



M-TEC DOUBLE RAIL
ABOVE FLOOR SLIDE-OUT
OWNER'S MANUAL

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Introduction

The M-Tec Double Rail 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 to obtain replacement parts. The M-Tec Slide-out System is intended for the sole purpose of extending and retracting the slide-out room.

Additional information about this product can be obtained from [lci1.com/support](https://support.lci1.com/support) or by downloading the free LippertNOW app. The app is available on Apple App Store® 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/above-floor-m-tec-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

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 Lippert limited warranty.

The M-Tec Double Rail 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 for which it is designed may result in severe product or property damage and/or serious personal injury or death.

WARNING

The "WARNING" symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury and/or severe product or property damage, including voiding of the component warranty, 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

Depending on the nature of the task, always wear appropriate personal protection equipment (PPE) when performing the procedures set forth in this manual.

CAUTION

Always disconnect the battery from the system prior to service. Failure to disconnect the battery can cause electrical feedback through the motor, causing serious damage to the system as well as voiding the warranty.

CAUTION

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

Preparation

Prior to slide-out operation:

1. Make sure the unit is appropriately supported on solid, level ground.
2. If applicable, make sure the unit's parking brake is engaged.



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3. Make sure all persons, pets and obstructions are clear of the unit prior to slide-out room actuation.
4. Keep hands and other body parts away from slide-out mechanisms during actuation.

Operation

Depending on unit configuration, the slide-out room may be operated by a rocker switch (Fig. 1) mounted on the unit's wall located close to the entry door.

If operating a motorized coach (Class A and C; Gas and Diesel):

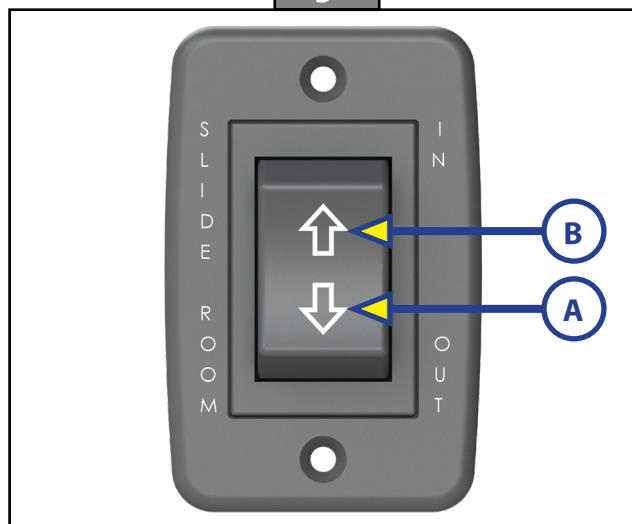
1. Make sure the PARKING BRAKE is engaged.
2. Make sure the transmission is in PARK.
3. Make sure the ignition is off.
4. Make sure the battery is fully charged and connected to the electrical system.
5. Make sure the slide-out's path is clear of people, pets and objects before and during operation of the slide-out.
6. Keep clear of the slide rails when the slide-out is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.
7. Keep items in compartment clear of the slide-out motor mechanisms and wiring to prevent interference of operation.

Extending Slide-Out

1. Level the unit.
2. If equipped, remove transit bars.
3. Press and hold the IN/OUT switch in the OUT position (Fig. 1A) until the slide-out is fully extended and the motor clutches.
4. Release the switch, which will lock the slide-out into position.

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

Fig. 1



Retracting Slide-Out

1. Verify the battery is fully charged and hooked up to the electrical system.



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2. Press and hold the IN/OUT switch in the IN position (Fig. 1B) until the slide-out is fully retracted, stops moving and the motor clutches.
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

The M-Tec Double Rail Above Floor Slide-out system has been designed to require very little maintenance. The system has been extensively tested 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:

1. The slide-out system requires full battery current and voltage. The battery must be maintained at full capacity.
2. 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.

NOTE: 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 concerns are due to bad ground connections.

3. If applicable, check motor leads under the unit's chassis and make sure they are in good condition.

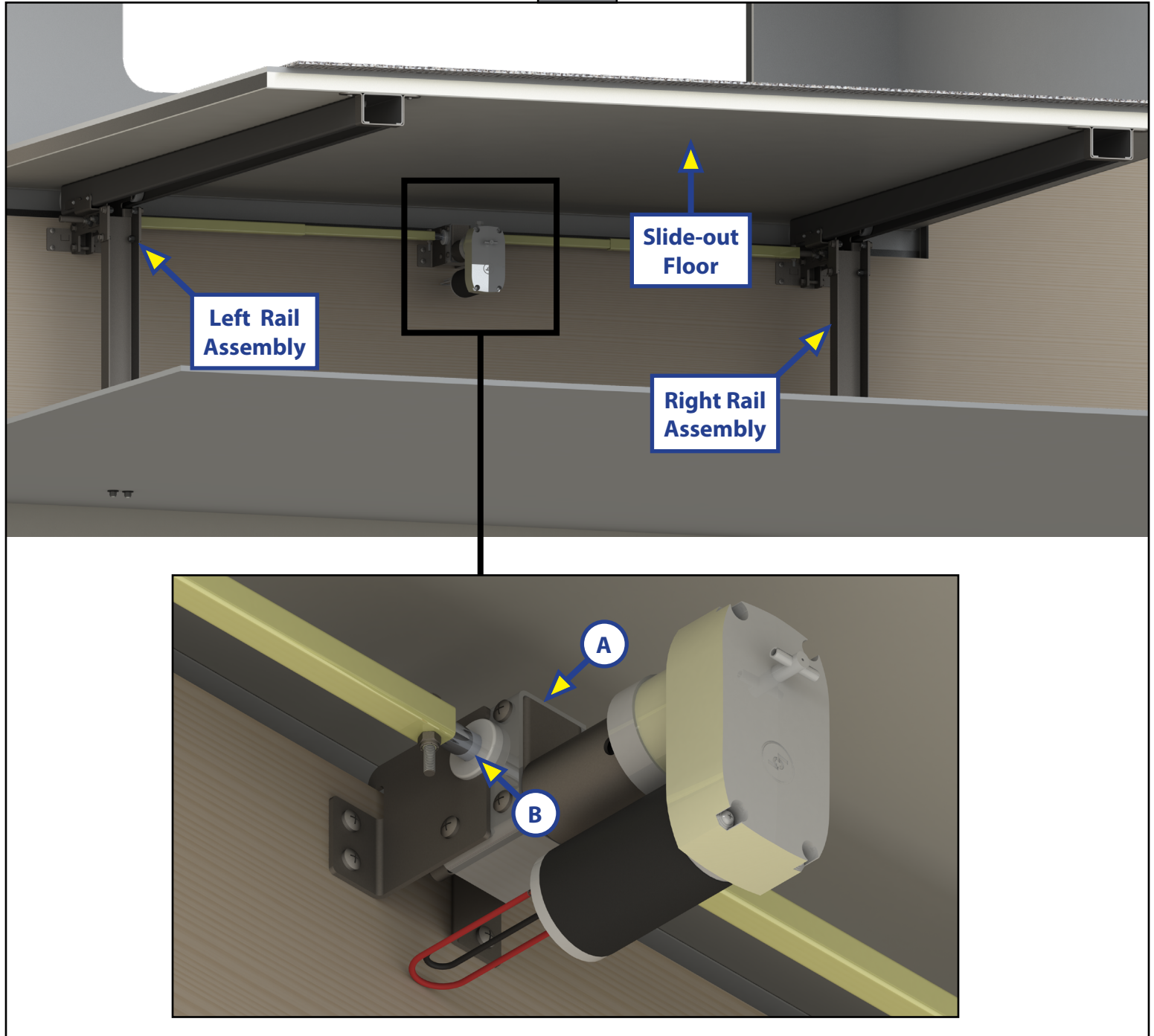
NOTE: These connections are subject to damage from road debris.

Mechanical

Inspect the slide-out system for:

1. Any visible signs of external damage before and after movement of the slide-out room.
2. Inspect the inside and outside of the slide-out room and the unit.
3. For long-term storage, it is recommended that the slide-out room be closed (retracted).
4. Visually inspect the slide-out floor and drive box assembly (Fig. 2A).
 - A. Check for excess build-up of dirt or other foreign material—remove any debris that may be present.
 - B. If the system squeaks or makes any noise, it is permissible to apply a coat of dry lubricant to the drive shaft (Fig. 2B) and roller areas (rail assemblies). Do **NOT** use grease.

Fig. 2



Troubleshooting

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.

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.
	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 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 room inside or outside.	Check for and clear obstruction.
Room chatters during operation.	Teeth on gear drive broken or worn.	Gear drive assembly needs replacing.
	Teeth on inner rail broken and worn.	Gear drive assembly needs replacing.

Resources Required

- 3/4" wrench (stop bracket and vertical brace nuts)
- Screwdriver
- Crank handle

Slide-out Adjustment

If a major alignment/adjustment to the slide-out system is required, contact the Lippert Care Center.

If a minor alignment/adjustment to the slide-out system is required, do as follows:

1. Make sure the battery is fully charged and connected to the electrical system.

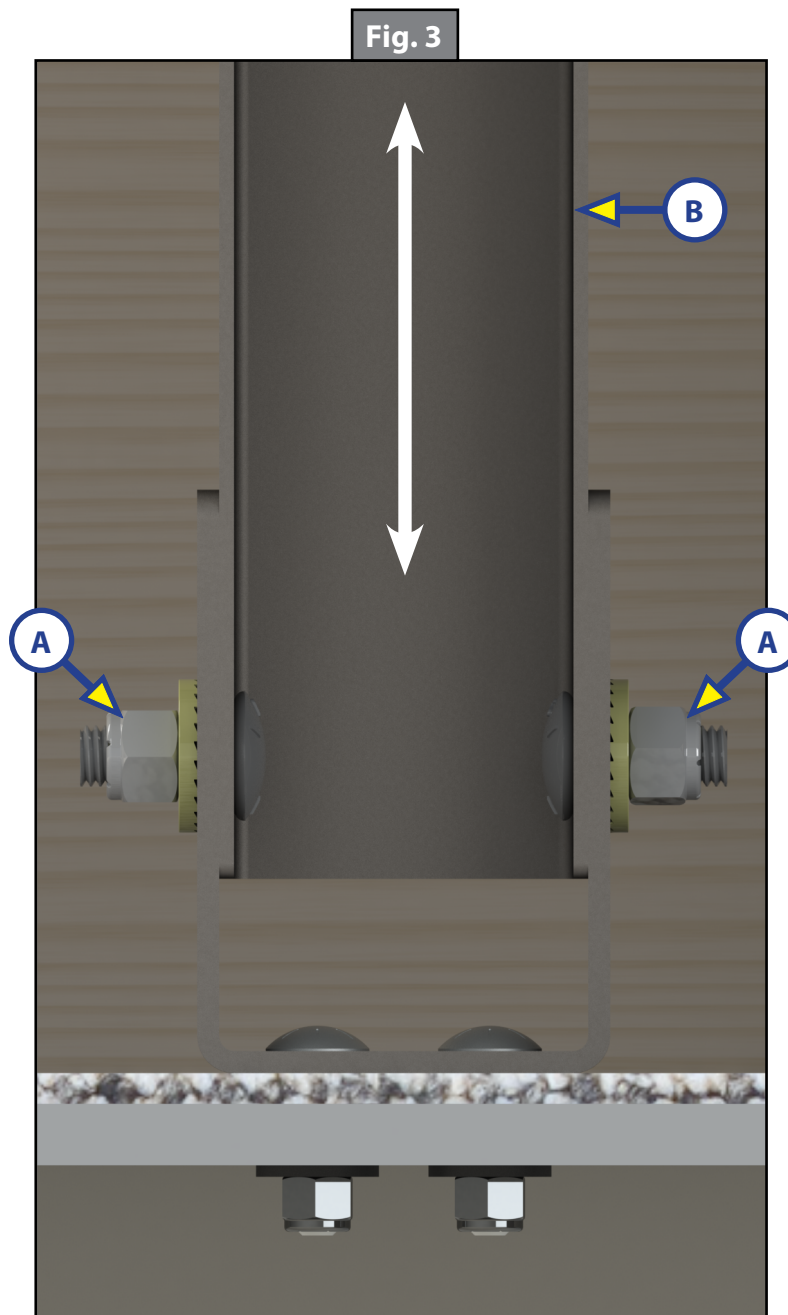
⚠ CAUTION

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2. Press and hold the OUT switch (Fig. 1A) until the slide-out is fully extended, stops moving and the motor clutches.

NOTE: Only hold the OUT switch until the slide-out stops.

3. Release the switch to lock the slide-out into position.
4. Inspect all internal sides of the fascia (interior molding) and all exterior sides of the slide-out room for indications of rubbing and scrape marks. If such interference marks are present, adjust the slide-out system using the following steps.
 - A. Loosen appropriate fasteners.
 - B. Set the slide-out room's sides parallel to the fascia's sides.
 - C. Tighten all loose fasteners.
 - D. Make sure the slide-out room is level.
 - I. Using a 3/4" wrench, loosen the carriage bolts (Fig. 3A) on the vertical brace (Fig. 3B) just enough to release tension on the wall mounting plate.



- II. Vertically adjust the slide-out room to level.
- III. Tighten the carriage bolts before operating the slide-out system.

⚠ CAUTION

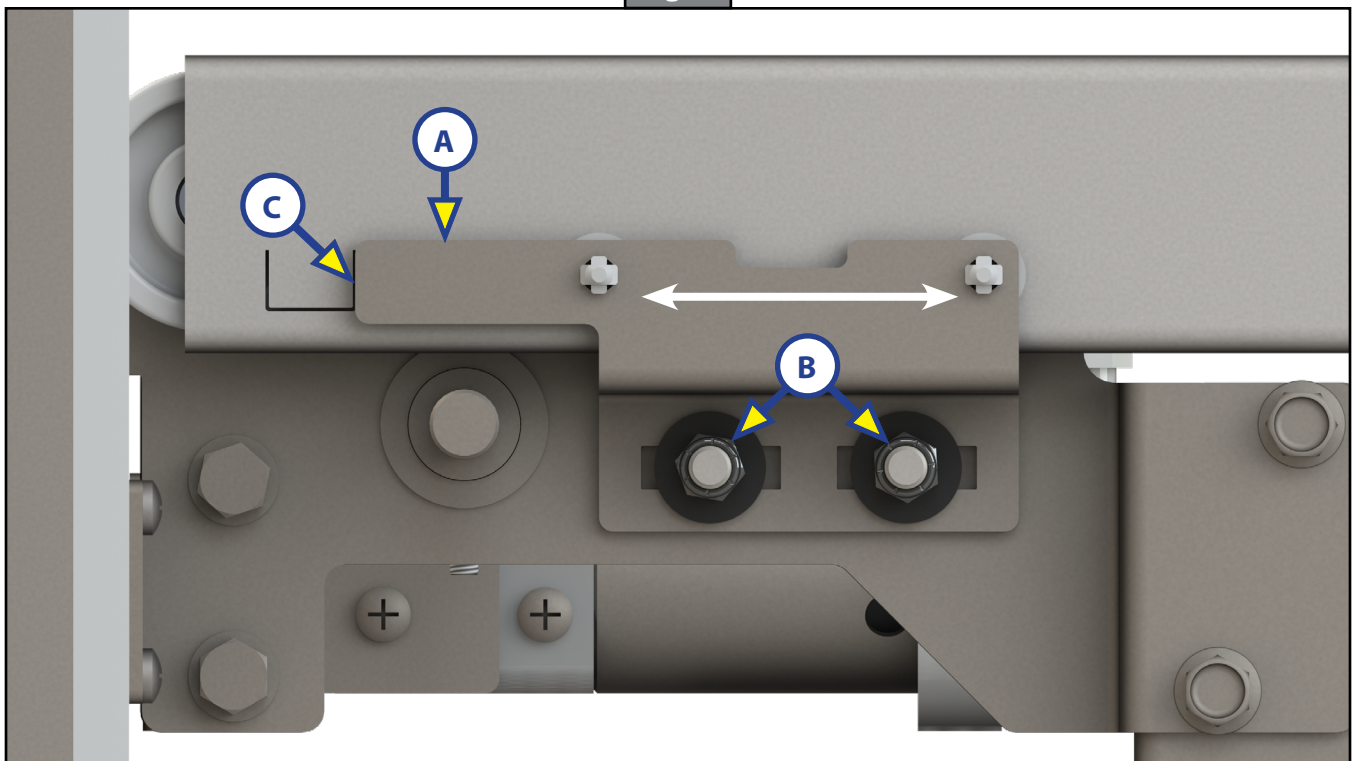
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- E. Alternate between pressing and holding the IN (Fig. 1B) and OUT (Fig. 1A) switches to run the slide-out room in and out while inspecting for interference.
 - I. If interference still exists, repeat slide-out adjustment steps until there is no more interference.
 - II. When the slide-out room moves freely (no interference), retract the slide-out room.
 - a. Press and hold the IN switch (Fig. 1B) position until the slide-out room is fully retracted, stops moving and the motor clutches.
 - b. Release the switch to lock the slide-out room into position.
- 5. Inspect the exterior T-molding of the slide-out room. If the fully retracted travel of the slide-out room appears to be putting pressure on the T-molding, the retract (in) stop bracket needs to be adjusted (Fig. 4A).

NOTE: The stop brackets shut down the slide-out system, protecting the drive shafts, shaft bolts and gears.

- A. Extend the slide-out room just enough to relieve pressure on the T-molding while still maintaining a good seal against the unit's outside wall.
- B. Using a 3/4" wrench, loosen the stop bracket nuts (Fig. 4B) on both sides of each slide rail assembly.
- C. Slide each stop bracket along its slots until each stop bracket touches against its rail's stop tab (Fig. 4C).
- D. Fully tighten all stop bracket nuts.

Fig. 4



Syncing the Slide-Out

When the two opposing sides of the slide-out rail assemblies are misaligned—out-of-sync—an adjustment can be made to realign—sync—the slide-out rail assemblies by performing a manual adjustment to the slide rail stop brackets.

The syncing of the slide-out system is made by adjusting the slide rail stop brackets (Fig. 4A).

1. Retract the slide-out room until it is fully retracted, stops moving and the motor clutches.

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.

2. Disconnect power to the slide-out system. See Wiring Diagram.
3. Inspect the seal between the T-molding and outer surface of the unit's wall.
 - A. Where there is a good seal (no gap), inspect the "in" stop on the slide rail to verify that it is pressed against the stop bracket.
 - B. Where there is a poor seal (gap), inspect the "in" stop on the slide rail to verify that it is **NOT** pressed against the stop bracket. This is the slide rail that needs to be synced.
 - I. Use a 3/4" socket or wrench to loosen the stop bracket nuts (Fig. 4B) on both sides of the stop bracket.
 - II. From outside of the unit, push the side of the slide-out room that has the gap until the seal between the T-molding and outer surface of the unit's wall matches the good seal on the opposite side of the slide-out room.
 - III. From inside of the unit, slide the stop bracket forward until it butts up against the "in" (retract) stop (Fig. 4C).
 - IV. From outside of the unit, verify that the slide-out room's T-molding has still maintained an all around good seal, then tighten all of the nuts on the stop bracket.
4. Reconnect power to the unit.

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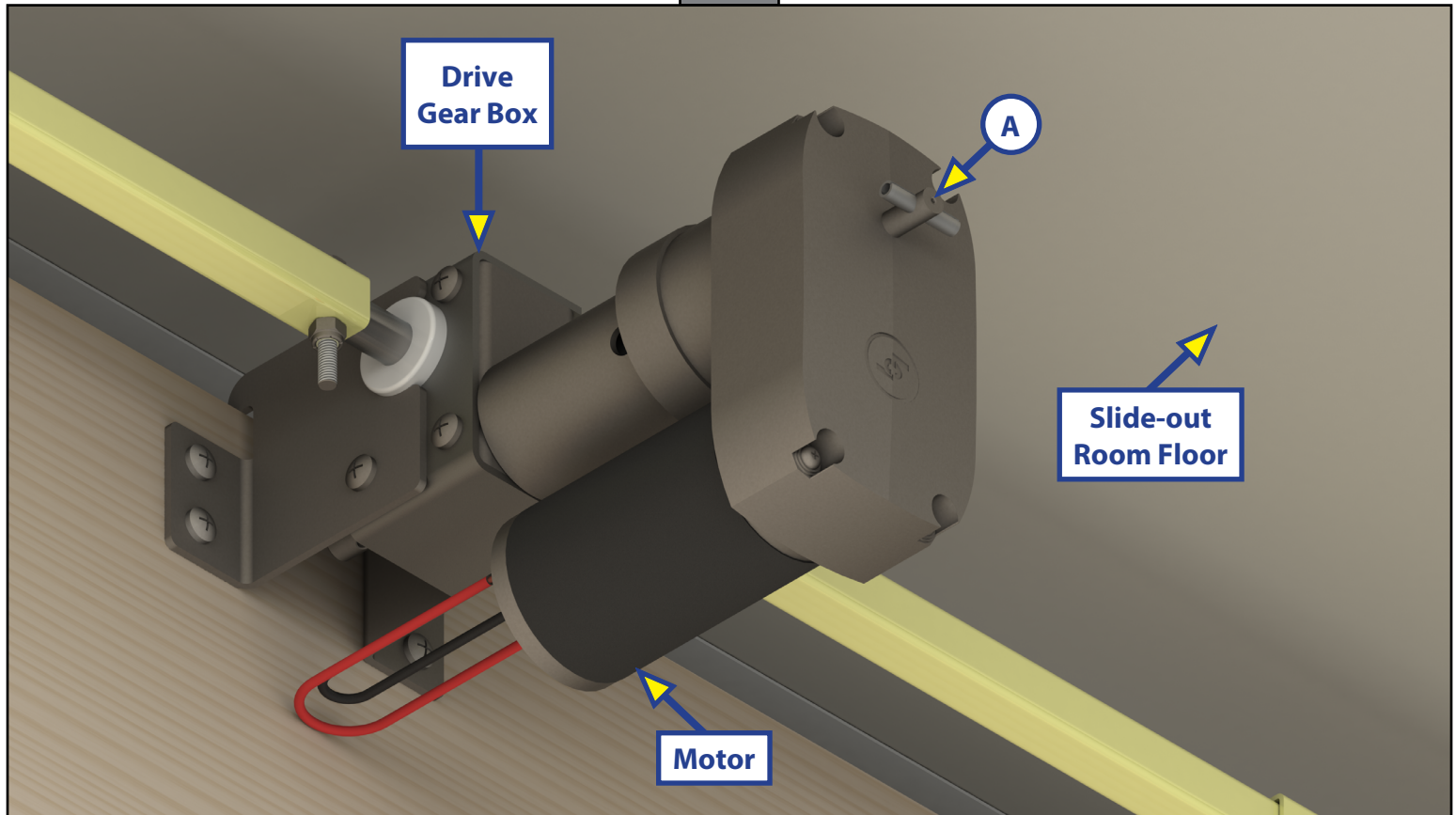
5. Use the momentary switch to extend (out) (Fig. 1A) and retract (in) (Fig. 1B) the slide-out system a few times to make sure the slide-out system is synced.
6. If slide rails remain out-of-sync, repeat steps 1-5 until both slide rails become synced and the slide-out room operates normally.

Manual Override

In the event of loss of power, the M-Tec Double Rail Above Floor Slide-out system can be manually operated as follows:

1. Before accessing the power unit, make sure power to the system has been disconnected.
See Wiring Diagram.
2. From inside the unit, access the motor's manual override coupling (Fig. 5A) located under the slide-out room floor.
3. Using the crank handle (Fig. 6A), engage the slotted end of the crank handle (Fig. 6B) over the override pin (Fig. 6C) in the coupling.

Fig. 5

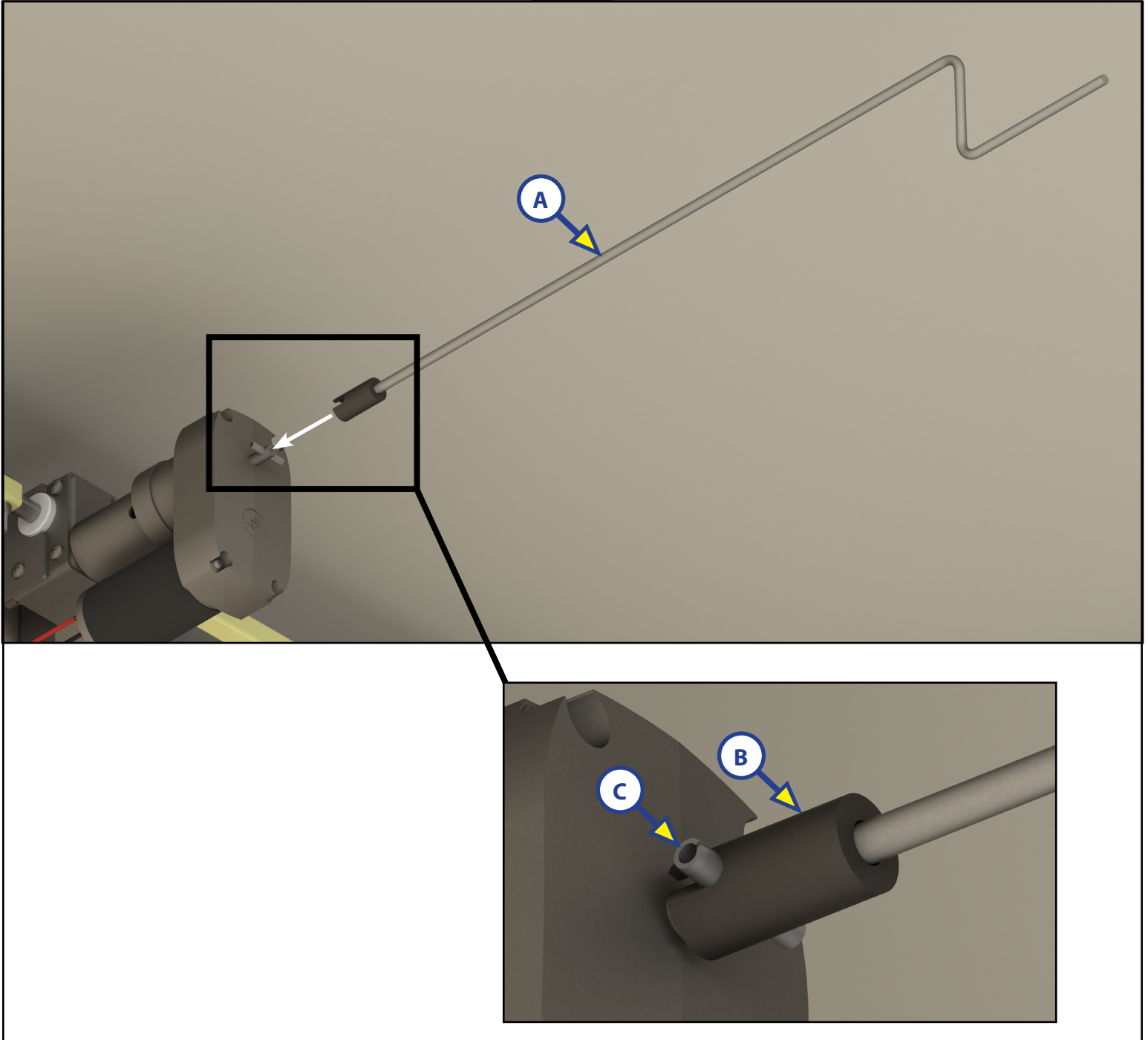


⚠ CAUTION

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

4. Rotate the crank handle to manually extend or retract the slide-out room.
5. When the slide-out room reaches its extended (out)/retracted (in) position, do **NOT** continue to manually extend/retract the slide-out system or damage to the system can occur.

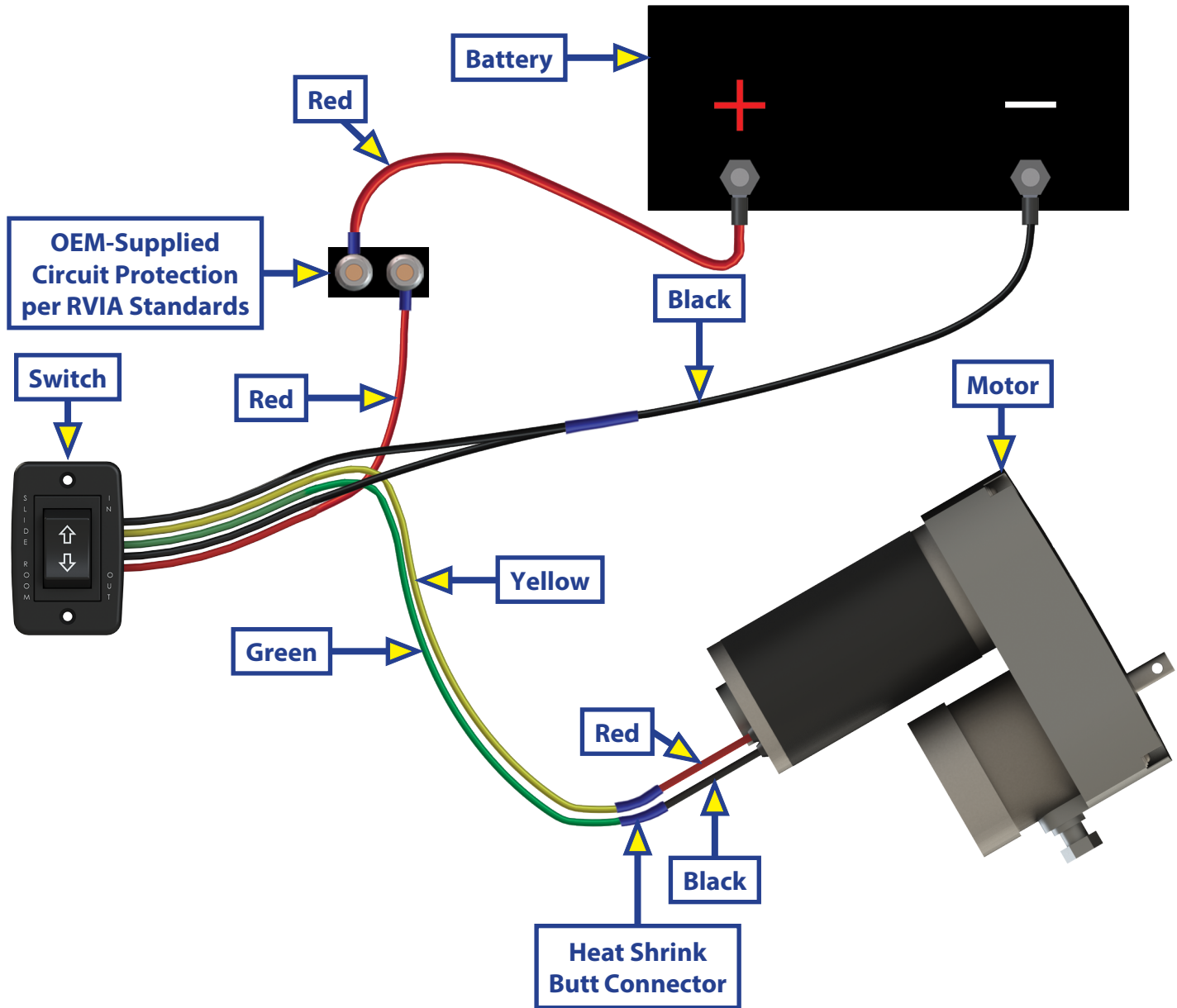
Fig. 6



Wiring Diagram

10 AWG Minimum

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



NOTE: If side-out 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 wire is ground.
- Yellow wire is "out" or extend.
- Green wire is "in" or retract.
- Red wire is power.



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