IN-WALL SLIDE-OUT

REPAIR KIT MANUAL

LIPPERT COMPONENTS™

TABLE OF CONTENTS

Safety Information

⚠WARNING

Failure to act in accordance with the following may result in death, serious injury, coach or property damage.

The IN-WALL™ Slide-out System is intended for the sole purpose of extending and retracting the slide-out room. Its function should not be used for any purpose or reason 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 coach.

Before actuating the system, please keep these things in mind:

1. The unit should be parked on solid and level ground and the area around the unit clear of obstructions that may cause damage when the slide-out room is being repaired.
2. Be sure all persons are clear of the coach prior to the slide-out room maintenance.
3. Keep hands and other body parts away from slide-out mechanisms during actuation.

Introduction

This document will aid in determining whether it is necessary for the assembly to be repaired or replaced entirely.

Standard Repair Kit Includes:
Upper Gear Rack (42 ½")
Lower Gear Rack (42 ½")
V-Roller (292801)
Snap Ring (234180)
Shoe (238463)
Foam Wear Plug (283544)
Flat Back Rack Plug (282573)

NOT INCLUDED in Kit:
Coupler
Lower Bearing Block
Upper Bearing Block
Metal/Plastic Rivets
Spur Gear (300:1/ 500:1/Hex)

If the repair necessitates it, replacement bearing blocks, spur gears, and couplers can be ordered separately.

NOTE: See pages 14-15 for more details and part numbers.

Preliminary Visual Inspection

Prior to conducting any repair or replacement, it is imperative to ensure that the problem with the slide-out is properly diagnosed and that the issue will be corrected with a repair or replacement. Proper diagnosis of the issue includes ruling out a slide-out obstruction, a slide-out seal issue, or a slide-out measurement that is outside of suggested parameters. Prior to slide-out repair or replacement, be sure to check the following:

1. Check assembly and slide room for any type of obstruction that may have caused the initial concern.
2. Inspect the wiper seals for tearing or other damage.
3. Make sure that the wiper seals are not being pulled into the gear rack causing binding.
4. Check that the interior and exterior bulb seals are compressing properly when the slide-out is extended or retracted.
5. It is recommended that measurements be taken to make sure the slide-out is parallel and that the H-Column is square. Make sure the measurements are taken from the same location on both sides (Figs. 1 and 2). Variance could be up to +/- ⅛" (Fig. 4).
6. Measure from the outside edge of the column to the face of the gear rack (Figs. 3 and 4).

NOTE: LCI prefers to these measurements submitted in picture format to assure proper guidance is given.

NOTE: Slide box fascia has been removed from (Fig. 3) for clarity.

Fig. 1

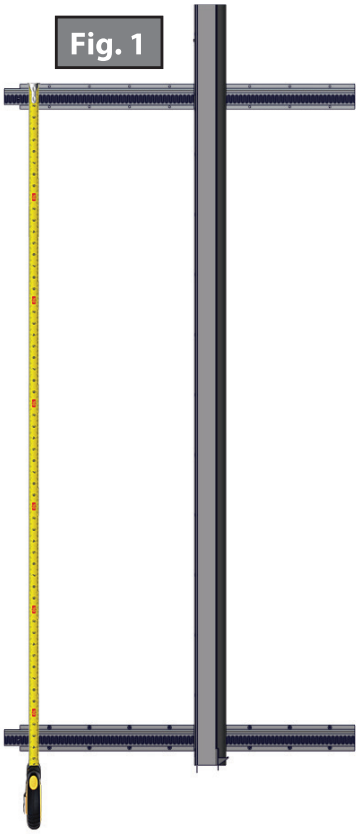


Fig. 2

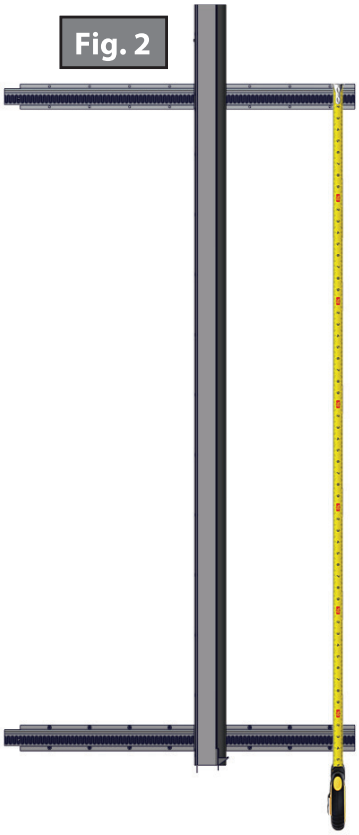


Fig. 3

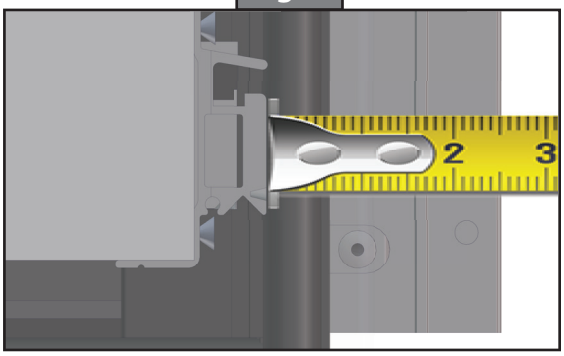
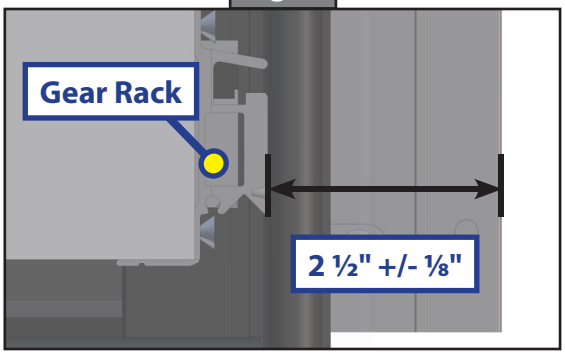


Fig. 4



Damaged Assembly Removal Procedure (For Repair)

Tools Required

- Electric drill
- Rubber mallet
- 2x4 (length=gap between T-molding and side of unit-¼")
- Razor knife
- Floor jack

Procedure

1. Remove first 3 sets of screws in each rack on the interior side of slide room.
2. Extend the slide room until about 8" of the room is left inside the unit.

NOTE: If the slide will not move by use of the switch it may be necessary to:

- **A.** Use electronic override mode on the IN-WALL™ controller.
  - **I.** Press the "mode button" six times quickly, press a 7th time and hold for approximately 5 seconds (Fig. 5A).
  - **II.** The red and green LED lights will begin to flash indicating system is in override mode (Fig. 5B).
  - **III.** Using the wall switch, press and hold the "IN" button until the unit comes completely in.
- **B.** Disconnect the motor harnesses from the IN-WALL™ controller to allow the slide room to be manually pushed into position (Fig. 6A).
- **C.** Disengage the motors to allow the slide room to be manually pushed into position (Fig. 6B).

3. Support the slide room with a floor jack or other adequate support before continuing.
4. Place the 2x4 block on top of the slide room (standing on its edge between the T-Molding and side of the unit.)
5. Reach inside the top of the slide column to disconnect the wiring harness from the motor.
6. Remove the screws from the slie column attaching it to the side wall of the unit.
7. Using a razor knife, carefully cut the caulk bead along the edge of the slide column.
8. Create a jumper wire from an extra wiring harness: cut a 3-foot length of the harness (with the motor wire connector attached) and strip the ends of the red and black wires (Fig. 7).
9. Plug the jumper wire into the motor wire.
10. Holding the black and red wires against the terminals of your cordless screw gun battery, determine which polarity actuates the motor in the retract direction. The slide column should slide away from the side of the unit.

Fig. 5

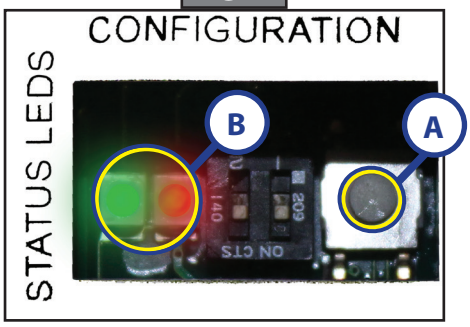


Fig. 6

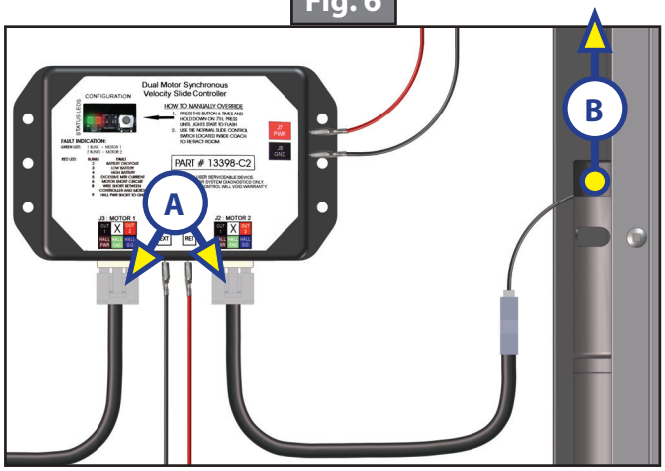
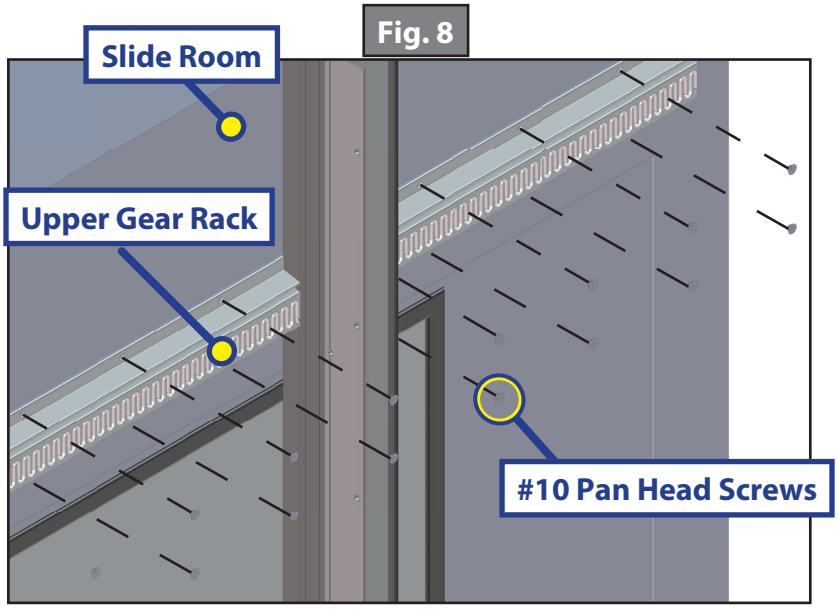


Fig. 7

11. Remove all screws from the gear racks (Fig. 8).

Fig. 8



12. You may need to pry the gear racks away from the sides of the slide room with a flathead screwdriver or putty knife. Do this carefully so you don't damage the finish on the side of the slide room.

13. Carefully slide the ends of the gear racks past the bulb seal on the T-molding.

14. Pull the full system out and set aside.

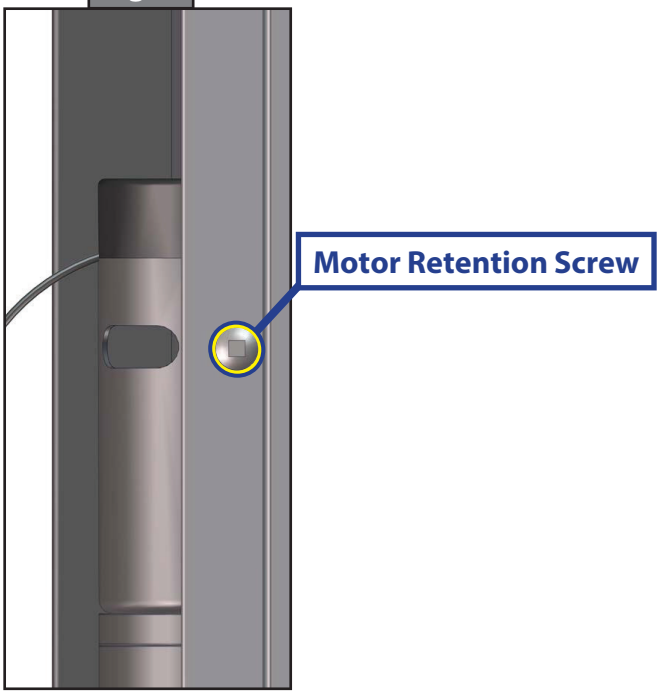
NOTE: LCI recommends that inspection and repair of the assembly be done on a clear workbench to prevent further damage to the system.

15. If motors are still engaged in the column, remove at this time. The motor is held in place by a retention screw. It is typically located on the exterior side of the column, near the motor ventilation holes (Fig. 9). Removal of the retention screw will allow the motor to easily slide out of the column.

16. Remove the upper, middle (if applicable), and lower racks from the column by grasping the column in one hand and sliding the racks toward your body.

NOTE: All racks will move together. Take necessary precautions to prevent damage to the other racks from a possible drop to the ground.

Fig. 9



Replacement of Entire Assembly Required

Damages listed below will require the inspected side to be replaced with a completely new assembly.

- **A.** Torque Shaft – Inspect the torque shaft for a bow or bend. Also inspect the torque shaft to assure that it has not dropped, or that the stakes in the top of the torque shaft (Fig. 10) are adequately keeping the shaft in place. If the torque shaft is found to be faulty, the inspected side should be replaced entirely.
- **B.** Gibs – In the event that a gib is found to be broken or loose, the inspected side should be replaced entirely. This includes a broken, loose, or missing rivet.
- **C.** Metal shavings near the spur gear – During inspection of the bearing block it is important to look for shavings around the spur gear (See locations outlined in Fig. 11A, B, C). This could indicate excessive wear around the torque shaft caused by the spur gear digging into the torque shaft.
- **D.** "H" Column – In the rare event that the column has been damaged in any way, the inspected side should be replaced entirely.

NOTE: If replacing the entire assembly, skip to the Assembly Installation Procedure on page 12.

Fig. 10

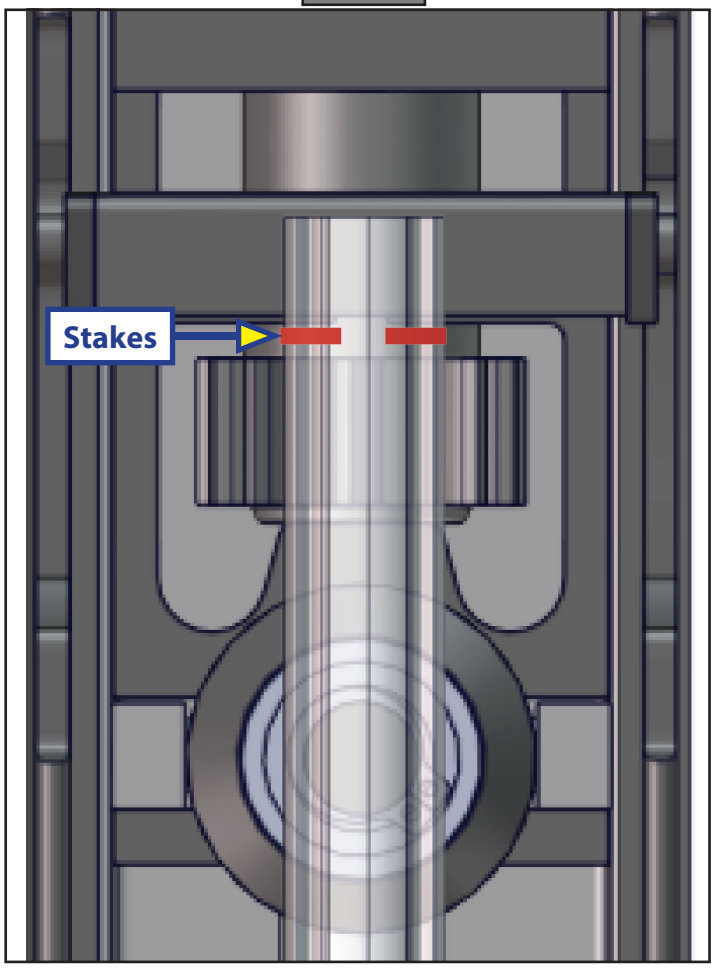
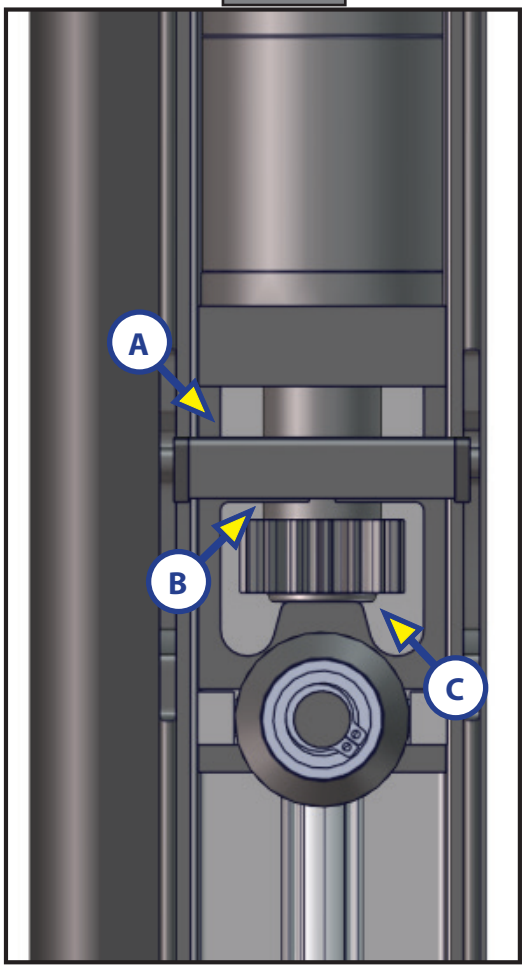


Fig. 11



Inspection

It will be important to begin with a general inspection of the gear rack to see if replacement is recommended.

Replacement

Below are the steps to replace an IN-WALL™ Gear Rack:

NOTE: If the gear rack being replaced has notches on both ends, the rack will need to be custom ordered. Contact LCI Parts at (574) 537-8900 for ordering assistance.

NOTE: You will notice that included in the IN-WALL™ Repair Kit is an upper and lower gear rack section that is longer than needed. In this case, a cut will be required to match the size of the original gear rack.

1. Measure the original gear rack, index your measurement from the "notched" end (Fig. 12A) of the gear rack and document accordingly.
2. Transpose the measurement taken from the original gear rack onto the new gear rack.

NOTE: Remember to start your measurement from the "notched" end (Fig. 12A) of the gear rack to ensure proper end of the gear rack is cut.

3. Check measurement prior to cutting.
4. Make the cut to the non-notched end of the rack (Fig. 12B), preferably with a chop saw to prevent angled cut or "chewed" appearance.
5. De-burr the cut end with a fine file or emery paper.
6. Insert the corresponding foam plugs into each end of the rack to ensure that water infiltration is prevented prior to installation (Fig. 13 and Fig. 14).
7. Gear racks can now be introduced back into the columns.

NOTE: Please refer to the **Re-timing Procedure** section of this manual (Page 11).

8. Assembly can now be installed back on the unit (Page 12).

Fig. 12

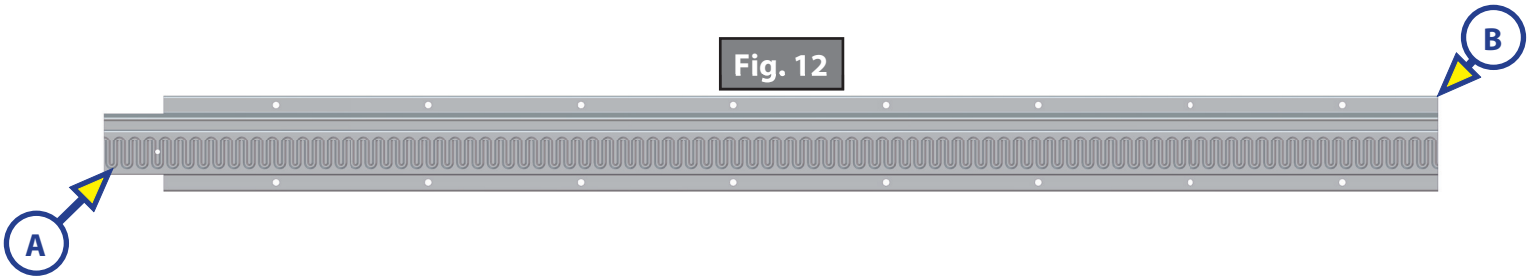


Fig. 13

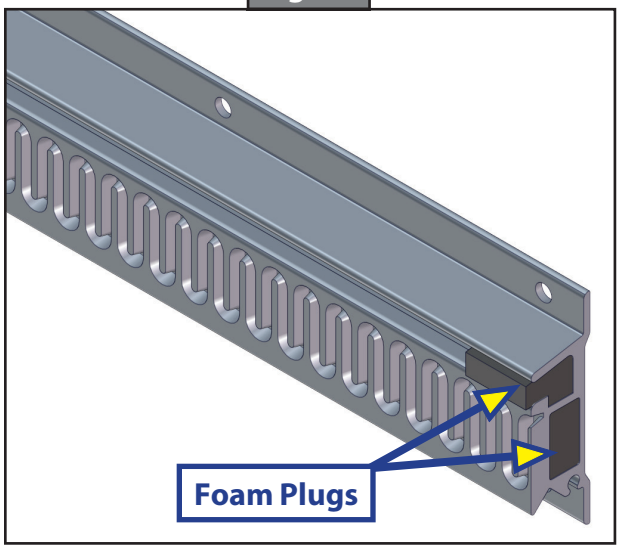
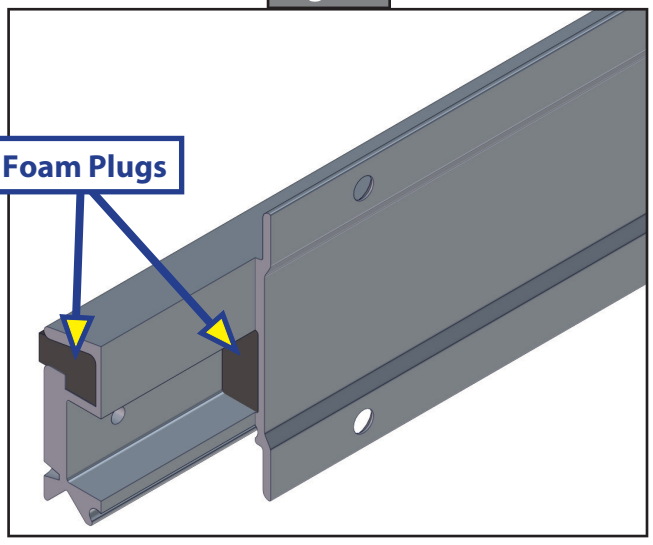


Fig. 14



Shoe

Inspection

A. Damaged or missing shoe (if damage to corresponding foot on bearing block is present, replacement of bearing block (page 10) will be necessary).

Replacement

Below are the steps to replace a shoe (Figs. 15 and 16):

1. With the racks removed from the assembly, the shoe replacement is snapped onto the bearing block foot. Align the notch located on foot (Fig. 15A) with the "rib" in the shoe (Fig. 16A) and press into place.
2. Gear racks can now be introduced back into the columns.

NOTE: Please refer to the **Re-timing Procedure** section of this manual (Page 11).

3. If all other concerns have been addressed, the assembly can now be installed back onto the unit (Page 12).

Fig. 15

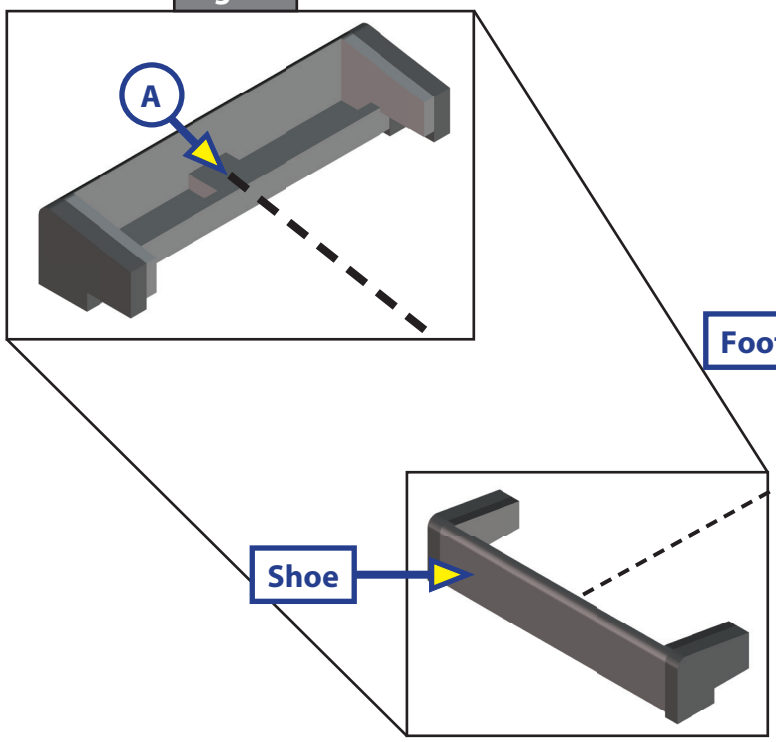
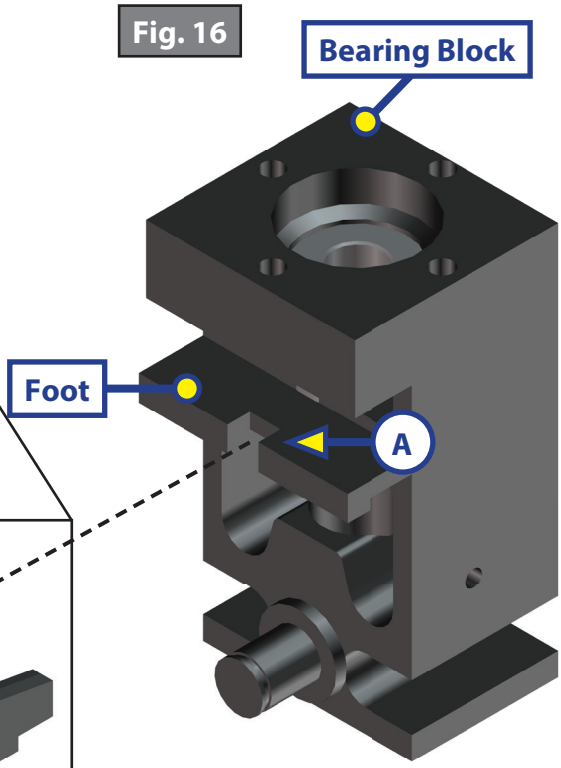


Fig. 16



V-Roller

Inspection

A. Damaged or missing v-roller (if damage to corresponding v-roller arm on bearing block is present, replacement of the bearing block (Page 10) will be necessary.)

B. Stress cracks on or around the v-roller arm. If the v-roller arm is found to be cracked, bent or unable to accept a replacement roller bearing, replacement of the bearing block will be necessary.

NOTE: If damage is evident on either bearing block, **BOTH** the upper and lower bearing blocks **MUST** be replaced.

Replacement

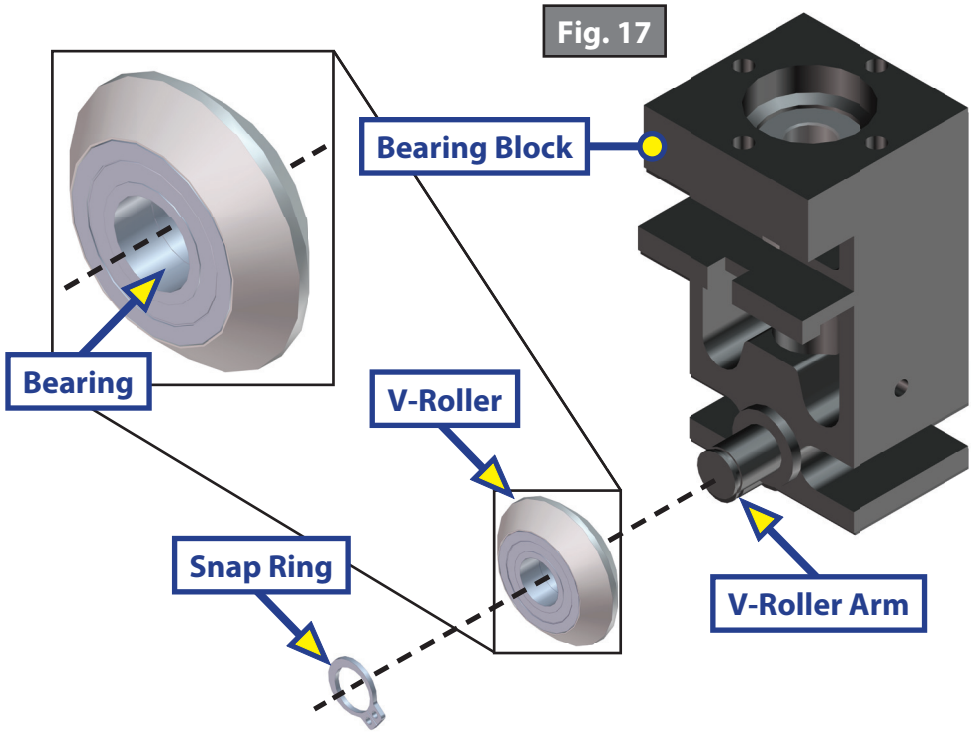
Below are the steps to replace a v-roller (Fig. 17):

1. Remove the corresponding snap ring to allow for removal of damaged v-roller.
2. Inspect v-roller arm for damage. If v-roller arm is damaged, see **bearing block replacement** instructions (Page 10).
3. Slide new v-roller onto the v-roller arm.
4. Replace the snap ring and inspect for proper seating.
5. Lube the v-roller bearings with Teflon® lubrication (Fig. 17 detail).
6. Gear racks can now be introduced back into the columns.

NOTE: Please refer to the **Re-timing Procedure** section of this manual (Page 11).

7. If all other concerns have been addressed, the assembly can now be installed back onto the unit (Page 12).

Fig. 17



Bearing Block/Spur Gear

NOTE: In order to remove spur gears, follow the steps below. The spur gears cannot be replaced without removing the bearing block.

Inspection

A. Stress cracks on or around the bearing block foot or v-roller arm. If the bearing block foot is found to be cracked or bent, replacement of the bearing block will be necessary.

B. Excessive damage to spur gear (teeth missing, etc).

Replacement

Below are the steps to replace a bearing block or a spur gear (Fig. 18):

Fig. 18

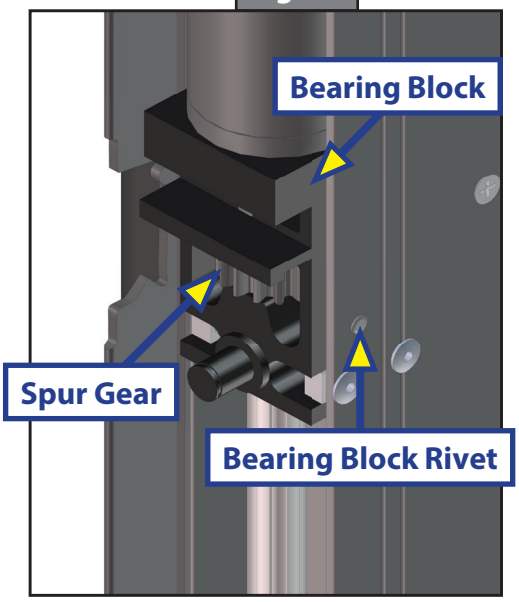


Fig. 19

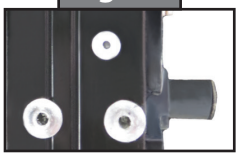


Fig. 20

1. If the bearing block shows any type of damage that indicates repeated contact with the gear rack, it **MUST** be completely removed from the drive assembly and replaced. If damage is evident on either bearing block, both the upper and lower bearing blocks **MUST** be replaced.
2. Follow directions on pages 4 and 5 for removing the assembly from the side wall.
3. Slide the gear racks out of the assembly.
4. Remove the motor and coupler.
5. Remove the rivets that hold the bearing block in place. These rivets may be made out of metal (Fig. 19) or plastic (Fig. 20) depending on the side being replaced.
6. Lift the drive assembly out of the column.
7. Slide the lower bearing block off of the bottom of the torque shaft followed by the upper.
8. Install the replacement upper and lower bearing blocks or spur gears.
9. Reinsert the coupler and motor and reassemble the column.

NOTE: Add shoe and v-roller to the bearing block assembly after the column is reassembled.

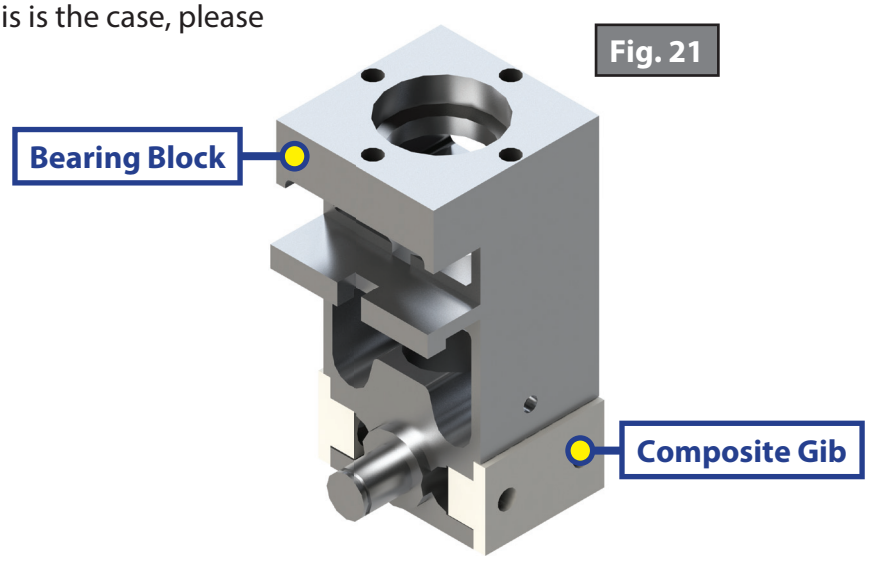
10. Reinstall the gear racks.

NOTE: Please refer to the **Re-timing Procedure** section of this manual (Page 11).

11. If all other concerns have been addressed, the assembly can now be installed back onto the unit.

NOTE: Replacing the slide-out on a motorized coach may require replacement of a "slim" bearing block and plastic composite gib (Fig. 21). If this is the case, please contact LCI for information.

Fig. 21



Re-Timing Procedure

The top and bottom gear racks on each side of the IN-WALL™ Slide-out System are connected by a torque shaft that runs from the upper bearing block to lower bearing block. The bearing blocks and torque shaft are mounted inside of the column. The column is fastened to the side wall opening of the unit. The timing of the system from top to bottom is considered to be adjustment free, as it is essentially locked in correct time. In the instance that the system is no longer in time, either the top or the bottom will extend farther than its opposite. The following procedure will help to properly address the concern:

NOTE: If the assembly is already off the slide room for repair, start at step 6.

1. Run the slide to half extension.
2. Beginning on one side of the slide, support the box using a jack and a block of wood.

NOTE: Do not lift the slide box, just support it.

3. Unplug motor from harness at the top of the column on the supported side.
4. Remove all screws from the column and the gear racks on the supported side of the slide box.
5. Remove entire system from supported side.

NOTE: The re-timing process is made easier by taking the system to a work bench.

6. Remove the motor retention screw that is keeping the motor engaged in the bearing block.
7. Remove the motor. This will allow the gear racks to move freely for the next step.
8. Pull one of the gear racks to remove it from the bearing block.

NOTE: Both gear racks will move. Be sure when removing the gear racks that they do not fall to the floor or sustain any damage.

9. Repeat the process to finish pulling the second gear rack free.
10. When feeding the gear racks back in, start from the notched side. Gently start the gear racks into the bearing blocks evenly.
11. Once both gear racks are engaged, use a tape measure and measure from the column to the end of each gear rack. The measurement must be the same to ensure that the slide room will be timed correctly (Figs 3 and 4).
12. Apply pressure to one of the gear racks. This will cause both gear racks to move together. At this point, the gear racks will be back in time.

⚠ CAUTION

Before replacing the system back in the unit, be sure to address the measurements (Figs. 1-4). If measurements are not within this specification, make necessary adjustments to screw locations to remedy. Adding additional screws may be necessary in between the pre-drilled spots on the column. If the system is not replaced within specifications found on Figs 1-4, serious damage to the system may occur.

13. If the above procedure corrects the timing, repeat the same process on the opposite side of the slide.

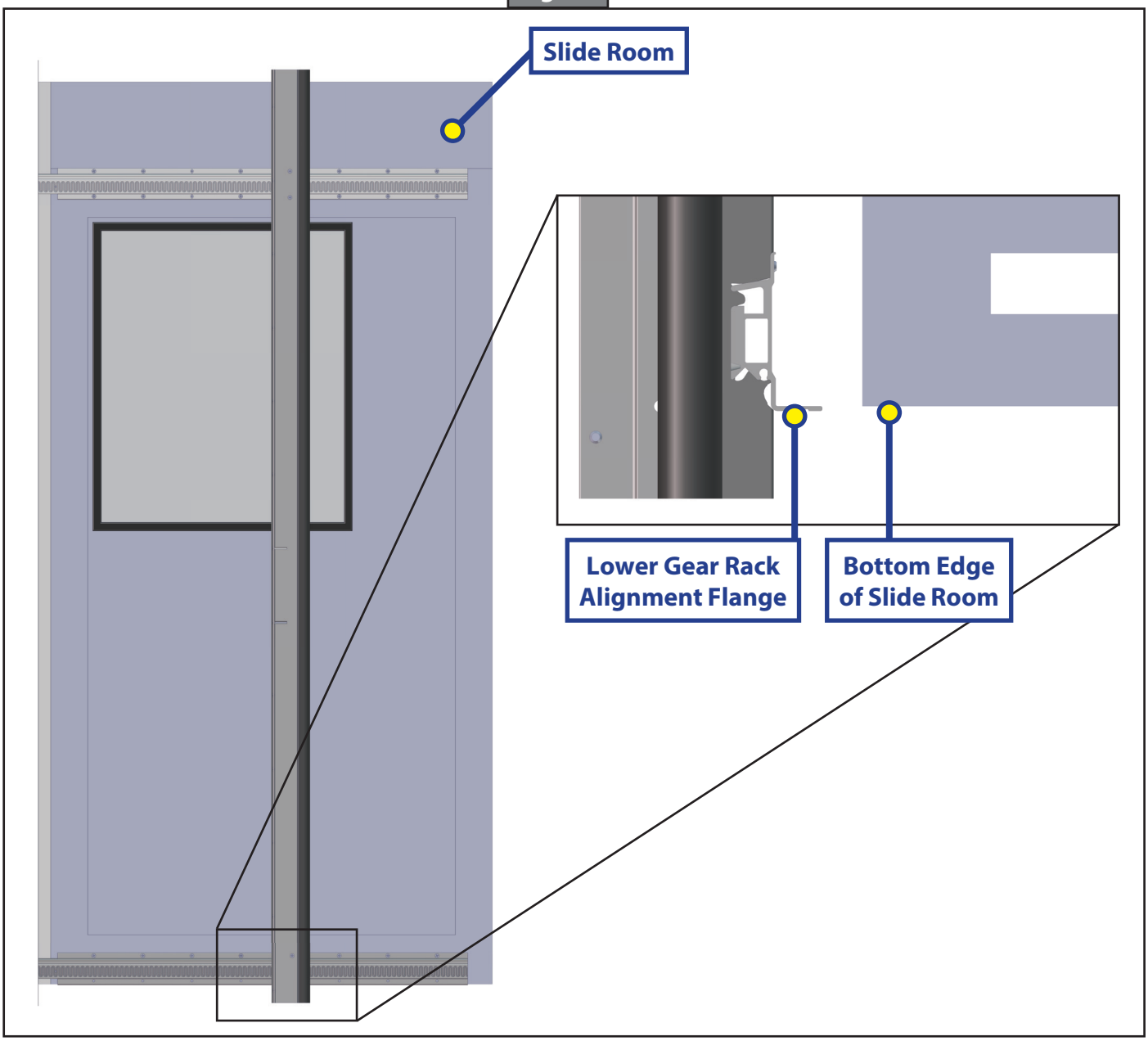
Assembly Installation Procedure

1. Prepare the slide room and side of unit for the new install by cleaning the surfaces of any adhesive residue using a putty knife and a solvent, being careful not to damage the finishes on the unit.
2. Prepare the new system for installation: measure the distance (center to center) from one gear rack to the next gear rack along the slide column. Write these measurements down.
3. Apply OEM recommended sealant to the entire length of the H-column along the inside edge where it will contact the side face of the unit.

NOTE: If installing a new assembly, remove the shipping angles before continuing this procedure.

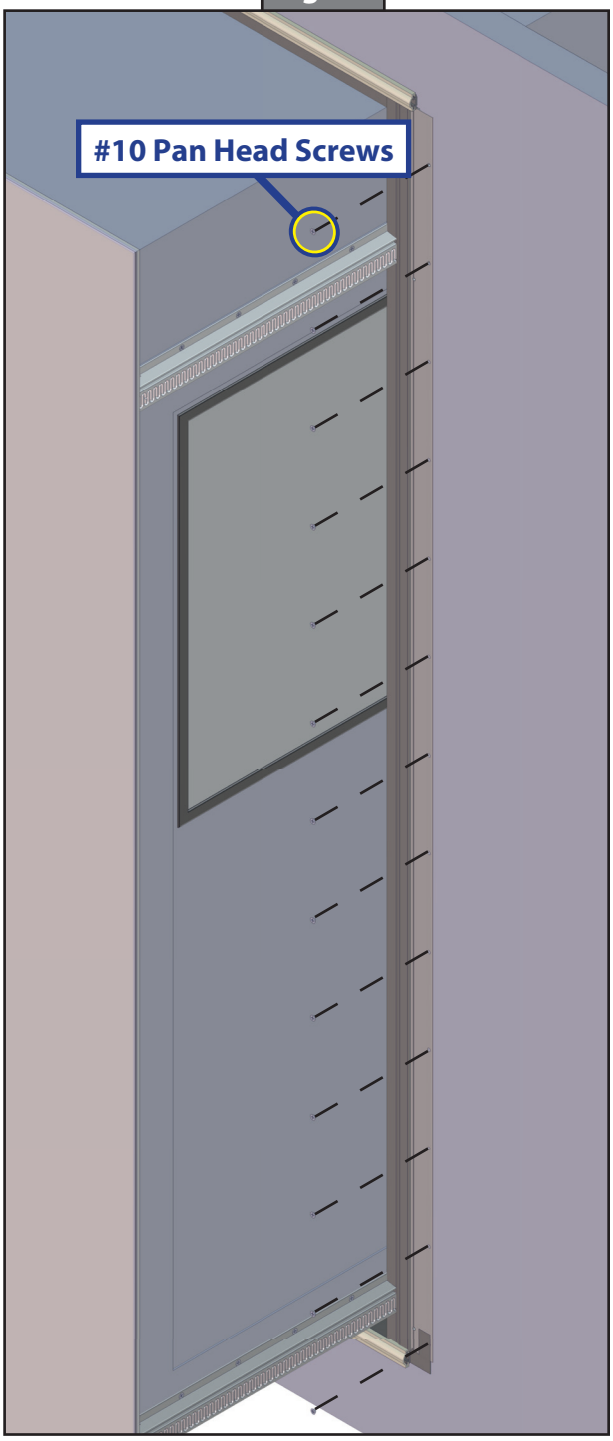
4. Gently slip the system through the opening between the slide room and the side wall opening. Tuck the gear racks inside the bulb seal attached to the T-molding.
5. Align the bottom lip of the lower gear rack with the bottom edge of the slide room (Fig. 22).
6. Push the bottom gear rack tight against the bottom of the slide room and put a screw into each end of the gear rack.

Fig. 22



7. Measure from the bottom of the gear rack (center to center) to the next gear rack and align that rack so that it matches the measurement you took off of the system during step 2 (Page 12). This will ensure that the racks are installed parallel and square. Put a screw in each end of the gear rack to hold it in place until you align all the gear racks.
8. Once you align and secure all the gear racks, put all the screws into the gear racks.
9. Attach the jumper wires to the motor in top of the slide column and then to the drill battery. Actuate the motor to move the slide column in towards the coach. Stop it when it is still a few inches away from the unit. Remove the jumper cable.
10. Make sure the motor cable is tucked into the top of the slide column.
11. Remove the 2x4 block.
12. Push the slide room in by hand until the slide column is flush with the side wall of the coach.
13. Screw the slide column into the side wall by placing a screw in the column by each rack and in the middle of the column to ensure the rack is straight, then fill in remaining screws (Fig. 23). Remove the floor jack.
14. From the inside of the coach, connect the wiring harness to the motor cable.
15. Repeat this process for the other side of the slide room.
16. Once you have completed both sides of the slide room, synchronize the slide system motors (See procedure below).

Fig. 23



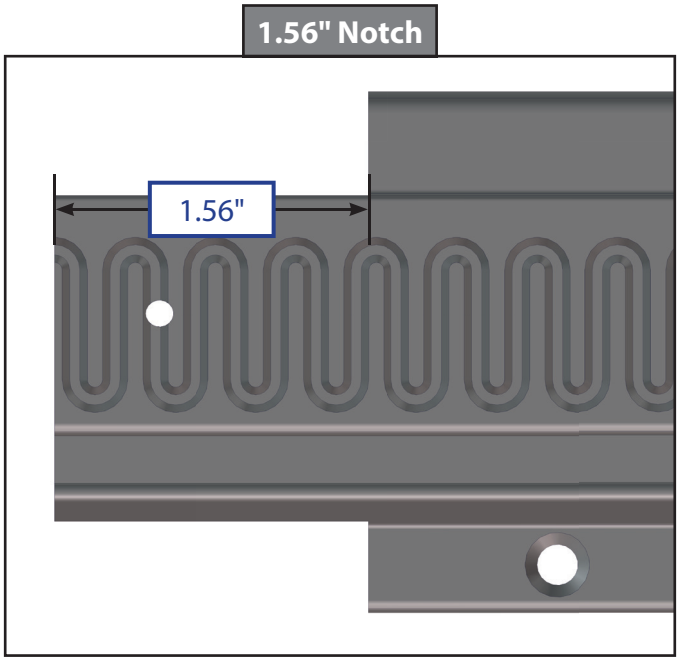
Synchronizing The Slide-Out Motors

1. Fully extend the slide room using the switch. Keep the switch engaged until the motors shut down on their own.
2. Retract the room 1-2 inches.
3. Repeat steps 1 and 2 until both motors shut down at the same time. In many cases, two or three repetitions are necessary to re-sync the system.
4. Fully extend and then retract the room. Again, always let the motors shut down on their own before releasing the switch.

Repair Kits Part Numbers

Standard (W/ 1.56" Notch)

Clear Part #	Black Part #	Description
366154	366209	Standard Fixed Repair Kit
366156	366211	Standard Float Repair Kit
366158	366212	Inverted Fixed Repair Kit
366159	366213	Inverted Float Repair Kit
366160	366214	Triple Fixed Repair Kit
366161	366215	Triple Float Repair Kit



Bearing Block Repair Kit

If the bearing blocks need to be replaced, a repair kit that includes one upper and one lower bearing block, four plastic rivets, and 2 aluminum rivets is available. Part numbers are on the table below.

Bearing Block Repair Kit Numbers	
Kit #	Description
379060	Standard Bearing Block Repair Kit
379076	Inverted Bearing Block Repair Kit
379077	Triple Bearing Block Repair Kit

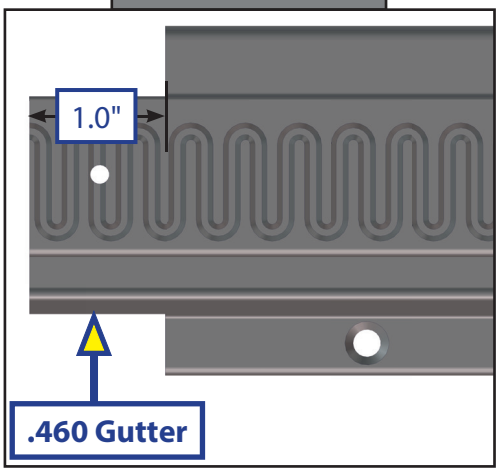
Custom

If the system being repaired has a different notch than the 1.56" described on the previous page, order one of the kits from Table 1 below, choose the appropriate rack part number from Table 2, and choose a rack notch pictured below.

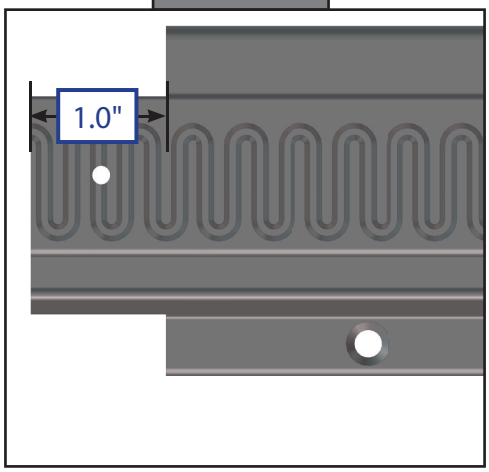
Table 1 - Custom Kit Numbers	
Kit #	Description
366121	Standard (without gear racks)
366120	Inverted (without gear racks)
366106	Triple (without gear racks)

Table 2 - Gear Rack Part Numbers		
Clear Part #	Black Part #	Description
268775	269858	Standard Lower
268774	269857	Standard Upper
299077	299079	Inverted Lower
299078	299080	Inverted Upper

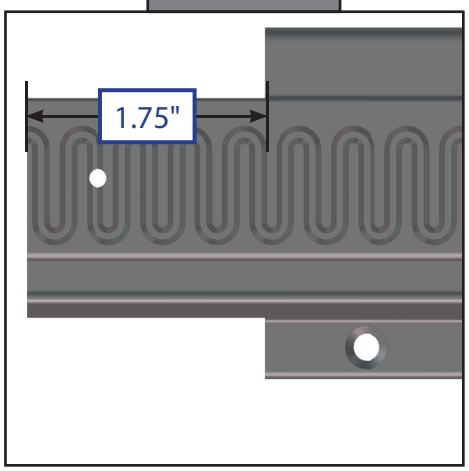
1.0" Gutter Notch



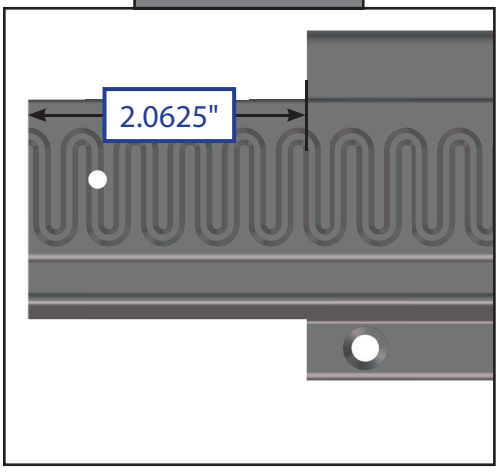
1.0" Notch



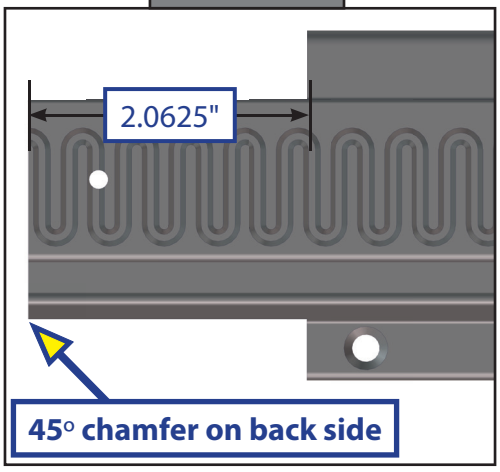
1.75" Notch



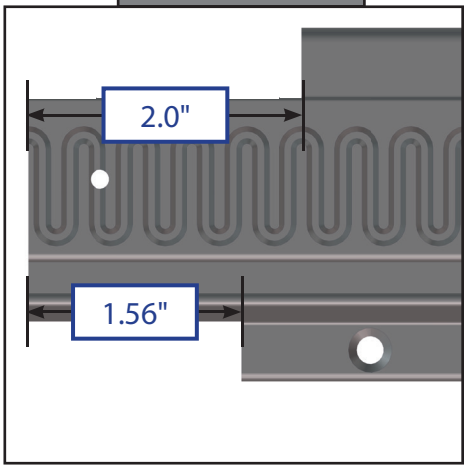
2.0625" Notch



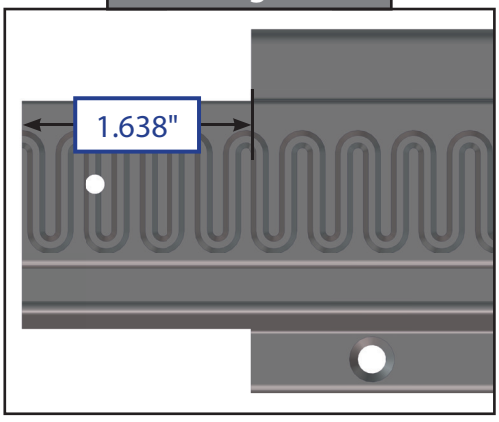
Tiffin Notch



Pinnacle Notch



Winnebago Notch



NOTE: If the gear rack being replaced has notches on both ends, the rack will need to be custom ordered. Contact LCI Parts at (574) 537-8900 for ordering assistance.

LIPPERT COMPONENTS™

Please recycle all obsolete materials.

For all concerns or questions, please contact
Lippert Components, Inc.
Ph: (574) 537-8900 | Web: www.lci1.com | Email: warranty@lci1.com