



**ABOVE FLOOR SLIDE-OUT (PG)
OEM INSTALLATION MANUAL**

LIPPERT
COMPONENTS®

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System Information

The Above Floor 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 clutching 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. The Above Floor Slide-out System is intended for the sole purpose of extending and retracting the slide-out room.

NOTE: This information was obtained from Power Gear manual 82-S0140-00 Rev 0F, originally released January 2010. This manual discusses Power Gear slide-outs manufactured from May 1999 to the present. Due to various changes in slide-out functionality, this manual does not apply and should not be used as a reference to previous versions of a Power Gear slide-outs.

Safety Information

WARNING

The "WARNING" symbol above is a sign that an installation 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 unit **MUST** be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death, serious personal injury, severe product or property damage.

CAUTION

The unit **MUST** be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death, serious personal injury, severe product or property damage.

CAUTION

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

The Above Floor 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 unit and/or cause serious personal 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. Make sure all persons are clear of the unit prior to the slide-out room actuation.
3. Keep hands and other body parts away from slide-out mechanisms during actuation. Death or severe personal injury may result.
4. To optimize slide-out actuation, park unit on solid and level ground.

Resources Required

- Cordless or electric drill or screw gun
- Appropriate drive bits
- Heat gun (electrical connections)
- Hex wrench (stop block set screw)
- $\frac{3}{8}$ " - 1 $\frac{1}{2}$ " full threaded screw
- $\frac{3}{8}$ " washers
- #8 x 1" screws
- Crimp butt connectors

Installation

Prior to installation, inspect slide-out mechanism and ensure that all stop blocks are intact and that there are no missing/damaged parts.

Installing Slide-Out Assembly onto Slide Opening

1. Locate the slide-out assembly or assemblies as per OEM design. For a single assembly, center the slide-out assembly in the slide-out opening.

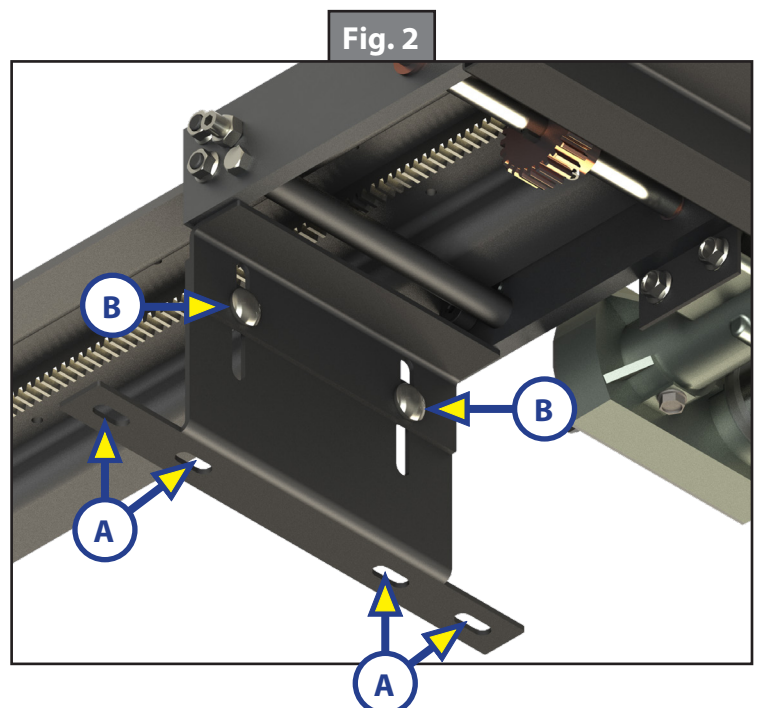
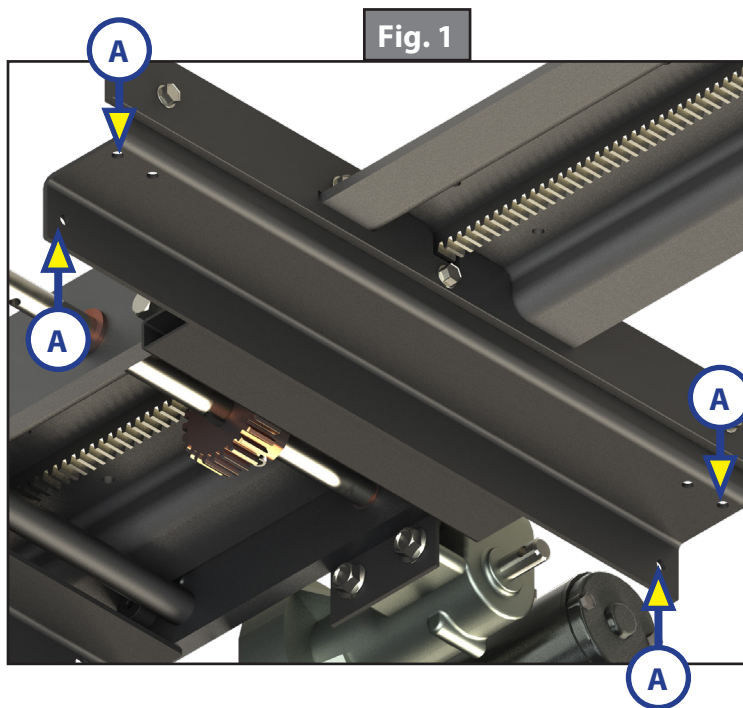
NOTE: Slide openings are determined by the OEM.

2. Using the four pre-drilled holes/slots in the main body subassembly (Fig. 1A), fasten it to the bottom edge of the slide opening using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers.
3. Using the four pre-drilled holes in the floor mounting bracket (Fig. 2A), fasten it to the unit's main floor using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers.

NOTE: Maintain parallelism between dual slide arms.

NOTE: If applicable, for dual assemblies it is critical that the assemblies be installed (timed) so that the slide-out room extends and retracts evenly.

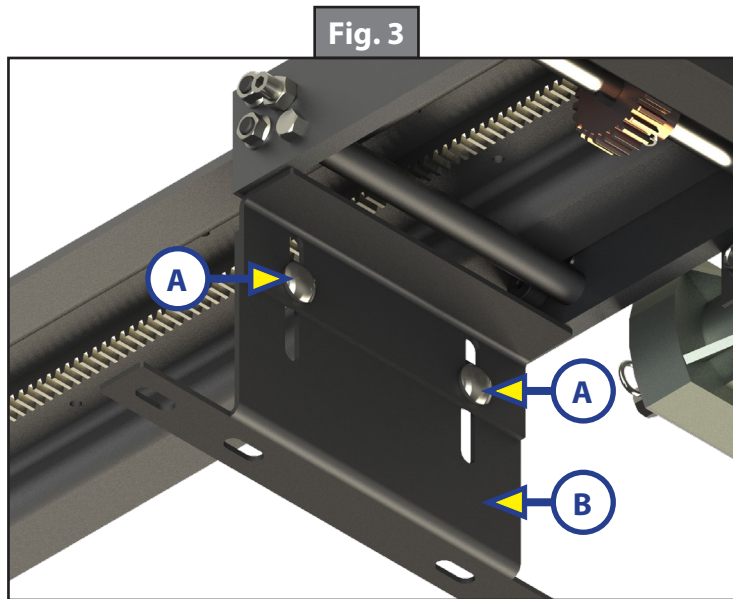
4. Using the carriage bolts on the adjustable floor mounting bracket (Fig. 2B), make sure the slide-out assembly is level prior to installing the slide room.



Room Adjustment

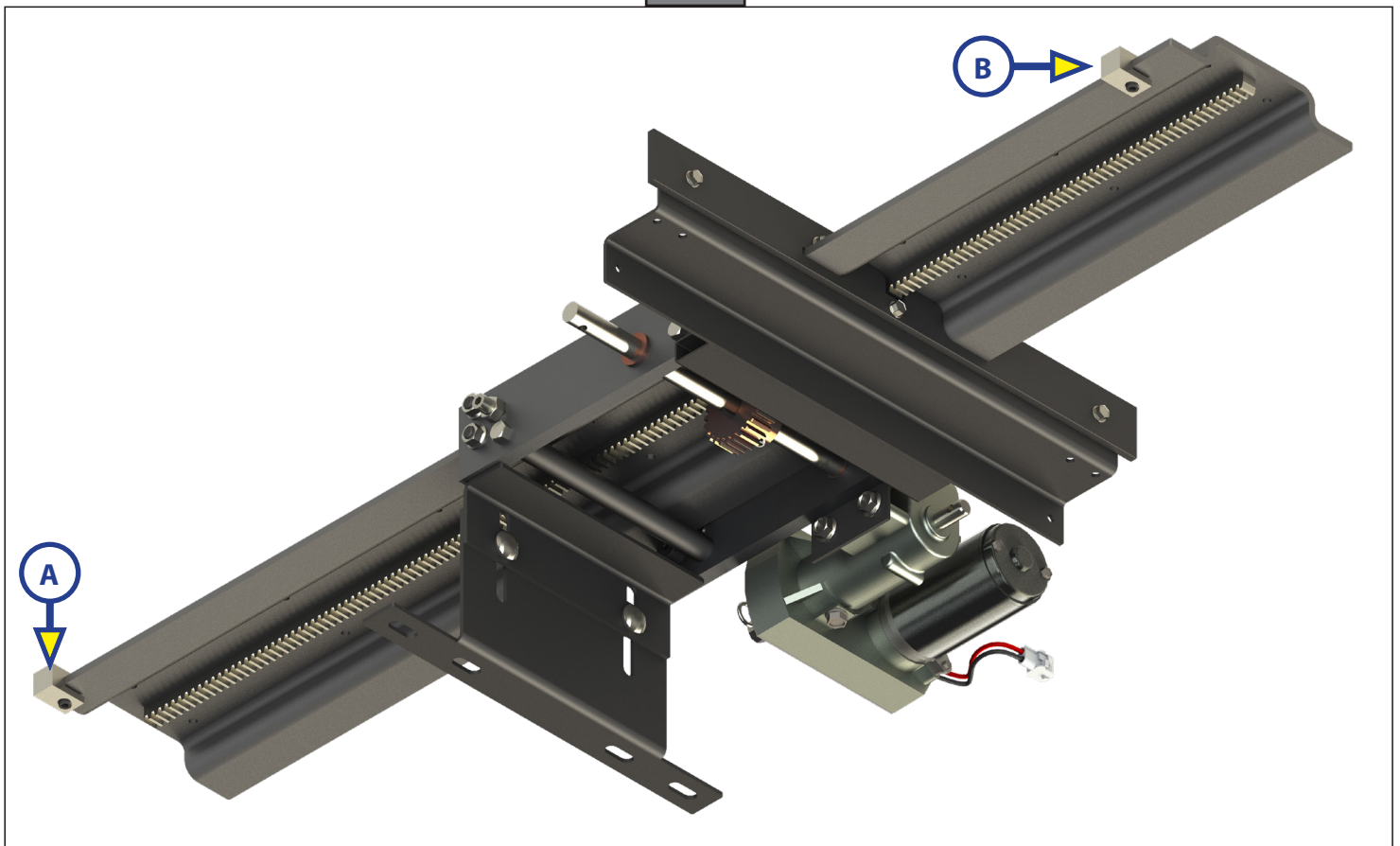
For vertical adjustment, do as follows:

1. Loosen the two carriage bolts (Fig. 3A) just enough to release tension on the interior mounting plate (Fig. 3B).
2. Adjust the room to desired location.
3. Tighten the two carriage bolts before operating room.



4. For "out" stop (Fig. 4A) or "in" stop (Fig. 4B) adjustment, loosen the set screw (Fig. 4A or 4B) on the stop block.
5. Adjust the stop block to desired location.
6. Tighten the set screw.

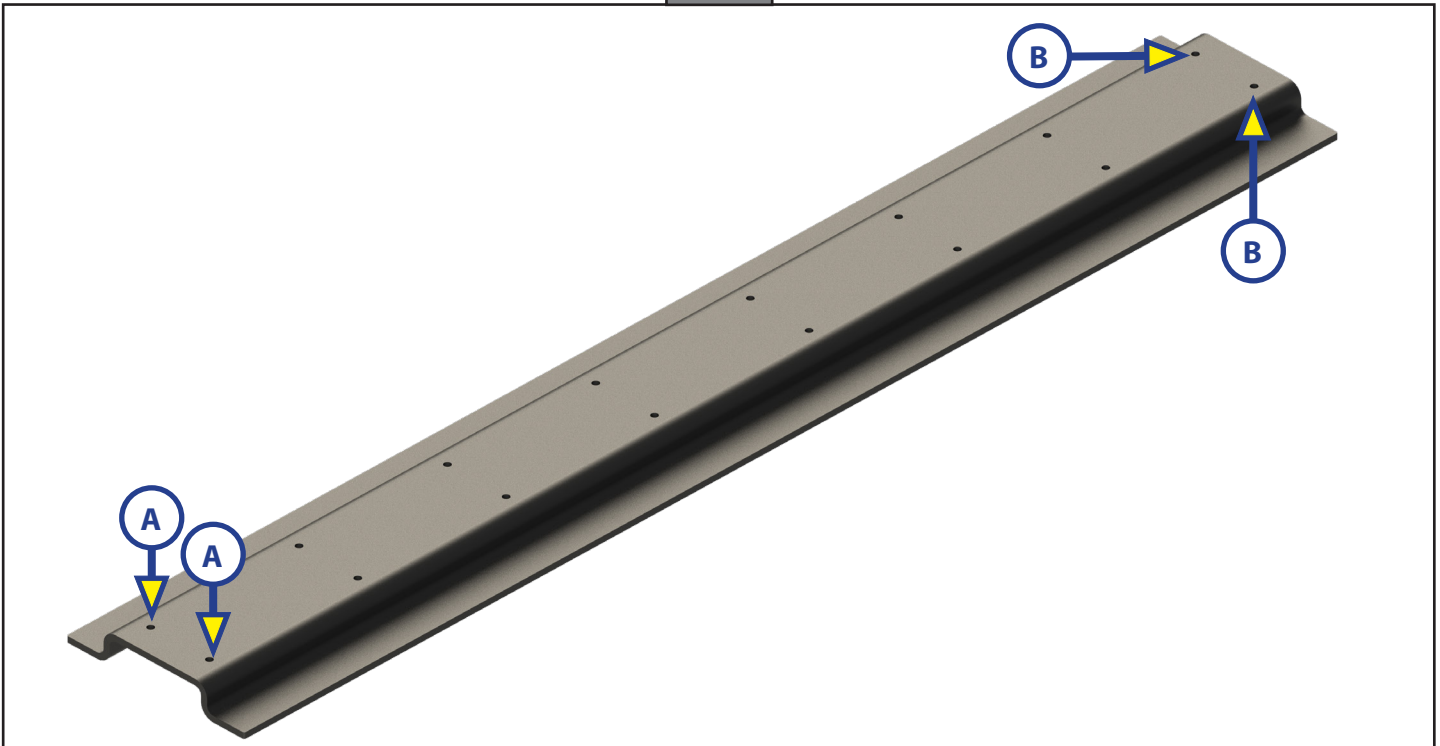
Fig. 4



Slide Room Installation

1. Place room on top of the hat channel(s) (Fig. 5). Center the room in the slide opening.
NOTE: Ensure the room is centered before securing to hat channel(s).
2. Locate the two exterior holes (Fig. 5A) in the hat channel. Secure the room to the hat channel(s) using OEM supplied fasteners.
NOTE: LCI recommends carriage bolt or lag bolt, determined by OEM.
3. Locate the two interior holes inside the unit (Fig. 5B) in the hat channel. Secure the room to the hat channel(s) using OEM supplied fasteners.
NOTE: Ensure the T-molding and fascia are installed prior to operating the slide-out (determined by OEM).
4. Use a hex key to set stop blocks (refer to the Hard Stops section of this manual in order to achieve proper seal in and out).

Fig. 5



Mounting and Switch Wiring

Depending on OEM requirements, the slide-out room may be operated using a variety of user interfaces; for example, a rocker switch (Fig. 6) or touchpad.

Fig. 6



1. Determine where to mount the user interface. It can be mounted anywhere inside the unit. The mounting location must be watertight..
2. Install the user interface per OEM recommendations using two OEM-supplied #8 x 1" screws.
3. See the Wiring Diagram section in this manual for wiring instructions.

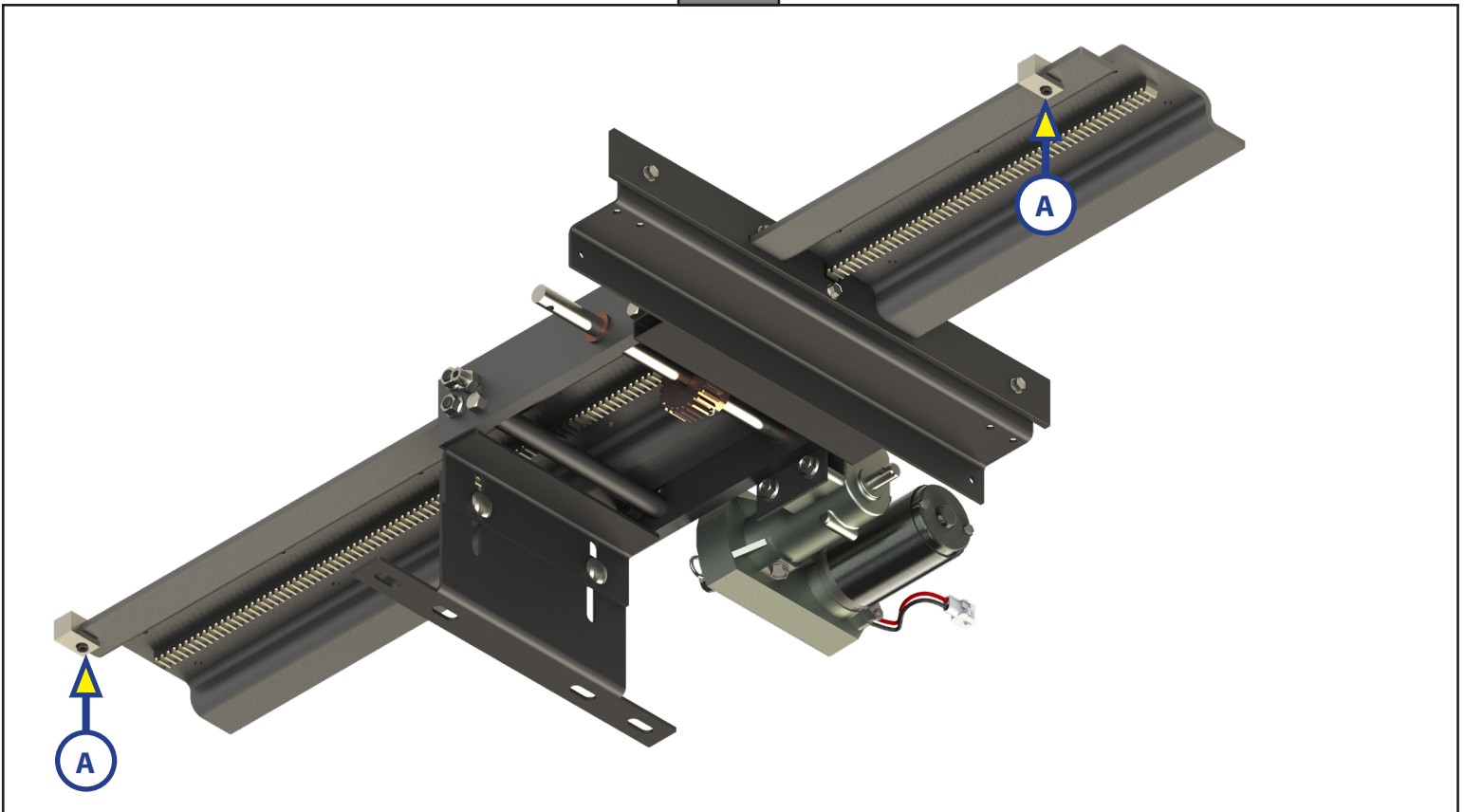
Hard Stops

The Above Floor Slide-out Systems are available in many different configurations and applications with varying height, travel, steel or aluminum and single and double arm. Access to these mechanisms is generally from inside the unit, under the floor of the slide-out.

If the fully extended or fully retracted travel of the slide-out appears to be putting pressure on the interior trim or exterior flange, stops may be missing from the mechanism and should be installed to prevent damage to the unit and slide system components.

Hard stops are added to the above floor slide-out systems in the form of stop block assemblies (Fig. 7A). The stop block assemblies are provided as a clamp-on stop, giving the slide-out the hard stops it needs to end the extend and retract travel of the slide out mechanism. The assemblies are comprised of the aluminum block notched to fit over the rear of the slide-out hat channel or arm and the set screw.

Fig. 7

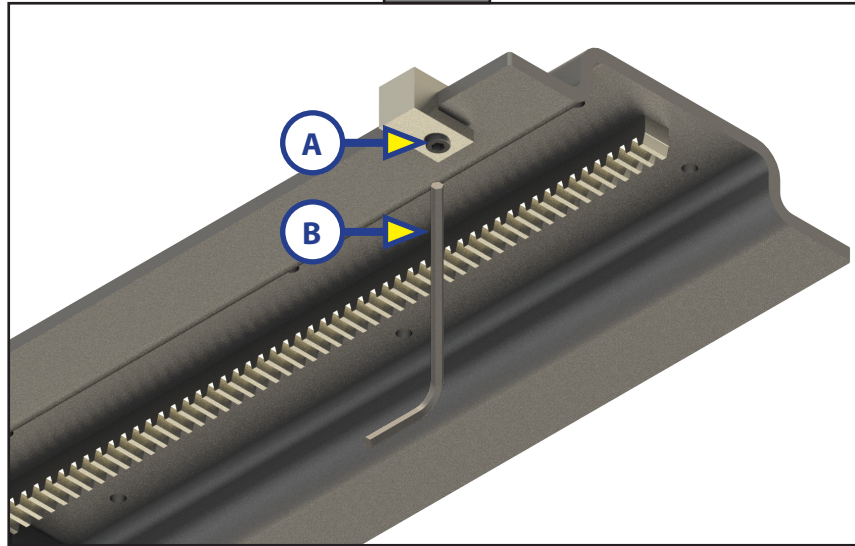


The stop block is placed on the rear of the hat channel or arm at the extend and retract points of the slide-out. The set screw (Fig. 8A) is then tightened with a hex wrench (Fig. 8B) in order to provide the above floor slide-out with hard stops. Once the set screw is tightened, the stop will make a water-tight seal with the slide-out.

NOTE: Without the hard stops, the interior trim and the outside slide flange become soft stops and can be damaged as the slide controller or motor clutch will not be able to shut the system off.

The hard stop will allow the motor to clutch or the control box to sense the amperage spike when the slide motor is stopped. The stops shut down the slide-out system protecting the drive shaft, shaft bolt and the crown gear.

Fig. 8



Operation

⚠ WARNING

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

⚠ CAUTION

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

Prior to Operation

Prior to operating the above floor slide-out, do as follows:

1. Unit should be parked on the most level surface available.
2. If operating a motorized coach the PARKING BRAKE must be engaged.
3. If operating a motorized coach the transmission must be in PARK.
4. If operating a motorized coach the ignition must be in the off position (Class A and C; Gas and Diesel)
5. Make sure slide-out room path is clear of people and objects before and during operation of the slide-out room.
6. 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.
7. Keep stored items in compartment clear of slide-out motor mechanisms and wiring to prevent interference of slide-out operation.
8. The 12V DC battery disconnect should be in the ON position.

NOTE: Batteries **MUST** be tested under a load to get an accurate reading. Use a multi-meter to ensure the battery is fully charged, the multimeter must read 12.5V - 13.7V DC for a full charge.

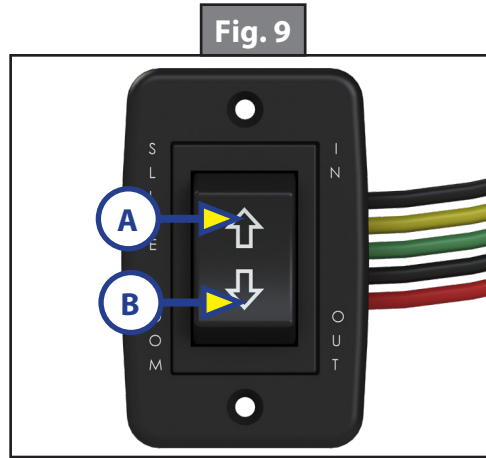
9. Level the unit.
10. Remove transit bars (if so equipped).

Extending Slide-Out Room

1. Ensure the battery is fully charged and hooked up to the electrical system.
2. If using a switch to activate the slide-out room, press and hold the IN/OUT switch in the OUT (Fig. 9B) position until room is fully extended and stops moving.

NOTE: Only hold OUT switch until room stops.

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



Retracting Slide-Out Room

1. Make sure the battery is fully charged and hooked up to the electrical system.
2. Press and hold IN/OUT switch in the IN position (Fig. 9A) until room is fully retracted and stops moving.

NOTE: Only hold IN switch until room stops.

3. Release the switch to lock the room into position.
4. Reinstall the transit bars (if so equipped).

Troubleshooting

When something restricts room travel, system performances will be unpredictable. It is very important that slide rails, rack and pinion be free of any form of debris or other type 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 by testing under a load to get an accurate reading. Make sure there are no visible signs of external damage to the motor or assembly or rails and that the motor is wired properly and all connections are secure.

Room extension adjustments are made by repositioning the stop blocks on both ends of the hat channel.

During troubleshooting, changing, altering or adjusting one component, it may affect another. Make sure any changes do not create a new problem.

Switch Related Concerns

If room moves opposite from what the switch plate indicates, reverse the wires from the motor on the back of the switch. Wire size must be 10 AWG minimum, see the Wiring Diagram.

- Black wires are ground
- Yellow wire is "out" or extend
- Green wire is "in" or retract
- Red wire is power

Motor Unit Concerns

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. Batteries must be tested under a load to get an accurate reading.

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 wall switch. Does the meter indicate 12V DC? If no, see step 2; if yes, see step 3.
2. If no, inspect all connections between battery and switch. Inspect any and all breakers, relays and fuses. Recheck switch terminals (step 1).
3. 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.

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

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

Troubleshooting Chart

Use the Troubleshooting Chart as necessary to assist in the identification and resolution of other possible post-installation concerns.

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.
	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.
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.	Gear drive assembly needs replaced.
	Teeth on inner rail broken and worn.	Gear drive assembly needs replaced.

⚠ WARNING

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

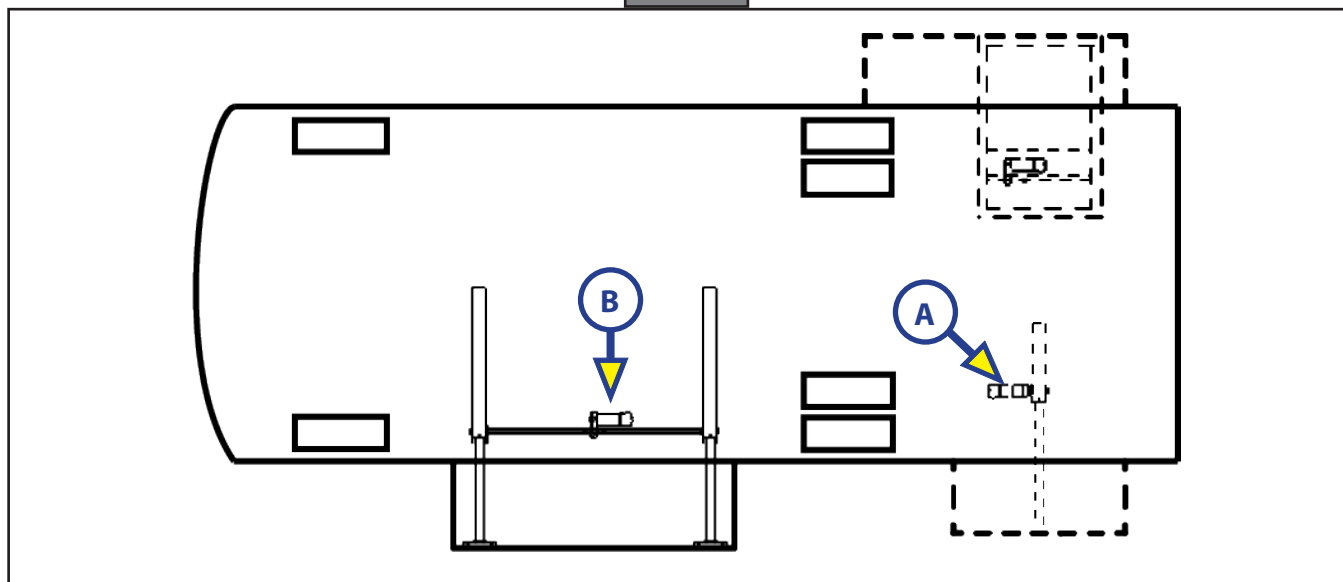
⚠ CAUTION

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

In the event that the slide-out room does not move when the user interface is activated, the Above Floor Slide-out motor is equipped with a manual override that allows extension / retraction of the slide-out room. A $\frac{3}{4}$ " socket or wrench may be used to retract the slide-out room. Check the Troubleshooting section for possible solutions before using the manual override.

1. Locate the unit's 12V DC battery disconnect and turn the switch to the OFF position.
2. Locate the slide-out motor. The motor will be mounted to the rail assembly (Fig. 10A) or to the cross shaft, in between the slide out rails (Fig. 10B).

Fig. 10



⚠ WARNING

When the motor brake is released, the motor output shaft is not locked into place and can be moved by the weight of the slide-out room. If the slide-out room has been manually retracted, be sure to return the motor brake lever to its NORMAL ENGAGED POSITION in order to seal and lock the slide-out room into position. See Figure 12A for the normal engaged position of brake release lever.

3. Disconnect the motor leads.
 4. With your thumb, depress the brake release lever on the side of the rubber boot cover (Fig. 11A). Then, rotate the brake release lever counter-clockwise to release the motor brake (Fig. 12A).
- NOTE:** Do **NOT** remove rubber boot cover. Removal of rubber boot cover will void manufacturer's warranty.
5. Locate the manual $\frac{3}{4}$ " hex override coupler on the output shaft of the motor (Fig. 11B).

Fig. 11

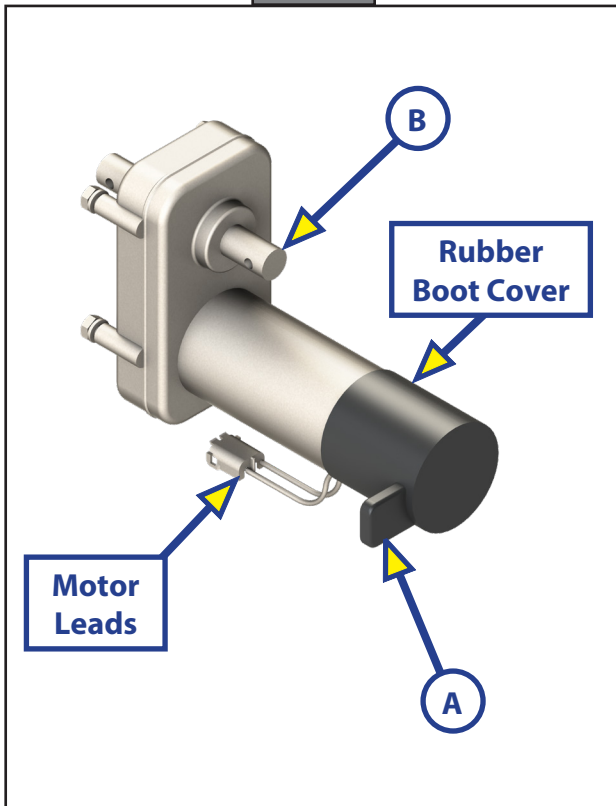
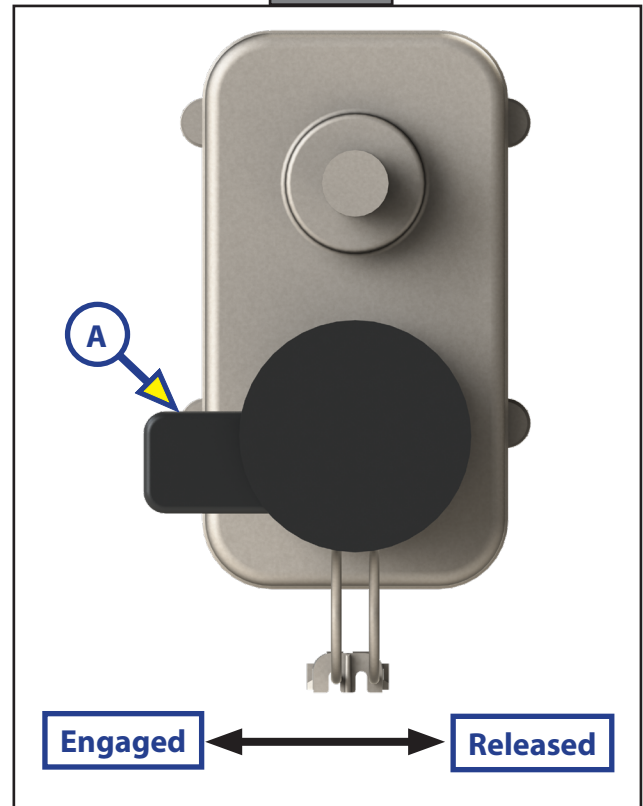


Fig. 12

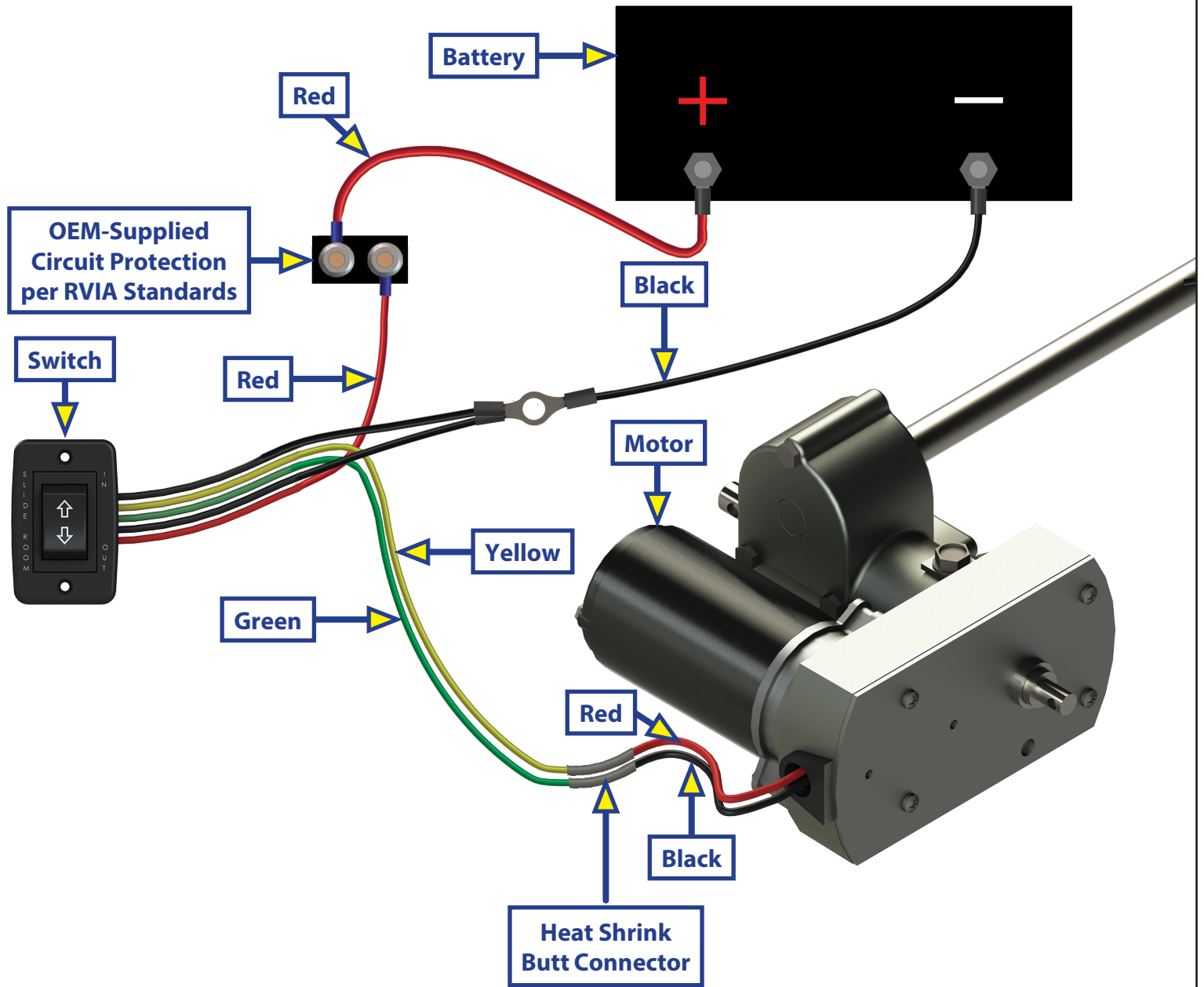


6. If the motor is located between the rails of the slide out system, the override coupler will be located on the side of the front or rear rail assembly.
7. Using a $\frac{3}{4}$ " wrench or ratchet, completely crank in the slide-out room. If access to the override coupling is limited, an adjustable wrench can be used to turn the square drive/cross tube on the system.
8. Check to make sure that you have a good seal.
9. Engage the brake lever by rotating clockwise (Fig. 12A).
10. Reconnect the motor leads.

Wiring Diagram

10 AWG Minimum

NOTE: Make sure the OEM-supplied heat shrink butt connectors are appropriate for the gauge of wire used.





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