).

NOTE: In-Wall assemblies will have attached shipping angles (Fig. 9D) that permit installation of exterior slide-room T-molding without removal of the angles. Installers can place the exterior shipping angle flush against the inside of the T-molding and the lower gear rack flange while squaring up to the bottom of the slide box.

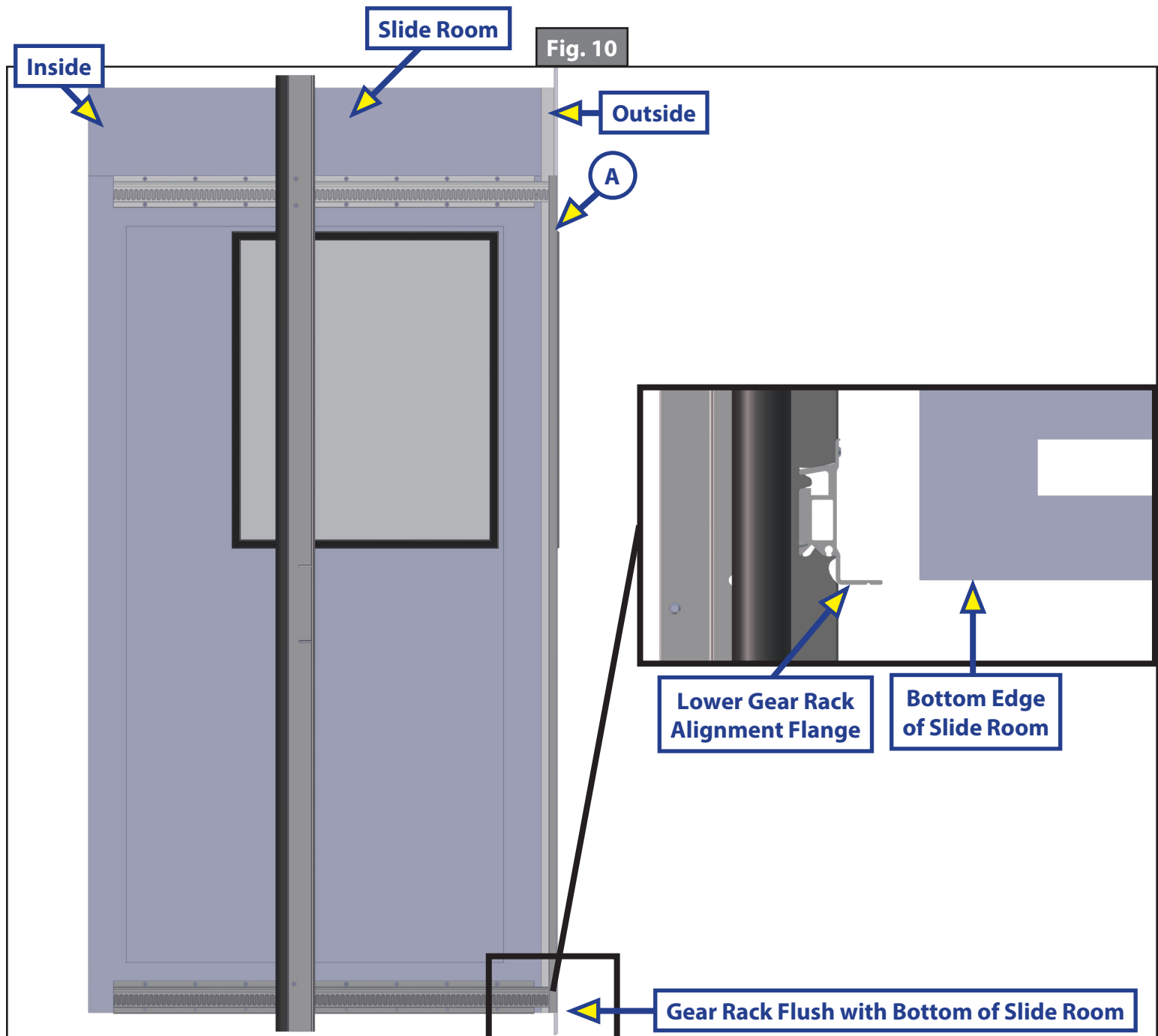


Installing Slide Mechanism to Slide Room

NOTE: The left-hand and right-hand sides of the slide-out are determined by standing on the exterior of the slide-out and facing it. The "fixed" or right-hand assembly will have the installation alignment flange of the shipping angle on the right-hand side of the assembly when looking at the "S" track on the gear rack. The "float" or left-hand assembly will have the installation alignment flange of the shipping angle on the left-hand side of the assembly when looking at the "S" track on the gear rack.

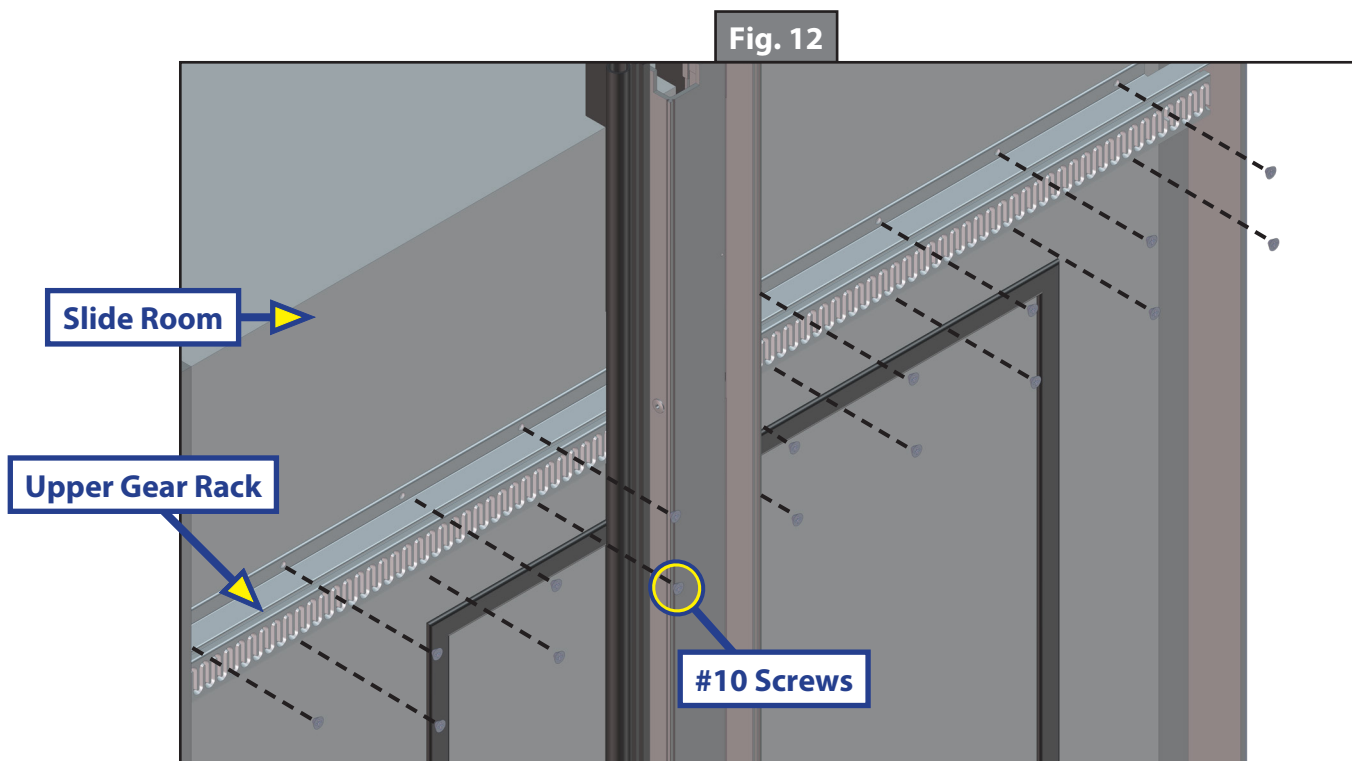
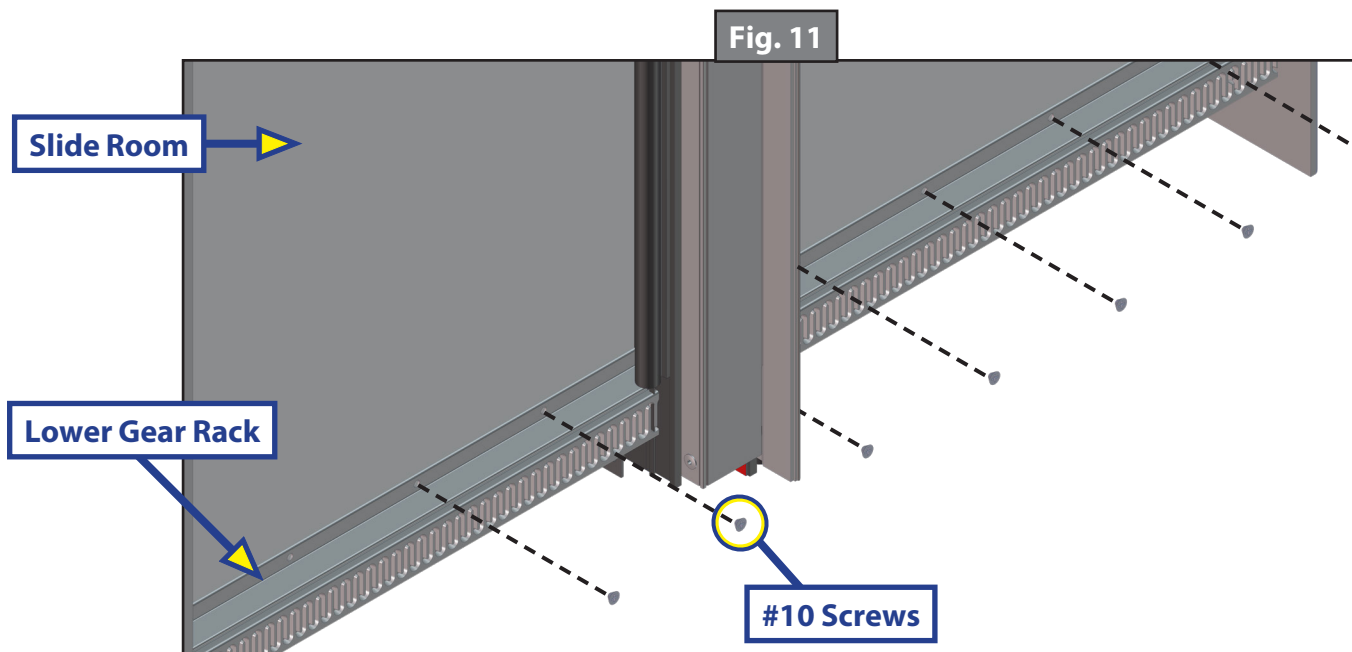
1. Place the "fixed" assembly against the left-hand side wall of the slide room (Fig. 10).
2. Hook the lower gear rack installation alignment flange on the bottom of the room (Fig. 10).
3. Slide the assembly to the rear, placing the installation alignment flange of the front shipping angle flush against the front of the slide room (Fig. 10A). Always align the assembly to the front and bottom of the slide room.

NOTE: The bottom edge of the slide room rests on the bottom angle of the lower rack alignment flange (Fig. 10).



4. While maintaining alignment with the bottom and front of the slide room, attach the lower gear rack to the side of the slide room with #10 pan head screws (Fig. 11). The lower gear rack will only have screw holes above the "S" track of the gear rack.
5. While maintaining alignment with the bottom and front of the slide room, attach upper gear rack to the side of the slide room with #10 screws (Fig. 12). The upper gear rack will have screw holes above and below the "S" track of the gear rack.
6. Remove the front/exterior shipping angle from the gear racks.
7. Repeat steps 1 through 4 for attaching the "float" slide assembly to the right-hand side of the slide room.
8. Measure the center-to-center distance between the upper and lower gear racks at each end to make sure the racks are parallel.
9. Attach the exterior slide room T-molding, if not already installed.

NOTE: Once the T-molding has been installed, the slide room is ready to be installed into the caravan.

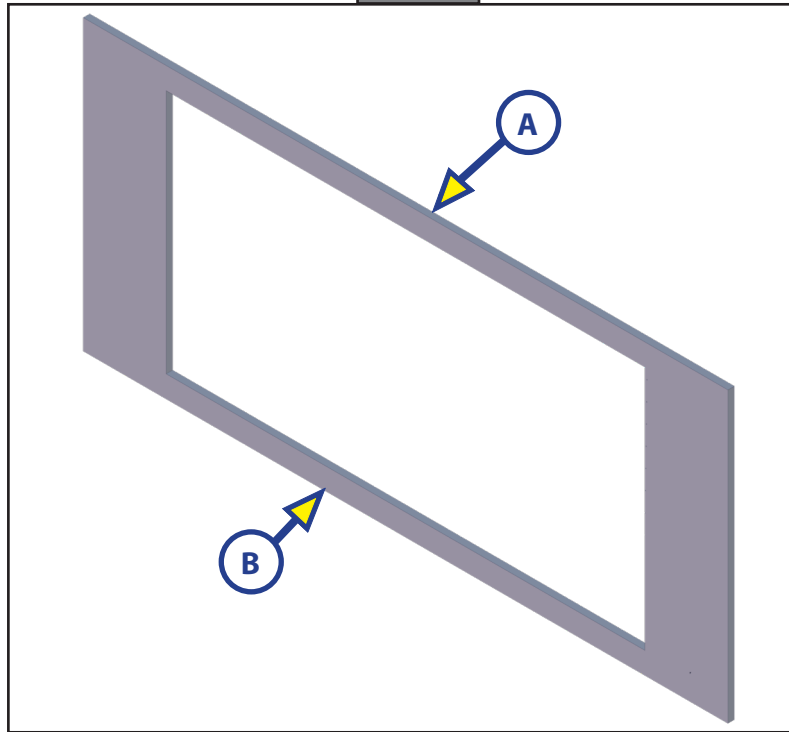


Prepare Wall Opening for Slide Room Installation

1. Prepare upper (Fig. 13A) and lower (Fig. 13B) outer wall surfaces using adhesion promoter or 50/50 alcohol/water mix to clean and prepare the area for complete adhesion of sealant.

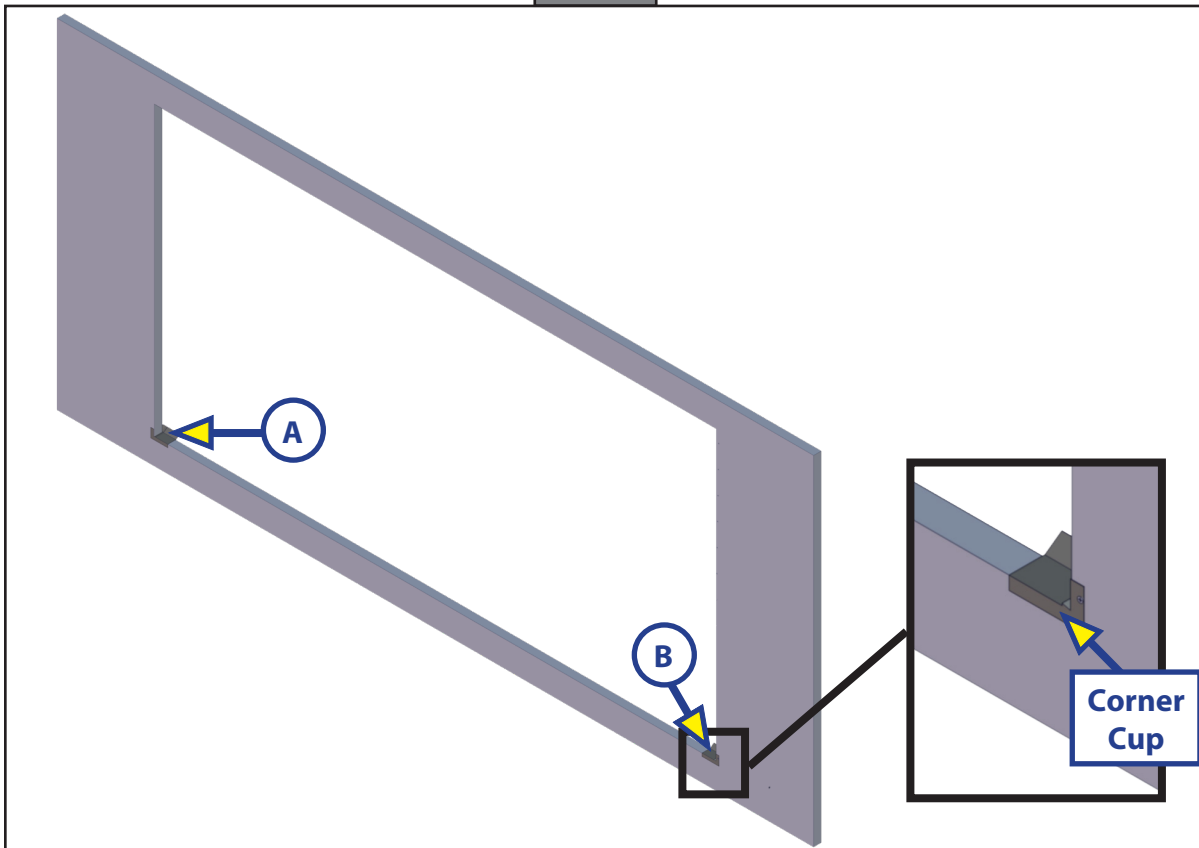
NOTE: Corners need to be at 90° with no obstructions.

Fig. 13



2. Set both left (Fig. 14A) and right (Fig. 14B) molded corner cups. Remove liner from tape adhesive.

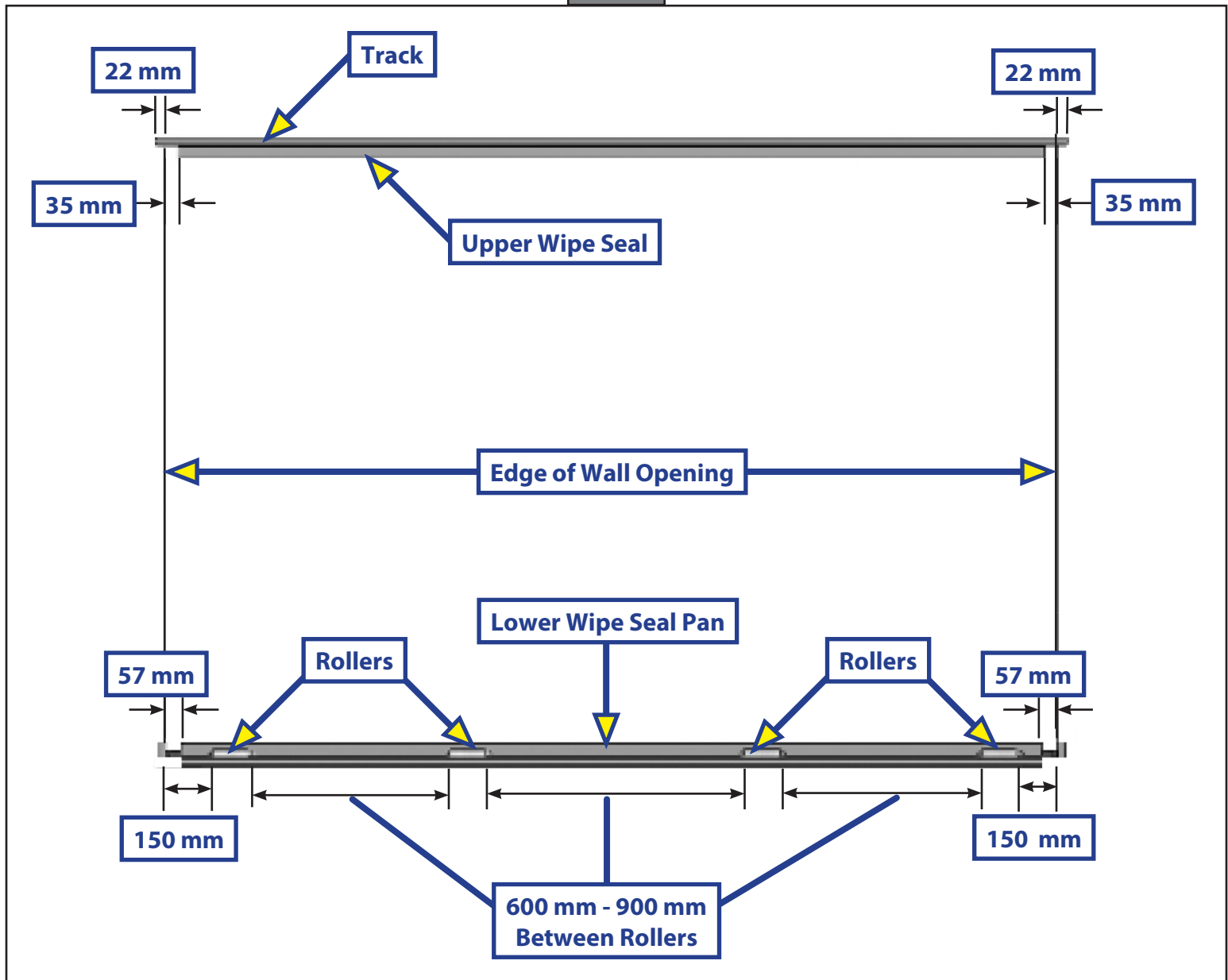
Fig. 14



Refer to Fig. 15 for steps 3 through 8:

3. Cut lower wipe seal pan to allow a 57 mm gap from the edge of the wall to the edge of the pan.
4. Remove the liner from adhesive tape and install as shown.
5. Cut the upper wipe seal to allow a 35 mm gap from the edge of the wall. Track extends 22 mm past wall opening on both ends.
6. Remove liner from adhesive tape and install with tape to outside of wall.
7. Finish by attaching with screws or staples in the clip area for the upper and lower seals.
8. Install rollers per guidelines: End rollers 150 mm from wall opening side wall; span rollers along the slide room sill every 600 to 900 mm between rollers to support the weight of the slide room.

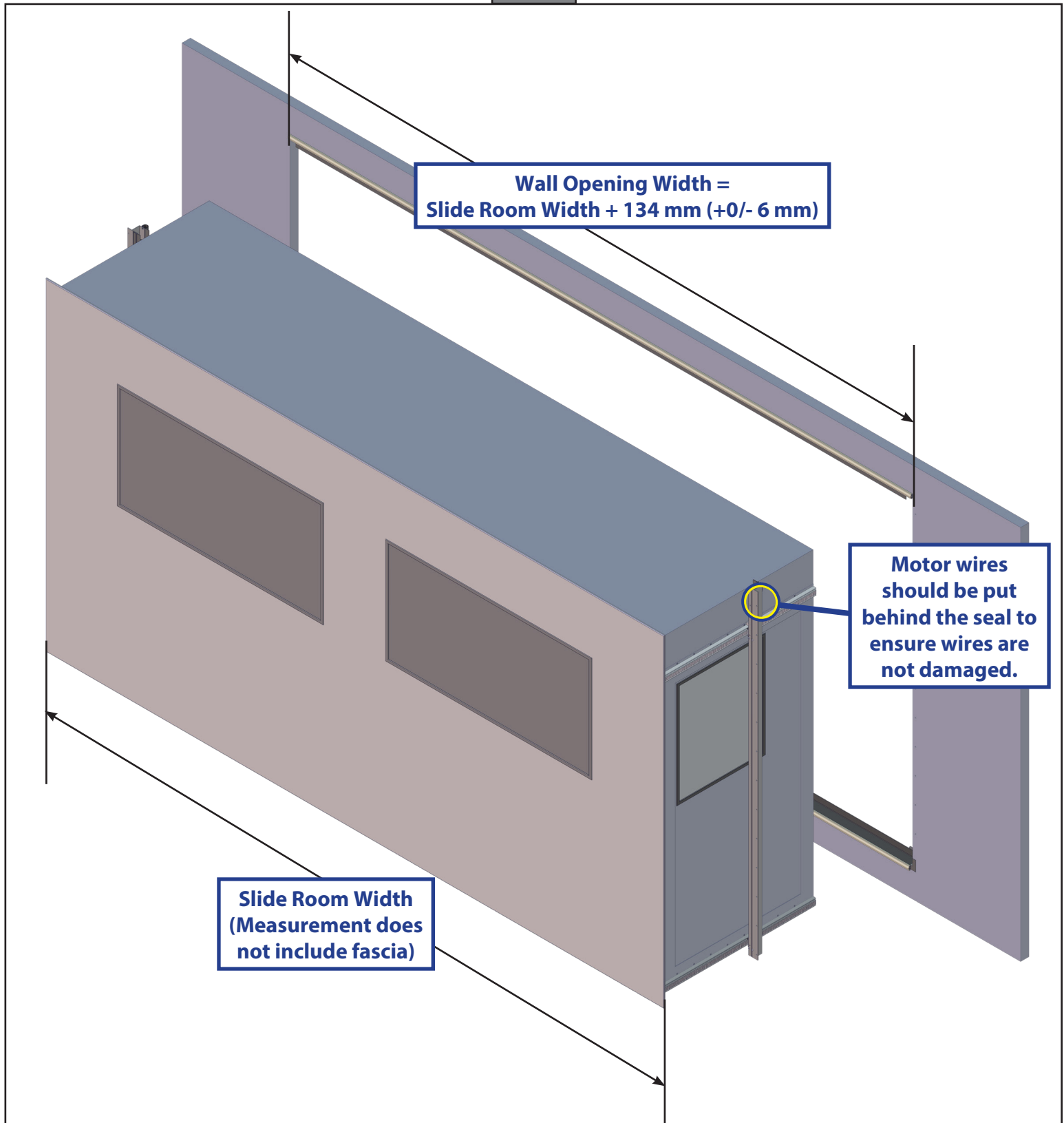
Fig. 15



Slide Room Installation

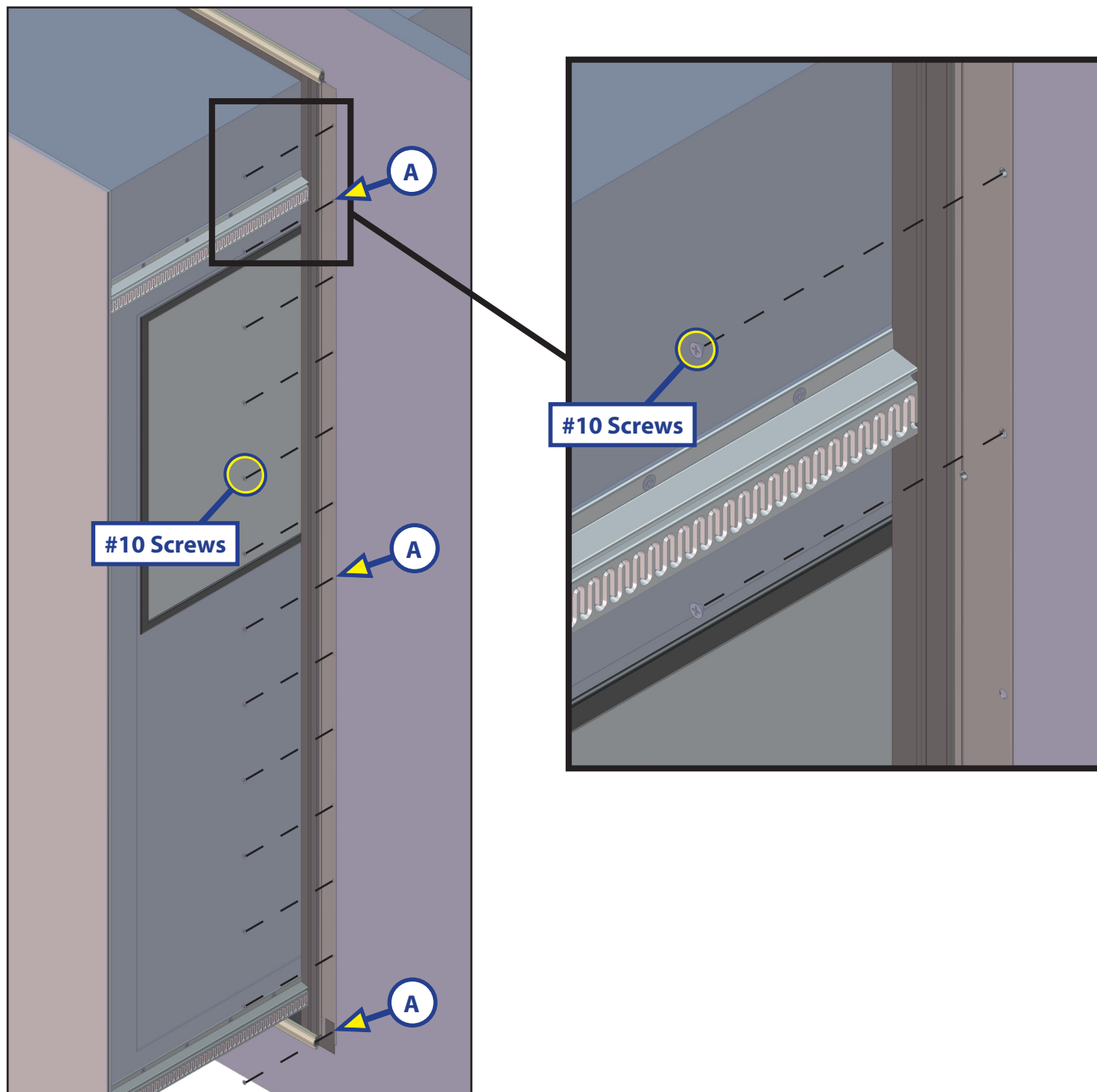
1. Measure the slide room width and the wall opening (Fig. 16). The wall opening needs to be 134 mm wider than the actual slide room measurement. Do not attempt to install the slide room in the caravan if this dimension is more than 134 mm or less than 127 mm.
2. Insert the completed slide room into the wall opening, taking care to center support columns within the opening.
3. Center the box in slide opening.

Fig. 16



4. Attach right- and left-hand support columns to the wall of caravan with #10 pan head screws, starting by installing screws in the holes closest to each gear rack where the gear rack and column meet and also by installing one screw in the center of each column (Fig. 17A).
5. Finish installation by securing right- and left-hand columns completely to the caravan wall with #10 pan head screws (Fig. 17).
6. Remove the rear/interior shipping angles from the gear racks.

Fig. 17



7. Attach the interior slide room fascia. Fastener spacing must be 152 mm to 203 mm apart unless using side-mounted stop angles.

NOTE: Interior slide room fascia must be attached prior to operating the slide room. Do not attempt to operate the slide room until both the exterior T-molding and the interior fascia are attached to the slide room.

8. Apply glue to the back of the upper wipe seal and lay it over the top of the vertical wipe seal on the column (Fig. 18).
9. Fasten the short leg (Fig. 19A) of the aluminum angle to the room with #10 screws.
10. Seal the exterior joint between the aluminum angle and the room on the exterior edge.

NOTE: Do not attempt to operate the room until all the interior angles are properly secured to the slide-out.

Fig. 18

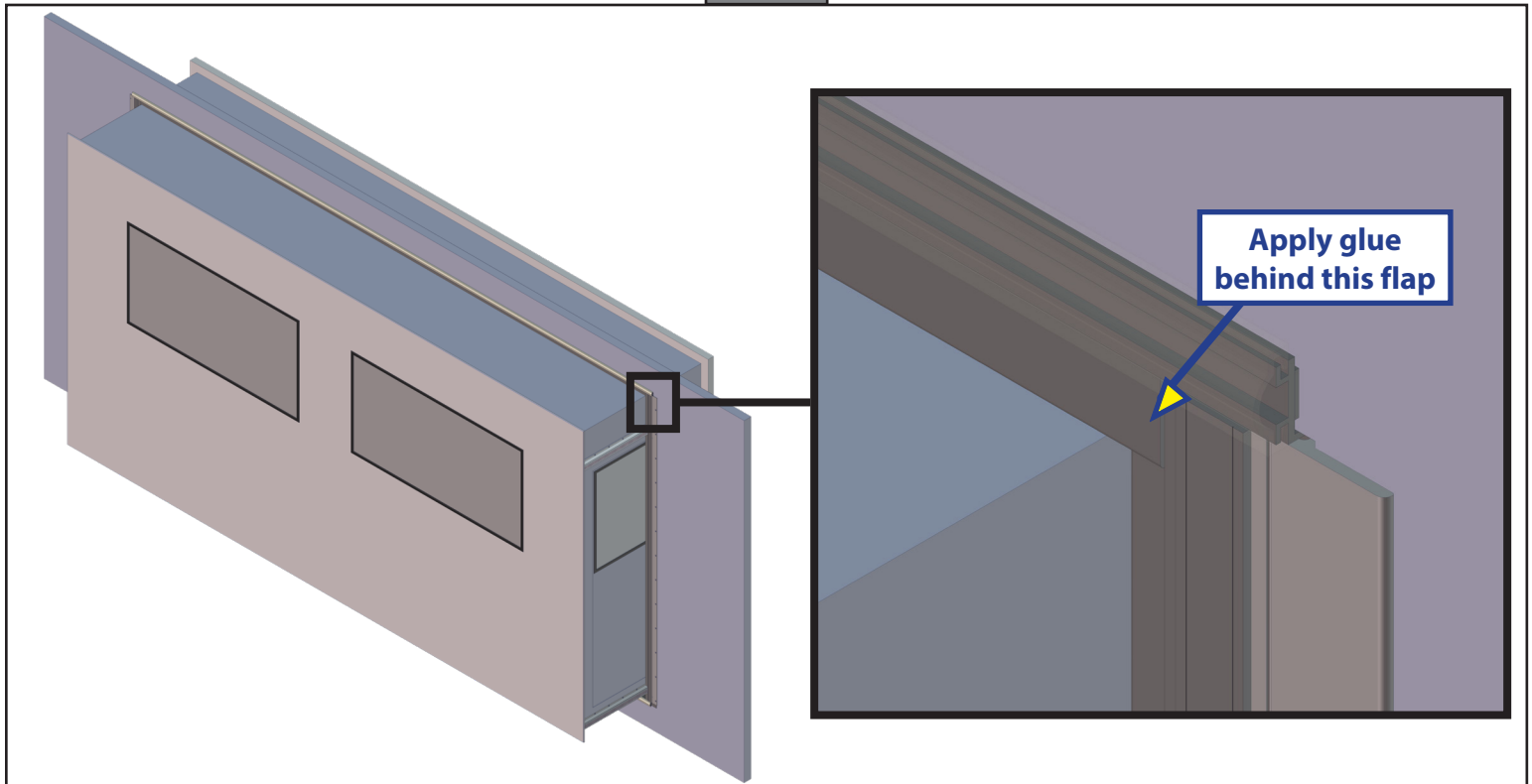
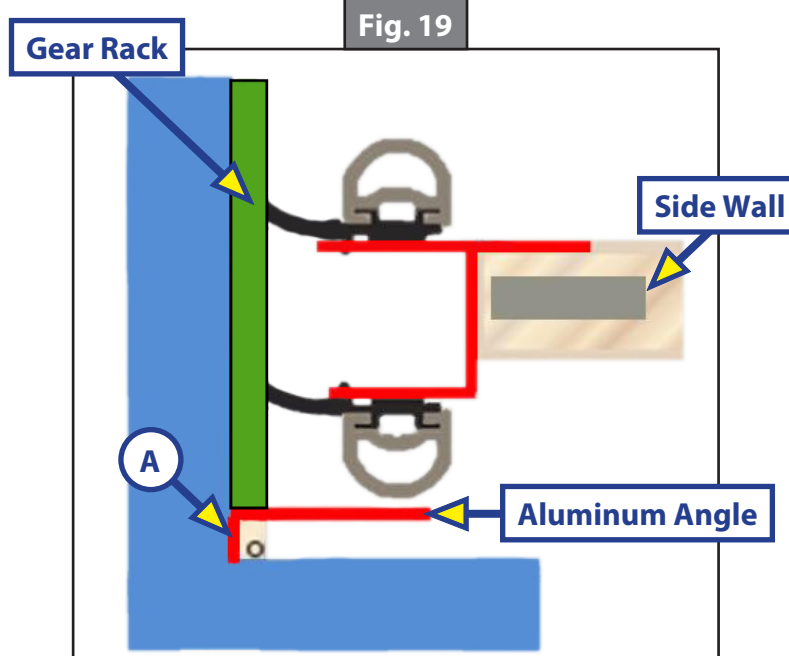


Fig. 19



Required: Installation of In-Wall Column Z Clamp

Z clamps **MUST** be utilized for installed In-Wall Slide-out systems.

NOTE: Clamps are required for all In-Wall slide systems.

⚠ WARNING

Do not work on your slide-out system unless the battery is disconnected. Failure to act in accordance with the following may result in death or serious personal injury.

⚠ CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

Resources Required

- Cordless or Electric Drill or Screw Gun
- Appropriate Drive Bit
- #10 x 19mm screws
- Z clamp

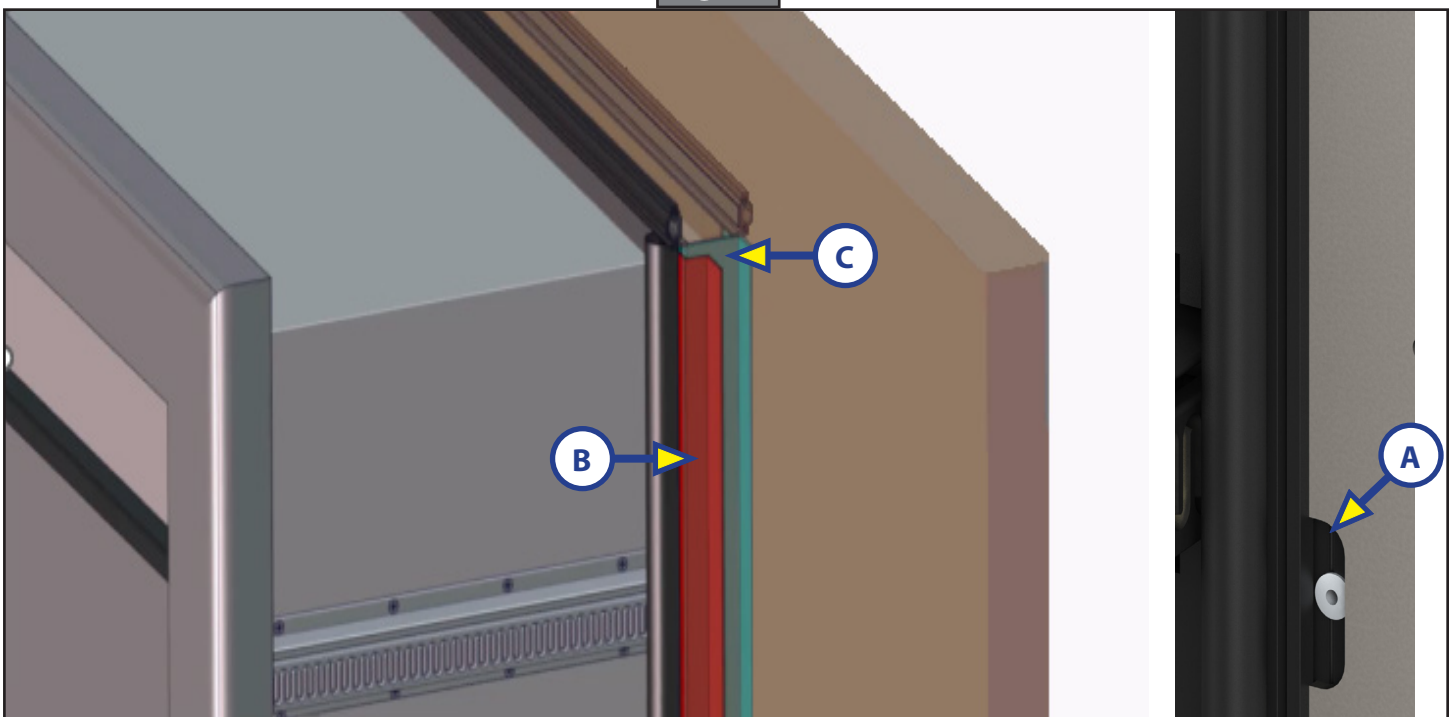
Installation - Full Length Clamps

1. If using a full length Z clamp, it must be appropriately notched to fit around the upper and lower gib rivet heads (Fig. 20A).
2. Place the Z clamp (Fig. 20B) on the interior of the slide system (Fig. 20C). The clamp should be flush to the top of the channel, against the bulb seal.

NOTE: Use self-drilling screws or drill pilot holes.

3. Use #10 x 19mm screws to attach the In-Wall column clamp to the interior of the In-Wall system.
4. Use #10 screws to fasten the In-Wall column clamp to the wall of the unit.
5. Repeat steps 1 - 3 for the opposite side.

Fig. 20



Installation - Two 406mm Z Clamps

The fixed side top (Fig. 21) and bottom (Fig. 22) 406mm clamp correct positions are:

- Three holes screwed to the column.
- Four holes screwed to the wall opening edge.
- The clamp will be 26mm below the silver rivet for top clamp position and 64mm above the silver rivet for bottom clamp position.

The float side clamp installations will be a mirror of the fixed side.

NOTE: Any other orientation of the clamps or added screws could result in damage to the slide-out system.

Fig. 21

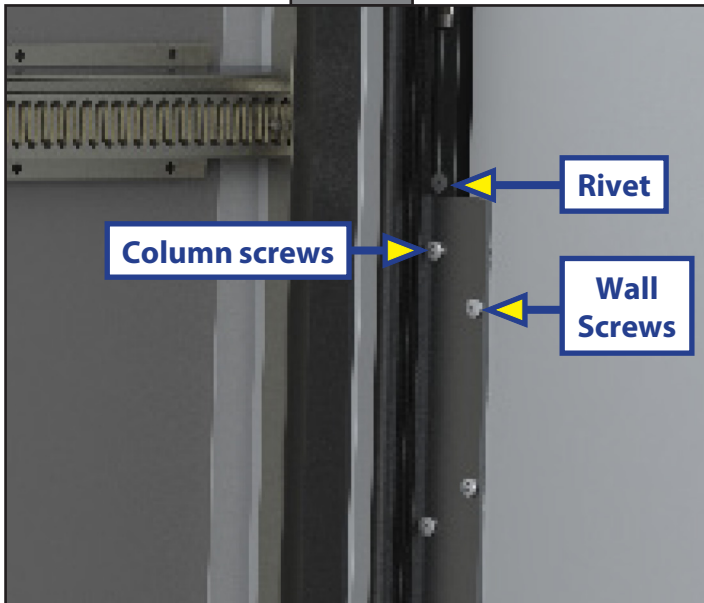
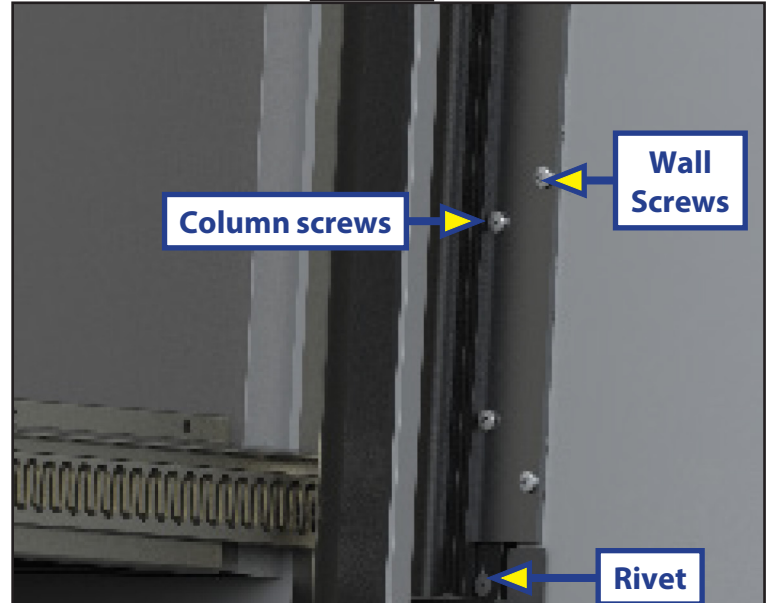


Fig. 22



Controller Installation

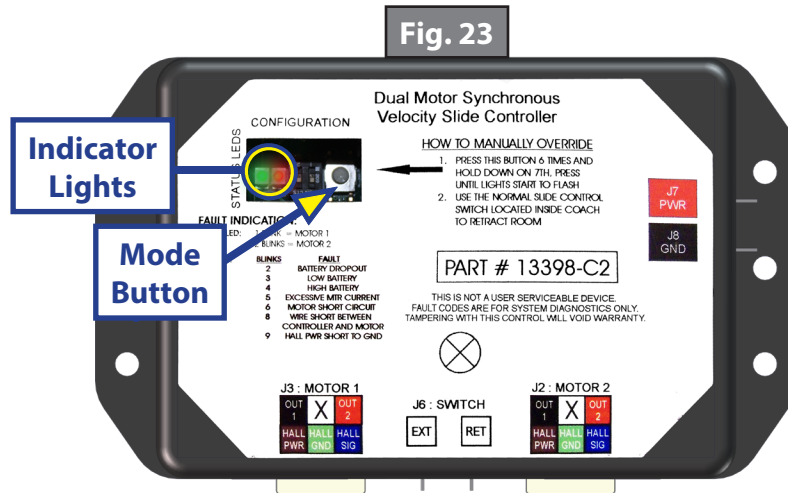
1. Mount controller by securing to a solid surface with #8 x 25 mm wood screws or equivalent.

NOTE: The compartment where the controller is installed must be protected from the elements because the controller is not waterproof. Additionally, the controller should be located away from interior water sources that may cause damage.

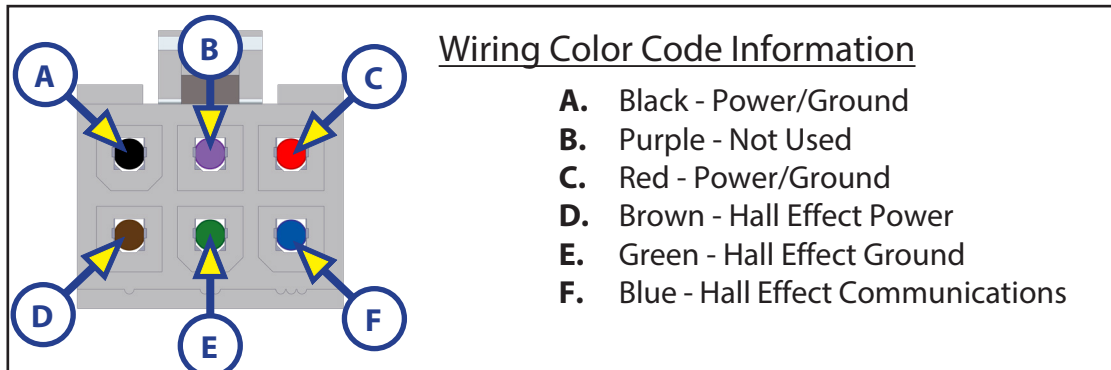
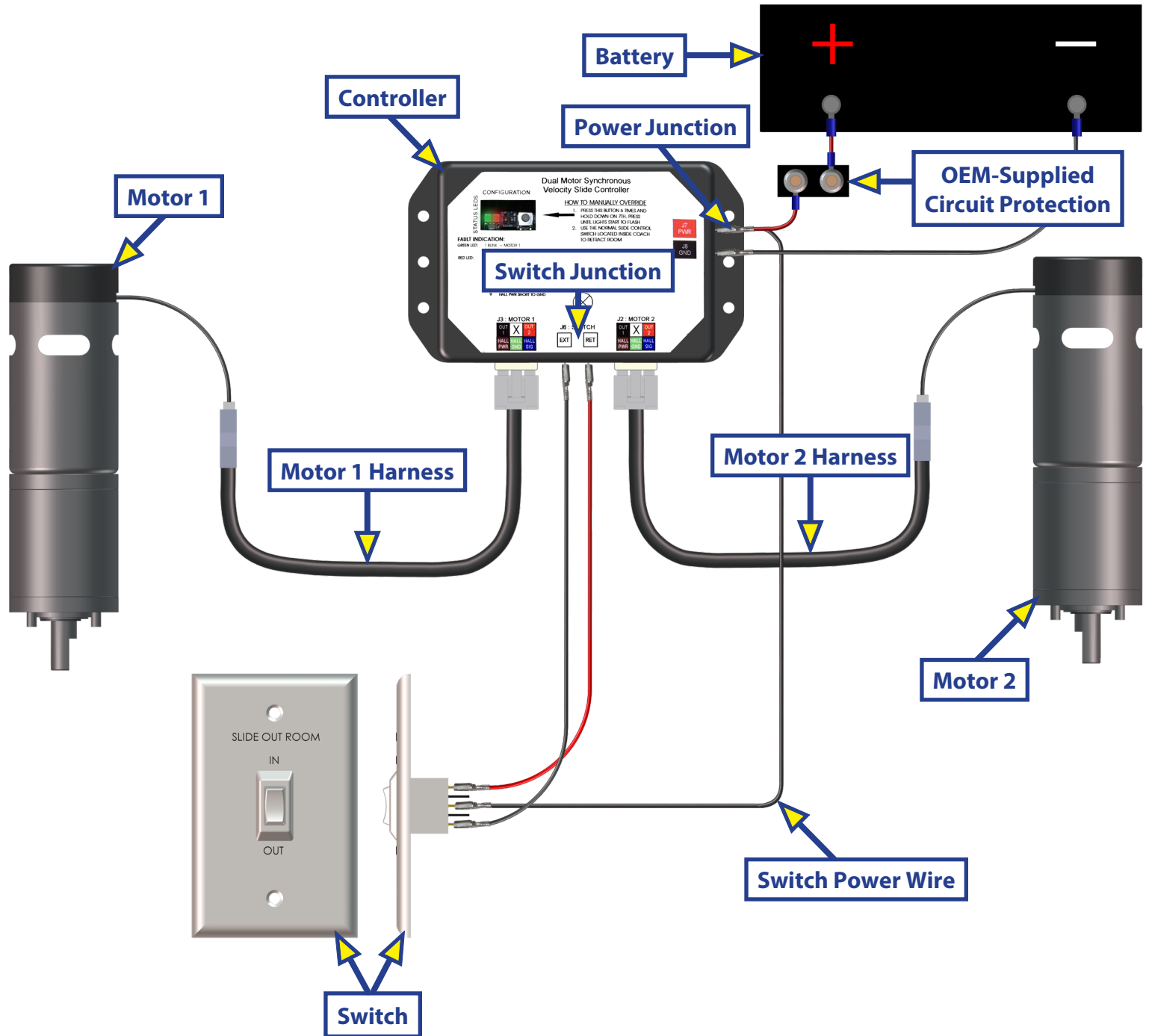
NOTE: The controller (Fig. 23) must be mounted with the face visible, allowing the indicator lights and mode button to be accessible for resetting and troubleshooting purposes.

2. Wire the system using 10 AWG electrical wire minimum. See Wiring Diagram.

NOTE: OEM-supplied circuit protection of 30 amps or as determined by OEM requirements should be installed in-line between the power supply and controller. All wiring is to conform to RVIA standards.



Wiring Diagram



Startup and Final Inspection

⚠ WARNING

Always make sure that the slide-out room path is clear of people and objects before and during operation of the slide-out. Always keep away from the gear racks when the room is being operated.

To optimize slide-out operation, park caravan on solid and level ground. Parking locations should be clear of obstructions that may cause damage when the slide-out room is actuated. Make sure all persons are clear of the caravan prior to the slide-out room actuation. Keep hands and other body parts away from slide-out mechanisms during actuation.

1. Inspect both the inside fascia and the exterior T-molding and verify they are securely fastened.
2. Inspect the connections at the controller and verify they are securely attached.
3. Visually inspect all of the gear rack mounting screws to verify they are tight and flush against the gear racks.
4. To home the slide box for the first time, use the following procedure:
 - A. Press and hold the IN button on the wall switch (Fig. 24).
 - B. Verify that both motors are moving the room in the same direction. If not, stop and check the wiring and connections to verify proper operation. Replace any damaged harness or motor if the wiring is damaged.
 - C. Allow the room to power all of the way in and continue pressing the IN button until both sides have completely stopped and the motors turn off by themselves.
5. To synchronize the slide motors, use the following procedure:
 - A. Fully extend the slide room by pressing and holding the OUT button (Fig. 24). Keep the switch engaged until the motors shut down.
 - B. Retract the room 25 to 51 mm.
 - C. Repeat steps A and B. In many cases two or three repetitions are necessary to synchronize the system. When the motors are synchronized they will shut down (amp out) at the same time.
6. Using the wall switch, extend the room all of the way out until it stops. Conduct these inspections:
 - A. Verify the room did a full stroke and that the interior seals are evenly compressed.
 - B. Verify the vertical wipe seals are in uniform contact with the side walls of the slide room.
 - C. Verify the upper and lower wipe seals are in uniform contact with the floor and ceiling.
 - D. Verify that all of the floor rollers are in constant contact with the slide box floor.
 - E. Verify the lower wipe seal is of proper length and is clear of all of the rollers.
 - F. Verify the exterior top wipe seal is overlapped and glued at each corner to the vertical wipe seal.

Optionally, connect an amp meter to the incoming power to the controller and extend and retract the room. The slide should operate at a consistent amp load throughout its entire stroke. Unusually high amps or amp spikes during the stroke are a sign of a troubled installation.

Fig. 24



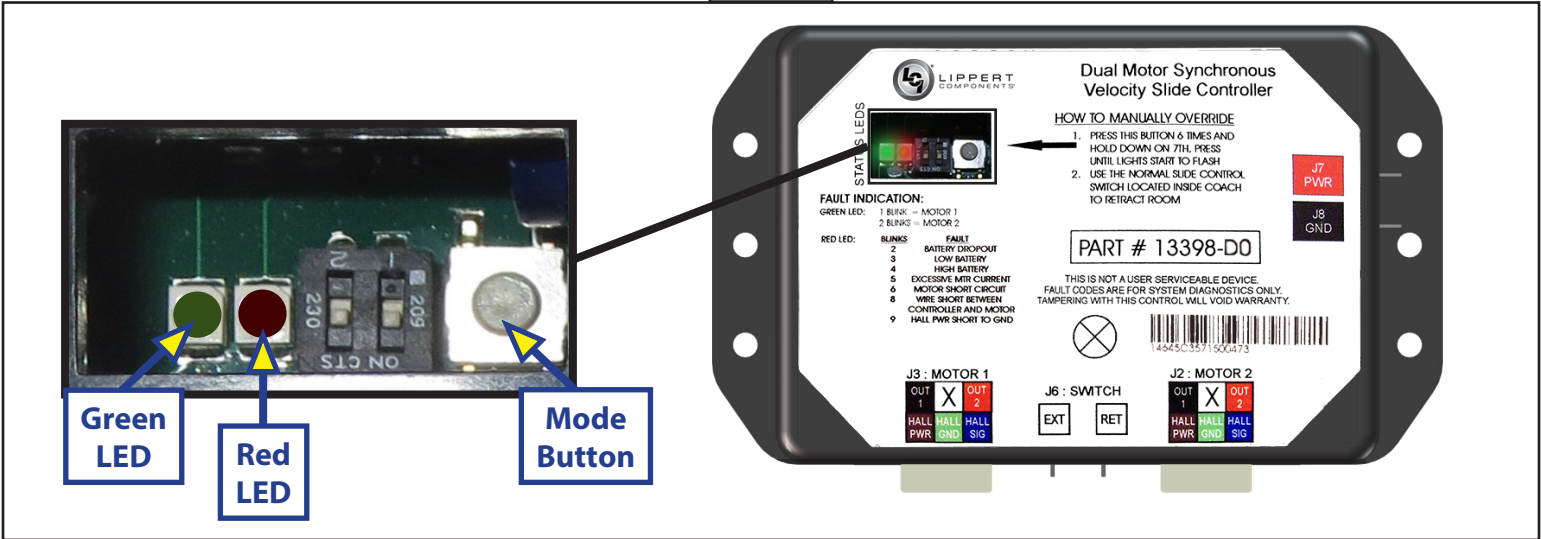
Troubleshooting

When an error occurs during operation, the control board will use the LED lights to indicate where the problem exists (Fig. 25). For motor specific faults, the green LED will blink one time for motor one and two times for motor two. The red LED will blink from two to nine times, depending on the error code.

When an error code is present, the board will need to be reset. Turning on the extend/retract switch resets the board. Turning it off and turning it on again prepares the slide-outs for normal operation.

Error Code Chart		
Red LCD Flashes	What Is Happening?	Corrective Action Needed
2	Battery dropout.	Battery capacity low enough to drop below 6V DC while running.
		Short in switch wiring.
3	Low battery.	Voltage below 8V DC at start of cycle.
5	Excessive motor current.	High amperage; also indicated by one side of slide continually stalling.
6	Motor short circuit.	Motor or wiring to motor has shorted out.
8	Wire short between controller and motor.	Encoder is not providing a signal. This is usually a wiring problem.
9	Hall power short to ground.	Power to encoder has been shorted to ground. This is usually a wiring problem.

Fig. 25



Electronic Manual Override

Refer to figure 25 for locations of the mode button and LEDs.

1. Press the mode button on the controller six times and hold on the seventh for five seconds to enter electronic manual override mode.
2. Use the extend/retract switch to move both motors in or out.

NOTE: Over-current and short circuit detection are still enabled. Electronic manual override provides 12V DC directly to both motors.

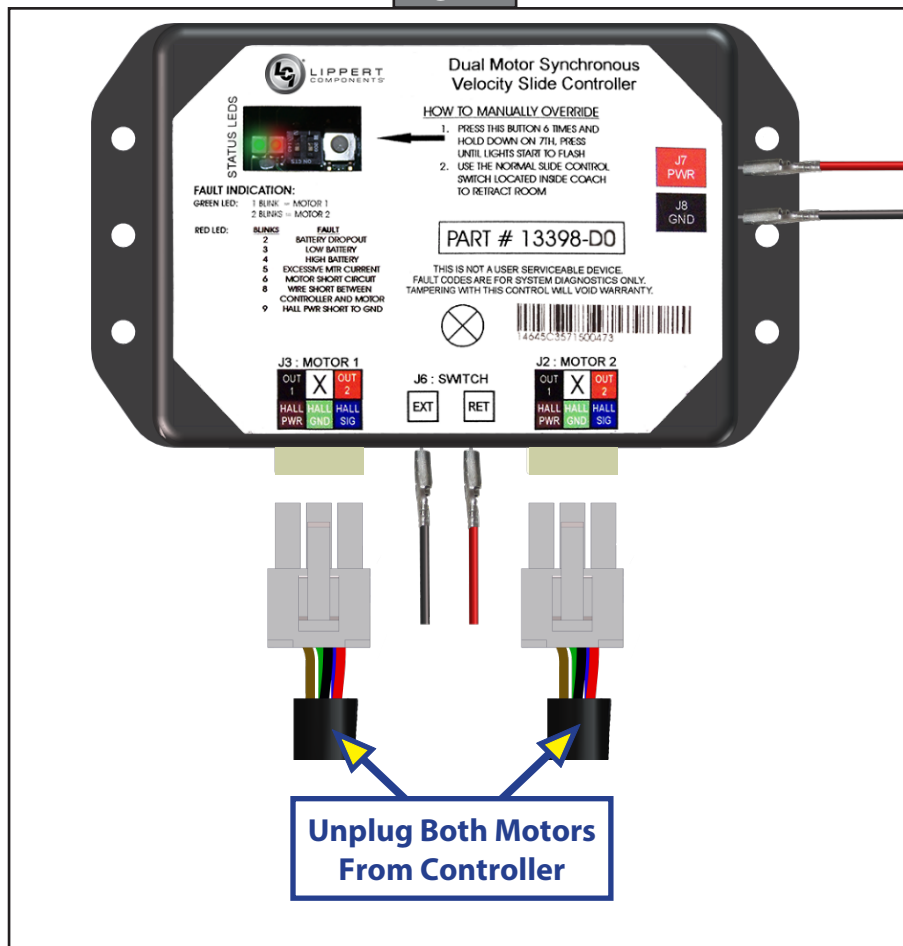
3. To exit the mode, push and hold the mode button until the LEDs begin to blink simultaneously. Exiting the override mode resets the motor positions. Resync motors.

NOTE: During this override procedure the motors are not synchronized. Visually watch the room: if one side is moving significantly slower than the other, or not at all, then immediately stop and use the "Motor Disengagement Procedure."

Physical Manual Override

1. Locate the controller.
2. Unplug both motors from the controller (Fig. 26).
3. Push or pull in slide room. Larger rooms may require several people to move the slide rooms.
4. Keep both sides of the room relatively even.
5. When the room is completely pushed in, plug in both motors to the controllers.

Fig. 26





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