



PG ABOVE FLOOR
SLIDE-OUT
OEM INSTALLATION MANUAL

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

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 "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

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 (Fig. 1A) are intact and that there are no missing/damaged parts.

⚠ CAUTION

When installing systems that are secured to the floor via screws do not rely on wood-only mount. The systems should be screwed or bolted into steel or aluminum material under the floor for solid anchor points.

NOTE: Some dual-arm versions of the PG Above Floor Slide-Out feature a follow side assembly (Fig.2A) that has a stepped bracket which allows the assembly to be mounted on top of a wheel well (Fig. 2B). Inspect the follow arm of the assembly and if wheel well bracket is present, follow the instructions for Installing the Dual Arm Assembly with Wheel Well Bracket in this manual.

Installing the Single Arm Slide-Out Assembly Onto Slide Opening

1. Center the assembly in the slide-out opening.

NOTE: Slide opening sizes and styles are determined by the OEM.

2. Using the four pre-drilled holes in the main body floor mounting brackets (Fig. 3A), fasten the assembly to the unit's main floor using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers.

Fig. 1



Fig. 2

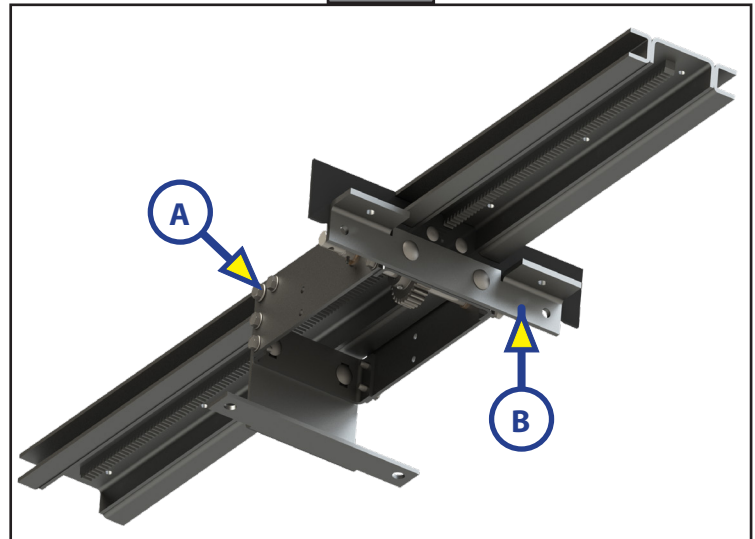
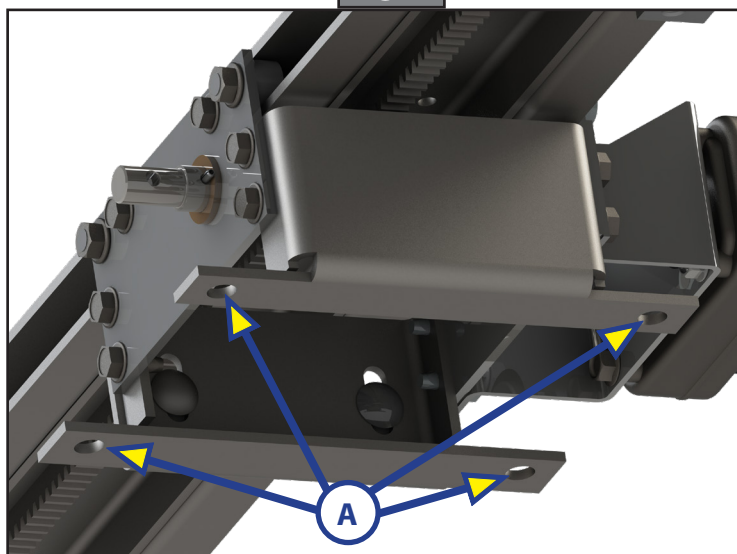


Fig. 3



Installing the Dual Arm Slide-Out Assembly With Wheel Well Bracket Onto Slide Opening

NOTE: Slide opening sizes and styles are determined by the OEM.

1. Space arms as evenly as possible from each end of the room. Keep in mind locations of storage and seating positions.
2. Align the drive arm assembly and follow arm assembly so they are parallel and the wheel well bracket on the follow arm assembly seats flush against the corner of the wheel well.
3. For the drive arm assembly, fasten the assembly to the unit's main floor using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers through the four pre-drilled holes in the main body floor mounting brackets (Fig. 4A).
4. For the follow arm assembly, fasten the floor mounting bracket on the back of the assembly to the unit's main floor through the two pre-drilled holes in the bracket using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers.
5. On the front of the follow arm assembly, fasten the wheel well mounting bracket to the wheel well on the top (Fig. 5A) and side (Fig. 5B) of the bracket through the four pre-drilled holes in the bracket using OEM-supplied $\frac{3}{8}$ " screws and $\frac{3}{8}$ " washers.

Fig. 4

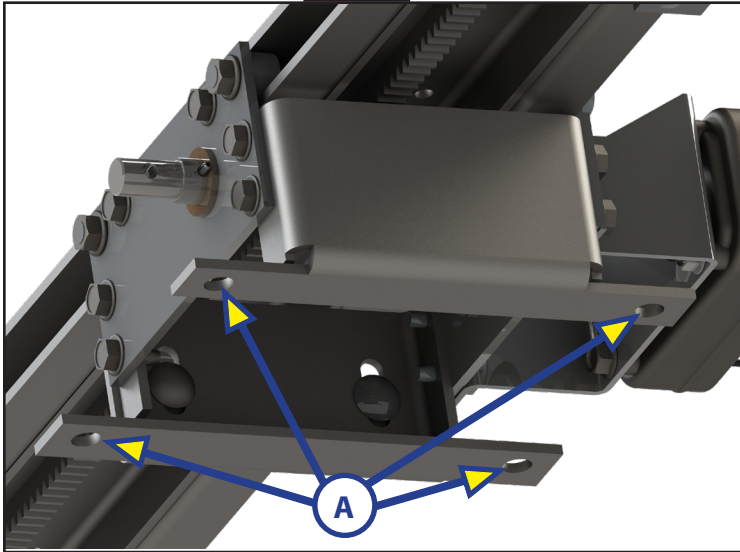
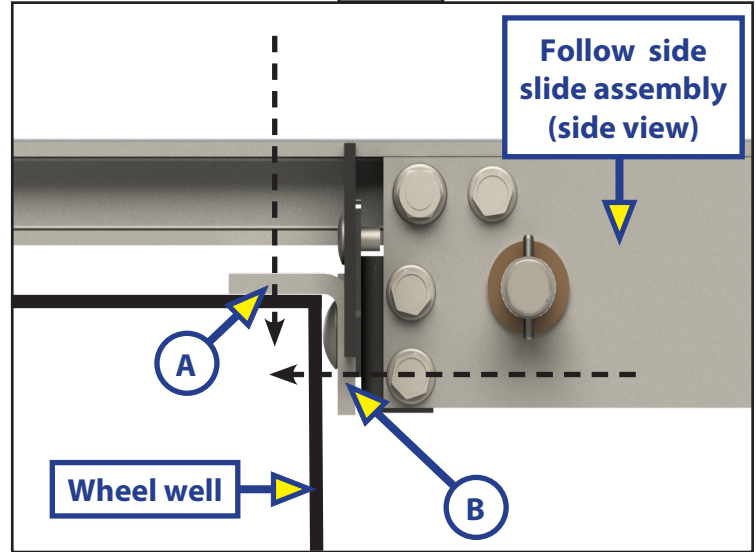


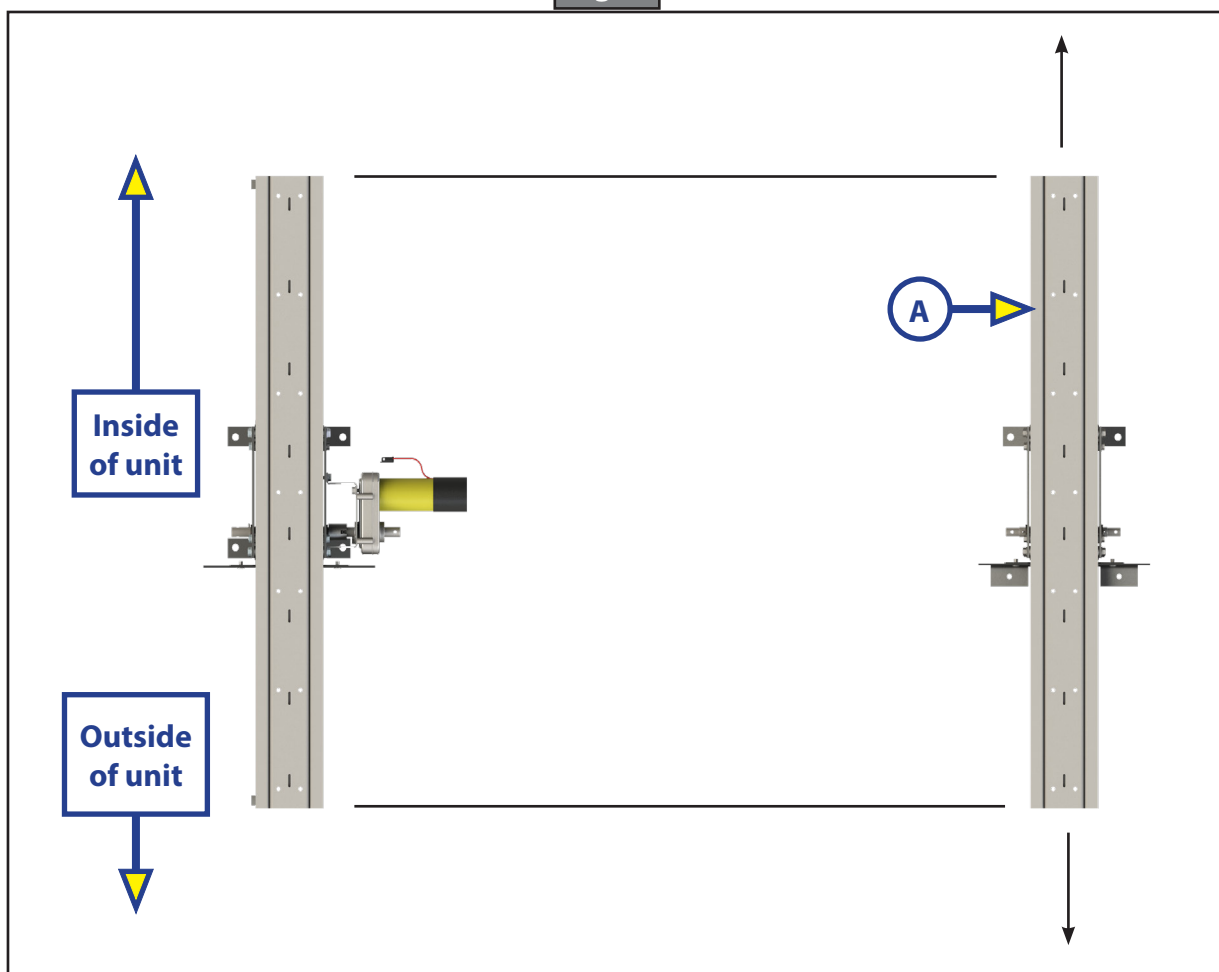
Fig. 5



6. Position the follow slide arm slide rail (Fig. 6A) by sliding it forward or backward to match the position of the drive side slide rail. This will sync (or "time") the rails together (Fig. 6).

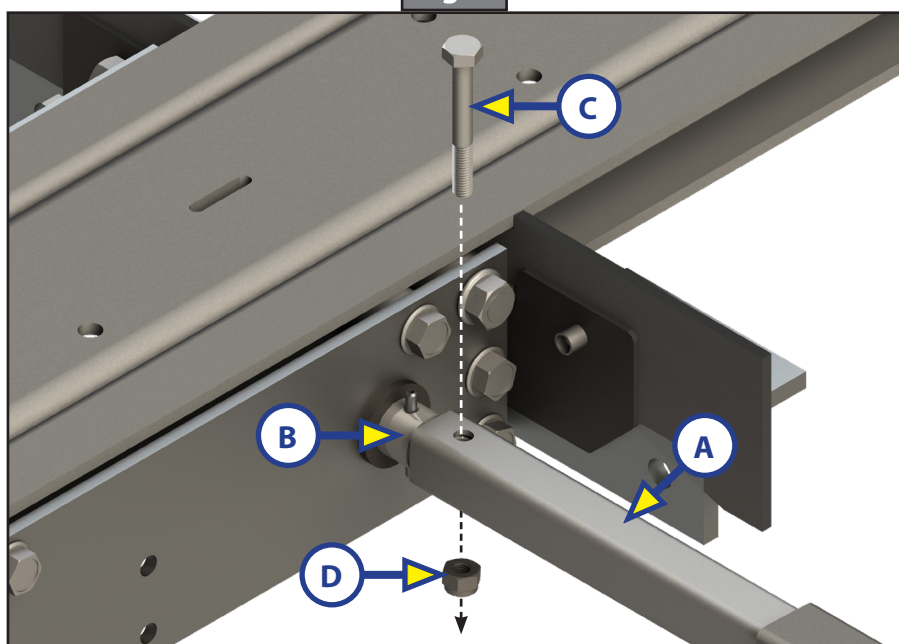
NOTE: The drive shaft should always be oriented nearest to the side wall itself.

Fig. 6



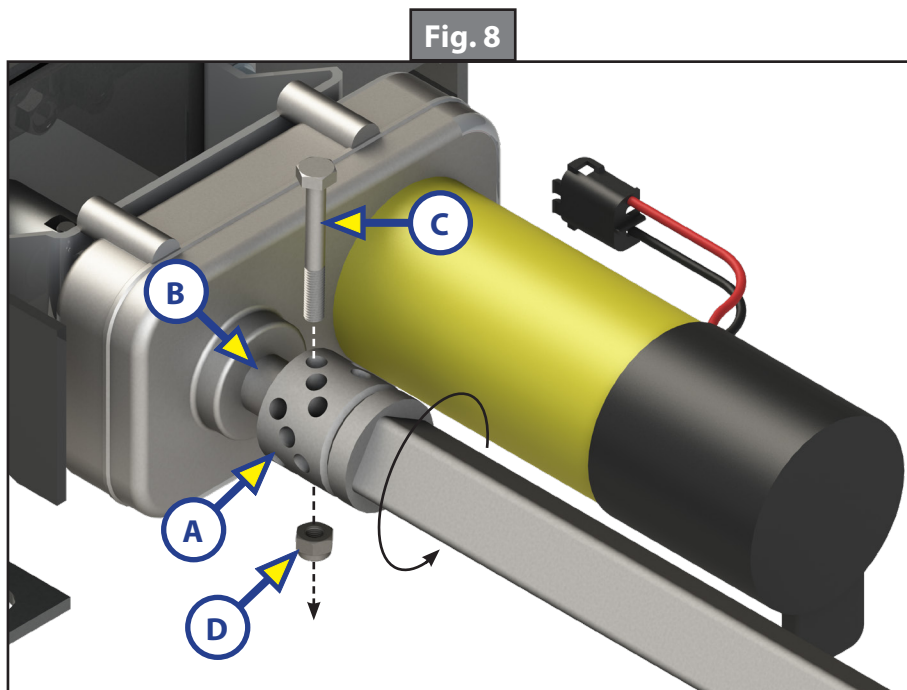
7. Slide the inner x-shaft (Fig. 7A) over the follow slide arm assembly's gear shaft (Fig. 7B) so that the holes align. Secure with a $\frac{1}{4}$ " - 20 bolt (Fig. 7C) and nylon locking nut (Fig. 7D).

Fig. 7



8. Slide the outer x-shaft coupling (Fig. 8A) over the motor drive shaft (Fig. 8B) on the drive side slide assembly. Adjust the coupling, shaft, and follow side assembly as needed by rotating them to time the arms of the slide. Secure the coupling to the shaft using a $\frac{1}{4}$ " - 20 bolt (Fig. 8C) and nylon locking nut (Fig. 8D).

NOTE: It is critical that the drive arm rail and follow arm rail be timed before room installation so that the slide-out room extends and retracts evenly.



Mounting and Switch Wiring

1. Determine where to mount the switch (Fig. 9). It can be mounted anywhere inside the unit. The mounting location must be watertight.
2. Install the switch per OEM recommendations using two OEM-supplied #8 x 1" screws.
3. See the Wiring Diagram section in this manual for wiring instructions.

Fig. 9



Slide Room Installation

1. Extend hat channels halfway using the switch.

NOTE: For dual arm slides make sure hat channels (slide rails) are timed, and cross shaft is installed linking the drive arm and follow arm gear shafts.

2. Place room on top of the hat channel(s). Center room in the slide opening.
3. Locate the two exterior holes (Fig. 10A) in the hat channel. Secure the room to the hat channel using OEM supplied fasteners. For dual arm assemblies, repeat on the other hat channel.

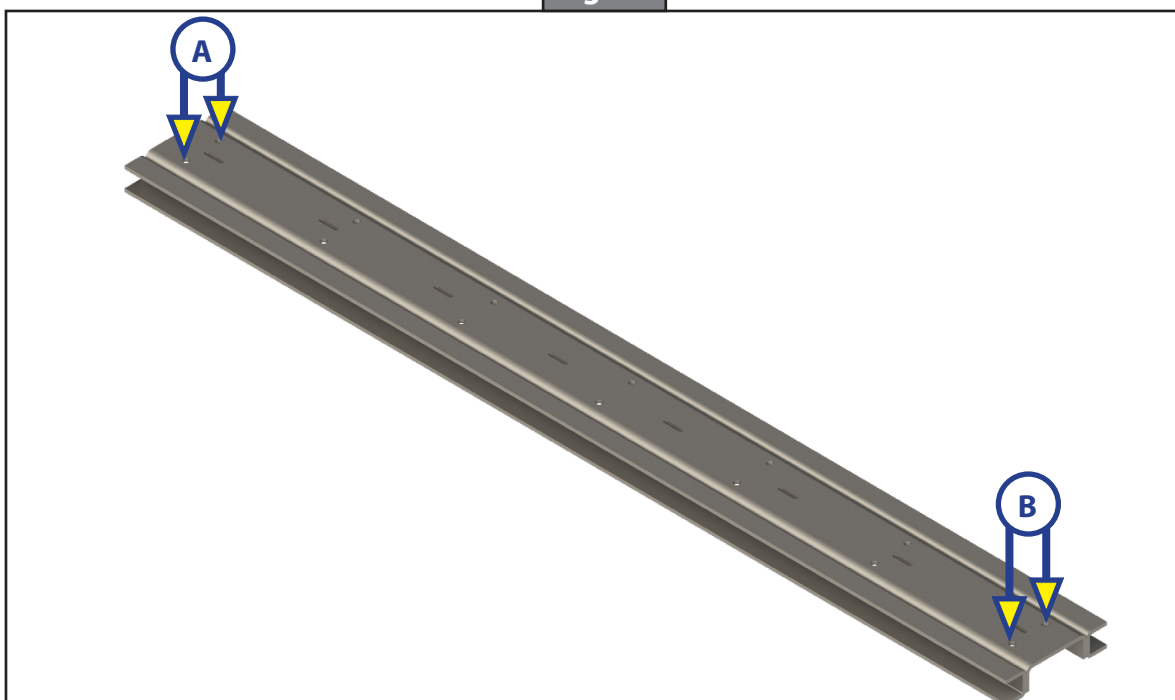
NOTE: Lippert recommends carriage bolt or lag bolt, determined by OEM.

4. Locate the two interior holes inside the unit (Fig. 10B) in the hat channel. Secure the room to the hat channel using OEM supplied fasteners. For dual arm assemblies, repeat on the other hat channel.

NOTE: Ensure the T-molding and fascia are installed prior to operating the slide-out (determined by OEM).

5. Use a hex key to set stop blocks (refer to the Room Adjustment section of this manual in order to achieve proper seal in and out).

Fig. 10

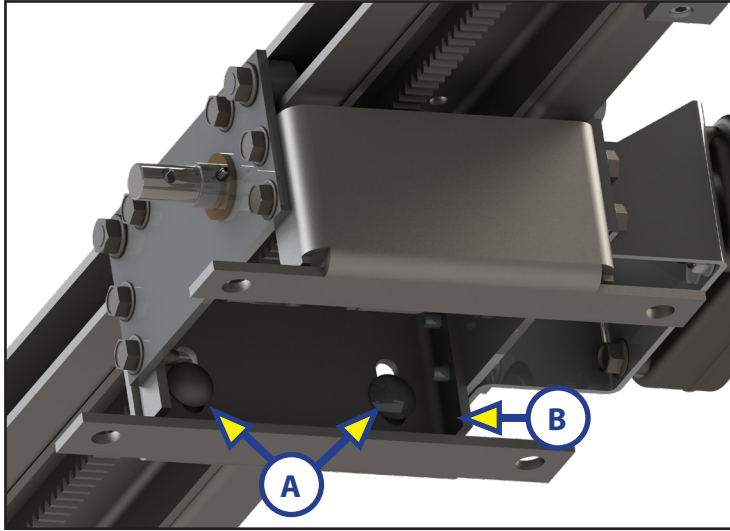


Room Adjustment

For vertical adjustment, do as follows:

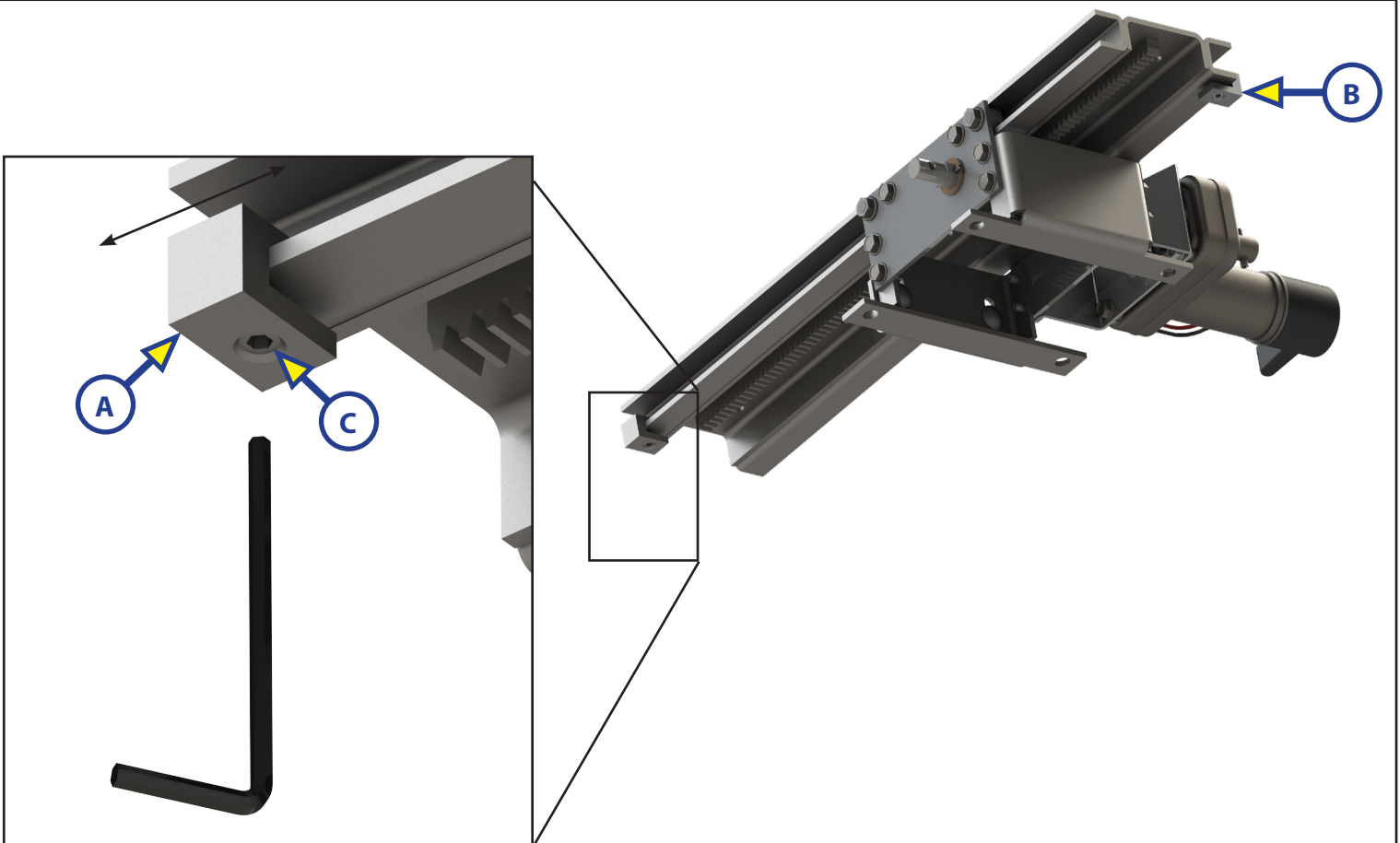
1. Loosen the two carriage bolts (Fig. 11A) just enough to release tension on the interior mounting plate (Fig. 11B).
2. Adjust the room to desired location.
3. Tighten the two carriage bolts again before operating room.

Fig. 11



For "out" stop (Fig. 12A) or "in" stop (Fig. 12B) adjustment:

1. Loosen the set screw (Fig, 12C) in the stop block.
2. Adjust the stop block to desired location.
3. Tighten the set screw again.

Fig. 12

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:

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).

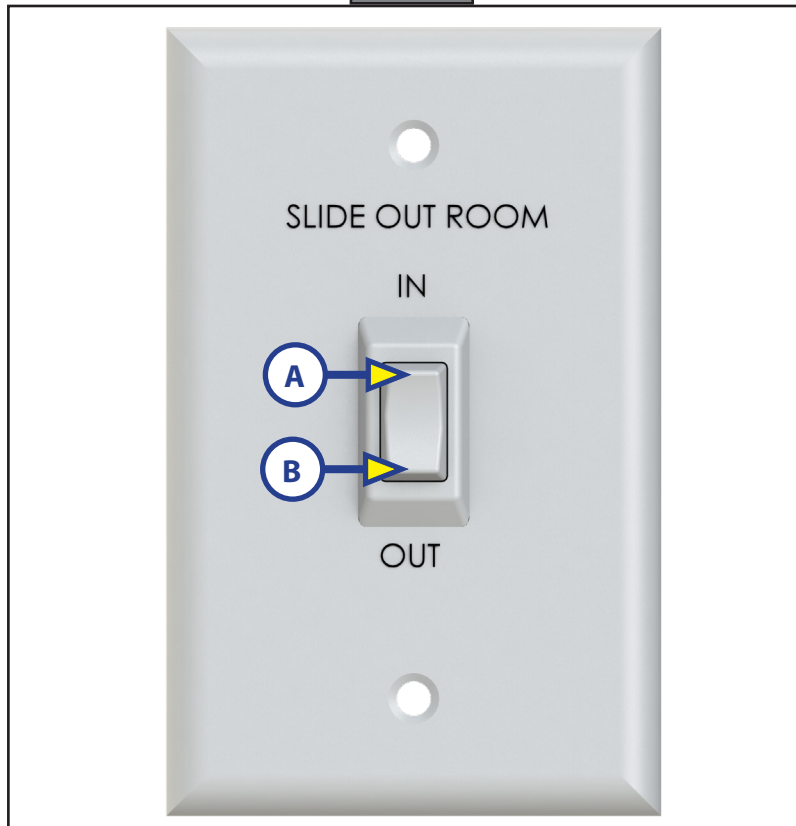
Extending Slide-Out Room

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. 13B) 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.

Fig. 13



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. 13A) 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 performance 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 concern.

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.
Motor runs but room does not move.	Motor turns, room does not move.	Gear key is broken or lost. Replace gear drive assembly.
	Motor gets power, but brake does not release.	Replace motor/brake 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.
Motor 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.

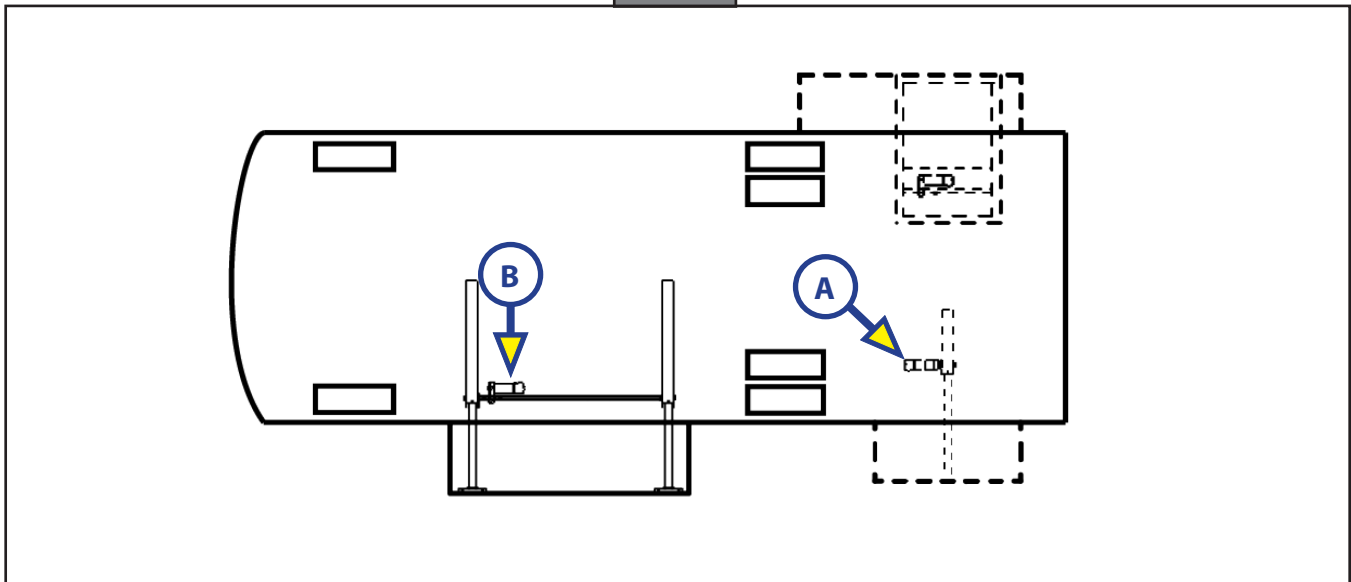
⚠ CAUTION

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 switch is activated, the PG 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. 14A) or, on a dual arm assembly, on the drive side assembly at the end of the x-shaft (Fig. 14B).

Fig. 14



⚠ 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 16A 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. 15A). Then, rotate the brake release lever counter-clockwise to release the motor brake (Fig. 16A).
- 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. 15B).

Fig. 15

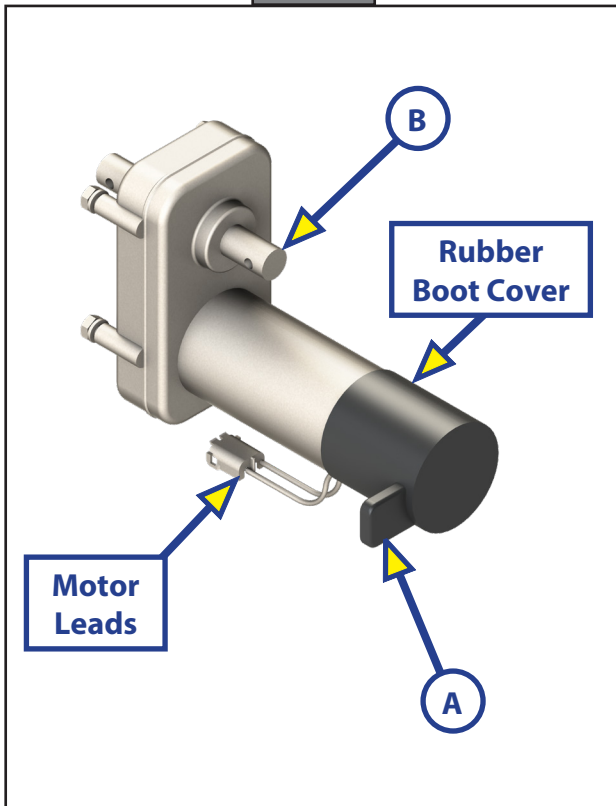
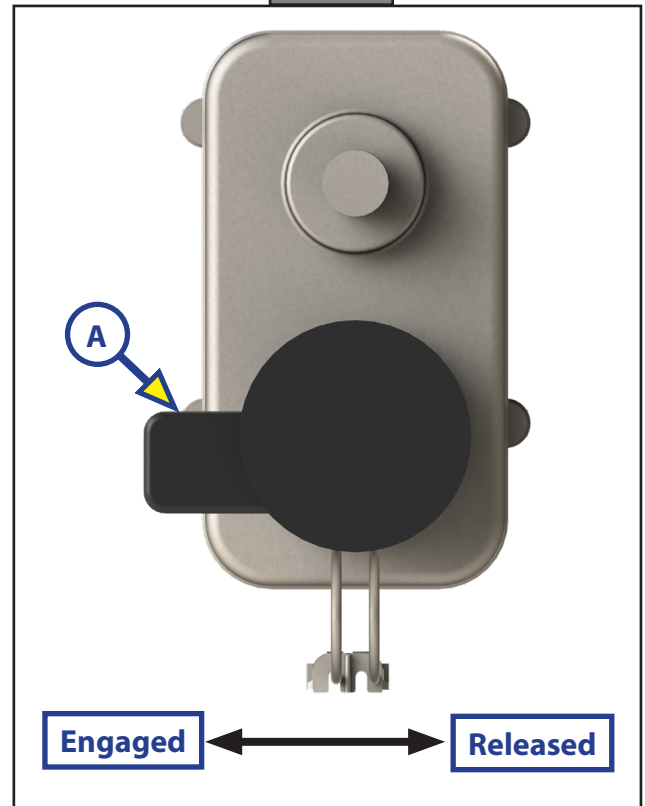
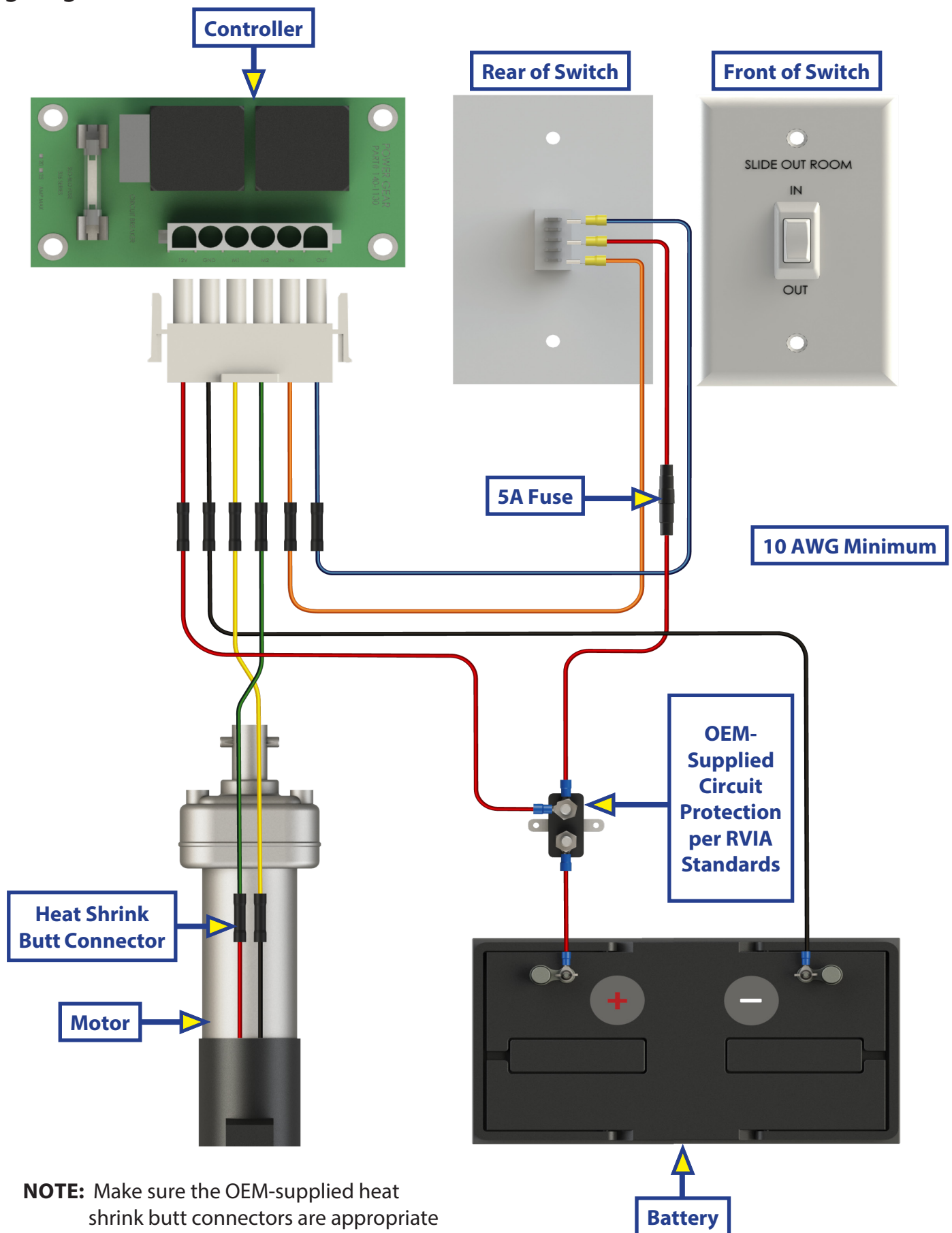


Fig. 16



6. On a dual arm assembly, the manual override is located on the drive assembly opposite the motor.
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 for a good seal.
9. Engage the brake lever by rotating clockwise (Fig. 16A).
10. Reconnect the motor leads.

Wiring Diagram



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

Notes

[illegible]



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