

# Master Owner's Manual

## Slide-outs



LIPPERT  
COMPONENTS®

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# Master Owner's Manual

The Master Owner's Manual is intended to provide information on Lippert Components Inc.'s most widely-used products. Products described in the Master Owner's Manual may not be on every trailer. The trailer may also have products not included in this manual. All manual information is subject to change without notice. Revised editions will be available for free download at [lci1.com/support](http://lci1.com/support). Manual information is considered factual until made obsolete by a revised version. Manual information may be distributed as a complete document only, unless Lippert Components provides explicit consent to distribute individual parts.

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# ABOVE FLOOR SLIDE-OUT (VERTICAL MOTOR)

## SLIDE-OUTS

### Introduction

The LCI Above Floor Slide-out (Vertical Motor) system is a rack and pinion style slide system. Utilizing a bi-directional electric motor to actuate the drive shaft, the slide-out room is extended and retracted from the same source. The actuator has a built-in automatic braking feature.

There are no serviceable parts within the electric motor. If the motor fails, it must be replaced.

Disassembly of the motor voids the warranty.

Mechanical portions of the slide-out system are replaceable. Contact Lippert Components, Inc. to obtain replacement parts.

Additional information about this product can be obtained from [lci1.com/support](http://lci1.com/support) or by downloading the free myLCI app. The app is available on iTunes® for iPhone® and iPad® and also on Google Play™ for Android™ users.

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For information on the assembly or individual components of this product, please visit:

<https://support.lci1.com/slide-outs-support-above-floor-slide-outs>

**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 and assemblies may differ.

### Safety

The LCI Above Floor Slide-out (Vertical Motor) system is intended for the sole purpose of extending and retracting the slide-out room. Its function should not be used for any other purpose or reason than to actuate the slide-out room. To use the system for any reason other than what it is designed for may result in damage to the unit and/or cause serious injury or even death.

Read and understand all instructions before installing or 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 LCI limited warranty.

**▲ WARNING**

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

**▲ WARNING**

Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and property damage, including voiding of the component warranty.

**▲ WARNING**

Unit **MUST** be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death or serious personal injury.

**▲ CAUTION**

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

**▲ CAUTION**

Always wear eye protection when performing service, maintenance or installation procedures. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.

**▲ CAUTION**

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

## Prior to Operation

Before operating the LCI Above Floor Slide-out (Vertical Motor) system, do as follows:

1. Parking location should be clear of obstructions that may cause damage when the slide-out room is actuated.
2. To optimize slide-out actuation, the unit should be parked on the most solid, level surface available.
  - A. Locations should also be free of depressions.
  - B. When parking the unit on extremely soft surfaces, utilize load distribution pads under each jack.
3. For motorized units:
  - A. The battery **MUST** be fully charged.
  - B. The PARKING BRAKE **MUST** be engaged.
  - C. The coach's transmission **MUST** be in PARK.
  - D. The coach's ignition **MUST** be in the OFF position—the engine **NOT** running. (Class A and C only; Gas and Diesel)
4. Make sure all persons, pets and property are clear of the unit prior to slide-out room actuation.
5. Keep hands and other body parts away from slide-out mechanisms during actuation or severe personal injury or death may occur.

## Operation

The family of LCI Above Floor Slide-out systems are controlled by a switch (Fig. 1) mounted on the unit's wall, normally located close to the entry door.

1. Make sure the slide-out path is clear of persons, pets and property before and during operation of the slide-out room.
2. Always keep away from the slide rails when the room is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.
3. Keep stored items in compartment clear of slide-out motor mechanisms and wiring to prevent interference of slide-out operation.

### Extending Slide-Out

1. Level the unit.
2. Verify the battery is fully charged and hooked up to the electrical system.
3. If equipped, remove transit bars.
4. Press and hold the IN/OUT switch in the OUT position (Fig. 1A) until the slide-out is fully extended and stops moving.
5. Release the switch, which will lock the slide-out into position.

**NOTE:** Only hold the switch's OUT position until the slide-out stops.

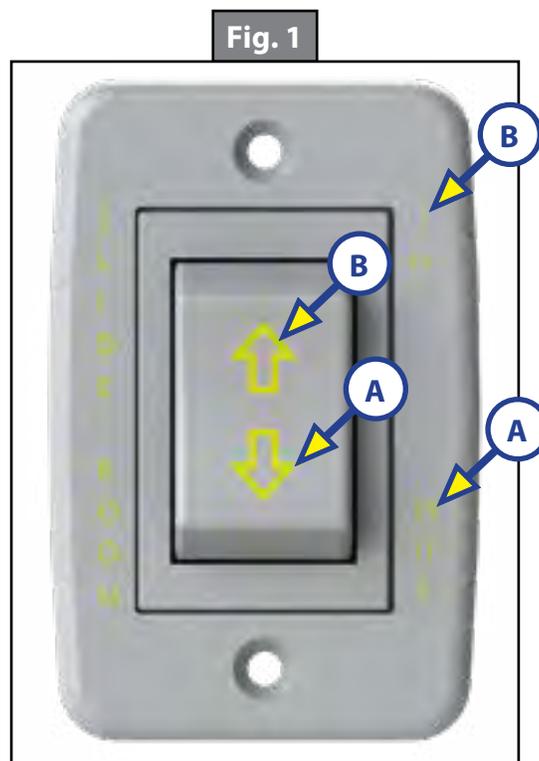
### Retracting Slide-Out

1. Verify the battery is fully charged and hooked up to the electrical system.
2. Press and hold the IN/OUT switch in the IN position (Fig. 1B) until the slide-out is fully retracted and stops moving.
3. Release the switch, which will lock the slide-out into position.

**NOTE:** Only hold the switch's IN position until the slide-out stops.

4. If equipped, install the transit bars.

**NOTE:** Transit bars should only be used during storage and transportation.



## Maintenance

### Preventative

The LCI Above Floor Slide-out (Vertical Motor) system has been designed to require very little maintenance. The system has been static tested to over 2,500 continuous cycles without any noticeable wear to rotating or sliding parts. No grease or lubrication is necessary and, in some situations, may be detrimental to the environment and long term dependability of the system. To ensure the long life of the slide-out system, read and follow these few simple procedures.

### Electric

For optimum performance, the slide-out system requires full battery current and voltage. The battery must be maintained at full capacity. Other than good battery maintenance, check the terminals and other connections at the battery, the control switch, and the electric motor for corrosion and loose or damaged terminals. Check motor leads under the motor-home chassis. Since these connections are subject to damage from road debris, be sure they are in good condition.

**NOTE:** The LCI Above Floor Slide-out (Vertical Motor) system is designed to operate as a negative ground system. A 12V DC system must maintain good wire connections. It is important that the electrical components have good ground connection. Over 90% of unit electrical problems are due to bad ground connections.

### Mechanical Maintenance

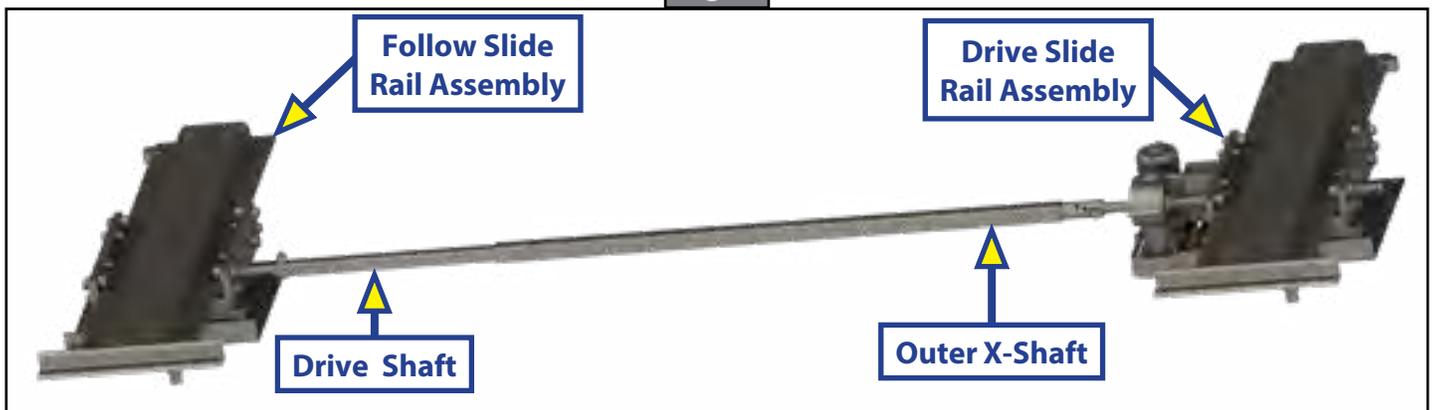
Although the LCI Above Floor Slide-out (Vertical Motor) system is designed to be almost maintenance free, inspect the slide-out for any visible signs of external damage before and after movement of the slide-out. Remember to inspect inside the unit as well as the slide-out outside the unit.

For long-term storage, it is recommended that the slide-out be closed (retracted).

Visually inspect the slide floor and drive box assemblies. Refer to figure 2 for locations of rail assemblies. Check for excess build-up of dirt or other foreign material; remove any debris that may be present.

If the system squeaks or makes any noises it is permissible to apply a coat of lightweight oil to the drive shaft and roller areas, but remove any excess oil so dirt and debris do not build-up. Do **NOT** use grease.

Fig. 2



## Troubleshooting

The LCI Above Floor Slide-out (Vertical Motor) system is only one of four inter-related slide-out system components. These four components are:

- Chassis
- Slide-out room
- Unit
- LCI Above Floor Slide-out (Vertical Motor) system

Each component needs to function correctly with the others or misalignment problems will occur.

Every unit has its own unique build, or "personality," so what may work to fix one unit may not work on another—even if the symptoms appear to be the same.

When something restricts room travel, system performance will be unpredictable. It is very important that slide rails, rack and pinion be free of contamination and allowed to travel freely the full distance or "STROKE." Debris build-up during travel is an example of the type of contamination that may occur.

When beginning to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the actuator, motor or rails and that the motor is wired properly and all connections are secure.

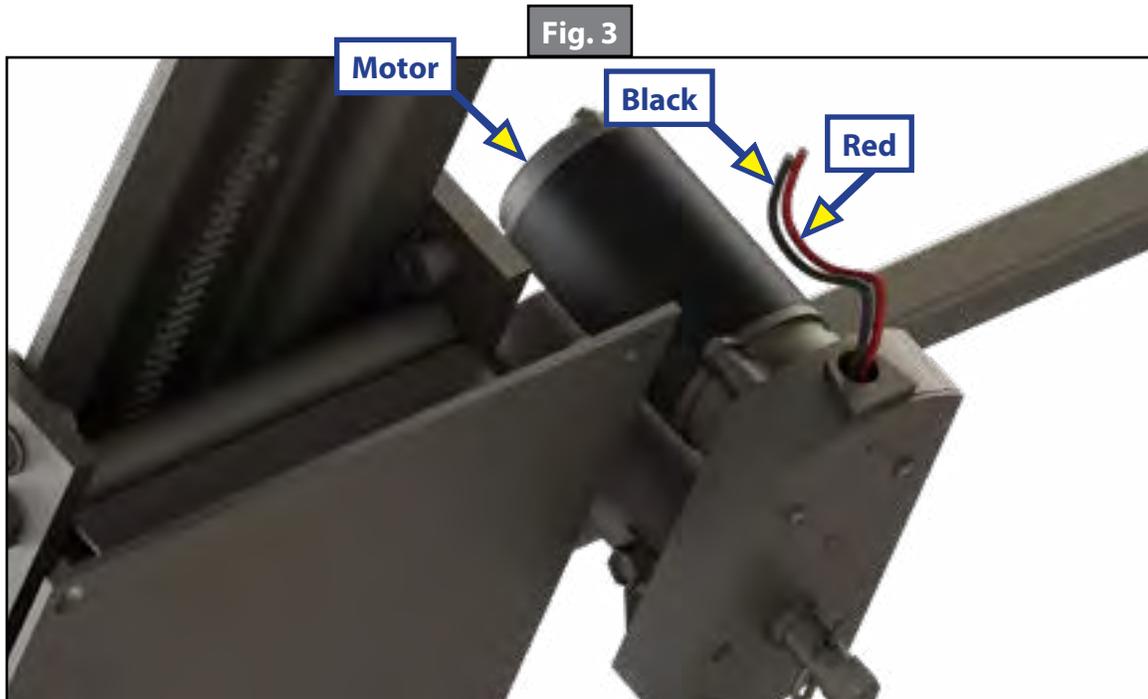
You can adjust slide-out extension by modifying the position of the rack gear on the slide floor rail to the pinion gear on the gear assembly.

During troubleshooting, changing, altering or adjusting one thing may affect something else. Make sure any changes do not create a new problem.

Troubleshooting Chart		
What is Happening	Why?	What Should Be Done?
Slide-out doesn't move when switch is pressed.	Restriction or obstruction inside or outside of unit.	Check for and clear obstruction.
	Low battery voltage, blown fuse, defective wiring.	Check battery voltage and charge if needed. Find and check fuse, replace if blown. Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Excessive slide-out drag.	Check that transit bars are removed.
Power unit runs, but slide-out does not move.	Motor turns, slide-out does not move.	Gear key is broken or lost. Replace gear drive assembly.
	Broken gear on drive shaft.	Replace gear drive assembly.
	Broken gear in gearbox.	Replace motor/gearbox assembly.
	Bad motor or gearbox.	Replace motor/gearbox assembly.
Slide-out starts to move, then stops.	Low battery voltage, blown fuse, defective wiring.	Check battery voltage and charge if needed. Find and check fuse, replace if blown. Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Obstruction of slide-out inside or outside.	Check for and clear obstruction.
Slide-out chatters during operation.	Teeth on gear drive broken or worn.	Replace gear drive assembly.
	Teeth on inner rail broken and worn.	Replace inner rail assembly.

## Switch Related Problems

1. If the slide-out moves opposite from what the switch plate indicates, reverse the red and black motor wires at the splice junction (Fig. 3). Wire size must be 10 AWG minimum.
2. If a gear is stripped, the entire gearbox must be replaced.



## Motor Unit

Before attempting to troubleshoot the power unit, make sure an adequate power source is available. The unit's batteries should be fully charged or the unit should be plugged into A/C service with batteries installed. Do **NOT** attempt to troubleshoot the power unit without assuring a full 12V DC charge.

The following tests require only a DC voltmeter, or DC test light, and a jumper lead.

1. Attach voltmeter or test light leads to the negative and positive switch terminals on back of the wall switch. Does the meter indicate 12V DC?
  - A. If yes, go to step 2.
  - B. If no, go to step 3.
2. Check the incoming leads to 12V DC. Does meter indicate 12V DC?

**NOTE:** If necessary, disconnect leads at wire splices.

- A. If yes, the power unit needs to be replaced.

**NOTE:** The motor is not field serviceable. Do **NOT** attempt to repair.

- B. If no, inspect all wires and connections between the wall switch and the motor.
    - I. Repair connections as necessary.
    - II. Re-check voltage per step 1.
3. If meter still does not register 12V DC, then:
    - III. Inspect all connections between battery and switch.
    - IV. Inspect any and all breakers, relays and fuses.
    - V. Re-check voltage per step 1.

## Electrical

Since there are no field-serviceable parts in the motor of the 12V DC motor, electrical troubleshooting and service is limited to replacing only those components as previously outlined.

**NOTE:** Thorough inspection of wiring and connections is the only other electrical service that can be performed.

## Syncing the Slide-Out

When the two opposing sides of the slide-out are misaligned—out-of-sync—an adjustment can be made to realign—sync—the system by performing a manual adjustment of the outer x-shaft.

### ⚠ CAUTION

**Always disconnect battery from system prior to manually operating system. Failure to disconnect battery can cause electricity to back feed through the motor and cause serious damage to the system as well as voiding the warranty.**

Before accessing the power unit, make sure power to the system has been disconnected.

The slide-out adjustment for syncing the LCI Above Floor Slide-out is handled through the drive shaft (Fig. 2).

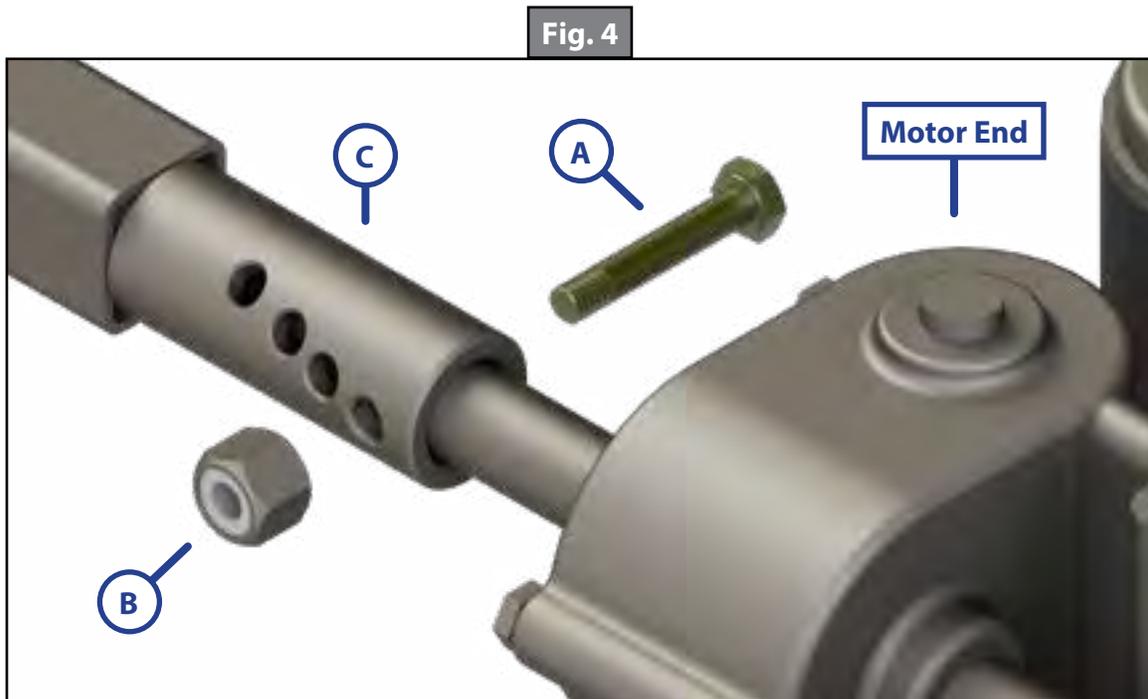
To sync the slide-out system, do as follows:

1. Access the slide-out's drive slide rail assembly (motor end) (Fig. 2).

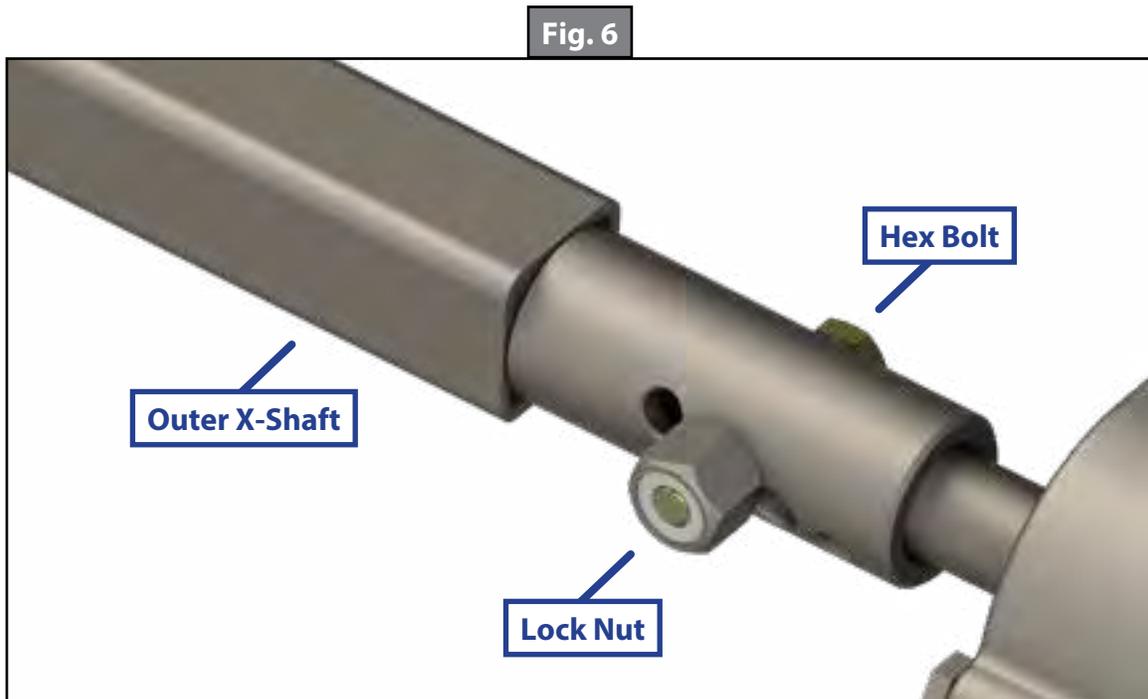
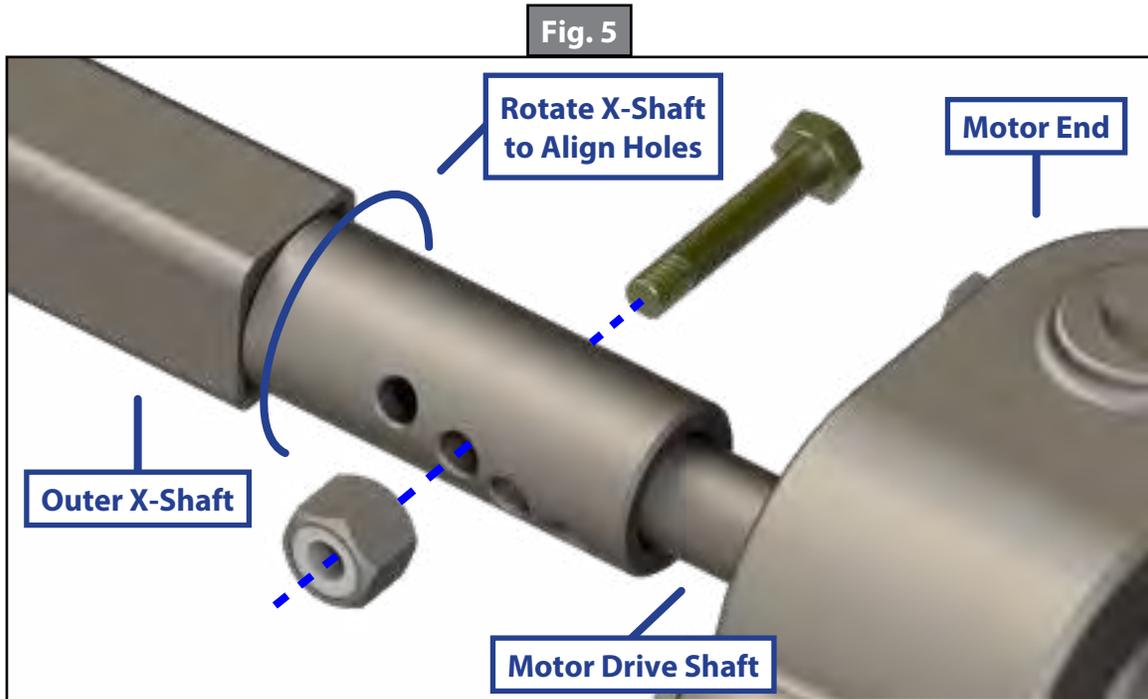
**NOTE:** The slide-out shaft will be accessible from the inside of the unit. The slide-out motor and mechanism are accessible from the outside.

2. At the motor end, remove the 1/4" - 20 bolt (Fig. 4A) and locking nut (Fig. 4B) from the outer x-shaft (Fig. 4C).

**NOTE:** This is the part that allows the follow slide to be adjusted, pulling the room closer to or further away from the wall at the follow end.



3. Turn the outer x-shaft (Fig. 5) to rotate the drive shaft until the follow slide end aligns—syncs—with the drive slide end.
4. Align the closest hole on the outer x-shaft with the through-hole on the drive shaft (Fig. 5), then reinsert the previously removed (step 2) 1/4" - 20 bolt and locking nut (Fig. 6) to secure the synced slides.



5. Reconnect internal and external power to the unit.
6. Using the switch (Fig. 1), operate the slide-out system to make sure the drive and follow slides are properly synced.
7. If slides remain out-of-sync, repeat steps 1-5 until both slides become synced and the room operates normally.

## Manual Override

In the event of loss of power, the LCI Above Floor Slide-out (Vertical Motor) system can be manually operated as follows:

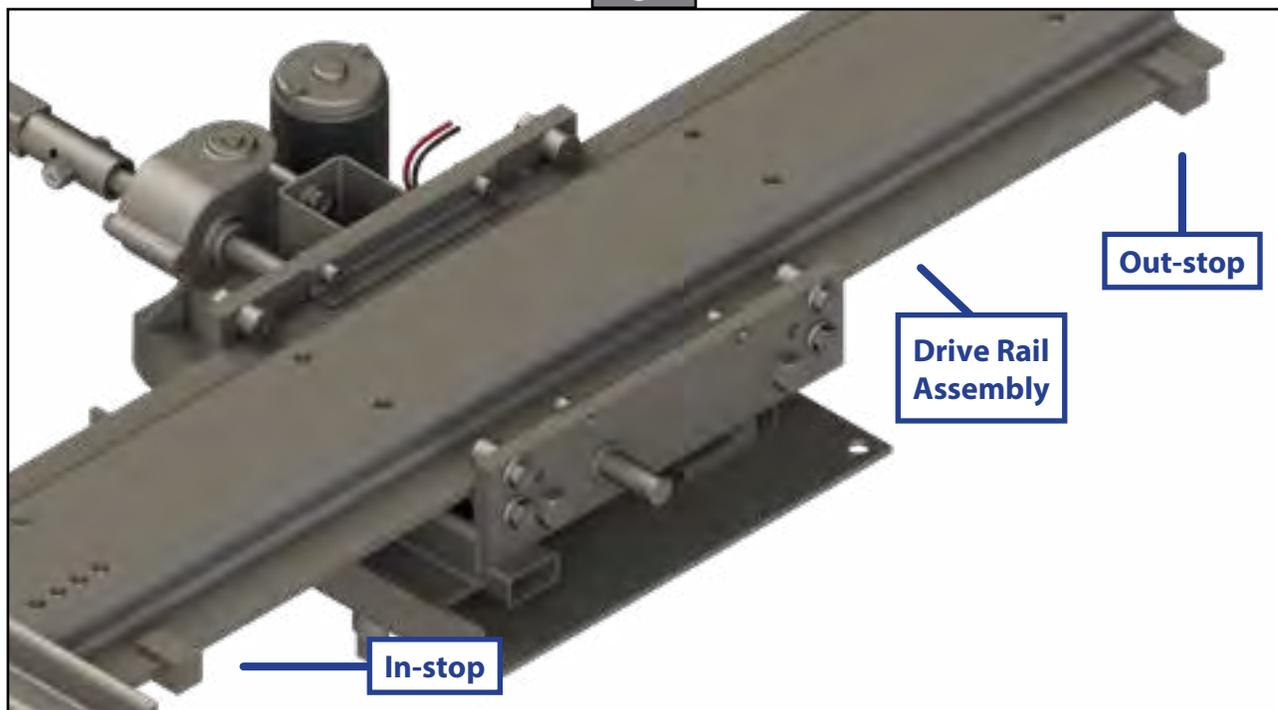
### **CAUTION**

**Always disconnect battery from system prior to manually operating system. Failure to disconnect battery can cause electricity to back feed through the motor and cause serious damage to the system as well as voiding the warranty.**

1. Before accessing the power unit, make sure power to the system has been disconnected.
2. Access the out-stop assembly (Fig. 7). Out-stops are located on the outer edge of the drive and follower rails.

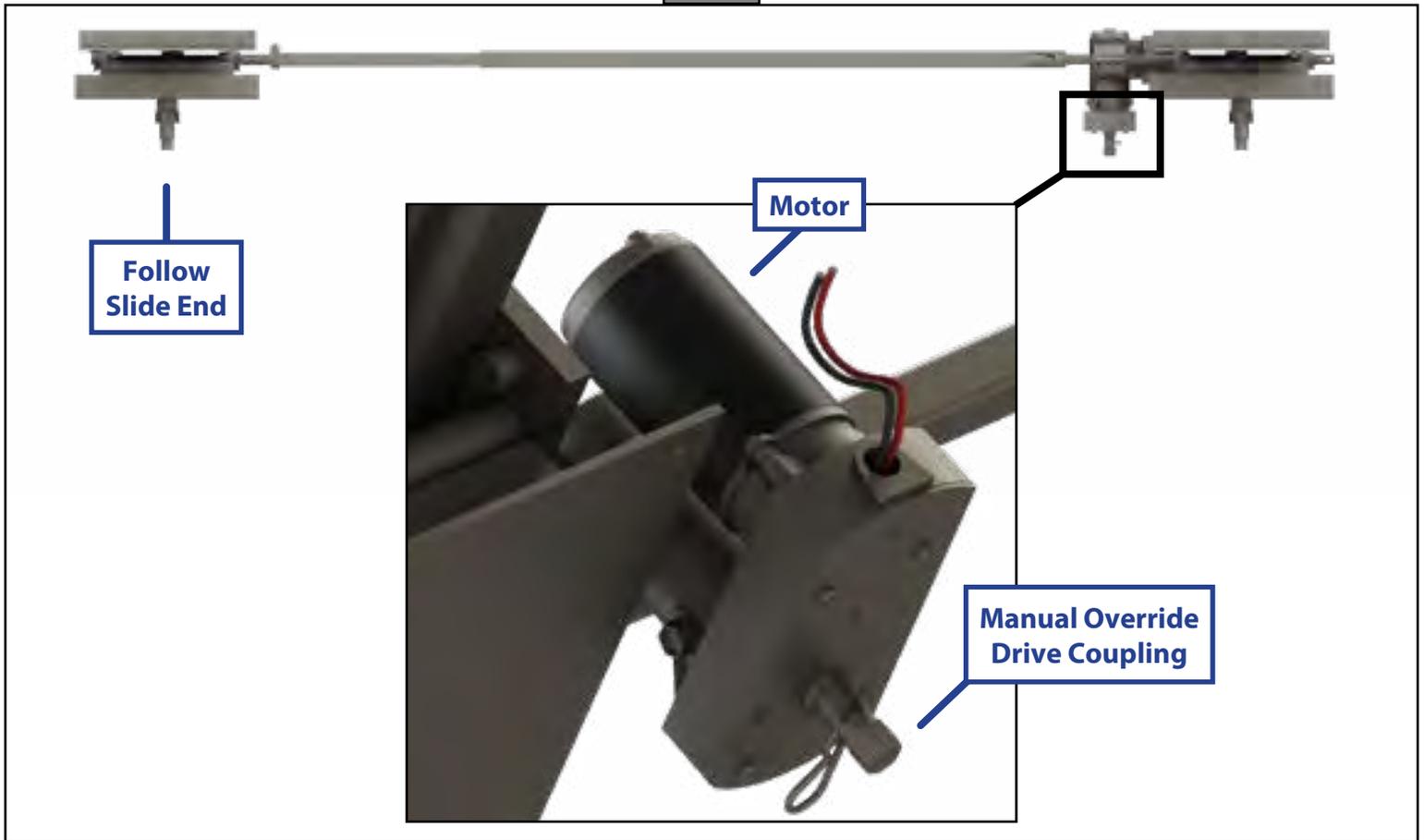
**NOTE:** The slide-out out-stop assembly will be accessible from the inside of the unit. The slide-out motor and mechanism are accessible from the outside.

Fig. 7



3. Using a 15/16" wrench or socket/ratchet combination, rotate the 5/8" hex head manual override (Fig. 8) to manually extend or retract the slide-out.

Fig. 8



**CAUTION**

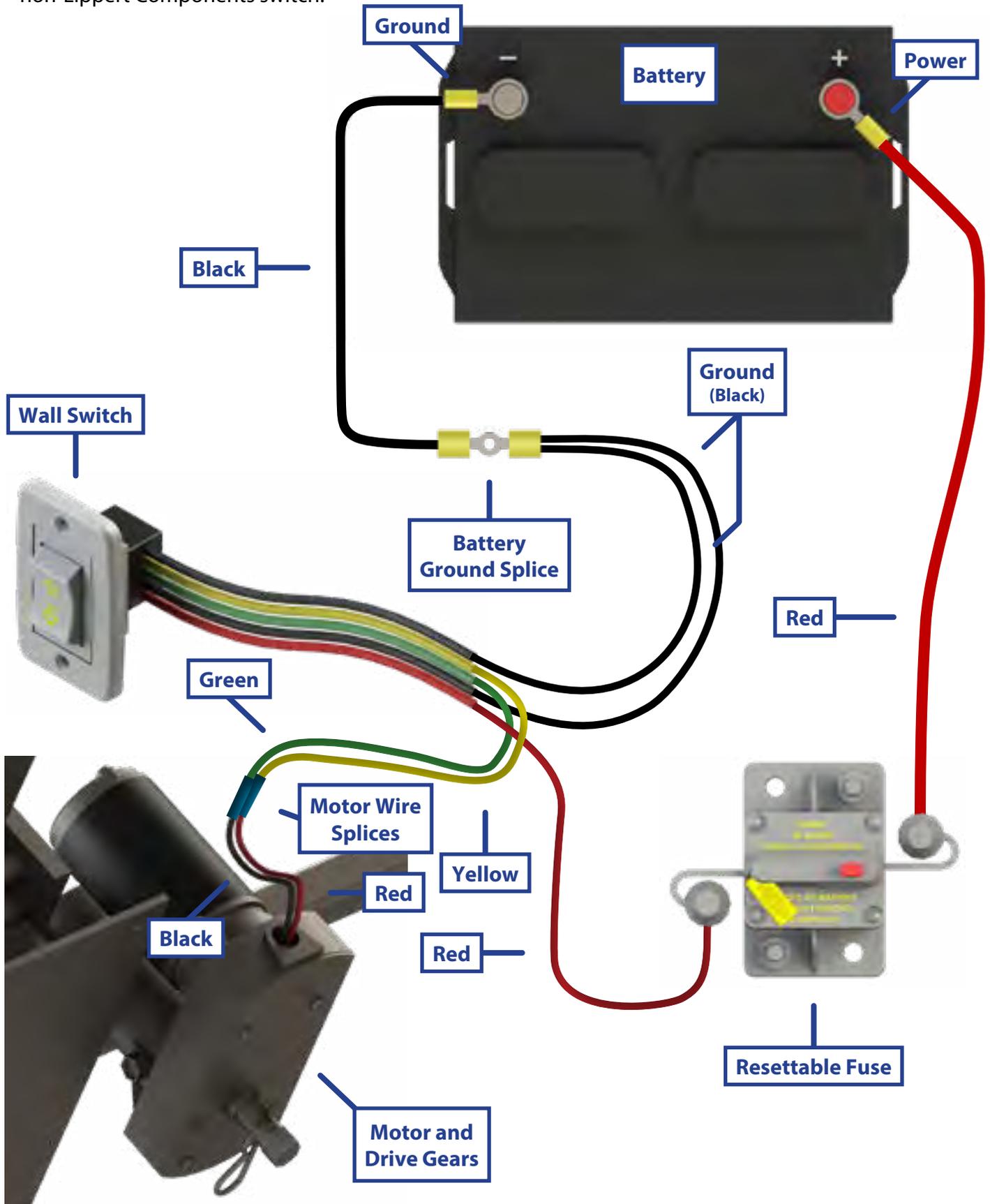
The gears can be stripped out if the slide-out is manually retracted/extended to its fullest extent and the operator continues to rotate manual override. Do NOT over extend or retract the slide-out when manually overriding the system. Damage may occur when over extending or retracting the slide-out, causing the system to fail and void the limited warranty.

4. When the slide-out reaches its stop (Fig. 7), do NOT continue to manually extend or retract the slide-out or damage to the system can occur.

**NOTE:** Stops are factory-set to optimize slide-out extension/retraction. No additional adjustment to the stops should be needed. If the retracted slide-out does not fully seal, then an adjustment to the in-stops may be required. Contact the unit's manufacturer for additional adjustment information.

# Wiring Diagram

**NOTE:** Wire colors may differ when using a non-Lippert Components switch.



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

### Operation

#### Prior to Operation

1. Coach should be parked on the most level surface available.
2. Leveling or stabilizing system should be actuated to ensure coach will not move during operation of slide-out system.

**NOTE:** In the case of a motorized unit, ignition must be off to operate the slide-out.

3. Be sure to keep all persons and pets clear of slide-out system during operation.

**NOTE:** Install transit bars (if so equipped) on the slide-out room during storage and transportation.

#### **▲ CAUTION**

**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.**

## Extending Slide-Out Room

1. Level the unit.

**NOTE:** In the case of a motorized unit, ignition must be off to operate the slide-out.

2. Remove the transit bars (if so equipped).
3. Press and hold the IN/OUT switch (Fig. 1B) in the OUT position until the room is fully extended and stops moving.

**NOTE:** It is important to continue to press the slide-out switch for a few seconds after the room is fully extended until the motor shuts off. The control will sense that the room has stopped and will shut off the motor after a few seconds.

4. Release the switch, which will lock the room into position.

## Retracting Slide-Out Room

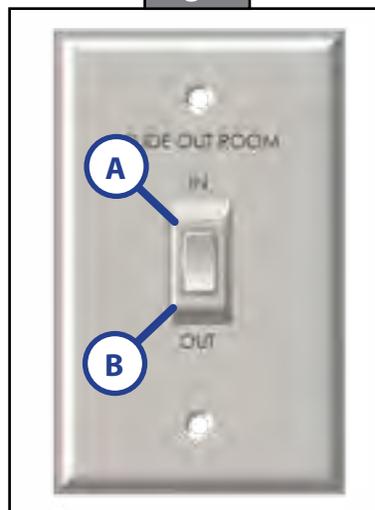
**NOTE:** In the case of a motorized unit, ignition must be off to operate the slide-out.

1. Press and hold the IN/OUT switch (Fig. 1A) in the IN position until the room is fully retracted and stops moving.

**NOTE:** It is important to continue to press the slide-out switch for a few seconds after the room is fully retracted until the motor shuts off. The control will sense that the room has stopped and will shut off the motor after a few seconds.

2. Release the switch, which will lock the room into position.
3. Install the transit bars (if so equipped).

Fig. 1



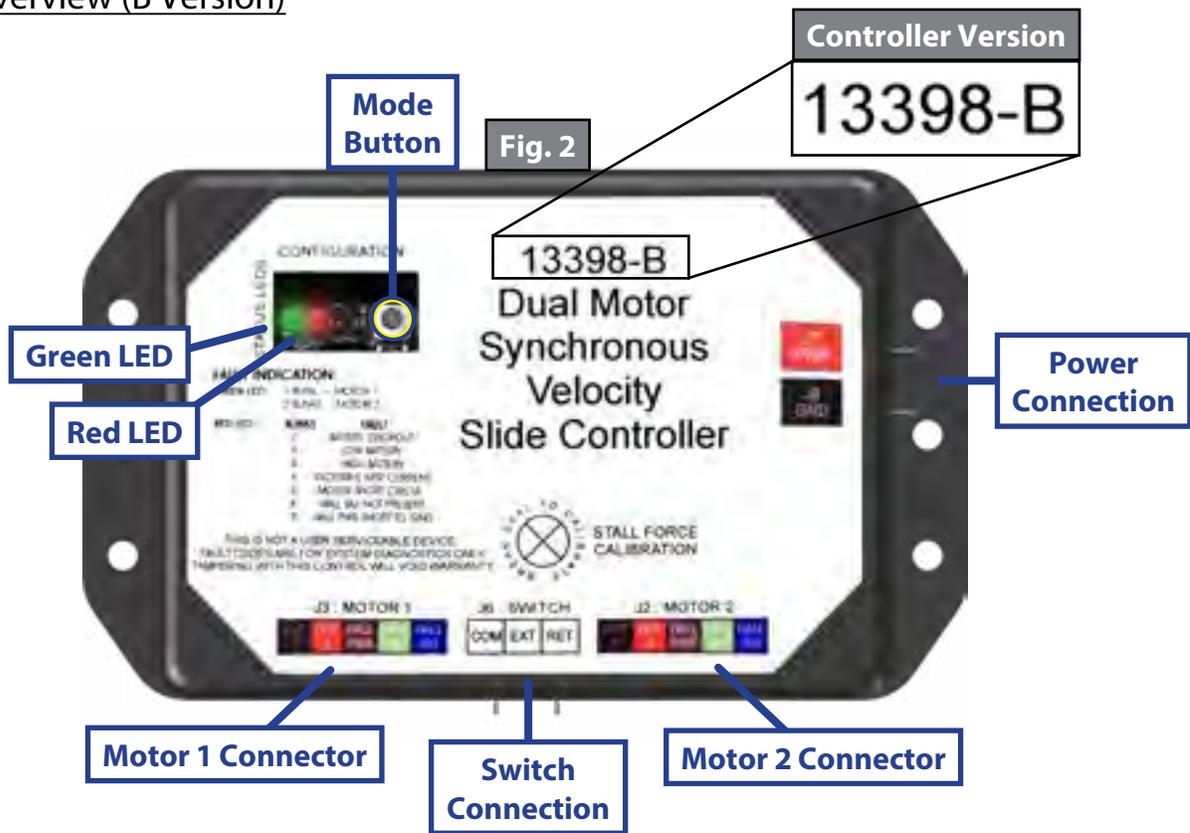
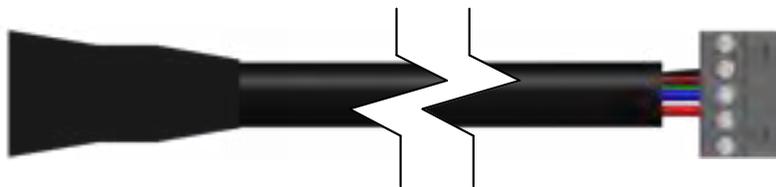


Fig. 3 - Controller Connections



Fig. 4 - Motor Harness



**Status LEDs:** 2 LEDs, 1 green and 1 red, are provided to indicate current controller status and faults.

**Power Connection:** 12V DC input. Unit will operate from 8V DC to 18V DC.

**Switch Connection:** Spade connection for the switch wiring.

**Motor 1 Connector:** Power and encoder input for motor 1.

**Motor 2 Connector:** Power and encoder input for motor 2.

**NOTE:** Version B motor harnesses have five wire in-line connectors at the controller and the molded connector at the motor end (Figs. 3 and 4). Wire colors match with color codes on control board. It does not matter which motor is 1 or 2.

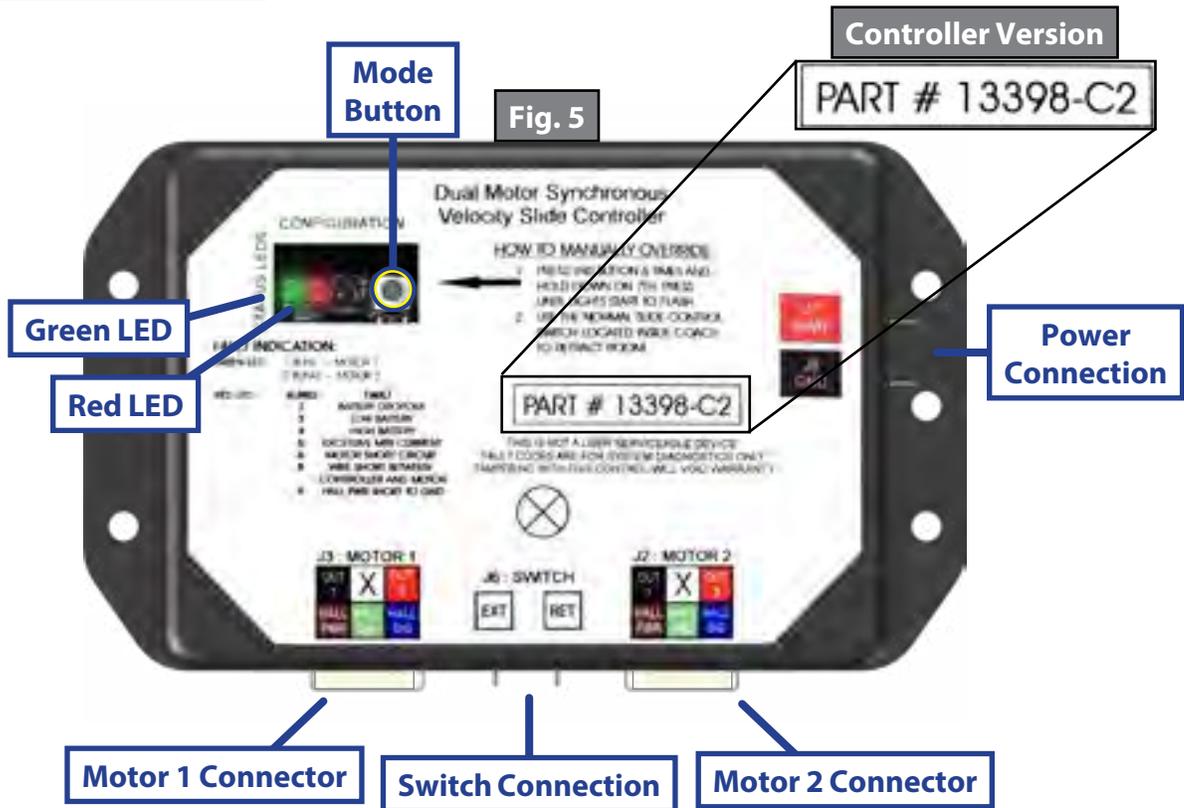
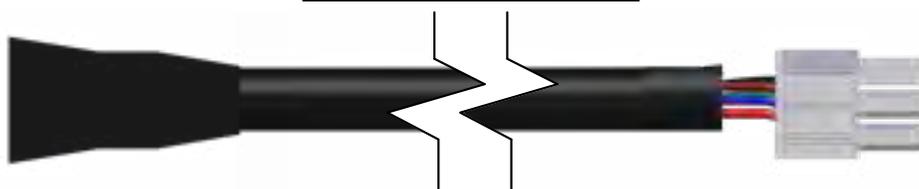


Fig. 6 - Controller Connections



Fig. 7 - Motor Harness



**Status LEDs:** 2 LEDs, 1 green and 1 red, are provided to indicate current controller status and faults.

**Mode Button:** Used to engage the electronic manual override.

**Power Connection:** 12V DC input. Unit will operate from 8V DC to 18V DC.

**Switch Connection:** Spade connection for the switch wiring.

**Motor 1 Connector:** Power and encoder input for motor 1.

**Motor 2 Connector:** Power and encoder input for motor 2.

**NOTE:** Motor harnesses have Molex® connectors at the controller and a molded connector at the motor end (Figs. 6 and 7). Wire colors match with color codes on control board. It does not matter which motor is 1 or 2.

## Motor and Controller Compatibility

Part #	Controller Version	Controller Replacement	Motor(s) Used
<a href="#">239657</a>	A (Daisy Chain) (Fig. 8)	A Only	Round-Square (Fig. 14), Round-Round (Fig. 15A)
<a href="#">211852</a>	B (Fig. 9)	B/C2* Only	Round Square (Fig. 14)
	C (Fig. 10)	C/C2* Only	Round-Round (Fig. 15A, 15B), Round-Square Plate (Fig. 16)
	C1 (Fig.11)	C1/C2* Only	
	C2 (Fig. 12)	C2	
	D-0 (Fig. 13)	B/C1/C2	
326876	8 Amp (Fig. 14)	8 Amp Only	Round-Round (Fig.15B)
<p><b>NOTE:</b> Always replace the motor in the system with the same motor except the Round-Square Plate (Fig. 17), which is obsolete. That motor will be replaced with the Round-Round (Fig. 16A, 16B).</p> <p><b>NOTE:</b> (*) Denotes that (2) new motor harnesses must be ordered, and re-wiring instructions must be used. See next page.</p>			

Fig. 8



Fig. 8



Fig. 10



Fig. 11



Fig.12

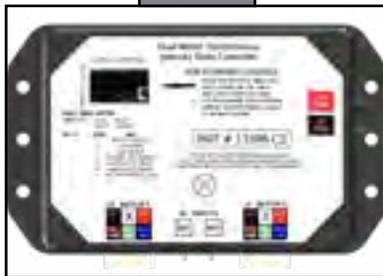


Fig. 13



Fig. 14

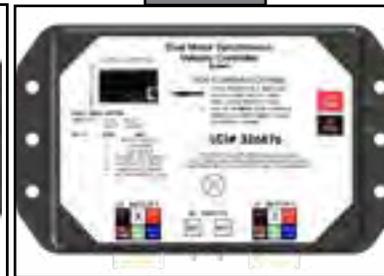


Fig. 15 - [229466](#)



Fig. 16A - [236575](#), 300:1



Fig. 16B - [287298](#), 500:1



Fig. 17 - Obsolete

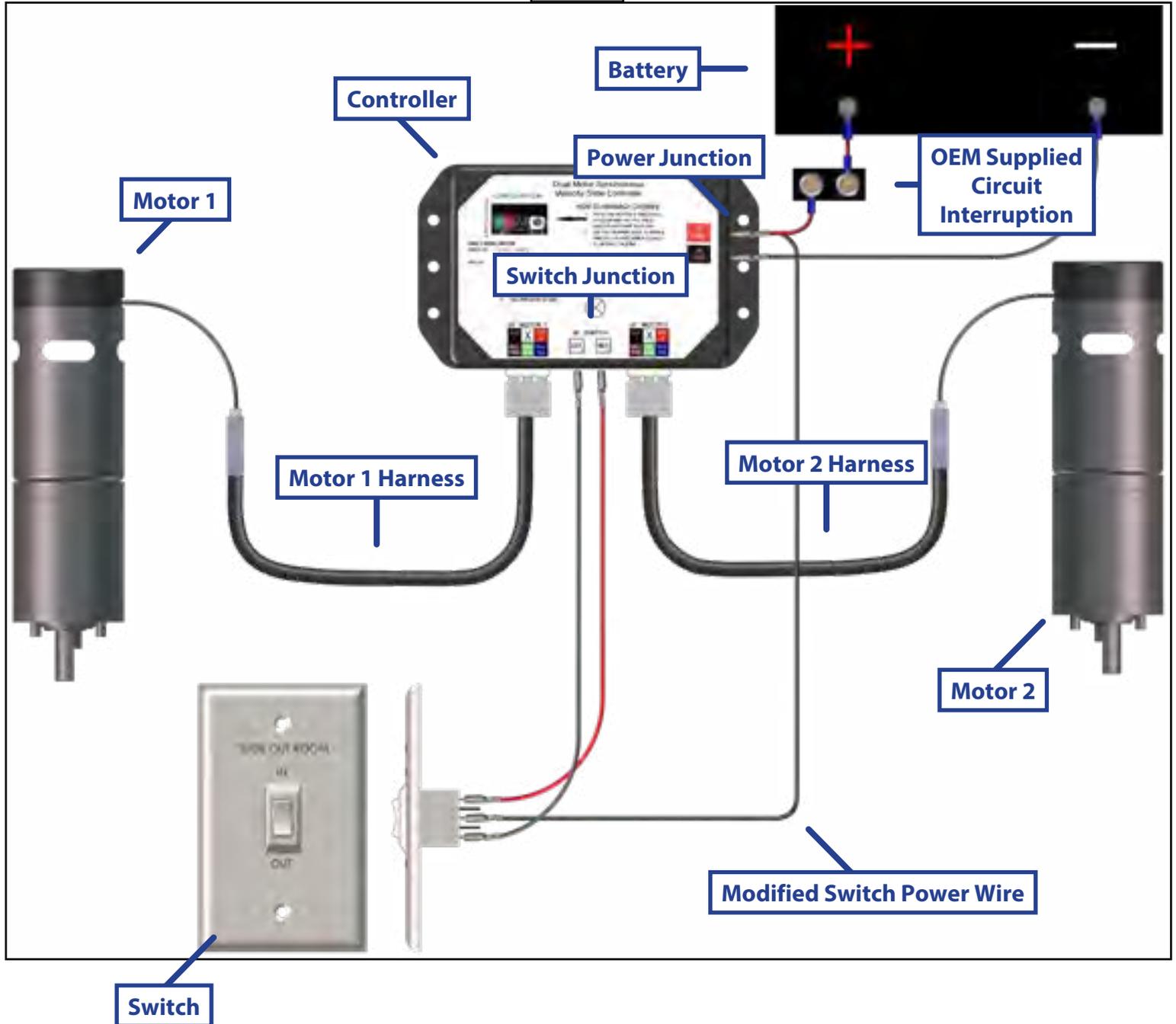


**NOTE:** Ensure that a 300:1 motor is replaced with a 300:1 motor (Fig. 16A), and that a 500:1 motor is replaced with a 500:1 motor (Fig. 16B).

## Rewiring Instructions

If it is necessary to replace a malfunctioning Rev. B, C, or C1 controller, it is recommended that the customer do so with a new Rev. D-0 controller. In order to properly rewire a Rev. B, C, or C1 controller to a new Rev. D-0 controller, the customer will need two new motor harnesses (one for each motor.) Additionally, it will be necessary to modify the power wire from the controller to the extend/retract switch by adapting the wire to piggyback the connection at the power junction. This wire comes from the positive side of the buss bar to the controller (Fig. 18).

Fig. 18



## Motors and Harnesses

1. Check for proper connections between the motors and harnesses (Fig. 19).
2. Visually inspect the exposed harnesses to ensure they are not pinched or damaged.

**NOTE:** Ribs on motor connector line up with notch inside of female connector on wiring harness. Color codes on wires also match (black to black, red to red, etc.)



## Resynchronizing 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 the slide-out and keep the switch engaged until the motors shut down on their own. Fully retract the slide-out, again keeping the switch engaged until the motors shut down on their own. If both motors shut down at the same time at full extension and full retraction, the room is properly synchronized. If they do not shut down at the same time, repeat the process until they do.

## Extend and Retract Switch Connections

Rev. A - Rev. C1 Controllers: Common connection on controller goes to common connection on extend and retract switch.

Rev. C2 and 8 amp Controllers: Extend and retract connections on the controller go to the extend and retract terminals on the switch. Switch is powered by the OEM supplied 12V DC power source.

## Power and Ground Connections at The Controller

Power and ground are supplied to the controller through the spade terminals located on the right-hand side of the controller (Figs. 2 and 5 - Power Connection). 12V DC is recommended. A 10 GA wire is the minimum size recommended. A 30 amp resetting or blade fuse is required (OEM supplied).

# Troubleshooting

## Checking Circuit Breakers

The IN-WALL® Slide-out requires a minimum of a 30-amp circuit breaker. Check the 12-volt circuit breaker box for blown circuit breakers, and replace any if necessary. Consult the RV manufacturer's documentation for the location of the 12-volt circuit breaker box, and the location of the IN-WALL® Slide-out controller's circuit breaker. If the circuit breaker blows immediately upon replacement, there is a problem with the wiring to the IN-WALL® Slide-out controller. Have qualified service personnel check and repair.

## Obstructions

Check outside the RV for possible obstructions: tree, post, car, etc. Check inside the RV for any obstructions: luggage, furniture, open cabinets, etc. Also, check for smaller objects that may be wedged under the floor or in the sides of unit. Remove obstructions before proceeding.

## Debris In the Rack

Check the sides of the slide room for any dirt or debris. Small dirt clumps or metal shavings can cause the spur gear to bind up and stop the movement of the slide-out. Use compressed air or a dry brush to remove any dirt or debris from the rack before attempting to actuate the system again.

## Error Codes

During operation when an error occurs, the board will use the LEDs to indicate where the problem exists (Fig. 20). For motor-specific faults the green LED will blink 1 time for motor 1 and 2 times for motor 2. The red LED will blink from 2 to 9 times depending on the error code (Fig. 21).

When an error code is present, the board needs to be reset. Energizing the extend/retract switch (Fig. 1) resets the board. Energize the extend/retract switch again for normal operation.

Fig. 20

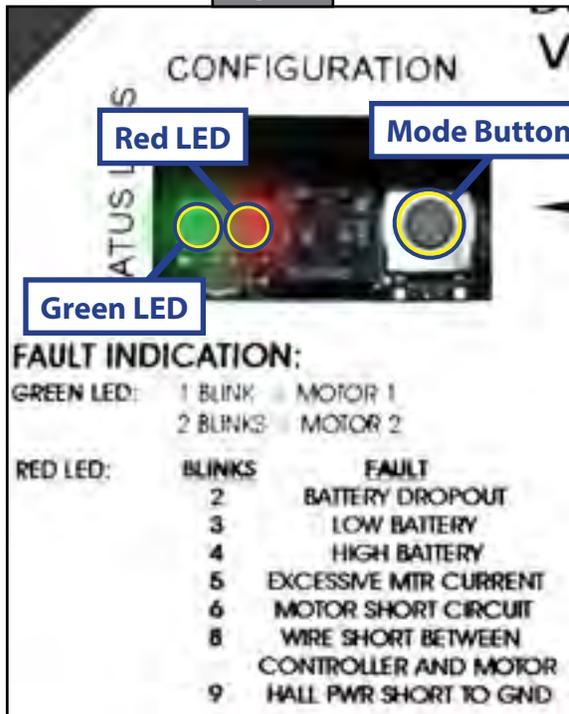


Fig. 21 - Error Code Description

Error Code	Name	Description
2	Battery drop out	Battery capacity low enough to drop below 6 volts while running or short in switch wiring.
3	Low battery	Voltage below 8 volts at start of cycle.
4	High battery	Voltage greater than 18 volts.
5	Excessive motor current	High amperage, also indicated by 1 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.

## Electronic Manual Override (Controllers C-1, C-2 and D-0 Only)

**NOTE:** See (Fig. 22) 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 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 (you will have to 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" below.

## Motor Disengagement Procedure

1. Remove motor retention screws located near the top of each vertical column on the outside of the coach (under bulb seal if equipped with bulb seal on column).
2. Locate motor.
  - A. On units built prior to 2011: Bend back wipe seal from outside of coach.
  - B. On units from 2011 to current: See slot in H-column on the inside of the coach.
3. Pull motor up until disengaged (roughly 1/2"). A flat-head screwdriver can be used to pry the motor up.
4. Reinstall motor retention screw to hold motor in place or remove motor.

## Low Voltage

The Lippert In-Wall Slide-out controller is capable of operating the room with as little as 8 volts. But at these lower voltages the amperage requirement is greater. Check voltage at the controller, see Figs. 2 and 5 for the location of power connections. If the battery is low, it needs to be charged or the unit should be plugged into shore power or the generator can be run, if equipped. It may be possible to "jump" the RV's battery temporarily to extend or retract the room. Consult the RV manufacturer's owners manual.

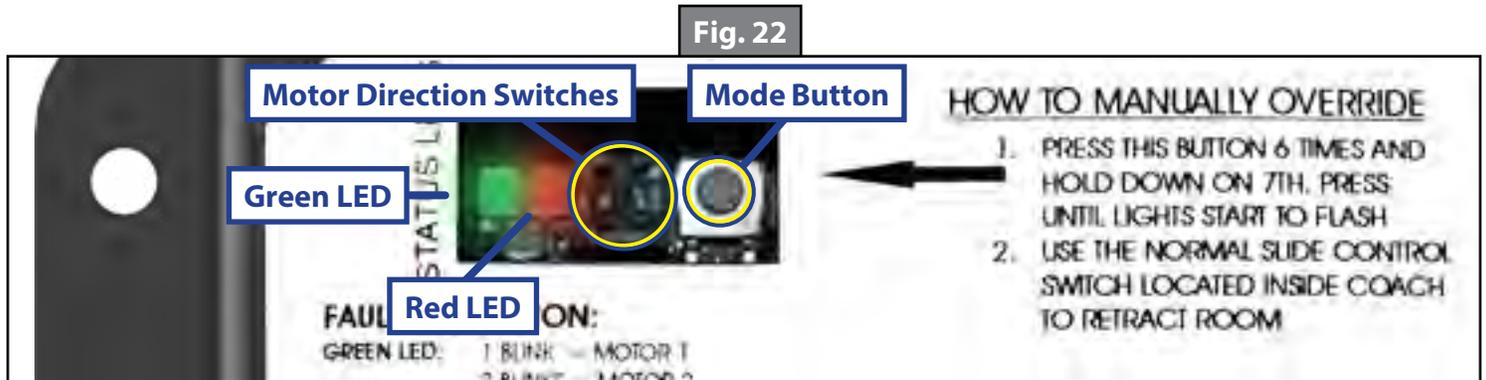
**NOTE:** Always connect directly to the battery and never to the controller power connections.

## Motor Direction Switches

Motor direction switches (Fig. 22) are used to change the direction of individual motors. If when trying to extend or retract the room, one side goes in and the other side goes out, then there is a problem in the wiring.

The motor direction switches can be used to correct this problem. The left switch controls motor 2 and the right switch controls motor 1. If motor 1 is going in the wrong direction, then change switch 1's position. If motor 2 is going in the wrong direction, then change switch 2's position.

The motor direction switches can also be used to change the direction of the extend/retract switch. If the room extends when the extend/retract switch is moved to the retract position, its direction can be reversed by moving both switch 1 and switch 2 to their opposite positions. This feature can be used if it is more convenient to change the motor direction switches than to rewire the extend/retract switch.



## System Maintenance

It is recommended that when operating In-Wall Slide-out system in harsh environments (road salt, ice buildup, etc.) that the gear racks and seals be kept clean and free of debris. They can be washed with mild soap and water.

**NOTE:** No grease or lubrication is necessary, and in some situations may be detrimental to the long-term dependability of the system.

# ABOVE FLOOR SOFA SLIDE-OUT

## SLIDE-OUTS

### **WARNING**

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

The Lippert Above Floor Sofa 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 other purpose or reason than to actuate the slide-out room. To use the system for any reason other than what it is designed for may result in damage to the coach and/or cause serious injury or even death.

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

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

## Product Information

The Lippert Above Floor Sofa Slide-out System is a rack and pinion style slide system. Utilizing a bi-directional electric motor to actuate the drive shaft, the slide-out room is extended and retracted from the same source. The actuator has a built-in automatic braking feature. The Lippert Above Floor Sofa Slide-out is designed as a negative or positive ground system.

There are no serviceable parts within the electric motor. If the motor fails, it must be replaced.

Disassembly of the motor voids the warranty.

Mechanical portions of the slide-out system are replaceable. Contact Lippert Components, Inc. to obtain replacement parts.

## Prior to Operation

Prior to operating the Lippert Above Floor Sofa Slide-out, follow these four (4) guidelines:

1. Coach should be parked on the most level surface available.
2. The PARKING BRAKE must be engaged.
3. The coach's transmission must be in PARK.
4. The coach's ignition must be in the ON or RUN position or the coach's engine must be running. (Class A and C only; Gas and Diesel)

## Operation

### **WARNING**

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

Always make sure that the slide-out room path is clear of people and objects before and during operation of the slide-out room. Always keep away from the slide rails when the room is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.

Keep stored items in compartment clear of slide-out motor mechanisms and wiring to prevent interference of slide-out operation.

Install transit bars (if so equipped) on the slide-out room during storage and transportation.

The family of Lippert Above Floor Sofa Slide is controlled by a switch mounted on the coach wall, normally located close to the entry door.

### Extending Slide-Out Room

1. Level Unit
2. Verify the battery is fully charged and hooked up to the electrical system.
3. Remove transit bars (if so equipped).
4. Press and hold the IN/OUT switch in the OUT position until room is fully extended and stops moving.
5. Release switch, which will lock the room into position.

**NOTE:** Only hold OUT switch until room stops.

### Retracting Slide-Out Room

1. Verify the battery is fully charged and hooked up to the electrical system.
2. Press and hold the IN/OUT switch in the IN position until the room is fully retracted and stops moving.
3. Release the switch. This will lock the room into position.

**NOTE:** Only hold IN switch until room stops.

4. Install the transit bars (if so equipped).

## **Maintenance**

### Preventative

The Lippert Above Floor Sofa Slide-out has been designed to require very little maintenance and has been static tested to over 2,500 continuous cycles with out any noticeable wear to rotating or sliding parts. No grease or lubrication is necessary and in some situations may be detrimental to the environment and long term dependability of the system. To ensure the long life of your slide-out system, read and follow these few simple procedures.

### Electric

For optimum performance, slide-out system requires full battery current and voltage. The battery must be maintained at full capacity. Other than good battery maintenance, check the terminals and other connections at the battery, the control switch, and the electric motor for corrosion, and loose or damaged terminals. Check motor leads under the motor-home chassis. Since these connections are subject to damage from road debris, be sure they are in good condition.

**NOTE:** The Lippert Above Floor Sofa Slide-out is designed to operate as a negative ground system. A 12VDC system must maintain good wire connections. It is important that the electrical components have good ground connection. Over 90% of unit electrical problems are due to bad ground connections.

## Mechanical Maintenance

Although the system is designed to be almost maintenance free, inspect the slide-out for any visible signs of external damage after and before movement of the room. Remember to inspect inside the coach as well as the slide-out outside the coach.

**NOTE:** For long-term storage: It is recommended that the room be closed (retracted).

**NOTE:** Visually inspect the Slide Floor and Drive Box Assemblies. Refer to Fig. 1 for location of rail assemblies. Check for excess build-up of dirt or other foreign material; remove any debris that may be present.

**NOTE:** If the system squeaks or makes any noises it is permissible to apply a coat of lightweight oil to the drive shaft and roller areas but remove any excess oil so dirt and debris do not build-up. DO NOT use grease.

## **Troubleshooting**

### Troubleshooting Introduction

The Lippert Above Floor Sofa Slide-out System is only one of four inter-related slide-out room system components. These four components are as follows: Chassis, Slide-out room, Coach and Lippert Above Floor Sofa Slide-out System. Each one needs to function correctly with the others or misalignment problems will occur.

Every coach has its own personality and what may work to fix one coach may not work on another, even if the symptoms appear to be the same.

When something restricts room travel, system performances will be unpredictable. It is very important that slide rails, rack and pinion be free of contamination and allowed to travel freely the full distance or "STROKE." Debris build-up during travel is an example of the type of contamination that may occur.

When beginning to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the actuator, motor or rails and that the motor is wired properly and all connections are secure.

You can adjust room extension by modifying the position of the rack gear on the slide floor rail to the pinion gear on the gear assembly.

During troubleshooting, remember, by changing, altering or adjusting one thing, it may affect something else. Be sure any changes do not create a new problem.

### Switch Related Problems

- If room moves opposite from what the switch plate indicates, reverse the motor wires on the back of the switch. Wire size must be 10ga. min.
- If a gear is stripped, the entire gearbox must be replaced.

### Motor Unit

Before attempting to troubleshoot the Power Unit, make sure an adequate power source is available. The unit batteries should be fully charged or the unit should be plugged into A/C service with batteries installed. Do not attempt to troubleshoot the Power Unit without assuring a full 12V DC charge.

The following tests require only a DC voltmeter (or DC test light) and a jumper lead.

**Step 1** - Attach voltmeter (or test light) leads to the negative and positive switch terminals on back of wall switch. Does the meter indicate 12VDC?

If **YES**, see **Step 2**; if **NO** see **Step 3**.

**Step 2** - If **YES**, at the motor, check the incoming leads to 12V DC (if necessary, disconnect leads at wire splices). Does meter indicate 12V DC? If **YES**, Power Unit needs to be replaced. The motor is not field serviceable. DO NOT ATTEMPT TO REPAIR. If **NO**, Inspect all wires and connections between the wall switch and the motor. Repair connections as necessary. Recheck as in **Step 1**.

**Step 3** - If **NO**, Inspect all connections between battery and switch. Inspect any and all breakers, relays and fuses. Recheck as above in **Step 1**.

Since there are no field serviceable parts in the motor of the 12V DC motor, electrical troubleshooting and service is limited to replacing only those components as previously outlined.

**NOTE:** Thorough inspection of wiring and connections is the only other electrical service that can be performed.

Problem	Probable Cause	Corrective Action
Room doesn't move when switch is pressed	Restriction or obstruction inside or outside of unit	Check for and clear obstruction
	Low battery voltage, blown fuse, defective wiring	Check battery voltage and charge if needed. Find and check fuse, replace if blown. Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Excessive room drag	Check that transit bars are removed
Power unit runs but room does not move	Motor turns, room does not move	Gear key is broken or lost. Replace gear drive assembly
	Broken gear on drive shaft	Replace gear drive assembly
	Broken gear in gearbox	Replace motor/gearbox assembly
	Bad motor or gearbox	Replace motor/gearbox assembly
Power unit runs but room moves slowly	Low battery, poor ground, extremely low outdoor temperature	Charge battery and check ground wire
	Room is in a bind	Adjust to proper room setting
	Incorrect height adjustment	Check for proper room height
Room starts to move and stops	Low battery voltage, blown fuse, defective wiring	Check battery voltage and charge if needed. Find and check fuse, replace if blown. Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Obstruction of room inside or outside	Check for and clear obstruction
Room chatters during operation	Teeth on gear drive broken or worn	Replace gear drive assembly
	Teeth on inner rail broken and worn	Replace inner rail assembly

**CAUTION**

**Always disconnect battery from system prior to manually operating system. Failure to disconnect battery can cause electricity to back feed through the motor and cause serious damage to the system as well as void the warranty.**

1. Accessing Out-Stop Assembly (Fig. 1).

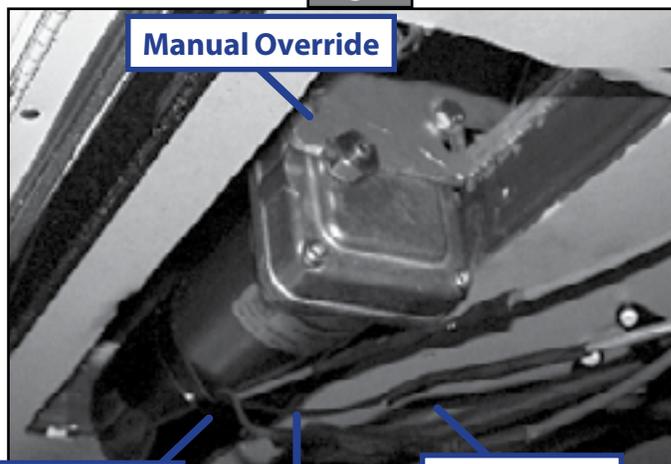
**NOTE:** The slide-out out-stop assembly will be accessible from the inside of the unit. The slide-out motor and mechanism is accessible from the outside.

**NOTE:** The gears can be stripped out if the room is manually retracted/extended to its fullest extent and the operator continues to rotate manual override. Any damage due to misuse of the Manual Override feature will disqualify any and all claims to the limited warranty.

Fig. 1



Fig. 2



2. With a second person assisting, one person must push and hold the manual override switch while the other person, using a 5/8" wrench or socket/ratchet combination, rotates the hex head manual override (Figs. 3 and 4) to manually move the slide-out.

Fig. 3

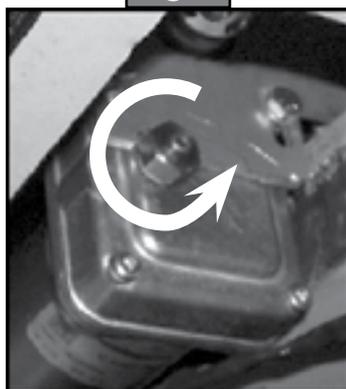
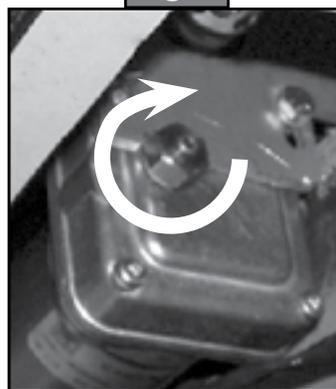
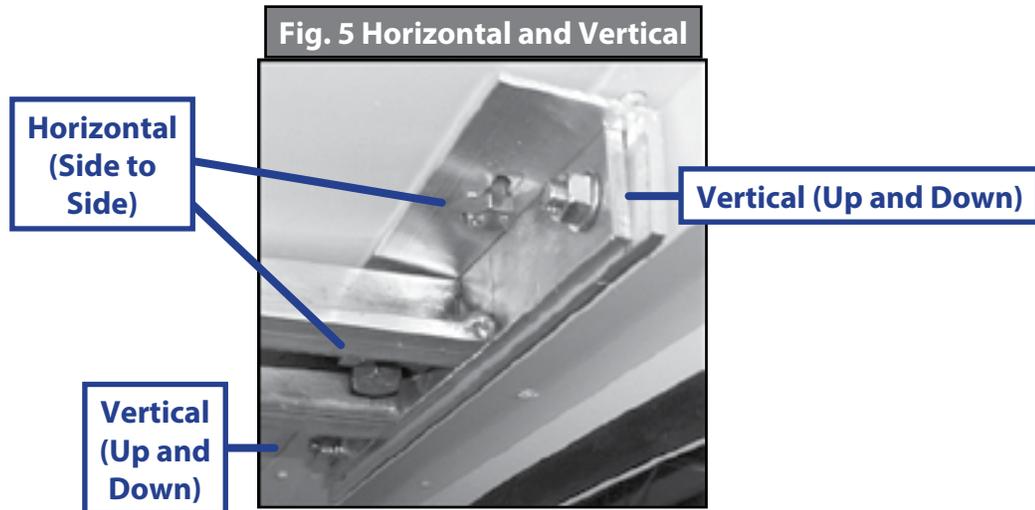


Fig. 4

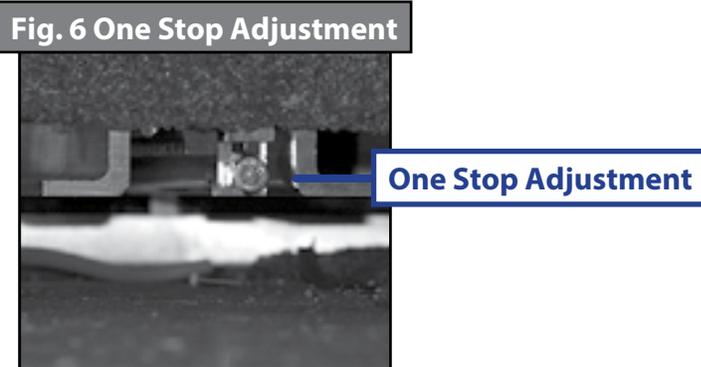


## Room Adjustment

1. For Horizontal Adjustment, back both lag bolts out just enough to release tension. In a Dual System, lag bolts must be loosened on both head stocks to adjust the room horizontally.
2. Adjust room to desired location.
3. Tighten lag bolts before operating room.



1. For One Stop Adjustment, loosen jam nut (shown) on the outside of the Out Stop Bracket.
2. Adjust Stop Bolt to desired location.
3. Tighten jam nut.



# ELECTRIC THROUGH FRAME SLIDE-OUT

## SLIDE-OUTS

### Warning, Safety, and System Requirement Information

#### Description

The Lippert Electric Through Frame Slide-out System is a rack and pinion guide system, utilizing an electric ball screw actuator to move the room assembly. The motor drives the ball screw in a forward and backward motion to move the slide room in and out. The actuator comes equipped with an automatic clutching system. The Lippert Electric Slide-out System is designed to operate as a negative ground system.

#### **▲WARNING**

**Failure to act in accordance with the following may result in death or serious personal injury.**

The Lippert Through Frame 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 other purpose or reason 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. Parking locations should be clear of obstructions that may cause damage when the slide-out room is actuated.
2. Be sure all persons are clear of the coach prior to the slide-out room actuation.
3. Keep hands and other body parts away from slide-out mechanisms during actuation. Severe injury or death may result.
4. To optimize slide-out actuation, park coach on solid and level ground.

#### **Prior to Operation**

Prior to operating the Lippert Through Frame Slide-out System, follow these guidelines:

1. Coach should be parked on the most level surface available.
2. Leveling or stabilizing system should be actuated to ensure coach will not move during operation of slide-out system.
3. Be sure battery is fully charged.
4. Be sure to keep all persons and pets clear of slide-out system during operation.

#### **▲CAUTION**

**Always make sure that the slide-out room path is clear of people and objects before and during operation of the slide-out room. Always keep away from the slide rails when the room is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.**

**NOTE:** Install transit bars (if so equipped) on the slide-out room during storage and transportation.

## Operation

### Extending Slide-Out Room

1. Level Unit
2. Verify the battery is fully charged and hooked up to the electrical system.
3. Remove transit bars (if so equipped).
4. Press and hold the IN/OUT switch in the OUT position (Fig. 1B) until room is fully extended and stops moving.
5. Release switch, which will lock the room into position.

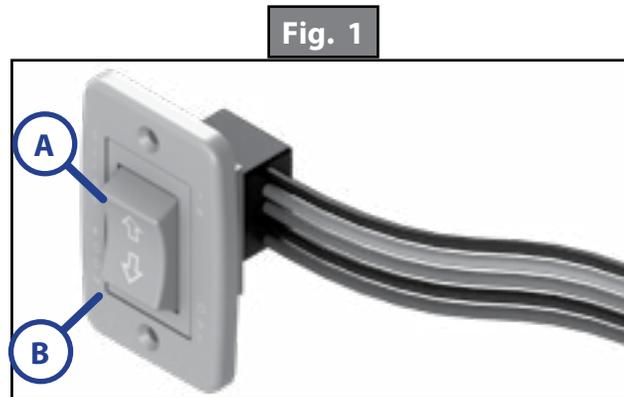
**NOTE:** Only hold OUT switch until room stops.

### Retracting Slide-Out Room

1. Verify the battery is fully charged and hooked up to the electrical system.
2. Press and hold the IN/OUT switch in the IN position (Fig. 1A) until the room is fully retracted and stops moving.
3. Release the switch. This will lock the room into position.

**NOTE:** Only hold IN switch until room stops.

4. Install the transit bars (if so equipped).



# Maintenance

## Inspection

After servicing the slide-out system in any way, be sure to check the following:

1. Slide-out stops are installed and adjusted properly.
2. Head assemblies are installed and adjusted properly.
3. System is mounted properly.
4. Cross shafts are mounted properly and clear all other components.
5. Gear packs function properly.
6. Manual override is accessible.
7. Outside seals compress when slide-out is retracted.
8. Inside seals compress when slide-out is extended.
9. Slide-out extends and retracts smoothly.
10. Both sides of slide-out are synchronized.
11. Any dirt or debris is cleaned from the interior or exterior of the coach.

The Lippert Slide-out System has been static tested to over 4,000 continuous cycles without any noticeable wear to rotating or sliding parts. It is recommended that when operating in harsh environments (road salt, ice build up, etc.) the moving parts be kept clean. They can be washed with mild soap and water. No grease or lubrication is necessary and in some situations may be detrimental to the environment and long term dependability of the system.

## Electrical System Maintenance

For optimum performance, the slide-out system requires full battery current and voltage. The battery must be maintained at full capacity. Other than good battery maintenance, check the terminals and other connections at the battery, the control switch, and the system for corrosion, and loose or damaged terminals. Check motor leads under the trailer chassis. Since these connections are subject to damage from road debris, be sure they are in good condition.

**NOTE:** The Lippert Slide-out System is designed to operate as a negative ground system. A negative ground system utilizes the chassis frame as a ground and an independent ground wire back to battery is necessary. It is important that the electrical components have good wire to chassis contact. To ensure the best possible ground, a star washer should be used. Over 90% of unit electrical problems are due to bad ground connections.

## Mechanical Maintenance

Although the system is designed to be almost maintenance free, actuate the room once or twice a month to keep the seals and internal moving parts lubricated. Check for any visible signs of external damage after and before movement of the travel trailer.

**NOTE:** For long-term storage: It is recommended that the room be closed (retracted).

# Troubleshooting

## Troubleshooting Introduction

This troubleshooting chart outlines some common problems, their causes and possible corrective actions. If any part or serial number information is available, provide it to the service technician when asking for assistance.

The Lippert Slide-out System is only one of four interrelated slide-out room system components. These four components are: chassis, room, coach, and Lippert Slide-out System. Each one needs to function correctly with the others or misalignment problems will occur.

Every travel trailer has its own personality and what may work to fix one trailer may not work on another even if the symptoms appear to be the same.

When something restricts room travel, system performance will be unpredictable. It is very important that slide tubes be free of contamination and allowed to travel full distance (Stroke). Ice or mud buildup during travel is an example of a type of contamination that can occur.

When you begin to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the system and that all connections are secure.

During troubleshooting, remember that if you change something, that change may affect something else. Be sure any changes you make will not create a new problem.

You can obtain additional information on the Lippert Slide-out System by visiting [www.lci1.com/customerservice](http://www.lci1.com/customerservice) or by calling 574-537-8900.

What Is Happening?	Why?	What Should Be Done?
Room doesn't move when switch is pressed.	Restriction or obstruction inside or outside of unit.	Check for and clear obstruction.
	Low battery voltage, blown fuse, defective wiring.	Check battery voltage and charge if needed. Find and check fuse, replace if blown. Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
Actuator motor runs but room does not move.	Actuator not attached to front mounting drive bracket.	Check jam nuts/nylock nuts. Be sure that they are properly tightened and adjusted.
	Bad motor or gear housing.	Replace motor.
Motor runs but room moves slowly.	Low battery voltage, poor ground, extremely low outdoor temperature.	Charge battery and check ground wire.
	Room is in a bind.	Check to see that room is properly adjusted.
Room stalls in mid-travel.	Actuator in a bind.	Crank manual override and move room short distance then retry electric switch to move room.
	Bad actuator.	Replace actuator if above instructions do not work.

## Manual Override

**NOTE:** Always disconnect battery from system prior to manually operating system. Failure to disconnect battery can cause electricity to backfeed through the motor and cause serious damage to the system as well as void the warranty.

The Lippert Electric Through Frame Slide-out comes with a Manual Override system. There are two different methods for manually extending and retracting the slide-out room. A crank handle extension can be used outside the chassis main rail at the crank extension with pin (Figs. 2-3). A socket and ratchet can be used inside the main frame on the hex head crank extension (Figs. 4-5).

### Manual Override-Outside Frame

Locate the crank extension with pin outside of the chassis main rail (Fig. 2). This is where the crank handle (standard fifth wheel landing gear crank handle or  $\frac{3}{4}$ " socket and ratchet) fits on (Fig. 3) to allow the manual extension/retraction of the room. Rotate the crank handle clockwise to retract and counterclockwise to extend slide-out. It is important to note that you DO NOT need to attempt to disengage the motor as the actuator is "manual ready." Just hook up and crank.

**NOTE:** Use EXTREME CAUTION when extending and/or retracting room using the manual override feature. It is possible to operate the slide-out beyond the maximum extension and/or retraction and damage the slide components, slide room structure or trim components.

**NOTE:** The gears can be stripped out if the room is manually retracted/extended to its fullest extent and the operator continues to rotate the manual override. Any damage due to misuse of the Manual Override feature will disqualify any and all claims to the Limited Warranty.

Fig. 2

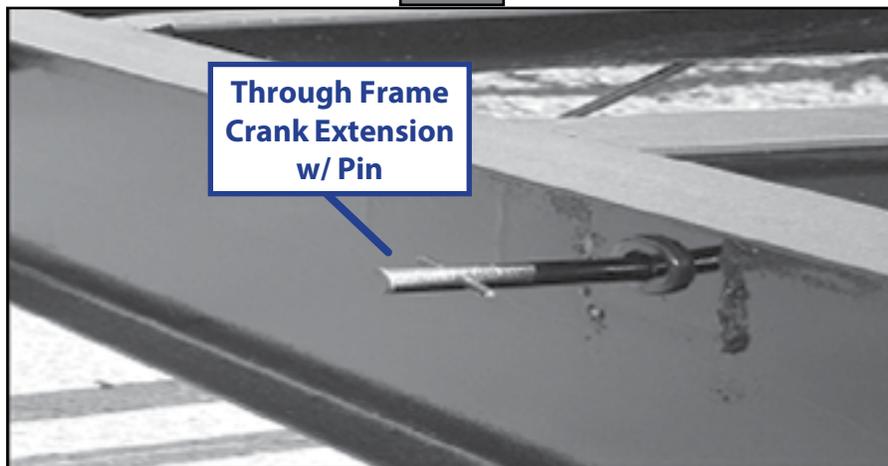
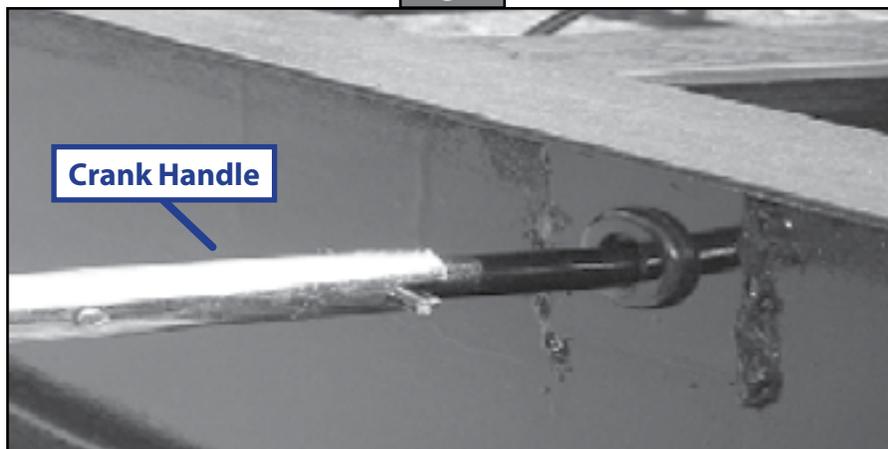


Fig. 3



## Manual Override - Inside Frame

Locate the hex head crank extension at the top of the actuator inside the chassis main frame (Fig. 4). Using a 3/4 socket and ratchet (Fig. 5), rotate the extension clockwise to retract the slide-out and counter clockwise to extend the slide-out. It is important to note that you DO NOT need to attempt to disengage the motor as the actuator is "manual ready."

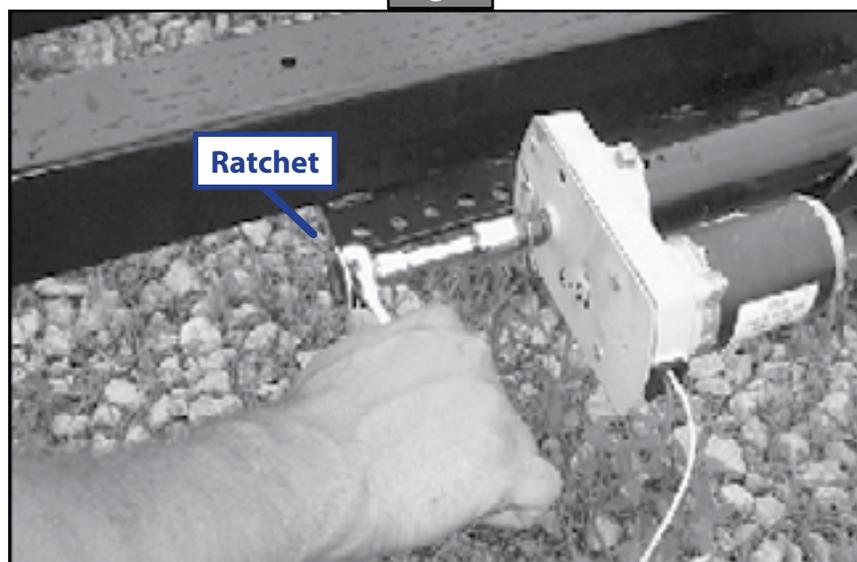
**NOTE:** Use EXTREME CAUTION when extending and/or retracting room using the manual override feature. It is possible to operate the slide-out beyond the maximum extension and/or retraction and damage the slide components, slide room structure or trim components.

**NOTE:** The gears can be stripped out if the room is manually retracted/extended to its fullest extent and the operator continues to rotate the manual override. Any damage due to misuse of the Manual Override feature will disqualify any and all claims to the Limited Warranty.

Fig. 4



Fig. 5



# HYDRAULIC THROUGH FRAME SLIDE-OUT

## SLIDE-OUTS

### Warning, Safety, and System Requirement Information

#### Description

The Lippert Hydraulic Through Frame Slide-out System is a rack and pinion guide system, utilizing a hydraulic cylinder to move the room assembly. The power unit drives the cylinder rod in a forward and backward motion to move the slide room in and out. The Lippert Hydraulic Slide-out System is designed to operate as a negative ground system.

#### Safety Information



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.

Always wear eye protection when performing service or maintenance to the vehicle. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the service.

This manual provides general service and maintenance procedures. Many variables can change the circumstances of the service procedure, i.e., the degree of difficulty involved in the service operation and the ability level of the individual performing the operation. This manual cannot begin to plot out procedures for every possibility, but will provide the general instructions for effectively servicing the vehicle. In the event the skill level required is too high or the procedure is too difficult, a certified technician should be consulted before performing the necessary service. Failure to correctly service the vehicle may result in death, serious injury or voiding the warranty. The owner's manual for the unit may have more procedures for service and maintenance.



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

The Lippert Hydraulic Through Frame 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 other purpose or reason than to actuate the slide-out room. To use the system for any reason other than what it is designed for may result in damage to the coach and/or cause serious injury or even death.

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

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

## Prior to Operation

Prior to operating the Lippert Hydraulic Through Frame Slide-out System, follow these guidelines:

1. Coach should be parked on the most level surface available.
2. Leveling or stabilizing system should be actuated to ensure coach will not move during operation of slide-out system.
3. Be sure battery is fully charged.
4. Be sure to keep all persons and pets clear of slide-out system during operation.



**Always make sure that the slide-out room path is clear of people and objects before and during operation of the slide-out room. Always keep away from the slide rails when the room is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.**

**NOTE:** Install transit bars (if so equipped) on the slide-out room during storage and transportation.

## Operation

### Extending Slide-Out Room

1. Level the Unit.
2. Verify the battery is fully charged and hooked up to the electrical system.
3. Remove transit bars (if so equipped).
4. Press and hold the IN/OUT switch (Fig.1) in the OUT position (Fig.1B) until room is fully extended and stops moving.
5. Release switch, which will lock the room into position.

**NOTE:** Only hold OUT switch until room stops.

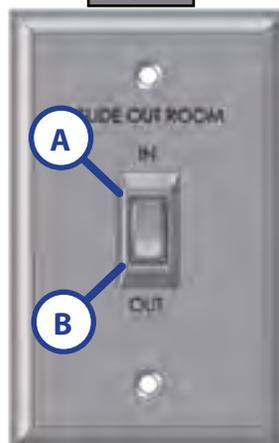
### Retracting Slide-Out Room

1. Verify the battery is fully charged and hooked up to the electrical system.
2. Press and hold the IN/OUT switch (Fig.1) in the IN position (Fig.1A) until the room is fully retracted and stops moving.
3. Release the switch. This will lock the room into position.

**NOTE:** Only hold IN switch until room stops.

4. Install the transit bars (if so equipped).

Fig. 1



# Maintenance

## Inspection

After servicing the slide-out system in any way, be sure to check the following:

1. Slide-out stops are installed and adjusted properly.
2. Head assemblies are installed and adjusted properly.
3. System is mounted properly.
4. Cross shafts are mounted properly and clear all other components.
5. Gear packs function properly.
6. Manual override is accessible.
7. Outside seals compress when slide-out is retracted.
8. Inside seals compress when slide-out is extended.
9. Slide-out extends and retracts smoothly.
10. Both sides of slide-out are synchronized.
11. Any dirt or debris is cleaned from the interior or exterior of the coach.

## **System Maintenance**

The Lippert Through Frame Slide-out System has been static tested to over 4,000 continuous cycles without any noticeable wear to rotating or sliding parts. It is recommended that when operating in harsh environments (road salt, ice build up, etc.) the moving parts be kept clean. They can be washed with mild soap and water. No grease or lubrication is necessary and in some situations may be detrimental to the environment and long term dependability of the system.

## Electrical System Maintenance

For optimum performance, the slide-out system requires full battery current and voltage. The battery must be maintained at full capacity. Other than good battery maintenance, check the terminals and other connections at the battery, the control switch, and the system for corrosion, and loose or damaged terminals. Check motor leads under the trailer chassis. Since these connections are subject to damage from road debris, be sure they are in good condition.

**NOTE:** The Lippert Through Frame Slide-out System is designed to operate as a negative ground system. A negative ground system utilizes the chassis frame as a ground and an independent ground wire back to the battery is necessary. It is important that the electrical components have good wire to chassis contact. To ensure the best possible ground, a star washer should be used. Over 90% of unit electrical problems are due to bad ground connections.

## Mechanical Maintenance

Although the system is designed to be almost maintenance free, actuate the room once or twice a month to keep the seals and internal moving parts lubricated. Check for any visible signs of external damage after and before movement of the travel trailer.

**NOTE:** For long-term storage: It is recommended that the room be closed (retracted).

## Fluid Recommendation

The Lippert Electronic Leveling System is pre-filled, primed and ready to operate direct from the manufacturer. Type "A" Automatic Transmission Fluid (ATF) is utilized and will work. ATF with Dexron III® or Mercon 5® or a blend of both is recommended by Lippert Components, Inc.

In colder temperatures (less than 10° F) the jacks may extend and retract slowly due to the fluid's molecular nature. For cold weather operation, fluid specially formulated for low temperatures may be desirable. For a list of approved fluid specifications, see [TI-188](#).

1. Remove Breather/Fill Cap (Fig. 2).
2. Pour ATF into Breather/Fill opening.

**NOTE:** Do not allow any contamination into reservoir during fill process.

**NOTE:** Standard reservoir holds approximately 2 quarts (1.89 liters) of ATF.

3. Fill to within ½" of top.
4. Replace Breather/Fill cap when finished.

**NOTE:** System is self-purging. By simply cycling the system 2-3 times, any air in the system will be forced back to the reservoir and out of the Breather/Fill cap.



## Adjusting room so it seals in the IN position

1. Locate cylinder coming through the frame.
2. Run room partially out.
3. Hold jam nut (Fig. 3A) in place with wrench.
4. Adjust Nylock nut (Fig. 3C) towards the bracket if the room does not seal. Adjust the Nylock nut (Fig. 3C) away from the bracket if the room is too tight and damages the fascia.

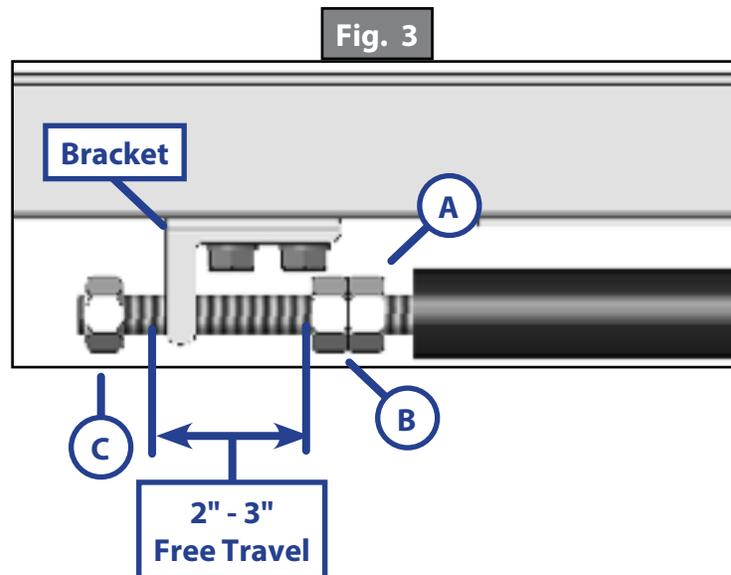
**NOTE:** Make small adjustments, running the room in after each adjustment until proper seal is achieved.

## Adjusting room so it seals in the OUT position

1. Locate cylinder coming through the frame.
2. Extend room completely out.
3. Check the inside fascia and seal positioning.
4. Partially retract room.
5. Loosen and back off jam nut (Fig. 3A) from nut (Fig. 3B) to give nut (Fig. 3B) room for adjustment.
6. Adjust nut (Fig. 3B) away from the bracket if the room extends too far and damages the inside fascia. Adjust nut (Fig. 3B) towards the bracket if the room does not seal.

**NOTE:** Make small adjustments, running the room out after each adjustment until proper seal is achieved.

7. Tighten jam nut (Fig. 3A) to nut (Fig. 3B).



2" to 3" of free travel is normal.

## Mechanical Room Adjustment

**NOTE:** All slide-out room adjustments must be performed by certified service technicians. Adjustments made by non-certified persons may void any and all warranty claims.

### Horizontal Adjustment

1. Loosen carriage bolts (Fig. 4A) on each bracket located at the end of each guide tube.
2. Room is ready to be positioned horizontally by pushing on the outside, sidewall or by using a prying device inserted into the opening between the room and coach.

**NOTE:** Use caution when using prying device so seals do not become damaged.

### Vertical Adjustment

1. Loosen 2 carriage bolts (Fig. 4A) on each bracket located at the end of each guide tube.
2. Loosen jam nut (Fig. 5A).
3. For vertical adjustment turn vertical adjustment bolt (Fig. 5B) up or down to locate room height.
4. Once room height is located, tighten carriage bolts (Fig. 4A) and jam nut (Fig. 5A).

Fig. 4

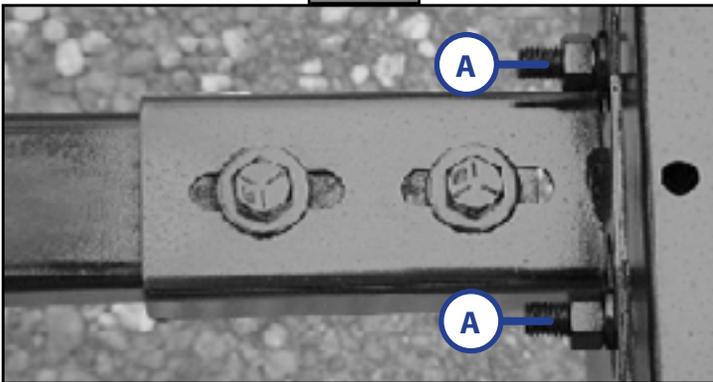
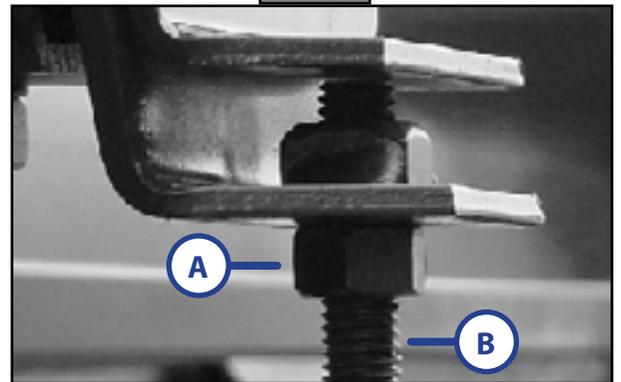


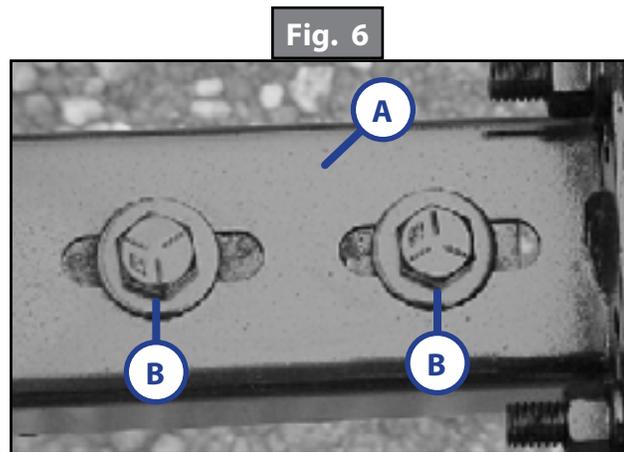
Fig. 5



## Synchronizing Room Travel

The Lippert Hydraulic Slide-out System room travel (both sides of the room traveling the same distance) can be adjusted with specially designed synchronizing bracket mounted on the passive slide tube. The passive slide tube is the one that is not powered. The active slide tube is the one that has the cylinder attached. If one side of the room fails to seal adjust as follows:

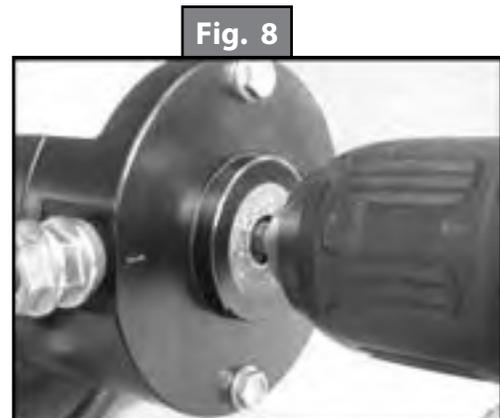
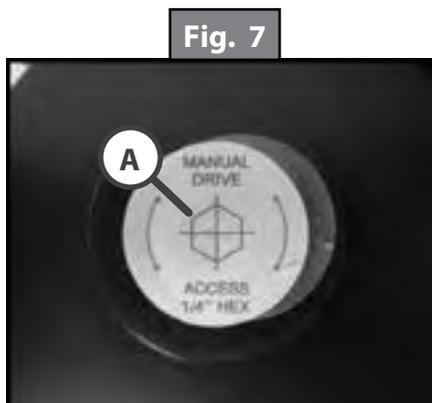
1. Extend the slide-out about halfway out.
2. Measure the active side from the "T"-molding on the slide-out back to the outside wall of the coach.
3. Then, measure the passive side in the same manner.
4. Loosen bolts (Fig. 6B) on top of the passive slide tube (Fig. 6A).
5. Push or pull room (on passive side) to align the passive side with the active side.
6. Tighten bolts (Fig. 6B) to secure the passive side position.
7. Retract room and run as normal.



## Manual Override

The Lippert Hydraulic Slide-out System can be run with an auxiliary power device like an electric or cordless drill. In the event of electrical or system failure, this manual method of extending and retracting the slide-out room can be used. A standard hand-held drill is all that is required. A standard 38" room will take approximately 45 seconds to retract. See the instructions below.

1. Remove protective label (Fig. 7A).
2. Using a standard hex bit and auxiliary drive device (cordless or electric drill), insert hex bit into coupler found under protective label (Fig. 8).
3. Run drill counterclockwise to extend slide-out room and clockwise to retract slide-out room.



# F.A.S.T. TRACK® SLIDE-OUT

## SLIDE-OUTS

### System Information

The F.A.S.T. (Fast Assembly Self Tensioning) Track® Slide-out is a cable-driven system that is operated by a 12V DC electric motor. The system is designed to actuate rooms up to 2,000 pounds and 40" of stroke. Room slide-out systems rated for higher weight or longer strokes can be obtained. Please act LCI for application assistance.

### Major Components

- Vertical column that mounts into the side wall opening
- Horizontal cables that actuate the room
- A 12V DC gear motor that operates the room using power from the battery
- A specially designed control box that gives the user full control of room movement. The control box has programmable stops. When programmed, the stops limit extend and retract and have the ability to detect faults for ease in troubleshooting.
- Harnesses to connect the rocker switch and motors to the control box

### Safety

#### **▲ WARNING**

**The F.A.S.T. Track Slide-out is intended for the sole purpose of extending and retracting a slide-out room. Its function should not be used for any other purpose. To use the system for any purpose other than its original design may result in death, serious personal injury, severe product or unit damage.**

#### **▲ WARNING**

**Failure to act in accordance with the following may result in death, serious personal injury, severe product or unit damage.**

## Prior to Operation

1. To optimize slide-out actuation, the unit **MUST** be parked on solid, level ground.
2. Inspect all connections at the controller and verify they are securely attached.
3. Verify there are no obstructions that could hinder normal movement of the slide-out room.
4. Make sure there is ample voltage being supplied to the slide-out controller.
5. Set the parking brake, if applicable.
6. The ignition of the unit **MUST** be turned off in order to operate the slide-out system, if applicable.



**Failure to act in accordance with the following may result in death, serious personal injury, severe product or unit damage.**



**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 avoid possible serious personal injury.**

## Operation

### Extending the Slide-Out Room

1. If equipped, remove the transit bars.
2. If equipped, turn "ON" the on/off switch or key.
3. Press and hold the "OUT" or "EXT" button.

**NOTE:** There will be a slight delay before the slide-out room will begin to move. This is normal.

4. Release the button when the slide-out room is fully extended and stops moving.
5. If equipped, turn "OFF" the on/off switch or key.

### Retracting the Slide-Out Room

1. If equipped, turn "ON" the on/off switch or key.
2. Press and hold the "IN" or "RET" button.

**NOTE:** There will be a slight delay before the slide-out room will begin to move. This is normal.

3. Release the button when the slide-out room is fully retracted and stops moving.
4. If equipped, turn "OFF" the on/off switch or key.
5. If equipped, replace the transit bars.

## Troubleshooting

The Error Code Chart in this section outlines some common problems, their causes and possible corrective actions. If any part or serial number information is available, provide it to the service technician when asking for assistance.

When something restricts room travel, system performance will be unpredictable. It is very important that the entire slide system be free of contamination and allowed to travel full distance (stroke). Ice or mud build-up during travel is an example of some types of contamination that can occur.

When you begin to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the system and that all connections are secure.

During troubleshooting, remember that if you change something, that change may affect something else. Make sure any changes you make will not create a new problem.

## Fault Codes

The controller has the ability to detect and display several faults within the slide-out system. When a fault is detected, the room movement may stop and two different LED lights on the controller will flash in a particular pattern indicating the proper action needed to clear the fault, such as:

1. The Motor LED will flash GREEN 1 or 2 times, indicating which motor is experiencing the associated fault. For example, 1 GREEN flash indicates Motor 1 and 2 GREEN flashes indicates Motor 2.
2. The Fault Code LED will flash RED a number of times, indicating the determined fault. Refer to the troubleshooting chart below to best determine the cause of the fault.

Error Code Chart		
What Is Happening?	Why?	What Should Be Done?
1 Red Flash	Parking brake (if applicable) is not set.	Set parking brake (if applicable).
	Ground signal is lost at parking brake receptacle at control box.	Check for continuity to ground on wire plugged into parking brake receptacle at control box.
2 Red Flashes	Incoming voltage to control is below 12V DC. The room will not move if the voltage is 10.5V DC or below.	Start vehicle, generator, or make sure the unit is plugged into shore power. Check 2-pin power connector at the control box at BATT + and GND. Consult manufacturer of unit charging system for troubleshooting assistance.
4 Red Flashes	Bad wire connection.	Refer to TIP Sheet 82-SO533 for troubleshooting.
	Bad motor.	
6 Red Flashes	Supply voltage to control box is 17V DC or greater.	Consult manufacturer of unit charging system for troubleshooting assistance.

**NOTE:** When motor movement is not detected by the control box in either direction during room actuation, the controller will automatically enter into "Emergency Jog" mode. When in Emergency Jog mode, the controller will jog both motors in the direction the switch is pressed, i.e. "IN" or "OUT". The switch may need to be pressed multiple times to fully retract or extend the slide-out room. Take the unit to an OEM-authorized dealer for service.

**NOTE:** The control box will return to normal mode after five minutes of inactivity or by cycling power to the control box.

## Manual Override

1. Disconnect the wire harness from the motor lead (Fig. 1A).
2. Remove the screws (Fig. 2B) anchoring the interior column clamp (Fig. 2C) to the wall.
3. Detach the interior column clamp from the column and set aside.
4. Remove the two screws (Fig. 2A) that hold the motor cover (Fig. 3A) to the column (Fig. 2D) and remove the motor cover.
5. Disengage the motor from the drive sprocket assembly (Fig. 4A).
6. Repeat steps 1-5 on the opposite column.
7. The slide-out system should be free to move manually.
8. Once fully, manually retracted, insert the motor into the drive sprocket assembly. This prevents the slide-out from moving freely while the unit is in motion.

Fig. 1

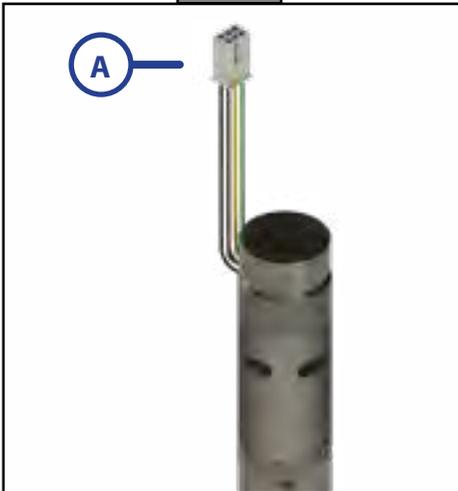


Fig. 2

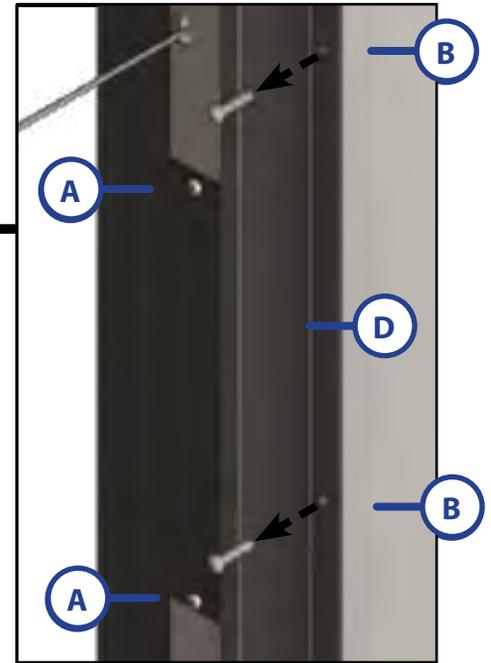
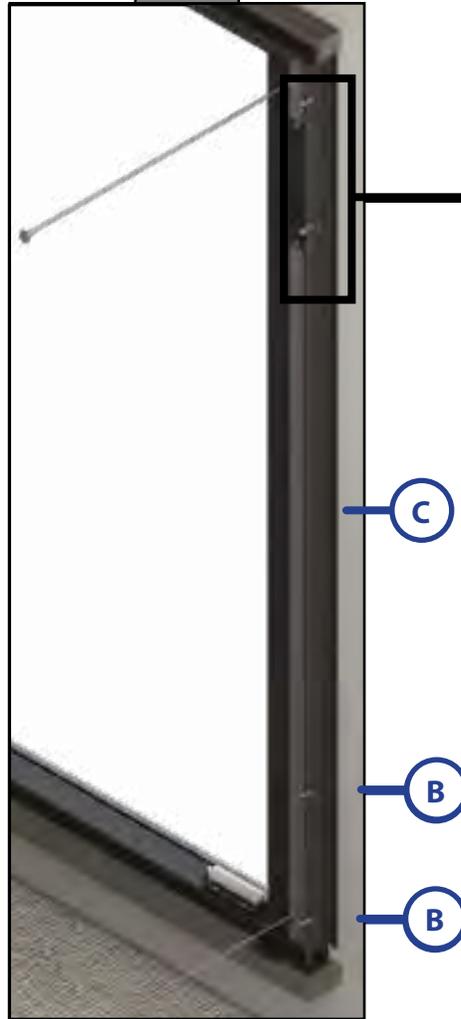


Fig. 3

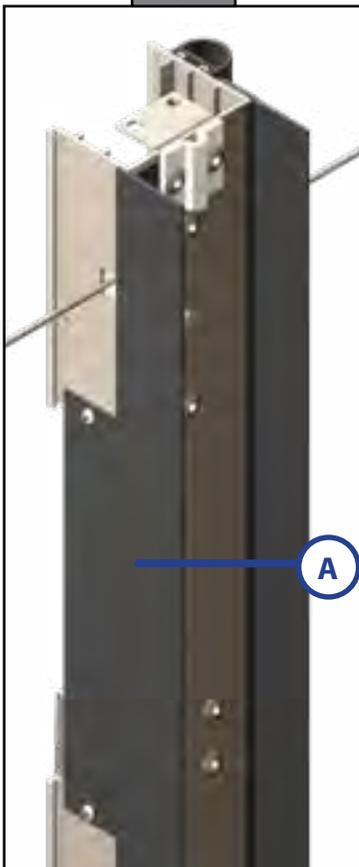


Fig. 4

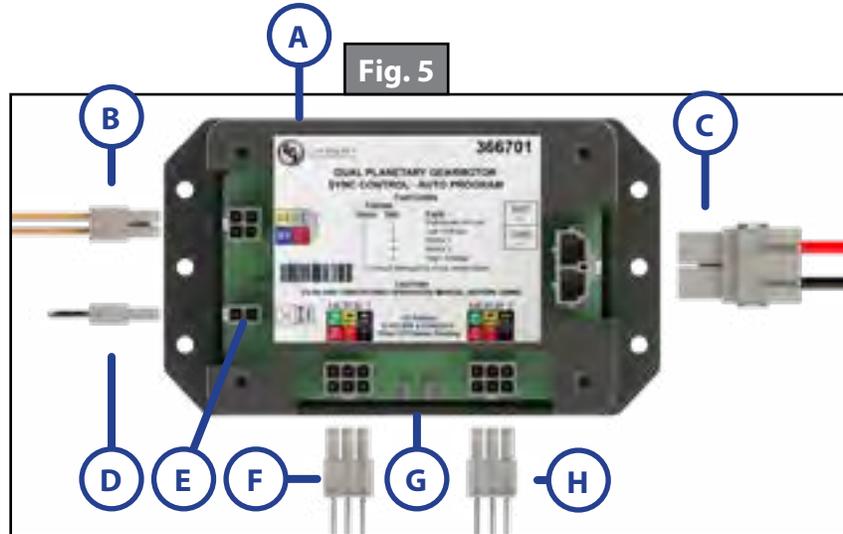


## Wiring

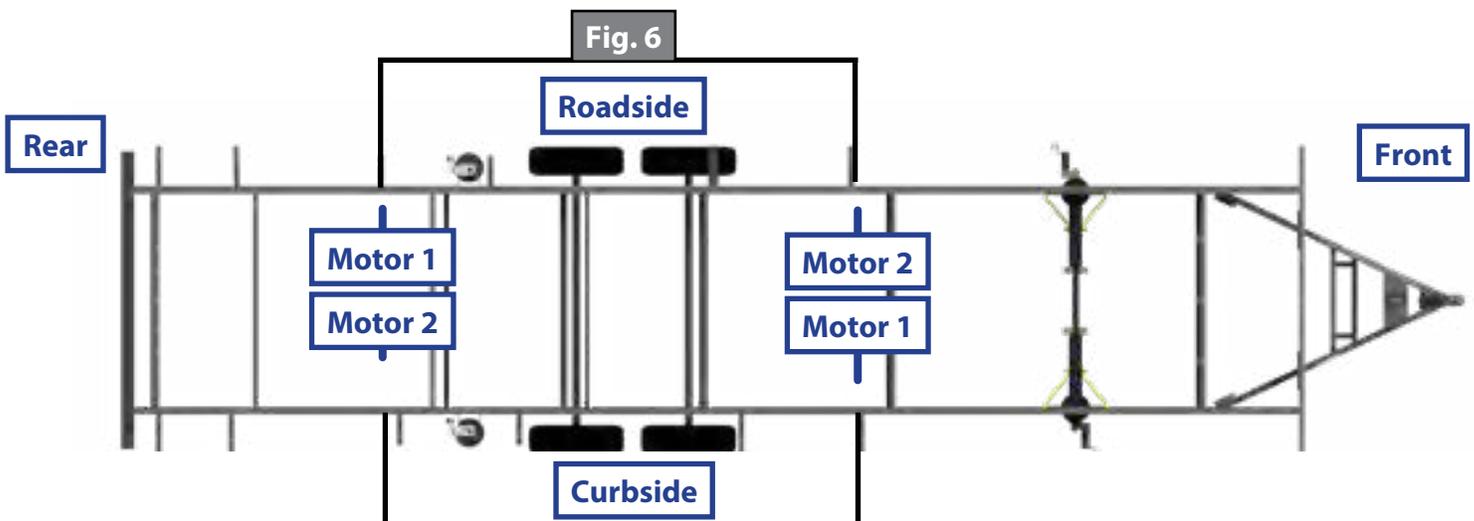
**NOTE:** The controller (Fig. 5A) is **NOT** waterproof.

**NOTE:** When identifying Motor 1 and Motor 2, refer to figure 6.

**NOTE:** With the mode switch (Fig. 5E) in the left position, the controller will not operate the slide-out room unless a park brake signal is found. With the mode switch in the right position, the controller will bypass this safety feature. For all travel trailers, the switch will need to be in the right position.



Callout	Description
A	Controller
B	SWITCH Harness
C	Power Harness (BATT+ / GND-)
D	PARK BRAKE Input Harness
E	Mode Switch
F	MOTOR 1 Harness
G	Indicator Lights
H	MOTOR 2 Harness



## Maintenance

The F.A.S.T. Track® Slide-out has been designed to require very little maintenance. To ensure the long life of your slide-out system, read and follow these few simple procedures:

- When the room is extended, visually inspect the slide system assemblies. Check for excess buildup of dirt or other foreign material. Remove any debris that may be present.
- If the system squeaks or makes any noises, wipe off any debris or dirt from the cables.
- If a slide-out cable is fraying, contact a qualified service center technician.

# SLIMRACK® SLIDE-OUT

## SLIDE-OUTS

### Introduction

The Lippert Components (LCI) SlimRack® Slide-Out system maximizes interior RV space by providing added comfort and offering a practical solution for additional space needs. The LCI SlimRack Slide-Out system combines versatile above-floor placement with attractive, seamless flush-floor style for a sleek, polished, high-end look with no step up.

Additional information about this product can be obtained from [www.lci1.com/support](http://www.lci1.com/support) or by downloading the free myLCI app. The app is available on iTunes® for iPhone® and iPad® and also on Google Play™ for Android™ users.

iTunes®, iPhone®, and iPad® are registered trademarks of Apple Inc.

Google Play™ and Android™ are trademarks of Google Inc.

## Product Information

The LCI SlimRack Slide-Out system is a rack-and-pinion design operated by a 12V DC gear motor. Slide-Out systems are engineered to provide years of trouble-free service. Changes to weight, stroke, weight distribution, gear rack position, controller, power supply seals, slide toppers, ramps, rollers, etc., all have an effect on the performance of the system. In order to secure warranty coverage, each new application or changes to existing applications **MUST** be audited and approved by Lippert Components with a signed document. Audits can be arranged by contacting Lippert Components.

This manual provides information for slide-out systems that use one of three different controllers: Power Gear part number 1510000199 / LCI part number [366697](#) (Fig. 1), Power Gear part number 1510000236 / LCI part number [366701](#) (Fig. 2) or Power Gear part number 1510000276 / LCI part number 366703 (Fig. 3). Controller Power Gear part number 1510000199 / LCI part number [366697](#) connects to a touchpad. Controller part numbers (Power Gear / LCI) 1510000236 / [366701](#) and 1510000276 / 366703 connect to a rocker switch.

**NOTE:** Previously, some Winnebago models used controller Power Gear part number 1510000276 / LCI part number 366703 (Fig. 3) which required a wire harness with an 8-pin connector for connecting the controller to Motor 2 (Fig. 3A). For all new units, Power Gear part number 1510000276 / LCI part number 366703 has been replaced by Power Gear part number 1510000236 / LCI part number [366701](#). For servicing older Winnebago units, controller Power Gear part number 1510000276 / LCI part number 366703 has been replaced with controller Power Gear part number 1510000236 / LCI part number [366701](#) with an added adapter wire harness.

Fig. 1



1510000199 / [366697](#)

Fig. 2



1510000236 / [366701](#)

Fig. 3



1510000276 / 366703 (Winnebago)  
Discontinued - replaced by 1510000236 / [366701](#)

There are two types of brackets used for fastening the motor and block assembly. Effective early February, 2018, the bracket used for the spring and hook attachment (Figs. 4 and 5) between the motor and the block was replaced with a new bracket and retention screw (Figs. 6 and 7).

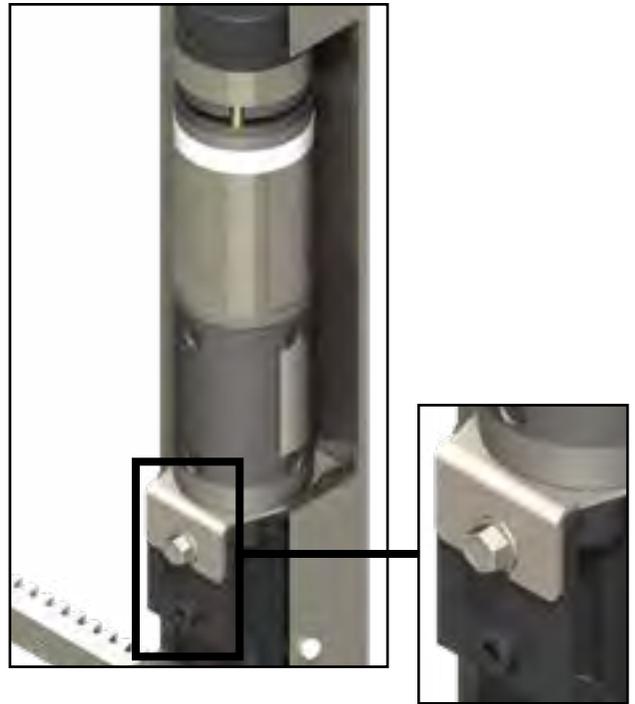
**Fig. 4**

**Motor-Block Assembly  
Production Prior to February 2018**



**Fig. 6**

**Motor-Block Assembly  
Early February 2018 Production**



**Fig. 5**

**Old Bracket 389061**



**Fig. 7**

**New Bracket 422671**



## Component Descriptions

- A touchpad (Fig. 8), used with programmable controller Power Gear part number 1510000199 / LCI part number [366697](#), or a rocker switch (Fig. 9), used with auto-programmable controller part numbers (Power Gear / LCI) 1510000236 / [366701](#) and 1510000276 / 366703 (Winnebago). Both types of devices mount to the wall and allow slide-out room movement as well as provide feedback to the user.
- A specially designed controller that gives the user full control of slide-out room movement, in or out. The controller has programmable stops that stop the motor when the slide-out room is fully extended or retracted and the ability to detect faults for ease in troubleshooting.

**NOTE:** The programmable controller, which incorporates use of a touchpad, is initially programmed once at installation. It is reprogrammed by an OEM-authorized dealer only if stops must be reset due to fault codes or to change the initial settings. With the auto-programmable controllers, those that connect to a rocker switch, the stops are automatically programmed each time the slide-out room is used.

- Vertical channel with 12V DC gear motor and gear rack arms that mount into the side wall opening and slide-out room.
- Harnesses to connect the rocker switch or touchpad and the motors to the controller.
- A manual override that allows extension / retraction of the slide-out room in the event of a loss of power.
- Floor rollers (not supplied by Lippert Components) that support the slide-out room's weight while extending and retracting the slide-out room. Only floor rollers approved by Lippert Components can be used with the system. Contact Lippert Components for recommended rollers.

Fig. 8



Fig. 9



## Safety

### **▲ WARNING**

The “WARNING” symbol above is a sign that an procedure has a safety risk involved and may cause death or serious injury if not performed safely and within the parameters set forth in this manual. Always wear eye protection when performing this procedure. Other safety equipment to consider would be hearing protection, gloves, and possibly a full face shield, depending on the nature of the procedure.

### **▲ 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 slide-out room is being operated. Obstructions in the slide-out room's path can cause serious personal injury, severe product or property damage .

### **▲ CAUTION**

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

### **▲ CAUTION**

When manually retracting the slide-out room, make sure that both sides of the slide-out room move together. Damage to the slide-out room may result if movement is not uniform.

## Preparation

### Resources Required

- 1-2 people, depending on task
- Phillips head screwdriver
- Pick tool
- Ratchet or socket wrench
- 1/2" 8-point star socket or 15 mm 12-point star socket
- Dry lubricant
- 3" extension for sockets
- 5/8" deep well socket
- 12V DC power source
- Multimeter
- 5/16" open-ended wrench or ratcheting box wrench

## Operation

### **▲ CAUTION**

**Always make sure that the slide-out room path is clear of people, pets and objects before and during operation of the slide-out. Always keep away from the gear racks when the slide-out room is being operated. Obstructions in the slide-out room's path can cause serious personal injury, severe product or property damage .**

### **▲ CAUTION**

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

#### Prior to Moving the Slide-Out Room

1. Make sure the engine or generator is running to ensure ample voltage is being supplied to the slide-out controller.
2. Set the parking brake if applicable.

#### Extending the Slide-Out Room

1. The engine or generator must be running, or unit must be plugged into shore power.
2. Transmission must be in park or neutral (if applicable).
3. If applicable, set the park brake and level the unit.
4. If equipped, remove the transit bars.
5. If equipped, turn "on" the on/off switch or key.
6. Press and hold the OUT button (Fig. 8A or 9A). There will be a slight delay before the slide-out room will begin to move. This is normal.
7. Release the button when the slide-out room is fully extended and stops moving.
8. If equipped, turn "off" the on/off switch or key.

#### Retracting the Slide-Out Room

1. The engine or generator must be running, or the unit must be plugged into shore power.
2. If applicable, transmission must be in park or neutral.
3. If applicable, set the park brake and level the unit.
4. If equipped, turn "on" the on/off switch or key.
5. Press and hold the IN button (Fig. 8B or 9B). There will be a slight delay before the slide-out room will begin to move. This is normal.
6. Release the button when the slide-out room is fully retracted and stops moving.
7. If equipped, turn "off" the on/off switch or key.
8. If equipped, install the transit bars.

## Troubleshooting

### Controller 1510000199 / 366697

Controller 1510000199 / [366697](#), which connects to a touchpad, has the ability to detect and display several faults. When a fault is detected, the slide-out room movement will stop and two different LEDs on the touchpad will flash in a pattern.

**NOTE:** The slide-out system with controller 1510000199 / [366697](#) will **NOT** function until the stops are properly set or faults are cleared.

1. The FAULT CODE LED (Fig. 10A) on the touchpad will flash red a number of times corresponding to a specific fault code. Refer to Fault Code Table - Controller 1510000199 / [366697](#) to best determine what caused the fault.
2. The ROOM MOVEMENT LED (Fig. 10B) on the touchpad indicates system operation and will flash green a number of times corresponding to which motor had the associated fault.

**NOTE:** For example, four RED flashes (Fault Code) and two GREEN flashes (Motor code) means there is a motor fault on Motor 2.

**NOTE:** A solid GREEN LED indicates normal slide-out room movement.

There are two types of faults, minor and major. Faults **MUST** be cleared in order for the slide-out room to operate.

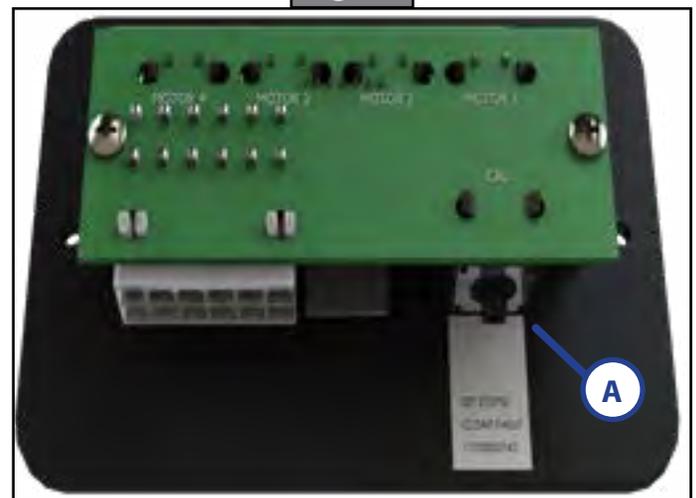
1. Minor faults can be cleared by pressing and releasing the IN (Fig. 10C) or OUT (Fig. 10D) buttons on the wall touchpad.
2. Major faults **MUST** be cleared by pressing and releasing the SET STOPS/CLEAR FAULTS button located on the back of the touchpad (Fig. 11A).

**NOTE:** For major faults, the controller must be overridden by following the Electrical Override Mode procedure described in the Override Mode section. When the problem is repaired, the controller must then be reprogrammed by an OEM-authorized dealer.

Fig.10



Fig. 11



Fault Code Table - Controller 1510000199 / [366697](#)

Fault Code (# of RED flashes)	Fault Type	Description	Why?	What Should Be Done?
1	Major	Stops not programmed	Stops have not been set	Stops must be programmed by an authorized service facility.
			Stops were cleared	
			Stops were improperly set	
2	Minor	System fault	Obstruction present	Run slide-out room in opposite direction of drag. If slide-out room continues to move in opposite direction, remove obstruction or have damaged component replaced. If slide-out room stops moving in opposite direction, observe fault code and refer to this chart.
			Excessive system drag	Run slide-out room in opposite direction of drag. If slide-out room continues to move in opposite direction, remove obstruction or have damaged component replaced. If slide-out room stops moving in opposite direction, observe fault code and refer to this chart.
4	Major	Motor fault	Bad or loose connection(s)	Check all connections at controller and motor. See Wiring Diagram for Controller 1510000199 / <a href="#">366697</a> .
			Defective harness	Check harness for broken wires. Replace as needed.
			Open or shorted motor	Apply a 12V DC power source to the motor. If motor does not operate, replace the motor.
6	Minor	Excessive battery voltage	Supply voltage to controller is 17V DC or greater	Use a multimeter to check 2-pin power connector at controller. See Wiring Diagram for Controller 1510000199 / <a href="#">366697</a> . If the voltage is 17V DC or higher, contact OEM for power and ground supplies.
Park brake LED flashing			Parking brake not set if applicable	Set parking brake if applicable
			Ground signal lost at park brake connector on controller	Check for continuity to ground on wire plugged into park brake connector at controller. See Wiring Diagram for Controller 1510000199 / <a href="#">366697</a> .
Low voltage LED flashing			Incoming voltage to controller is below 12V DC	Use a multimeter to check 2-pin power connector at controller. See Wiring Diagram for Controller 1510000199 / <a href="#">366697</a> . If the voltage is below 12V DC, contact OEM for recommendation.

## Auto-Programmable Controllers

Auto-programmable controllers, 1510000236 / [366701](#) or 1510000276 / 366703 (Winnebago), which connect to a rocker switch, have the ability to detect and display several faults. When a fault is detected, the slide-out room movement may stop and two different LEDs on the controller will flash in a pattern.

**NOTE:** Not all rocker switches contain fault indicator LEDs. For best results when reading fault codes, refer to the controller's Fault Code LED scheme and Auto-Programmable Controllers Fault Codes table.

1. The Fault Code LED on the rocker switch (Fig. 12A) will flash RED a number of times corresponding to the number of red flashes on the controller (Fig. 13A).

**NOTE:** Refer to the Fault Code Table - Auto-Programmable Controllers to best determine what caused the fault.

2. The Motor LED (Fig. 13B) on the controller will flash GREEN a number of times corresponding to which motor had the associated fault. For example, two GREEN flashes and four RED flashes means there is a motor fault on Motor 2.

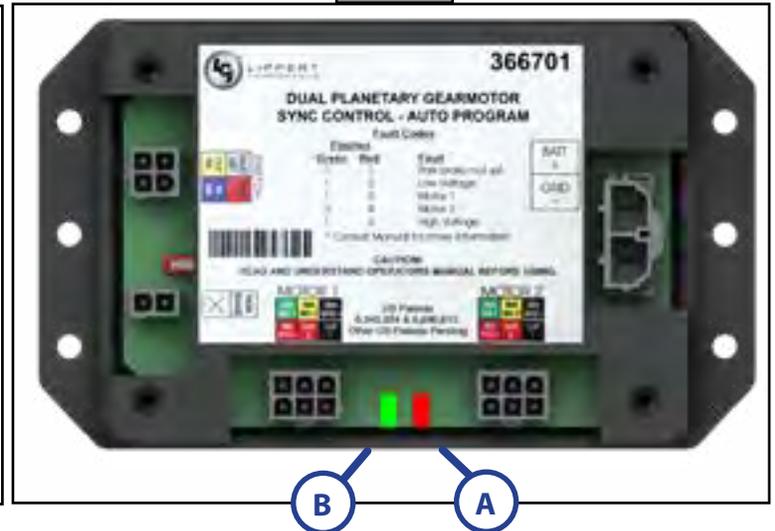
**NOTE:** For major faults, the controller will automatically enter "Emergency Jog" mode when motor movement is not detected by the controller in either direction during slide-out room activation. When in "Emergency Jog" mode, the controller will jog both motors in the direction the rocker switch is pressed (IN or OUT). The rocker switch may need to be pressed multiple times to fully retract or extend the slide-out room. Take the unit to an OEM-authorized dealer for service.

The controller will return to normal operation mode after five minutes of inactivity or by cycling the power to the controller.

Fig. 12



Fig. 13



Fault Code Table - Auto-Programmable Controllers

Fault Code Flashes		Fault Type	Description	Why?	What Should Be Done?
Green Flash	Red Flash				
1	1	Minor	Park brake not set	Park brake not set if applicable	Set parking brake if applicable.
				Ground signal lost at park brake receptacle at controller	Check for continuity to ground on wire plugged into park brake receptacle at controller.
1	2	Minor	Low voltage	Incoming voltage to controller is below 12V DC. The slide-out room will NOT move if voltage is 10.5V DC or below	Start vehicle, generator, or make sure coach is plugged into shore power. Use a multimeter to check 2-pin power connector at controller at BATT+ and GND-. Consult manufacturer of unit's charging system for troubleshooting assistance.
1	4	Major	Motor 1 fault	Bad wire connection	Refer to Troubleshooting Control Box for SlimRack Systems (82-S0533). To locate this document online, go to <a href="https://www.lci1.com/slide-outs-/support-slimrack">https://www.lci1.com/slide-outs-/support-slimrack</a> . Go to the Technical Information Sheets tab. Look for: <i>Troubleshooting Control Box for SlimRack Systems (82-S0533)</i> in the document listing.
				Bad motor	
2	4	Major	Motor 2 fault	Bad wire connection	
				Bad motor	
1	6	Minor	High voltage	Supply voltage to controller is 17V DC or greater	Consult manufacturer of unit's charging system for troubleshooting assistance.

## Electrical Override Modes

### Controller 1510000199 / 366697

In the event of component failure, the slide-out room operation can be overridden and retracted for travel. Use this procedure when there is NO loss of power or electrical problem with the system.

1. Using a Phillips head screwdriver, remove the touchpad from the wall.
2. Prior to clearing the MAJOR fault, write down the number of red and green flashes, indicated by the LEDs on the touchpad, for reference later.

**NOTE:** Once the slide-out room is forced to move, the fault code will be cleared. Writing down the fault code allows monitoring to see if the original code changes to a different code. This information will help the OEM-authorized dealer troubleshoot the slide-out system.

3. Press and hold the SET STOPS / CLEAR FAULTS button (Fig. 14A) on the back of the touchpad for five seconds. Both red and green LEDs will be solidly lit while this button is pressed. After five seconds, the GREEN LED will begin flashing and the RED LED will remain solidly lit.

**NOTE:** The unit is now ready to retract the slide-out room.

4. Press and hold the ROOM SLIDEOUT MOTOR buttons 1 and 2 on the back of the touchpad (Fig. 15).

Fig. 14

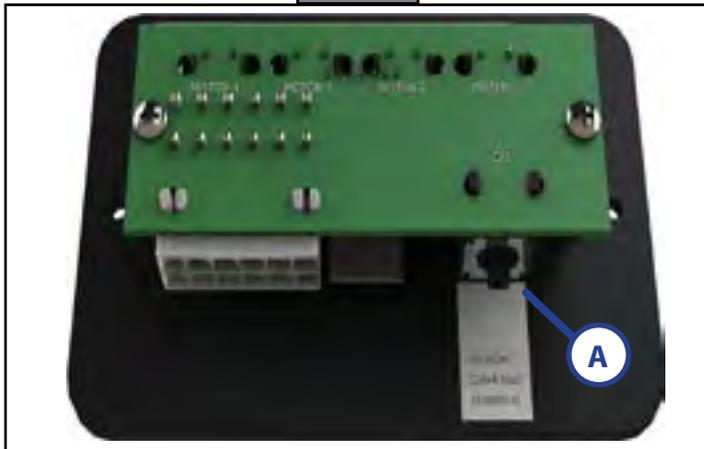
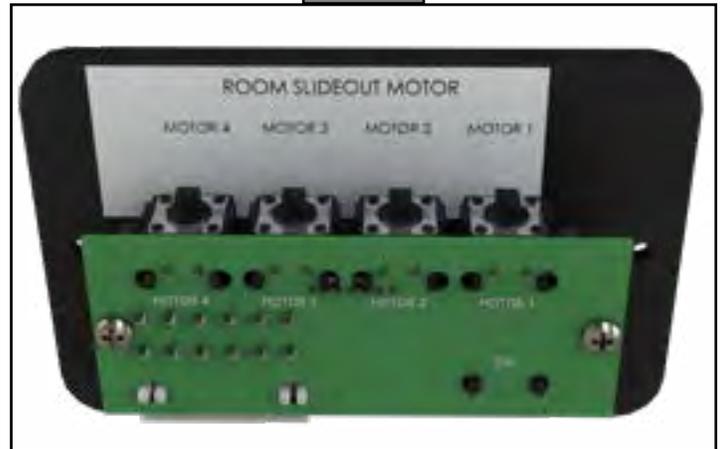


Fig. 15



### **CAUTION**

**During this procedure, the slide-out room has NO stop locations. Use another person to assist in determining when the slide-out room is retracted. Damage to the slide-out room can occur if the slide-out room is retracted too far.**

### **CAUTION**

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

5. Press the IN button on the front of the wall touchpad until the slide-out room is fully retracted. If one side of the slide-out room needs to retract further in order to get a good seal, press and hold the motor button corresponding only to the motor on the side that needs to move. Press the IN button on the front of the touchpad to retract the slide-out room the remainder of the way.

**NOTE:** At any time during the override procedure, the unit will exit the override mode if the slide-out room has not been moved for two minutes or if a fault is detected during slide-out room movement. The Fault Code and Room or Lock Movement LEDs on the front of the touchpad will flash rapidly for 10 seconds to indicate that the override procedure failed. After 10 seconds of flashing, the controller will automatically default to FAULT CODE 1 and programming must be restarted. Refer to Controller 1510000199 / 366697 Fault Codes chart for additional information.

6. Using a Phillips head screwdriver, reinstall the wall touchpad.
7. Take the unit to an OEM-authorized dealer for repairs.

**NOTE:** After the system has been overridden, the controller must be re-programmed by an OEM-authorized dealer.

### Auto-Programmable Controllers

For major faults, controllers 1510000236 / [366701](#) and 1510000276 / 366703 will automatically enter "Emergency Jog" mode when motor movement is not detected by the controller, in either direction, during slide-out activation. When in Emergency Jog mode, the controller will jog both motors in the direction the switch is pressed (IN or OUT). The switch may need to be pressed multiple times to fully retract or extend the slide-out. Take the unit to an OEM-authorized dealer for service.

**NOTE:** At any time during the override procedure, the unit will exit override mode if the slide-out has not been moved for five minutes. The controller will return to normal operation mode after five minutes of inactivity or by cycling power to the controller.

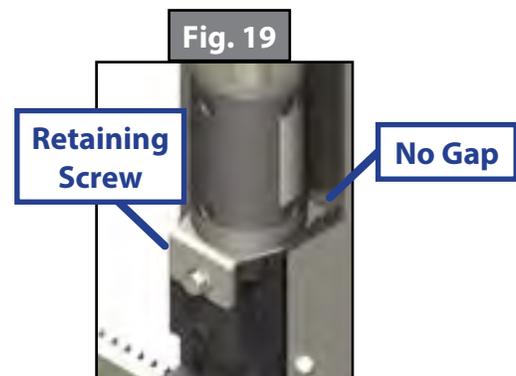
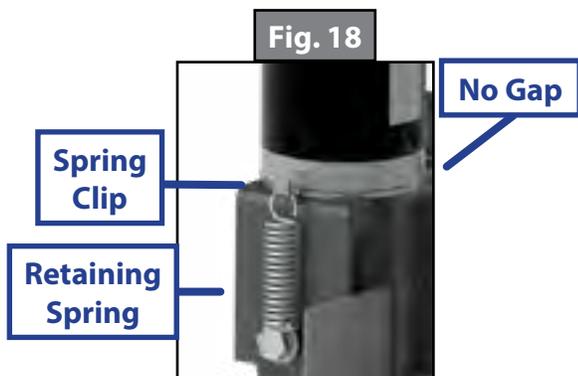
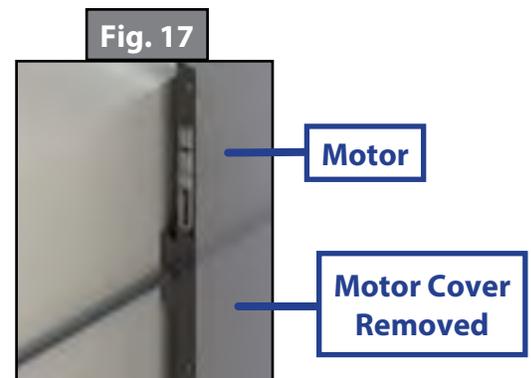
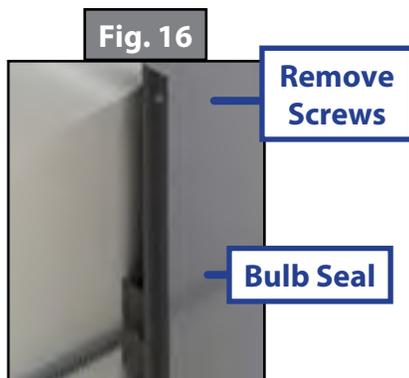
## Manual Override Mode—All Controllers

In the event that power is lost to the slide-out motor(s) or when the Electrical Override Mode does not work, the slide-out room can be manually retracted by following these steps.

### ▲ CAUTION

**When manually retracting the slide-out room, make sure that both sides of the slide-out room move together. Damage to the slide-out room may result if movement is not uniform.**

1. Gain access from either the inside or outside of the unit to the vertical channel assembly by removing the OEM trim and flange pieces on the slide-out room box. The motors are currently located at the top of the channel.
2. If applicable, use a Phillips head screwdriver to remove the top screw from the bulb seal at the top of the vertical channel (Fig. 16).
3. Pull down the bulb seal and remove the motor cover (Fig. 17). The motor cover may stick to the bulb seal.
4. If there is a retaining spring (Fig. 18), use a pick tool to remove the end of the retaining spring from the motor spring clip. Do not remove the retaining spring screw.
5. If not equipped with a retaining spring, use a  $\frac{5}{16}$ " open-ended wrench or ratcheting box wrench to loosen the motor retaining screw (Fig. 19) one to two rotations. Do not remove the motor retaining screw.
6. Unplug the motor from the harness and remove the motor by lifting it up and out of the column.
7. Repeat steps 1-6 for the other side.
8. Push the slide-out room uniformly into the retracted position.
9. Once the slide-out room is retracted, secure the slide-out room in-place by:
  - A. Re-installing the motors. If there is a retaining spring, make sure the end of the retaining spring is rehooked to the motor spring clip (Fig. 18).
  - B. Torquing the motor retaining screw to 40 in-lbs (Fig. 19) with the motor retainer fully engaged.
  - C. Using a transit bar (slide-out locking bar). Make sure motor is properly seated with no gap between the mounting bracket and block (Figs. 18 and 19).
10. Have the slide-out room serviced by the OEM-authorized dealer as soon as possible. Do not operate slide-out room until service is complete, as damage to the slide-out room may result.



## Alternate Override Modes—All Controllers

If none of the previous override methods retract the slide-out room, it may be possible to manually retract the slide-out room by one of the following alternate methods. Both of these procedures will only be possible if there is access to the described areas.

1. Manually retract the slide-out room using a ratchet and socket attached to the end of the coupler (Fig. 20) to move the slide-out room.
  - A. Remove the motor. Follow steps 1-6 under the Manual Override Mode section.

**▲ CAUTION**

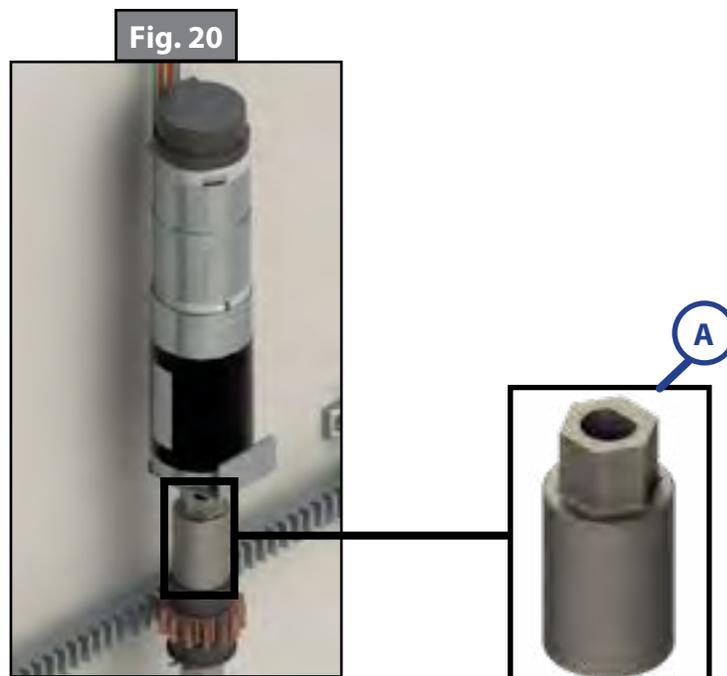
**When manually retracting the slide-out room, make sure that both sides of the slide-out room move together. Damage to the slide-out room may result if movement is not uniform.**

**▲ CAUTION**

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

- B. Place a ratcheting wrench with a 3" extension and  $\frac{5}{8}$ " deep well socket through the motor access opening and seat the socket onto the coupler (Fig. 20A).
- C. Using the ratcheting wrench with socket, and alternating from one side to the other, turn the wrench to retract the slide-out room.

**NOTE:** One person per side of the slide-out room (two total) with ratcheting wrench and socket will expedite the process. Make sure that both sides of the slide-out room retract together uniformly. The slide-out room moves approximately  $\frac{1}{4}$ " for every 30-40 degree turn of the wrench.

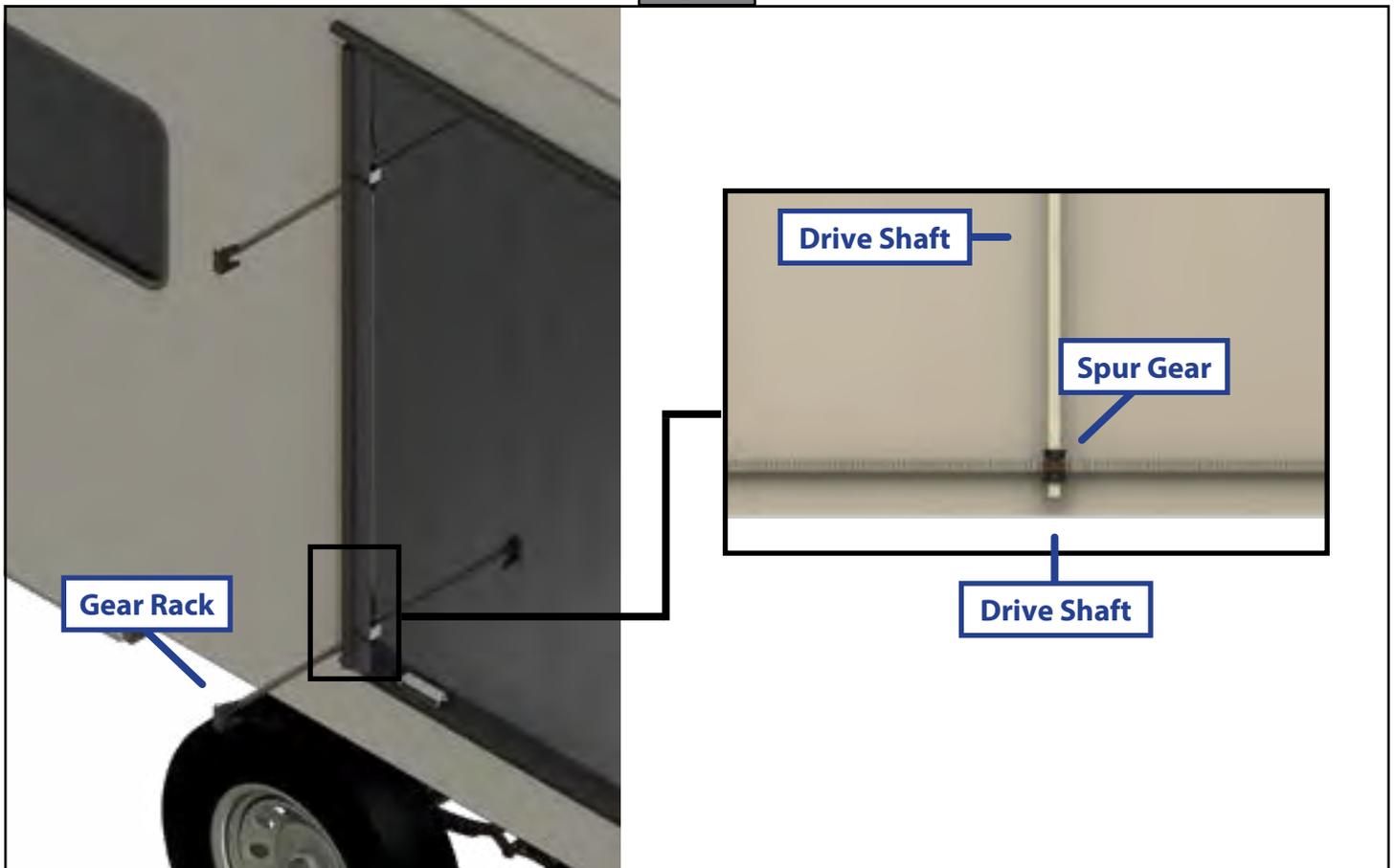


- D. Once the slide-out room is retracted, secure the slide-out room in-place by:
  - I. Re-installing the motors. If there is a retaining spring, make sure the end of the retaining spring is rehooked to the motor spring clip (Fig. 18).
  - II. Torquing the motor retaining screw to 40 in-lbs (Fig. 19) with the motor retainer fully engaged.
  - III. Using a transit bar (slide-out locking bar). Make sure motor is properly seated with no gap between the mounting bracket and block (Figs. 18 and 19).
- E. Have the slide-out room serviced by an OEM-authorized dealer as soon as possible. Do not operate the slide-out room until service is complete as damage to the slide-out room may result.
- 2. Manually retract the slide-out room by turning the 1/2" square drive shaft of each vertical channel assembly.
  - A. Remove the motor. Follow steps 1-6 of the Manual Override Mode.
  - B. Access the 1/2" square drive shaft (Fig. 23) of each vertical channel.
  - C. Using a 1/2" 8-point, star socket and alternating from one side to the other, turn the 1/2" square drive shaft to retract the slide-out room.

**NOTE:** A 15 mm 12-point socket is an option if the 1/2" 8-point star socket is not available. Use caution, as the 15 mm 12-point socket does not fit as snug as the 1/2" 8-point socket.

- D. Once the slide-out room is retracted, secure the slide-out room in-place by:
  - I. Re-installing the motors. If there is a retaining spring, make sure the end of the retaining spring is rehooked to the motor spring clip (Fig. 18).
  - II. Torquing the motor retaining screw to 40 in-lbs (Fig. 19) with the motor retainer fully engaged.
  - III. Using a transit bar (slide-out locking bar). Make sure motor is properly seated with no gap between the mounting bracket and block (Figs. 18 and 19).
- E. Have the slide-out room serviced by an OEM-authorized dealer as soon as possible. Do not operate slide-out room until service is complete as damage to the slide-out room may result.

Fig. 21



## Maintenance

The Lippert Components Slide-Out system has been designed to require very little maintenance. To ensure the long life of the Slide-Out system, read and follow these simple procedures:

1. When slide-out room is extended, visually inspect the slide gear rack assemblies. Check for excess buildup of dirt or other foreign material. Remove any debris that may be present.
2. If the system squeaks or makes any noises, hand apply a dry lubricant to prevent and/or stop squeaking.

# F.A.S.T. TRACK® FLUSH FLOOR SLIDE-OUT

## SLIDE-OUTS

### System Information

The F.A.S.T. (Fast Assembly Self Tensioning) Track® Slide-out is a cable-driven system that is operated by a 12V DC electric motor. The system is designed to actuate rooms up to 2,000 pounds and 40" of stroke.

Additional information about this product can be obtained from [lci1.com/support](http://lci1.com/support) or by downloading the free myLCI app. The app is available on iTunes® for iPhone® and iPad® and also on Google Play™ for Android™ users.

iTunes®, iPhone®, and iPad® are registered trademarks of Apple Inc.

Google Play™ and Android™ are trademarks of Google Inc.

### Major Components

- Vertical column that mounts into the side wall opening
- Horizontal cables that actuate the room
- A 12V DC gear motor that operates the room using power from the battery
- A specially designed control box that gives the user full control of room movement. The control box has programmable stops. When programmed, the stops limit extend and retract and have the ability to detect faults for ease in troubleshooting.
- Harnesses to connect the rocker switch and motors to the control box.

### **▲ WARNING**

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

### **▲ WARNING**

The F.A.S.T. Track Slide-out is intended for the sole purpose of extending and retracting a slide-out room. Its function should not be used for any other purpose. To use the system for any purpose other than its original design may result in death, serious personal injury, severe product or property damage.

### **▲ 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.

## Prior to Operation

### **▲ WARNING**

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

### **▲ WARNING**

Always make sure that the slide-out room path is clear of people, pets and objects before and during operation of the slide-out. Always keep away from the gear racks when the room is being operated to avoid possible serious personal injury.

1. To optimize slide-out actuation, the unit **MUST** be parked on solid, level ground.
2. Inspect all connections at the controller and verify they are securely attached.
3. Verify there are no obstructions that could hinder normal movement of the slide-out room.
4. Make sure there is ample voltage being supplied to the slide-out controller.
5. Set the parking brake, if applicable.
6. If applicable, the ignition of the unit **MUST** be turned off in order to operate the slide-out system.

## Operation



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

### Extending the Slide-out Room

1. If equipped, remove the transit bars.
2. If equipped, turn "ON" the on/off switch or key.
3. Press and hold the "OUT" or "EXT" button.

**NOTE:** There will be a slight delay before the slide-out room will begin to move. This is normal.

4. Release the button when the slide-out room is fully extended and stops moving.
5. If equipped, turn "OFF" the on/off switch or key.

### Retracting the Slide-out Room

1. If equipped, turn "ON" the on/off switch or key.
2. Press and hold the "IN" or "RET" button.

**NOTE:** There will be a slight delay before the slide-out room will begin to move. This is normal.

3. Release the button when the slide-out room is fully retracted and stops moving.
4. If equipped, turn "OFF" the on/off switch or key.
5. If equipped, replace the transit bars.

## Troubleshooting

The Fault Code Chart in this section outlines some common problems, their causes and possible corrective actions. If any part or serial number information is available, provide it to the service technician when asking for assistance.

When something restricts room travel, system performance will be unpredictable. It is very important that the entire slide system be free of contamination and allowed to travel full distance (stroke). Ice or mud build-up during travel is an example of some types of contamination that can occur.

When you begin to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the system and that all connections are secure.

During troubleshooting, remember that if you change something, that change may affect something else. Make sure any changes you make will not create a new problem.

## Fault Codes

The controller has the ability to detect and display several faults within the slide-out system. When a fault is detected, the room movement may stop and two different LED lights on the controller will flash in a particular pattern indicating the proper action needed to clear the fault, such as:

1. The Motor LED will flash GREEN 1 or 2 times, indicating which motor is experiencing the associated fault. For example, 1 GREEN flash indicates Motor 1 and 2 GREEN flashes indicates Motor 2.
2. The Fault Code LED will flash RED a number of times, indicating the determined fault. Refer to the troubleshooting chart below to best determine the cause of the fault.

Fault Code Chart					
Fault Code Flashes		Fault Type	Description	Why?	What Should Be Done?
Green Flash	Red Flash				
1	1	Minor	Park brake not set	Parking brake (if applicable) is not set.	Set parking brake (if applicable).
				Ground signal is lost at parking brake receptacle at control box.	Check for continuity to ground on wire plugged into parking brake receptacle at control box.
1	2	Minor	Low voltage	Incoming voltage to control is below 12V DC. The room will not move if the voltage is 10.5V DC or below.	Start vehicle, generator, or make sure the unit is plugged in to shore power. Check 2-pin power connector at the control box at BATT + and GND. Consult manufacturer of unit charging system for troubleshooting assistance.
2	4	Major	Motor 1 fault	Bad wire connection.	Refer to Technical Information Sheets: Troubleshooting Control Box for SlimRack Systems <a href="#">82-S0533</a> . If necessary, copy and paste or type the following path into a browser; <a href="https://www.lci1.com/slide-outs-/support-slimrack">https://www.lci1.com/slide-outs-/support-slimrack</a> then look for the specified document among the listing.
				Bad motor.	
2	2	Major	Motor 2 fault	Bad wire connection.	
				Bad motor.	
1	6	Minor	High voltage	Supply voltage to control box is 17V DC or greater.	Consult manufacturer of unit charging system for troubleshooting assistance.

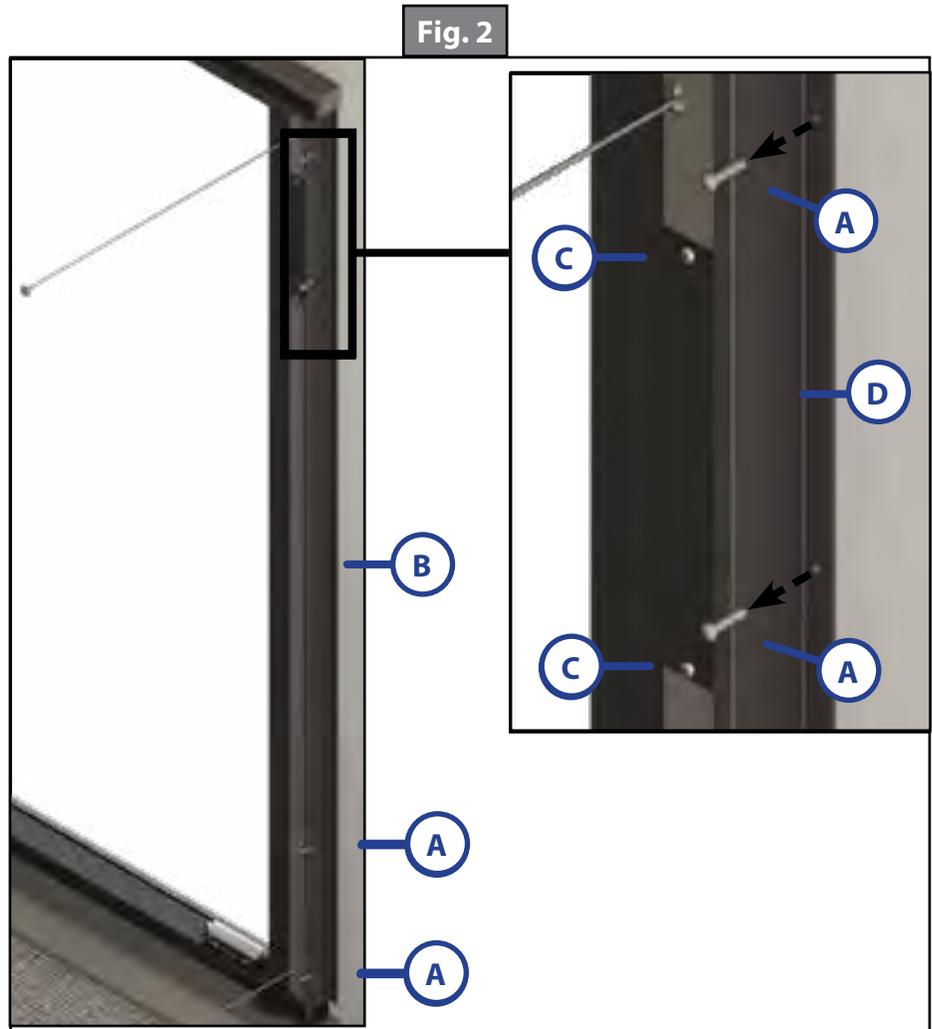
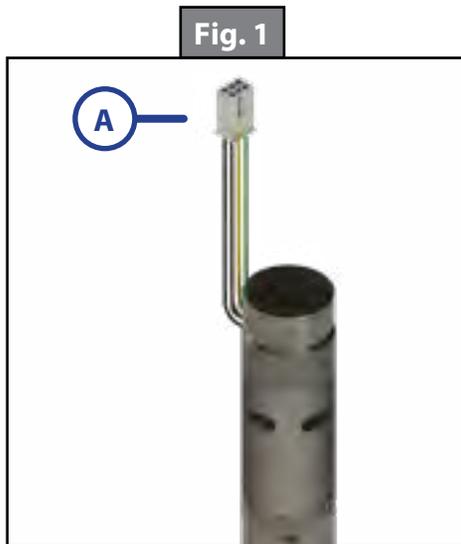
**NOTE:** When motor movement is not detected by the control box in either direction during room actuation, the controller will automatically enter into "Emergency Jog" mode. When in Emergency Jog mode, the controller will jog both motors in the direction the switch is pressed, i.e. "IN" or "OUT". The switch may need to be pressed multiple times to fully retract or extend the slide-out room. Take the unit to an OEM-authorized dealer for service.

**NOTE:** The control box will return to normal mode after five minutes of inactivity or by cycling power (turning power off/on) to the control box.

## Manual Override

In the event that power is lost to the slide-out motor(s), the slide-out room can be manually retracted by following these steps:

1. Disconnect the wire harness from the motor lead (Fig. 1A).
2. Remove the screws (Fig. 2A) anchoring the interior column clamp (Fig. 2B) to the wall.
3. Detach the interior column clamp from the column and set aside.
4. Remove the two screws (Fig. 2C) that hold the motor cover (Fig. 3A) to the column (Fig. 2D) and remove the motor cover.



5. Disengage the motor from the drive sprocket assembly (Fig. 4A).
6. Repeat steps 1-5 on the opposite column.
7. The slide-out system should be free to move manually.
8. Once fully, manually retracted, insert the motor into the drive sprocket assembly. This prevents the slide-out from moving freely while the unit is in motion.



## Maintenance

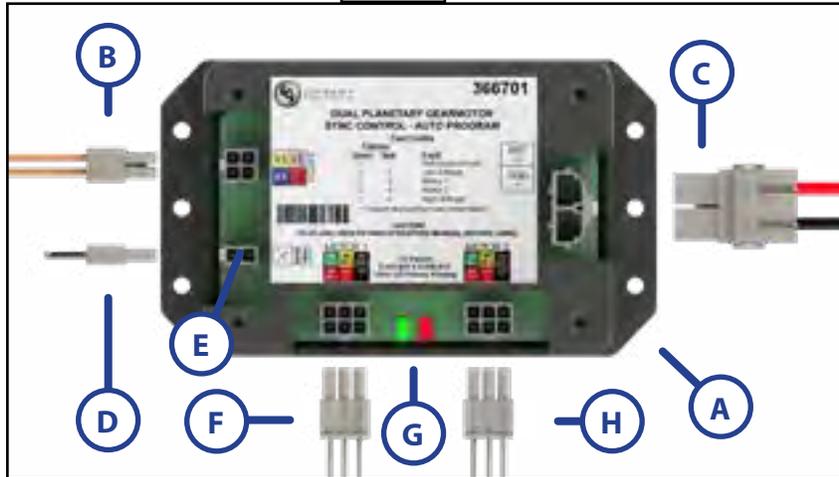
The F.A.S.T. Track® Slide-out has been designed to require very little maintenance. To ensure the long life of your slide-out system, read and follow these few simple procedures:

- When the room is extended, visually inspect the slide system assemblies. Check for excess buildup of dirt or other foreign material. Remove any debris that may be present.
- If the system squeaks or makes any noises, wipe off any debris or dirt from the cables.
- If a slide-out cable is fraying, contact a qualified service center technician.

## Wiring

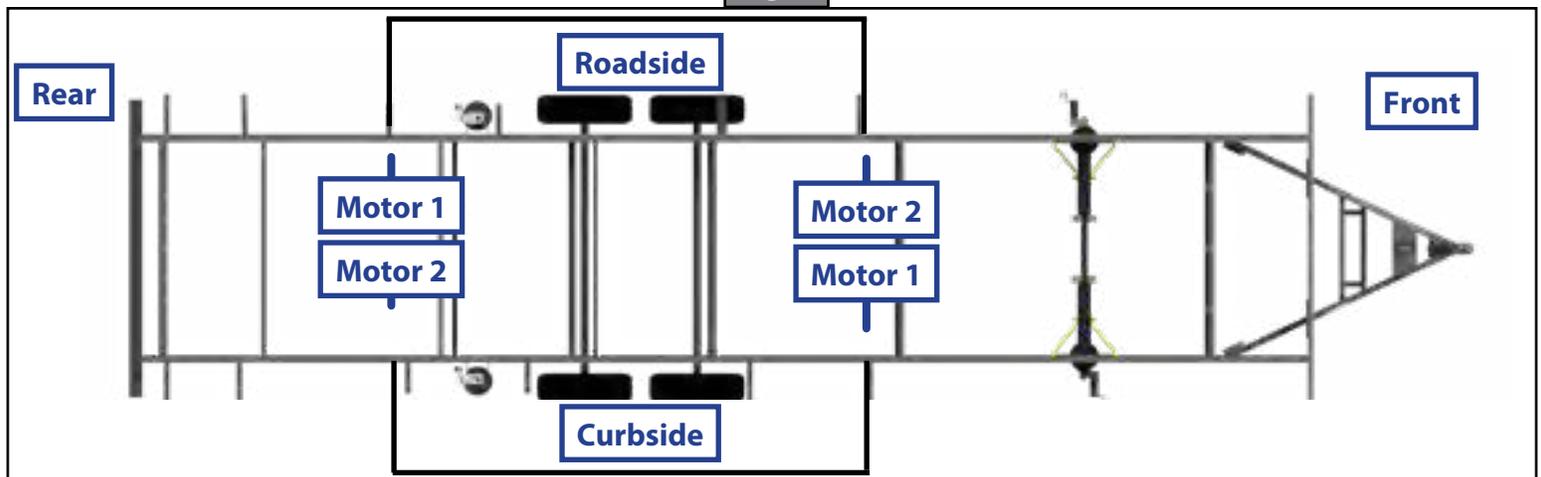
The controller (Fig. 5A) is not waterproof. When identifying Motor 1 and Motor 2, refer to figure 6. With the mode switch (Fig. 5E) in the left position, the controller will not operate the slide-out room unless a park brake signal is found. With the mode switch in the right position, the controller will bypass this safety feature. For all travel trailers, the switch will need to be in the right position.

Fig. 5



Callout	Description
A	Controller
B	Switch Harness
C	Power Harness (BATT+ / GND-)
D	Park Brake Input Harness
E	Mode Switch
F	Motor 1 Harness
G	Indicator Lights
H	Motor 2 Harness

Fig. 6



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Over the years of running a mobile RV repair service, having a dedicated place to access service manuals for all the different appliances and components found on RVs was something that I always had a desire to create.

I hope this resource makes your RV repairs easier, as it has mine, but please be careful and follow proper safety practices when attempting to repair your own RV.

If in doubt, please consult with a professional RV technician!



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