



IN-WALL® SLIDE-OUT
OEM INSTALLATION MANUAL

L I P P E R T
C O M P O N E N T S®

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System and Safety Information

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.

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.

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 trailer.

CAUTION

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

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

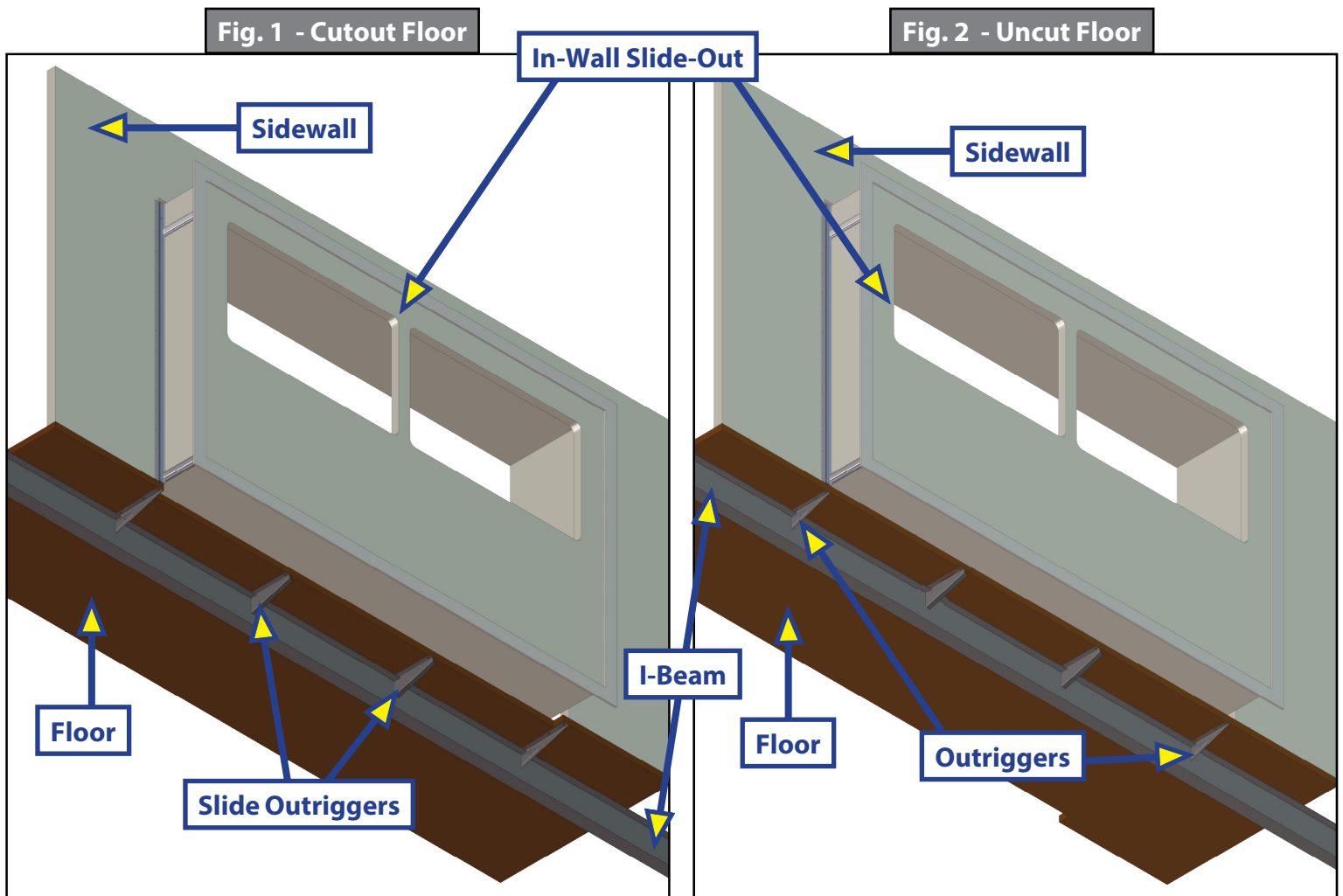
In-Wall Slide-Out Chassis Specification

6.1.1 Slide-Out Configurations

This section will show Lippert In-Wall slide system setups.

In-Wall Slide-Outs

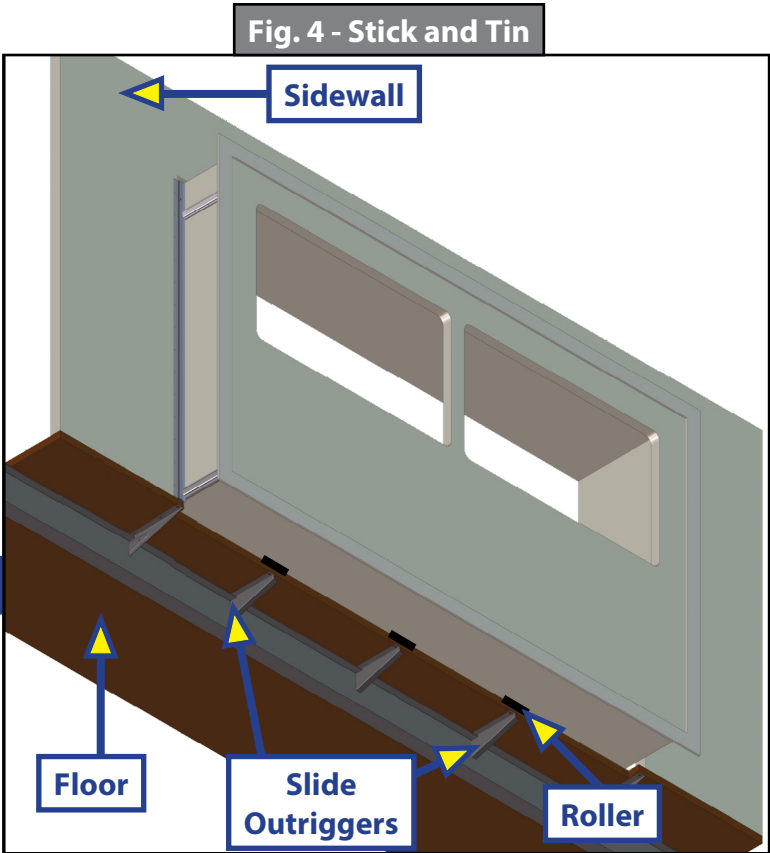
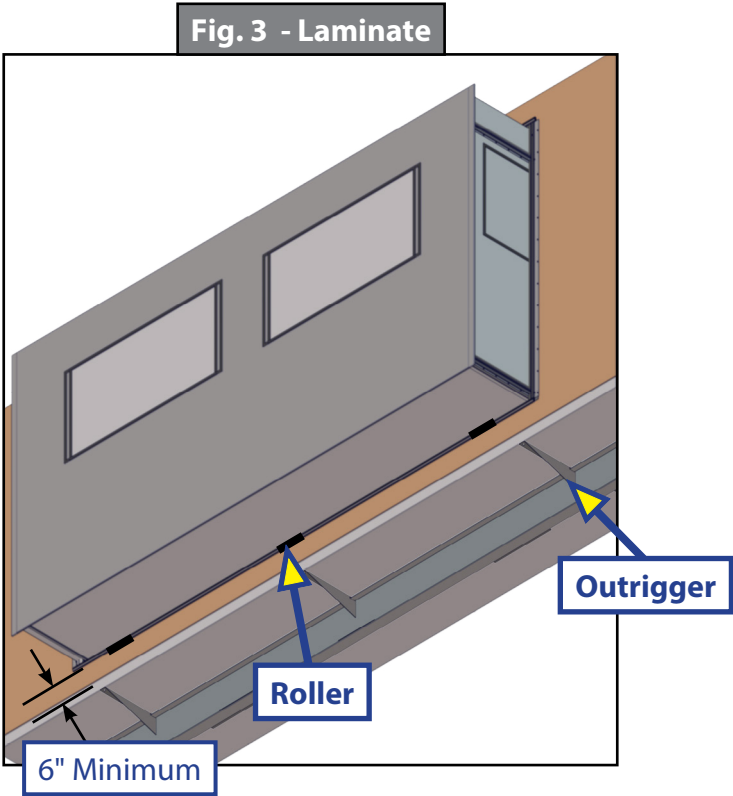
For laminate trailers with rollers mounted to the floor (Fig. 1 and Fig. 2), one standard outrigger is to be placed at the beginning and end of each slide room opening. A minimum of two slide outriggers will be required under each slide room. Slide outriggers should be placed under the heaviest points of the room. If the slide room is at least 144" a third slide outrigger will be required. Add an additional slide outrigger for every 48" thereafter.



Standard outrigger placement will apply every 48" for laminate trailers with at least 6" of wall structure under the slide room floor and rollers mounted on the wall (Fig. 3).

For stick and tin trailers (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 108", a third slide outrigger will be required. Add an additional slide outrigger for every 36" thereafter.

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



Recommended Wall Construction or Equivalent

Travel Trailer Lippert In-Wall

Opening perimeter needs to be 1" x 3" .060" (25.4mm x 76.2mm 1.5mm) aluminum for the header and vertical uprights. The header (Fig. 5) should extend 2' (609.6mm) beyond the vertical uprights for extra support shown in (Fig. 5). The vertical uprights need to be stuffed with wood for securing. If the vertical uprights have a minimum wall thickness of .125", the uprights do not need to be stuffed with wood. If uprights are not stuffed and wall thickness is below .125", interior clamps need to be added to the system. Upright wall thickness below .055" is not acceptable.

Wall Chart	
Thickness	Structure
Greater than or equal to .125"	Non Stuffed
Less than .125" to .055"	Stuffed or Inside Clamp
Less than .055"	Not Approved

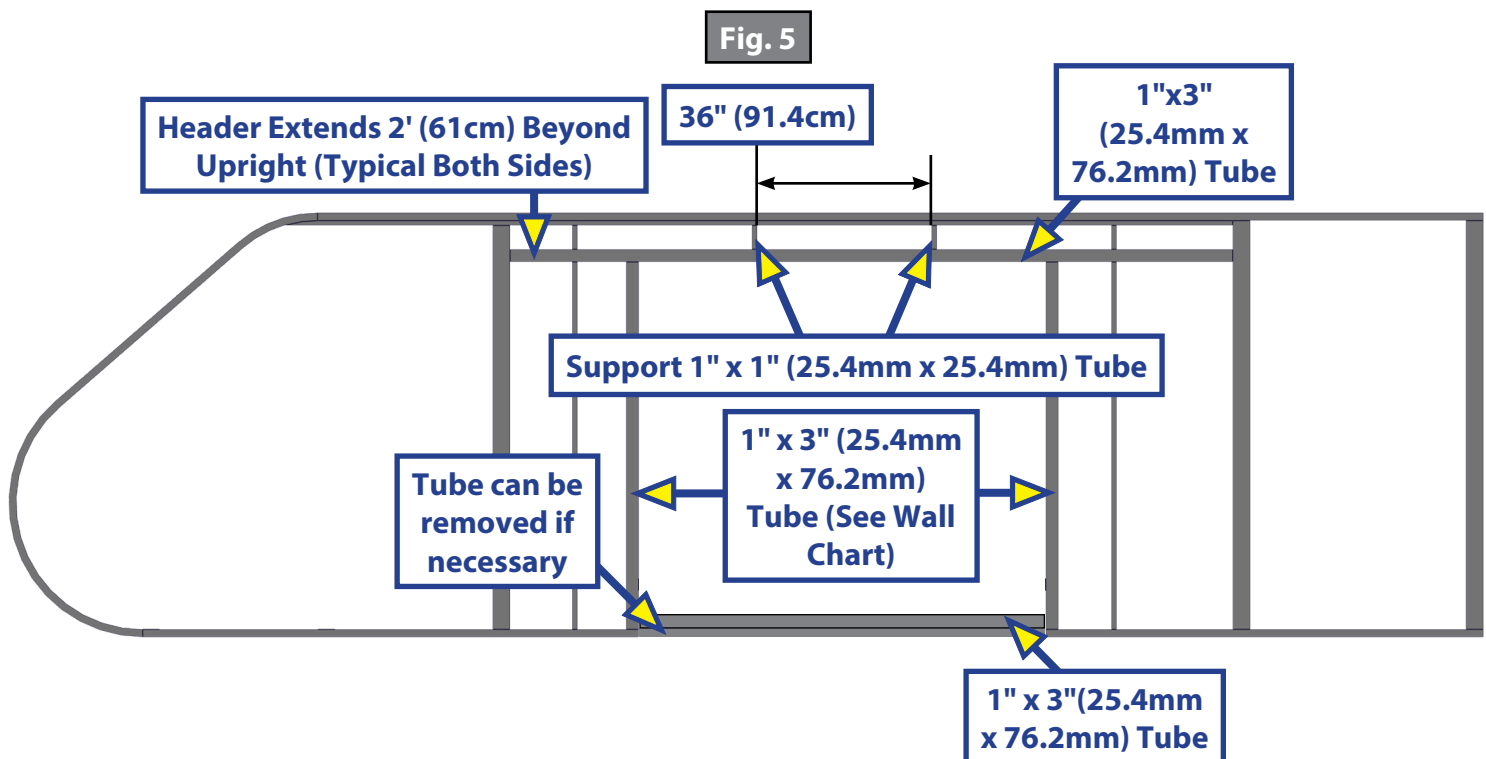
Fifth Wheel Lippert In-Wall

The room opening in (Fig. 5) will be the same except for using 1" x 5" .070" (25.4mm x 127mm 1.78mm) aluminum for the header and 1" x 3" .070" for the vertical uprights. Header should extend 2' (61cm) beyond the room opening. Vertical uprights should be stuffed with wood (Fig. 5). If the vertical uprights are at least .125" thick, the uprights do not need to be stuffed with wood. If uprights are not stuffed and wall thickness is below .125", interior clamps need to be added to the system. Upright wall thickness below .055" is not acceptable.

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

Supports need to be at least .040" (1mm) aluminum and 1" x 1" (25.4mm x 25.4mm) aluminum tube and should extend from the header up into a cross tube. If the room size in the slide wall is less than 4' (121.9cm) in width, no vertical supports are needed above the header. Any room that is more than 4' (121.9cm) and up to under 8' (243.8cm) needs to have one support centered on the room. Every room that is over 8' (243.8cm) up to 12' (365.8cm) needs to have two vertical supports evenly spaced over the top of the room. For example, a 9' opening would have a vertical support 3' (91.4cm) in from each upright (See Fig. 5 for reference). So for every 4' (121.9cm) in room width, one additional vertical support will be needed.

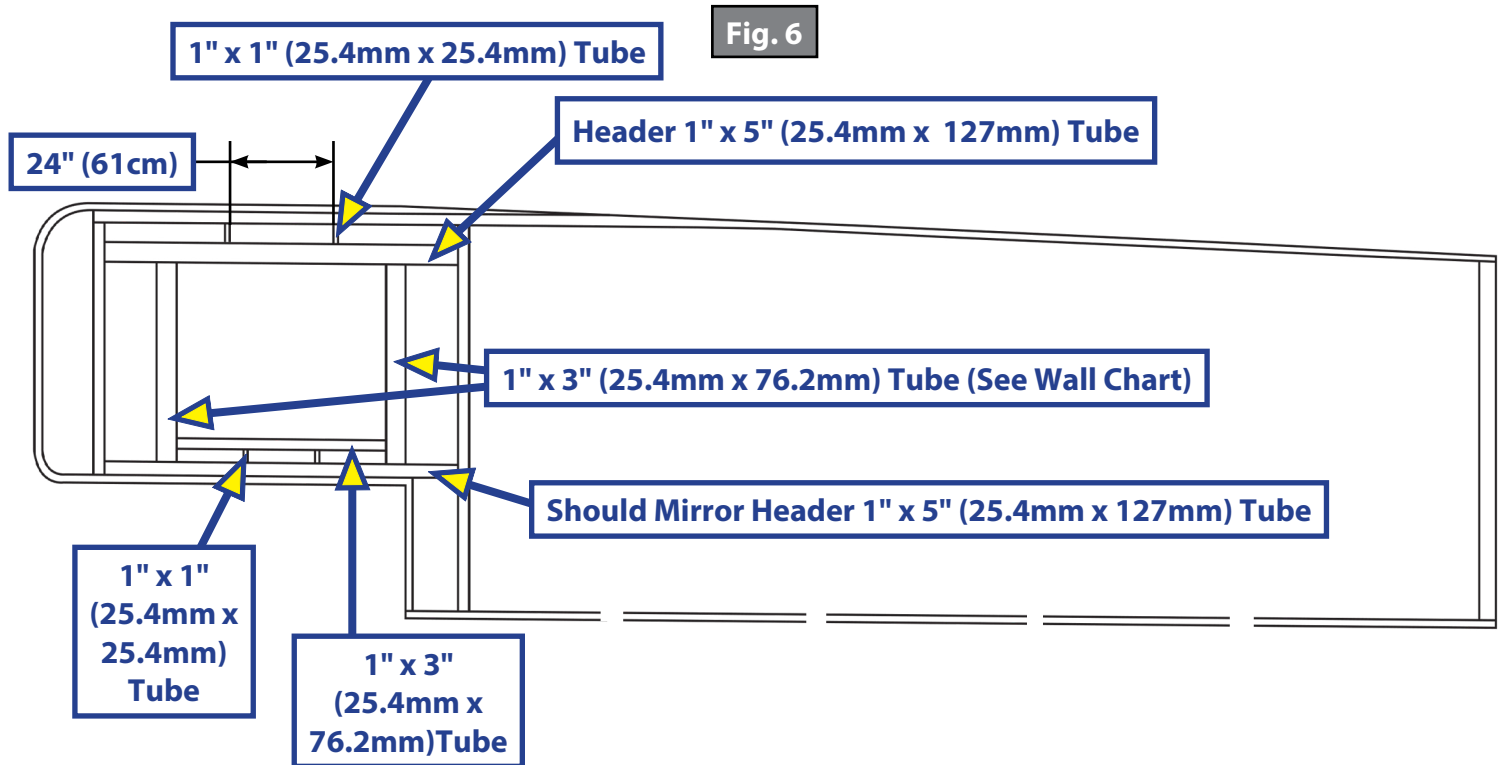
NOTE: These instructions are based on a 1" (25.4mm) sidewall thickness. For example, a 1.5" x 3" (38.1mm x 76.2mm) tube may be used if walls are 1.5" (38.1mm) thick.



Upper Deck Slide Room Opening

If a fifth wheel has a Lippert In-Wall slide opening in the upper deck area, the bottom cross tube should be equal to, or longer than, the header tube. If additional height is needed, the manufacturer will need to add another cross tube that is .060" (1.5mm) gauge minimum and add vertical supports for strength. The supports **MUST** be a minimum 1" x 1" (25.4mm x 25.4mm) aluminum tube and placed accordingly. This applies to top and bottom supports only in the upper deck area (Fig. 6).

- A. Room is 5' (152.4cm) and under, two vertical supports are needed spaced evenly.
- B. More than 5' (152.4cm) up to 7' (213.4cm), three supports are needed spaced evenly.
- C. More than 7' (213.4cm) up to 9' (274.32cm), four supports are needed spaced evenly and so on.
- D. Vertical supports need to be .040" (1mm) minimum gauge.



Slide Room Opening Bottom Section

The bottom tube in the slide room can be .040" (1mm) aluminum unless it falls into the wheel well or upper deck area as explained in the "Upper Deck Slide Room Opening" section. 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. 7). 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. 8). The bottom tube needs to be .060" (1.5mm) aluminum for travel trailers and .070" (1.8mm) aluminum for fifth wheels only when a tube is needed for the wheel well area.

NOTE: If slide room is in wheel well area, the slide wall structure should start at least 6" above the bottom of the rest of the wall (Fig. 8A). Slide outriggers will not be recommended in this case.

Fig. 7 - Slide Not in Wheel Well Area

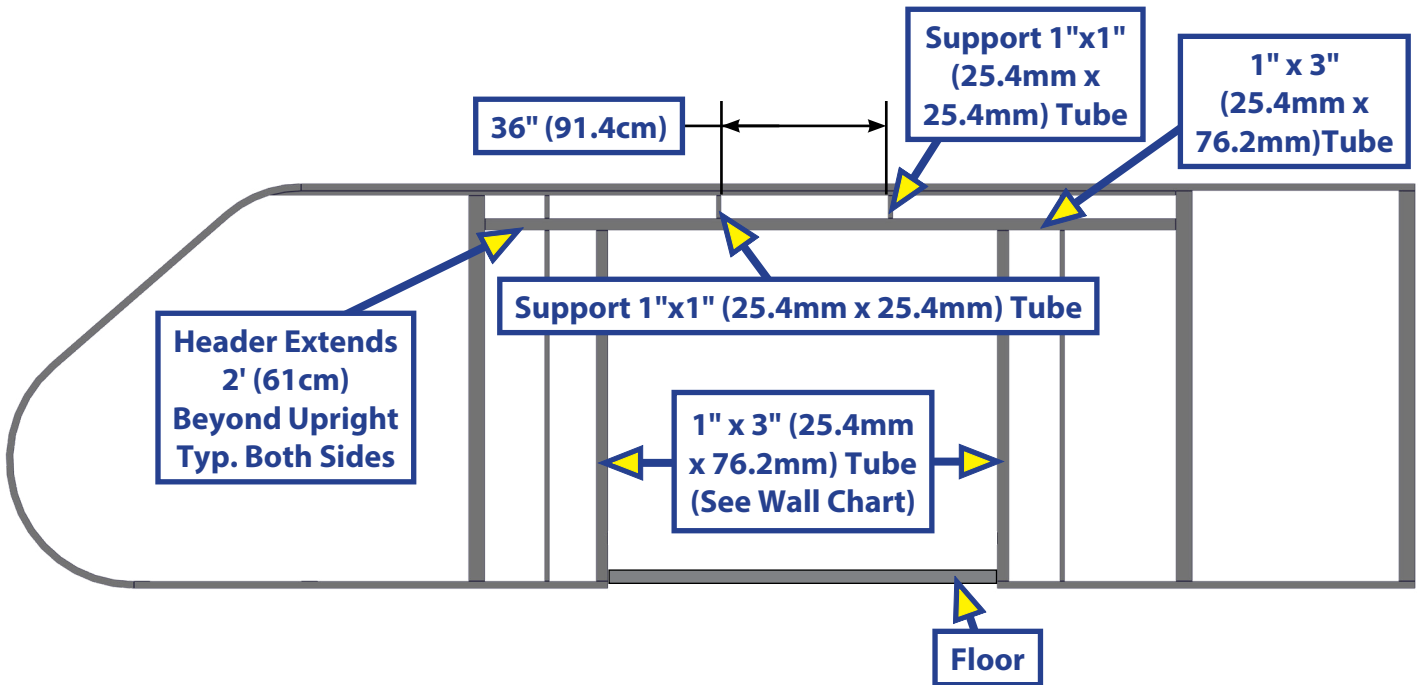
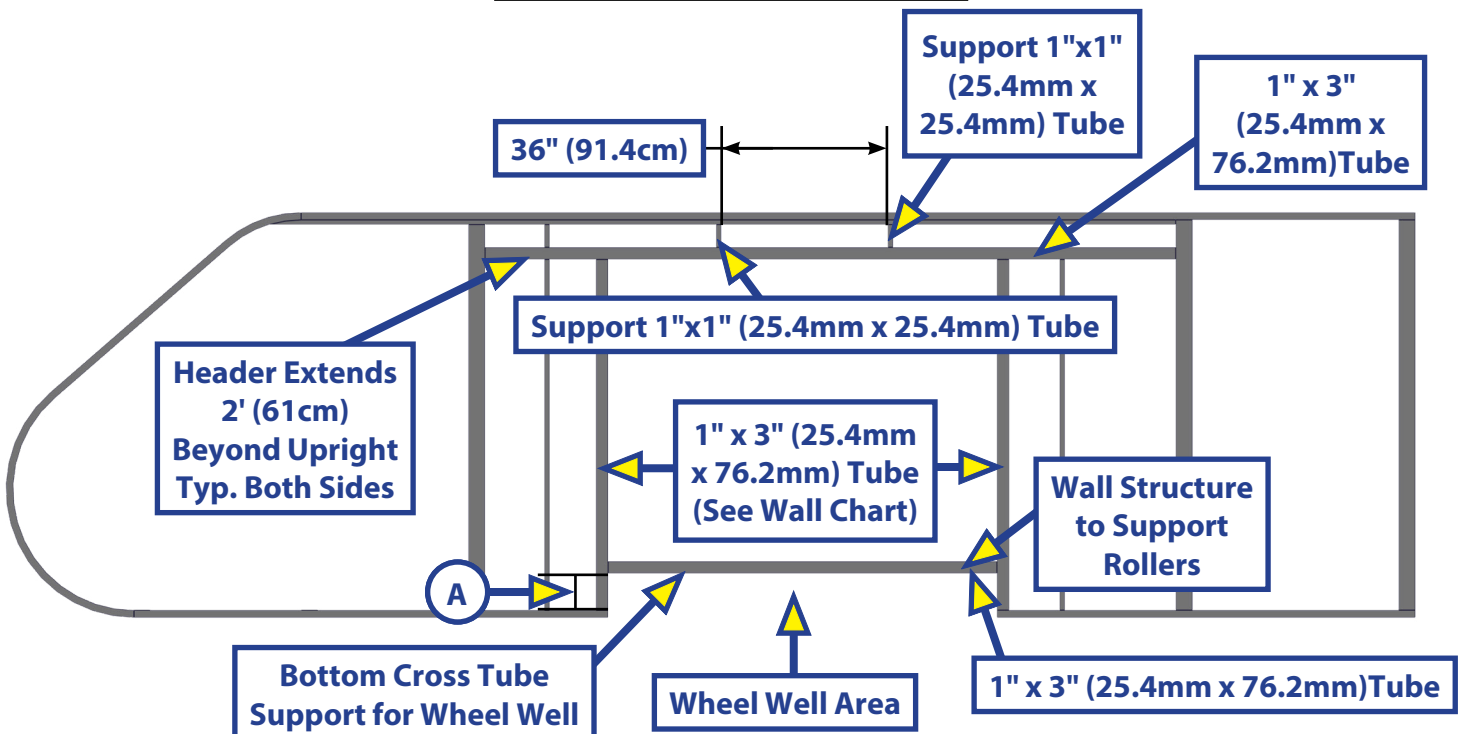


Fig. 8 - Slide in Wheel Well Area



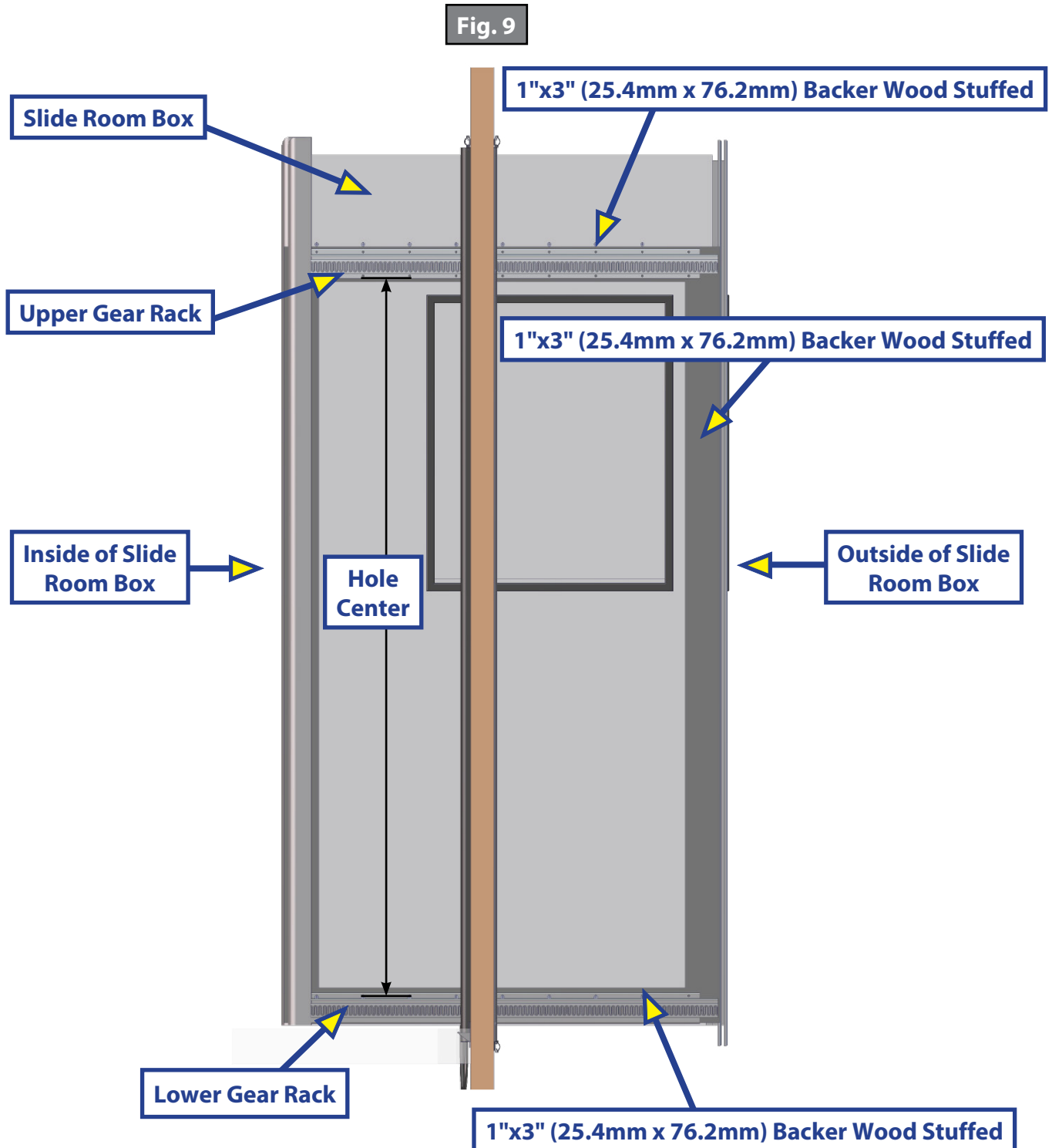
Square

The sidewall cutout and slide box should be no more than 1/2" 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 1" x 3" .060" (25.4mm x 76.2mm 1.5mm) aluminum that is wood stuffed. See diagram (Fig. 9) 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 .125". 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.



Prior to Installation

Resources Required

- Cordless or Electric Drill or Screw Gun
- Appropriate Drive Bits
- #10 Screws
- Glue
- Sealant

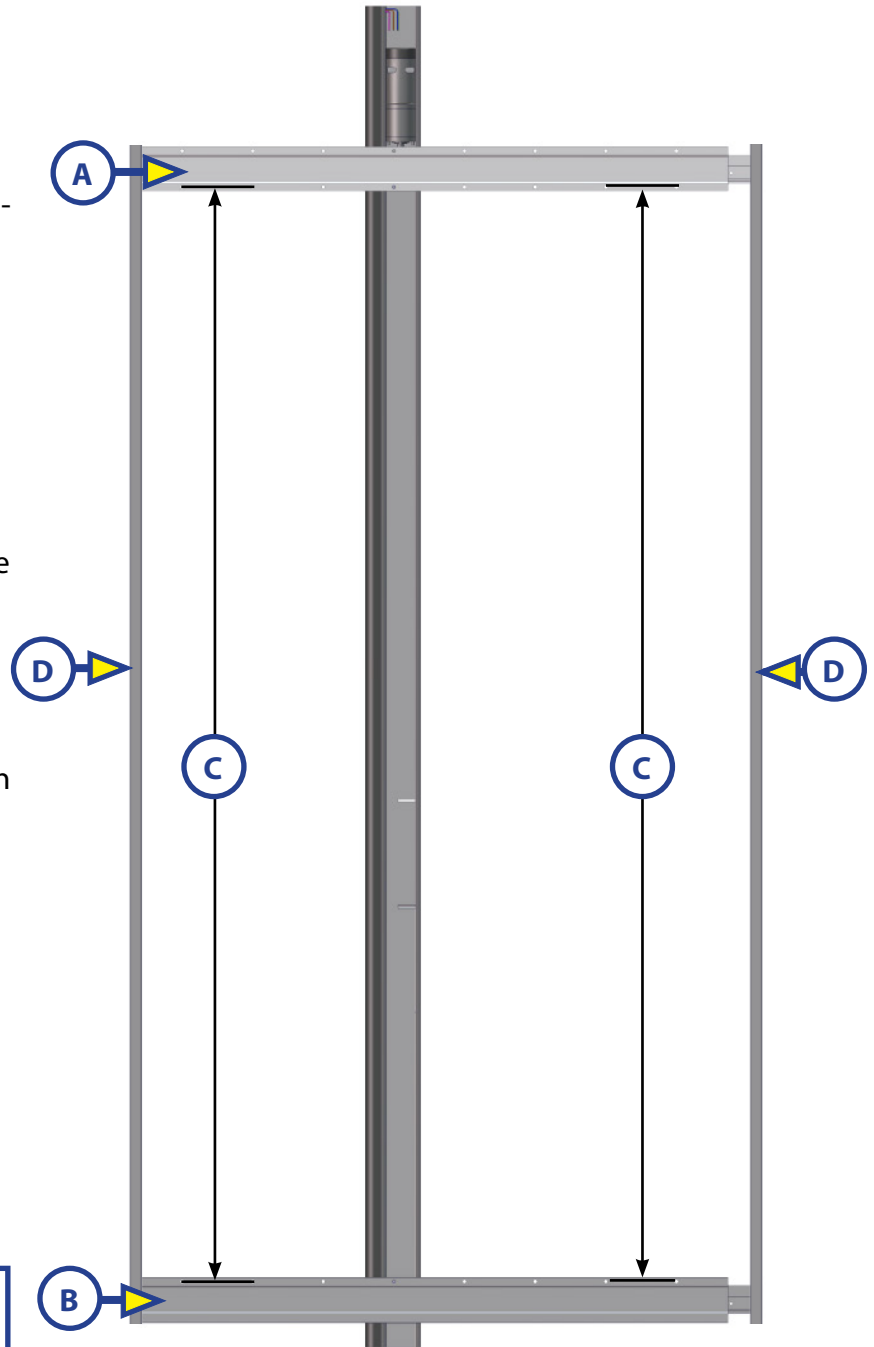
Inspect Slide-Out Mechanism

1. Check the back side of each gear rack to ensure there is foam tape running the entire length of the gear rack. (Figs. 10A and Fig. 10B).
2. Hole center span must be within $\frac{1}{16}$ " end-to-end (Fig. 10C).

NOTE: In-Wall assemblies are shipped with shipping angles (Fig. 10D) to keep the gear racks parallel and to assist with the installation process. Do NOT remove shipping angles until the gear racks have been installed on the side wall. Removal of the angle results in racks not being installed parallel to one another and perpendicular to the H column.

NOTE: In-Wall assemblies shipped after February 2017 will have attached shipping angles that permit installation of exterior slide room T-molding without removal of the angles (See below). The width of the new vertical exterior shipping angle leg does not extend past the gear rack flange. 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.

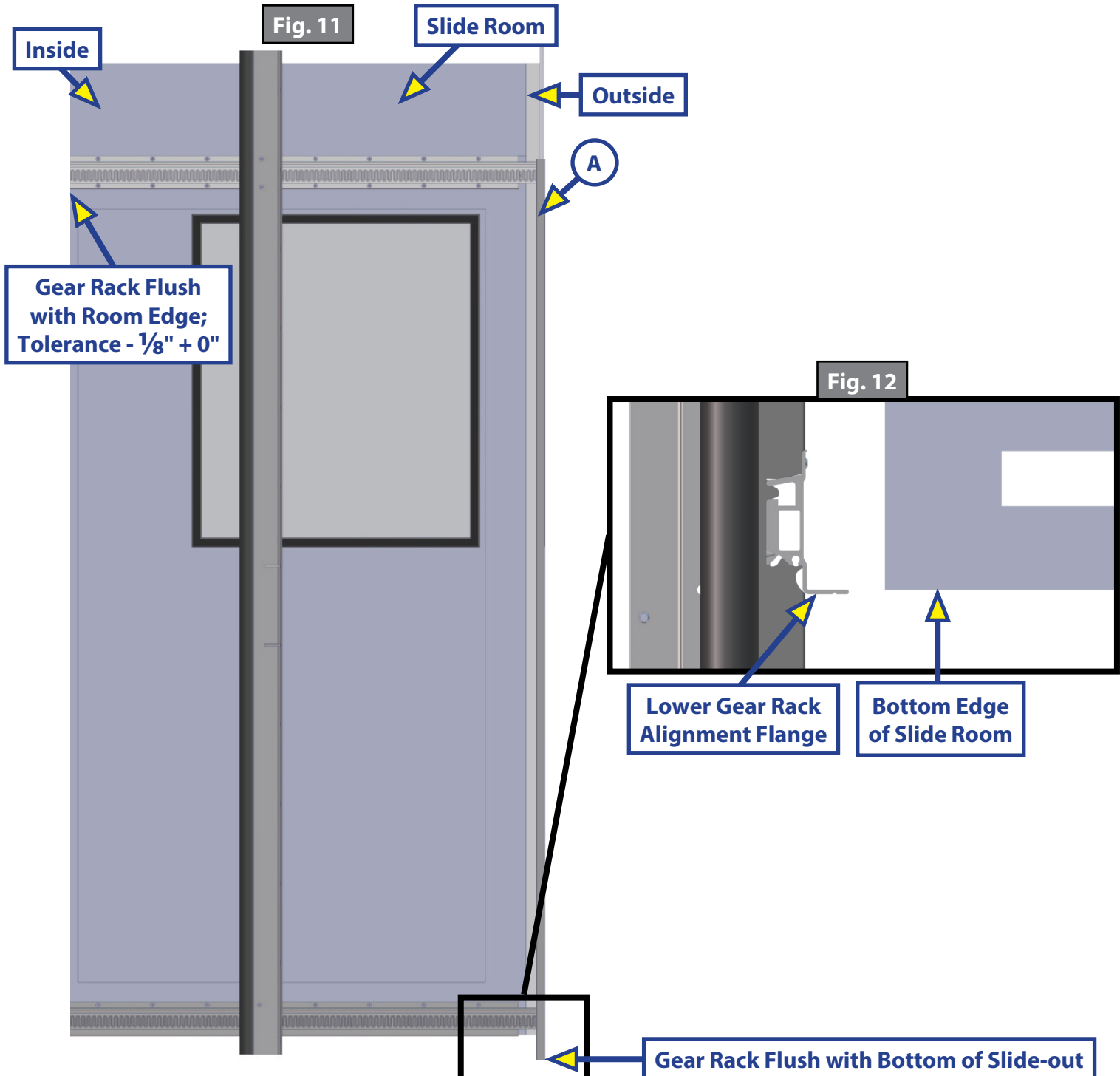
Fig. 10



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" 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 "Fixed" assembly has an aluminum rivet in the bearing block that prohibits the bearing block from moving. The "Float" 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. The "Float" assembly has a plastic rivet in the bearing block that is designed to shear to allow for movement of the bearing block.

1. Place the "Fixed" assembly against the left-hand side wall of the slide room (Fig. 11).
2. Hook the lower gear rack installation alignment flange on the bottom of the slide-out (Fig. 12).
3. Align the assembly to the rear, placing the installation alignment flange of the front shipping angle flat to the front of the slide room (Fig. 11A). Always align the slide-out assembly to the front and bottom of the slide room.



NOTE: The lower rack of the alignment flange sets snug against the bottom edge of slide room (Fig. 12).

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 screws (Fig. 13). 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. 14). 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" assembly to the right-hand side of the slide room.

NOTE: Although the plastic rivet in the "Float" assembly bearing block is designed to shear, it must remain in place during installation.

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 trailer.

Fig. 13

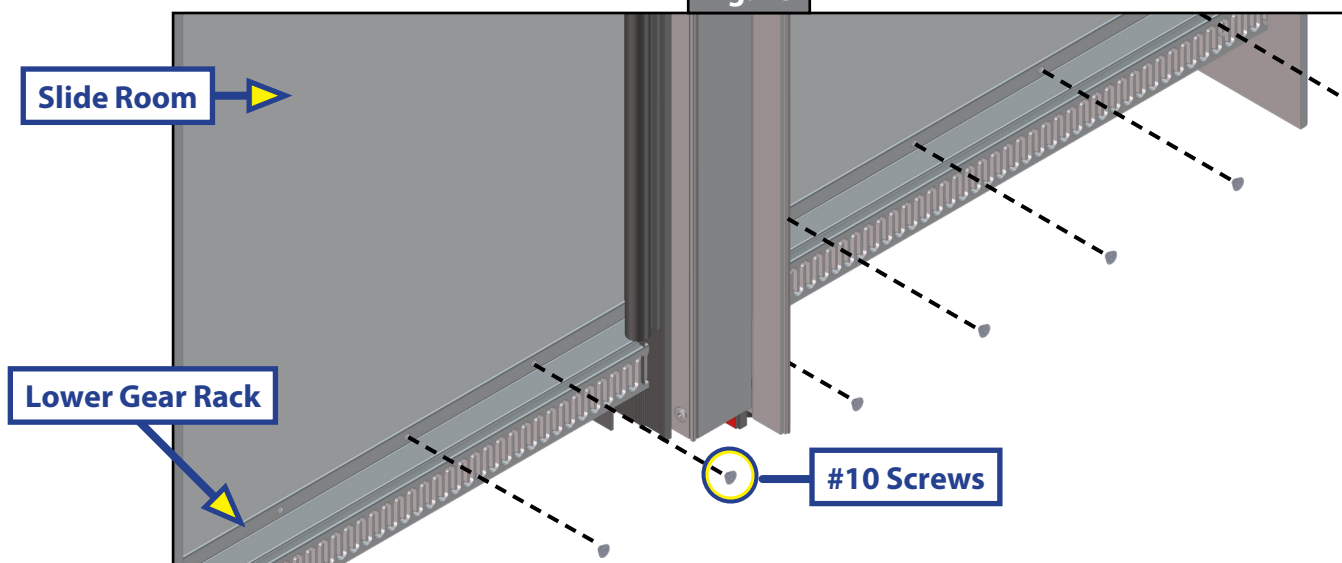
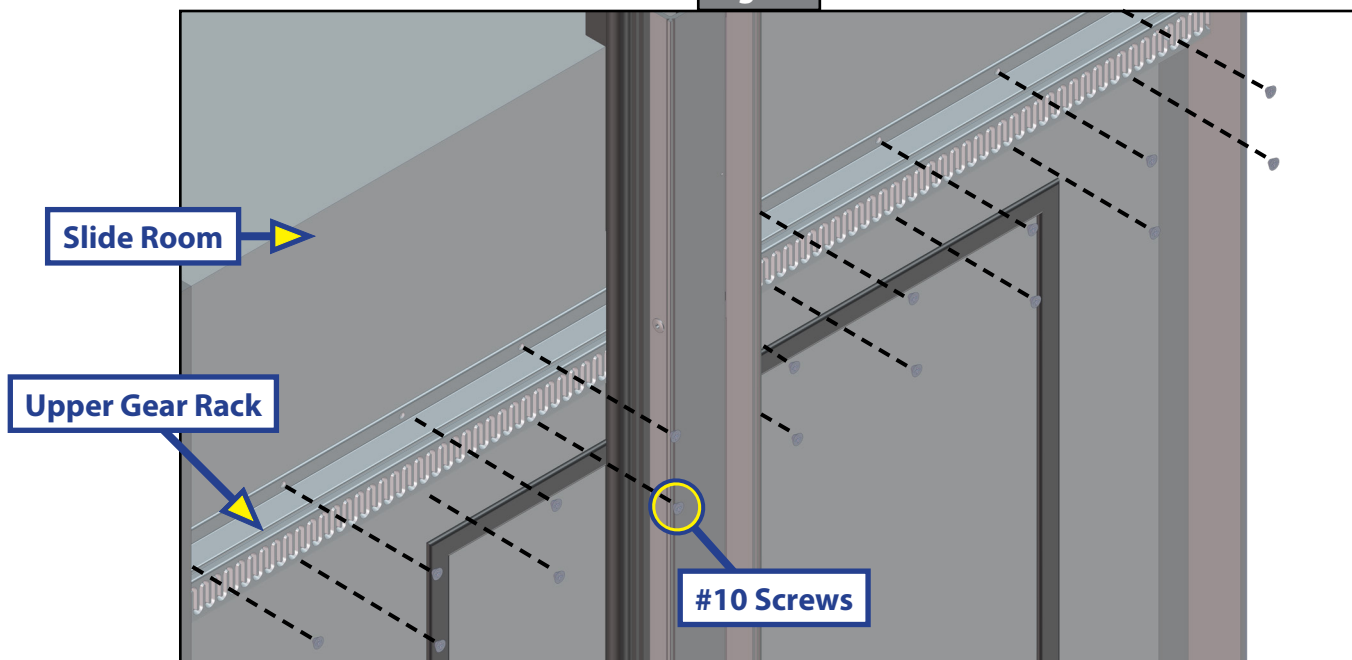


Fig. 14

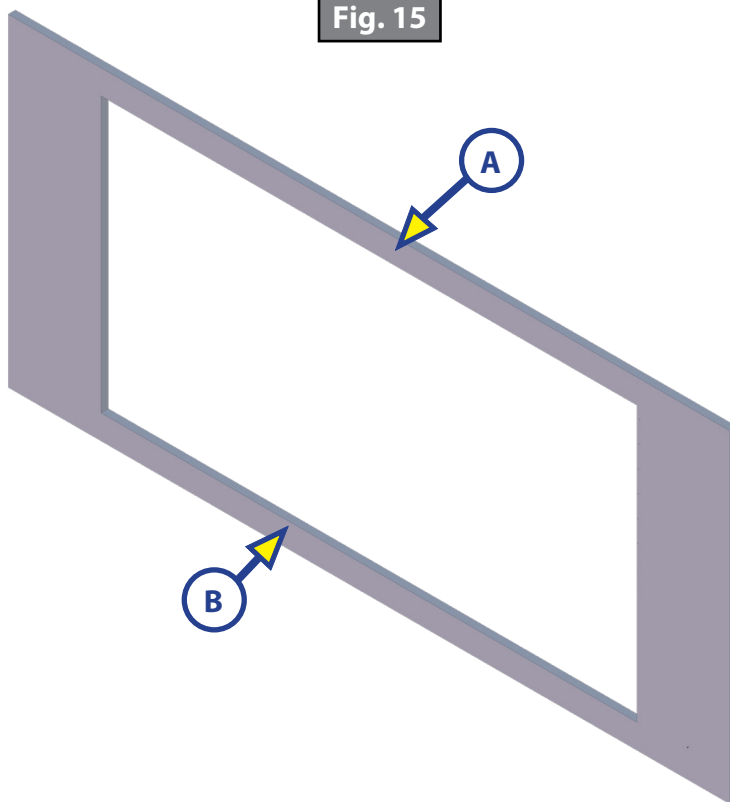


Prepare Wall Opening For Slide Room Installation

1. Prepare upper (Fig. 15A) and lower (Fig. 15B) 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. 15



2. Set both left (Fig. 16A) and right (Fig. 16B) molded corner cups. Remove liner from tape adhesive.

Fig. 16

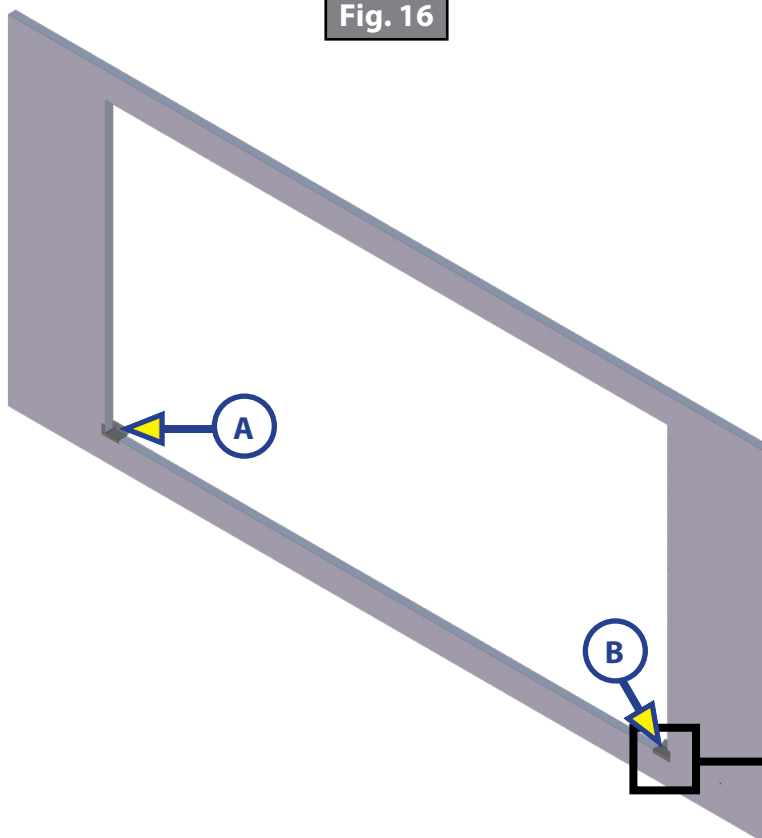
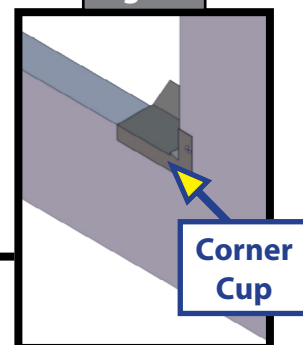
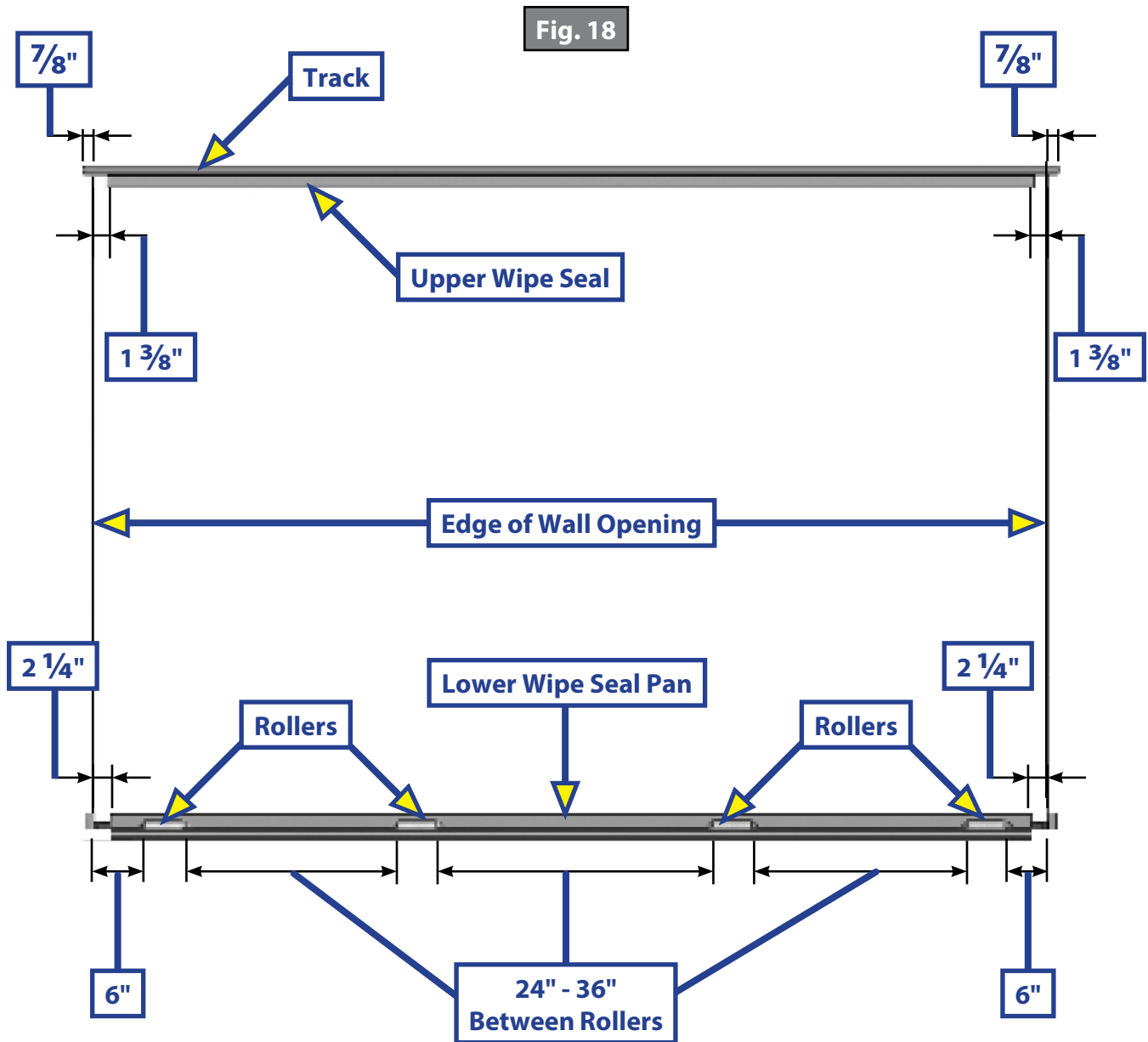


Fig. 17



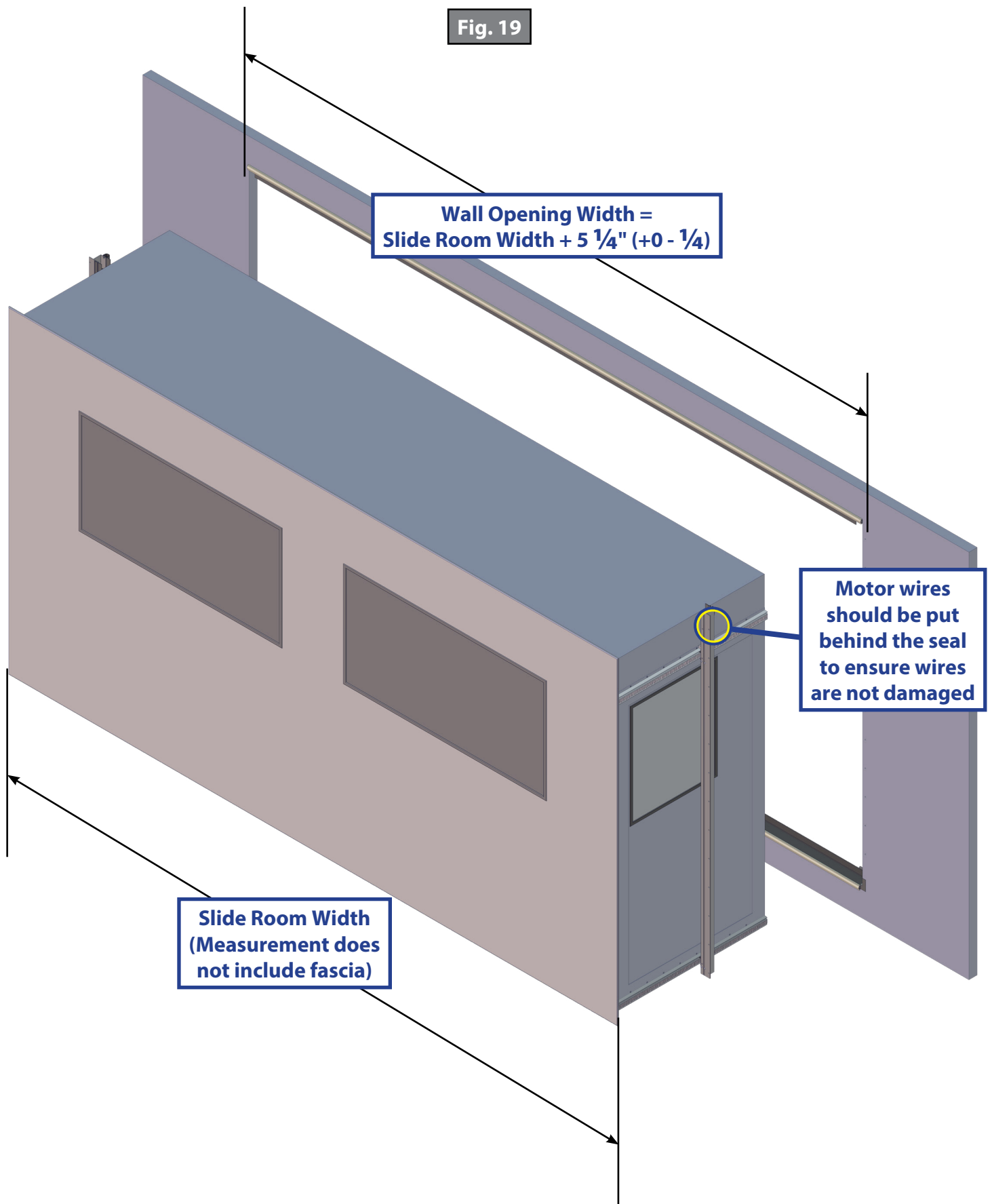
Refer to Fig. 18 for steps 3 through 8:

3. Cut lower wipe seal pan to allow a $2\frac{1}{4}$ " 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 $1\frac{3}{8}$ " gap from the edge of the wall. Track extends $\frac{7}{8}$ " 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 6" from wall opening side wall; span rollers along the slide room sill every 24" - 36" between rollers to support the weight of the slide room.



Slide Room Installation

1. Measure the slide room width and the wall opening (Fig. 19). The wall opening needs to be 5 1/4" wider than the actual slide room measurement. Do not attempt to install the slide room in the trailer if this dimension is more than 5 1/4" or less than 5".



2. Insert the completed slide room into wall opening, taking care to center "H" columns within the opening.
3. Center the box in slide opening.
4. Attach right and left hand "H" columns to the wall of trailer with #10 screws starting with the closest holes to each gear rack, where the gear rack and h-column meet and one in the center of each column (Fig. 20A and Fig. 21A) before securing in full.
5. Secure right and left hand "H" columns to the wall of trailer with #10 screws (Figs. 20 and Fig. 21).
6. At this point the slide room should be completely supported by both of the support columns.

Fig. 20

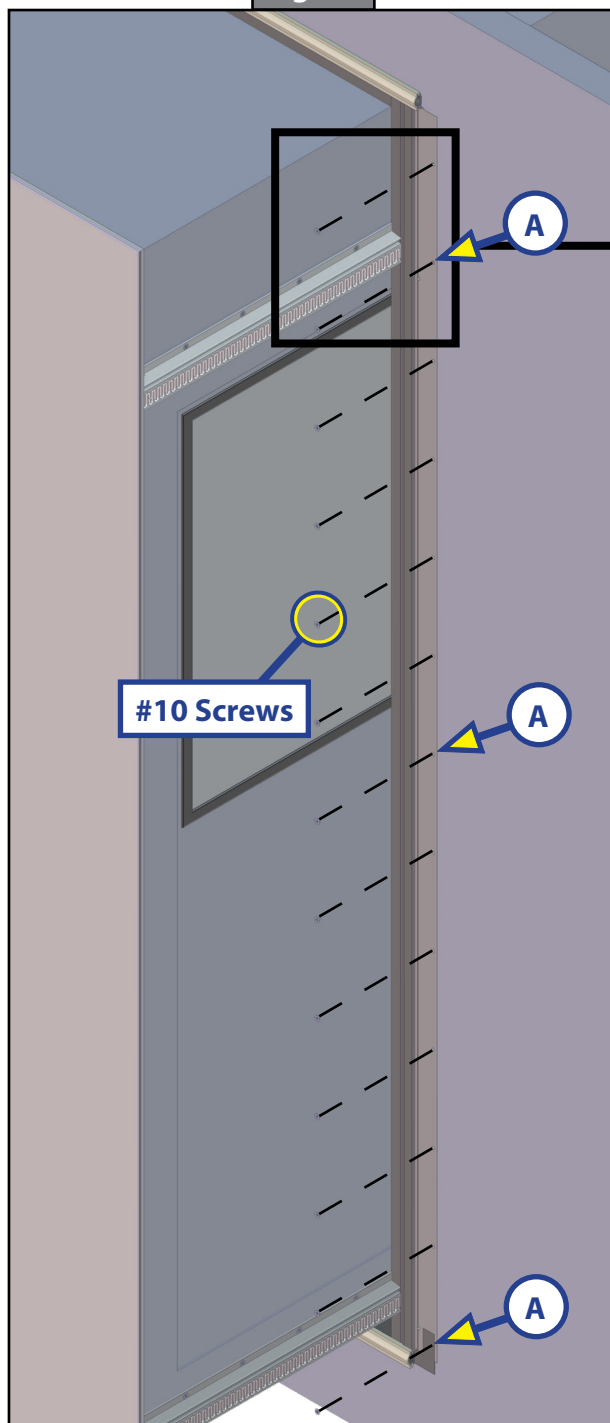
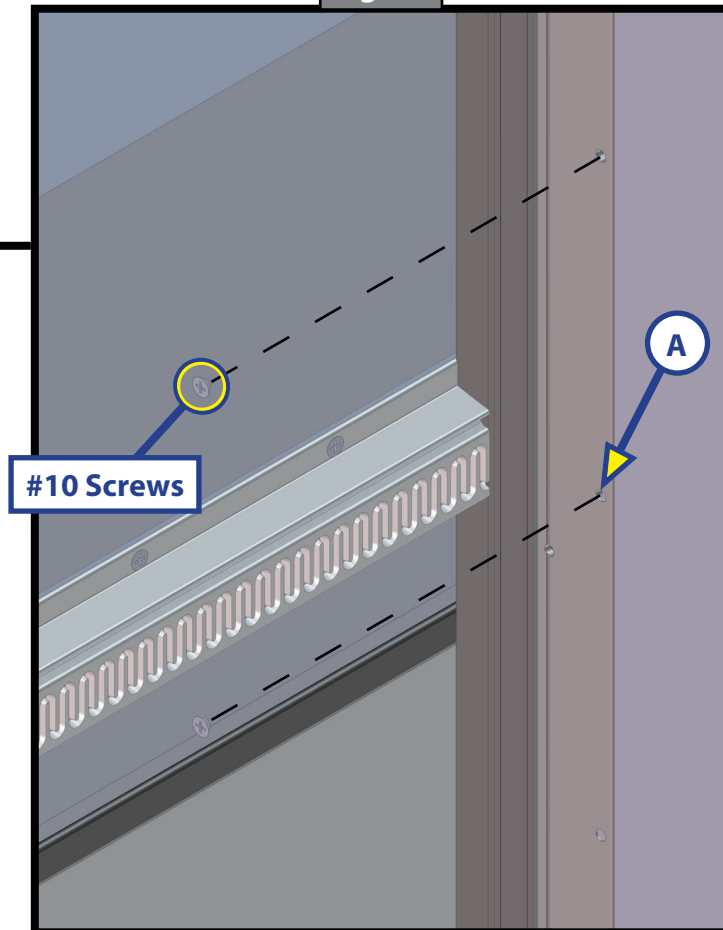


Fig. 21



7. Remove the rear/interior shipping angles from the gear racks.
8. Attach the interior slide room fascia. Fastener spacing must be 6" to 8" apart unless using side-mounted stop angles.

NOTE: Interior slide room fascia must be attached prior to operating the slide room for safety precautions.

⚠ WARNING

Do not attempt to operate the slide room until both the exterior T-molding and the interior fascia are attached to the slide room.

9. Apply glue to the back of the upper wipe seal and lay it over the top of the vertical wipe seal on the column (Figs. 22 and Fig. 23).

Fig. 22

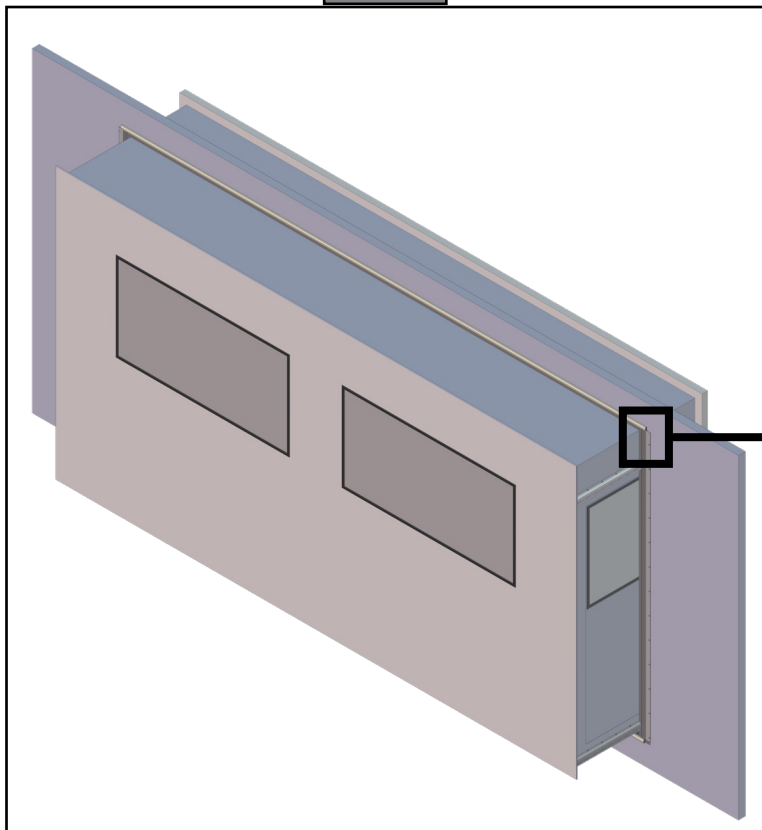
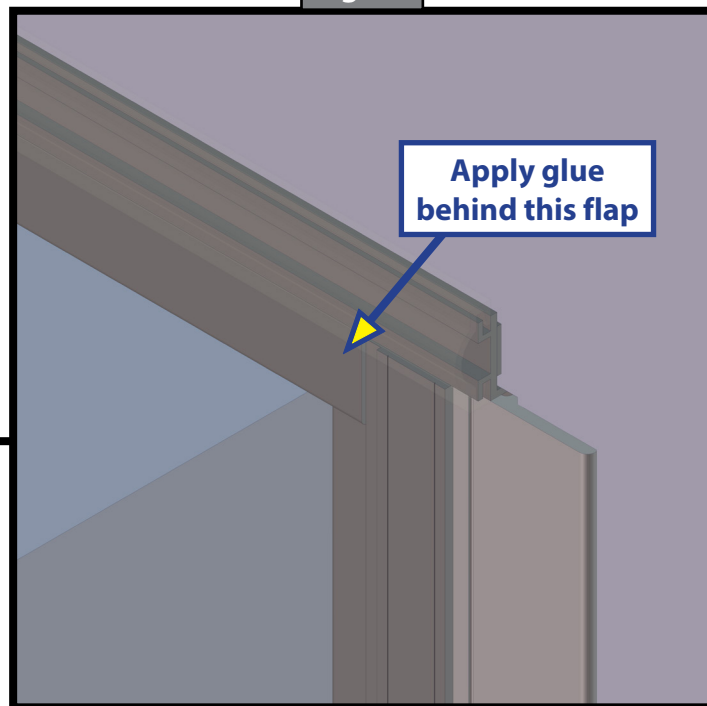


Fig. 23



Optional: Installation of In-Wall Column Clamp

The In-Wall column clamp PN 389787 should be utilized for installed In-Wall Slide-out systems only.

⚠ 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 $\frac{3}{4}$ " screws

Installation

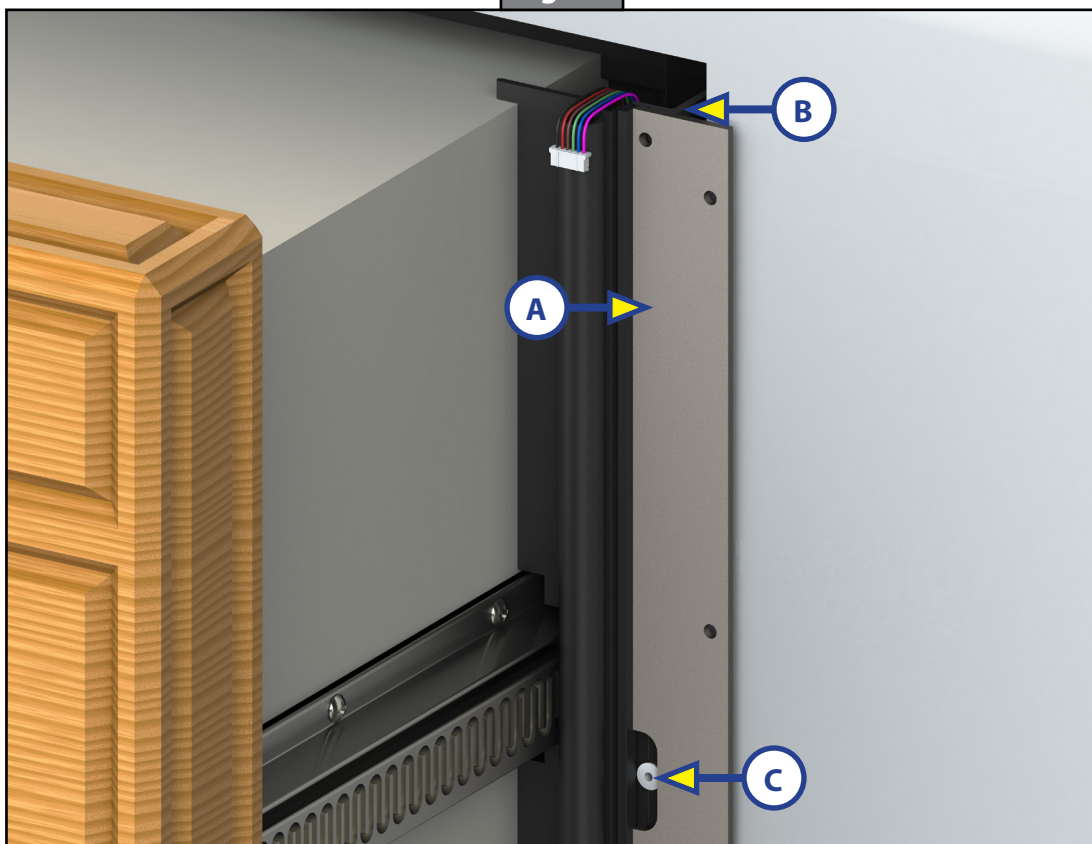
1. Place the In-Wall column clamp (Fig. 24A) on the inside of the slide system (Fig. 24B). The clamp should be flush to the top of the channel, against the bulb seal on the system and hang out over the wall.

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

2. Use #10 x $\frac{3}{4}$ " screws to attach the In-Wall column clamp to the inside of the In-Wall system.
3. Use #10 screws to fasten the In-Wall column clamp to the wall of the unit.
4. Repeat steps 1 - 3 for the opposite side.

NOTE: Notches around the rivet heads are an indication that the clamp is placed correctly (Fig. 24C).

Fig. 24



Controller Installation

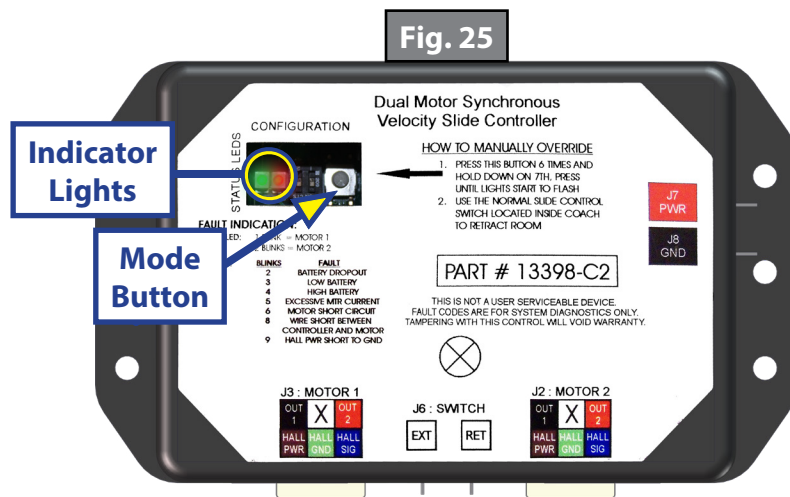
1. Mount controller by securing to a solid surface with #8 x 1" wood screws or equivalent.

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.

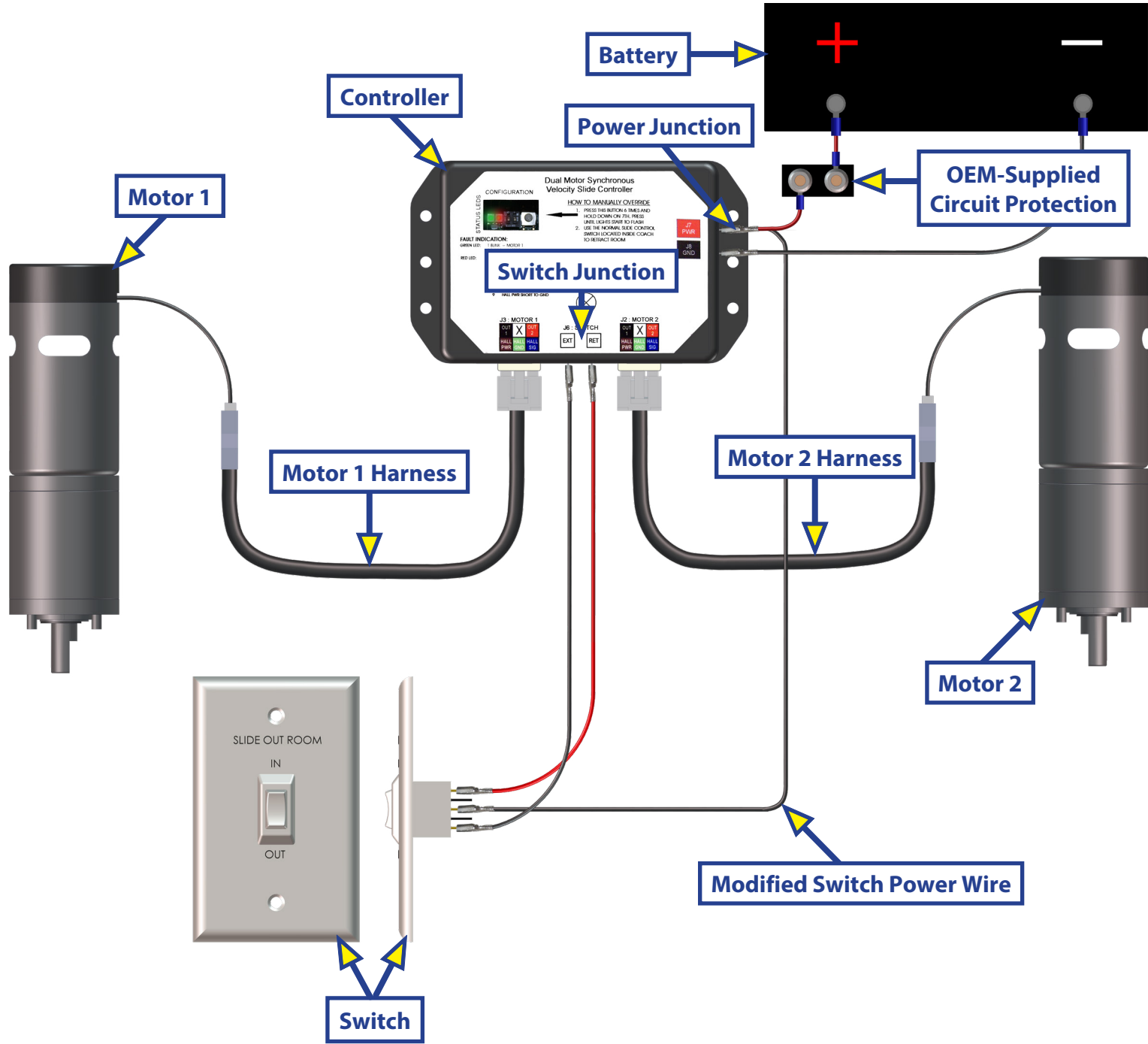
NOTE: The controller (Fig. 25) must be mounted with the face visible, allowing the indicator lights and mode button to be accessible for resetting and troubleshooting purposes.

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

NOTE: OEM-supplied circuit protection of a minimum of 30 amps must be installed in-line between the power supply and controller. All wiring is to conform to RVIA standards.



Wiring Diagram



A diagram of a terminal block with six terminals labeled A through F. Terminal A is black, B is purple, C is red, D is brown, E is green, and F is blue. Arrows point from the labels to the corresponding terminals.

Wiring Color Code Information

- A.** Black - Power/Ground
- B.** Purple - Not Used
- C.** Red - Power/Ground
- D.** Brown - Hall Effect Power
- E.** Green - Hall Effect Ground
- F.** Blue - Hall Effect Communications

Startup and Final Inspection

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 synchronize the slide motors:
 - A. Using the wall switch, press the "IN" button.
 - 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.
 - D. Extend the room 1".
 - E. Retract the room until the motors amp out.
 - F. Repeat steps D and E. 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.
5. 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.
6. **OPTIONAL:** 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.

Notes

[illegible]



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