



M²-Sync Room Slideout System Owners Manual

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Do not work on your slide out system unless the battery is disconnected



Introduction

SYSTEM DESCRIPTION

Your Power Gear Slideout System is a rack and pinion design operated by a pair of 12 Volt DC electric motors.

MAJOR COMPONENTS

- Inner rail assemblies are designed to support the room weight.
- The 12 Volt DC gearmotor will operate the room using power from the battery.
- Slideout systems are equipped with a manual override that allows you to extend / retract the room in the event of a loss of power.
- A specially designed control that gives the user full control of room movement, in or out. The control has programmable stops that stop the motor when the room is fully extended or retracted and the ability to detect faults for ease in troubleshooting.

Preventative Maintenance

Your Power Gear slide-out system 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 out, visually inspect the inner slide rail assemblies. Check for excess build-up of dirt or other foreign material; remove any debris or items that may be present.
- If the system squeaks or makes any noises it is permissible to apply a light coating of silicone spray or lithium grease to the roller and bearing sleeve I.D., removing any excess lubricant so that dirt or debris do not build-up. **DO NOT** lubricate the slide-out drive gears, gear racks, or roller OD as this will attract dirt / debris.

IF YOU HAVE ANY PROBLEMS OR QUESTIONS CONSULT YOUR LOCAL AUTHORIZED DEALER.



WARNING

Always make sure that the slideout room path is clear of people and objects before and during operation of the slideout 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.

Operation Mode

Two different versions of touch pads are used on this system (see figure 1). Unless otherwise noted, all operation of the control is the same regardless of which touch pad comes equipped with your coach.

Touch Pad "A" has two LEDs. Fault code is indicated in Red and room/lock movement is indicated in Green.

Touch pad "B" has four LEDs. Fault codes and low voltages are indicated in Red and room/lock movement in Green. With this touch pad if the Park Brake LED is flashing, you need to engage the park brake to operate your slideout system and if the Low Voltage LED is flashing, you will need to start and run the coach or generator to operate the slideout system. Let the engine/generator run for a few minutes to allow the batteries time to fully charge before operating.

Note:

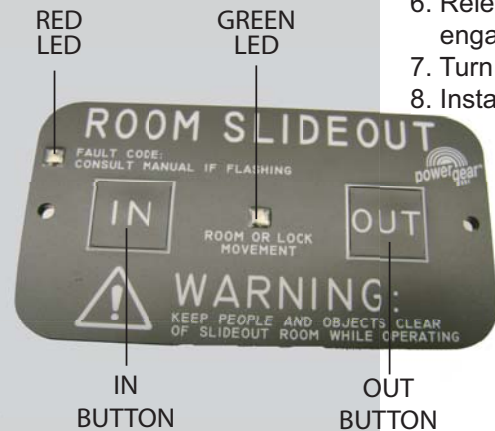
- The system will not work until stops are properly set or faults are cleared.
- The GREEN LED indicates system operation. (Figure 1)
 - A solid GREEN LED indicates room movement
 - A flashing GREEN LED indicates room lock movement, if room is equipped with room locks.
- The RED LEDs indicates a fault or problem with the system (Figure 1). Refer to the Fault Diagnostics in this manual for additional information.
- Prior to moving the slideout room, make sure the engine or generator is running to ensure ample voltage to the motors and the parking brake is set.

EXTENDING THE ROOM

1. The engine or generator must be running or apply shore power.
2. Set the park brak and level the unit.
3. Remove transit bars (if so equipped).
4. Turn 'ON' the on/off switch or key (if so equipped).
5. Press and hold the OUT button (Figure 1). If equipped with electronic room locks, the room locks will retract prior to room movement. Reference the GREEN LED indications above to determine component movement.
6. Release the button when room is fully extended and stops moving.
7. Turn 'OFF' the on/off switch or key (if so equipped).

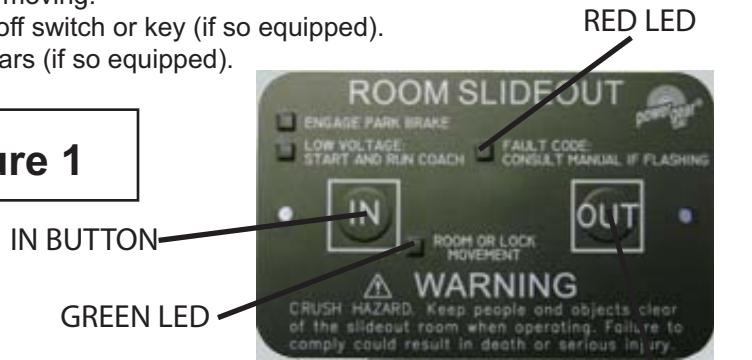
RETRACTING THE ROOM

1. Follow steps 1-4 above and then continue below with step 5.
5. Press and hold the IN button (Figure 1) If equipped with electronic room locks, the room locks will automatically extend when the room is fully retracted. Reference the GREEN LED indications above to determine component movement.
6. Release the button when room is fully retracted or when the room locks are fully engaged and stop moving.
7. Turn 'OFF' the on/off switch or key (if so equipped).
8. Install the transit bars (if so equipped).



TOUCH PAD "A"

Figure 1



TOUCH PAD "B"

Fault Diagnostics

This control has the ability to detect and display several faults. When a fault is detected, the room movement will stop, and two different LEDs will flash in a pattern.

- The Fault Code LED (Fig 1) will flash a number of times corresponding to a specific fault code. Refer to the Troubleshooting charts on the following pages to best determine what caused the fault.

- The Green Room Movement LED (Fig 1) will flash a number of times corresponding to which motor had the associated fault (or with battery Voltage faults, will flash once to signify the start/end of the flashing fault code).

Remember to use the correct troubleshooting chart depending on which Touch Pad you have.

For example, if you have Touch Pad Version A, and you are seeing
5 red flashes & 2 green flashes
it means your slideout is drawing excessive current on motor #2.

There are 2 types of faults (Minor & Major) and a fault must be cleared in order for the room to operate.

- MINOR faults can be cleared by pushing the IN and OUT buttons on the wall touch pad
- MAJOR faults must be cleared by pushing the Set Stops/Clear Faults button located on the back of the wall touchpad (Fig 2). This is done to alert the user that there is a major problem with the system and to prevent damage to the slideout room. **Note:** For major faults, the control must be overridden by following the Emergency Retract Mode in the Override Modes section of this manual, and the control must then be programmed by an authorized dealer when the problem is fixed

Troubleshooting - Touch Pad A



Use this troubleshooting chart if your touchpad looks like the picture above.
(Usually used with Control Box 1510000122)

Fault Code	Fault Type	Description	Probable Cause	Possible Solutions
1	Major	Stop Not Programmed	No stop locations has been set for the control	Stops need to be reprogrammed by an authorized dealer
2	Minor	Battery Dropout Voltage. Voltage dropped below 8.0V	Bad Battery, bad wire connection or short in system	Repair bad wire connection, short or replace battery
3	Minor	Low Battery Voltage. Voltage is below 10.5V when room movement was initiated	Bad wire connection from battery to control or low battery	Repair bad wire connection or replace battery
4	Minor	Excessive Battery Voltage. Battery Voltage is above 18.0V when room movement was initiated.	Bad battery	Replace battery
5	Minor	Slideout motor drawing excessive current	Excessive system/room drag, obstruction, improper stop locations or damaged component	Remove obstruction, re-adjust room, reset stops, or replace damaged component
6	Major	Slideout Motor Short	Shorted wiring or motor	Inspect motor harness wires and motor for shorts. Replace shorted component.
7	Major	Slideout Motor Open	Bad connection, motor or blown fuse.	Repair bad wire connection, replace motor or fuse
8	Major	No signal on motor sensor Out 1 (yellow) wire	Bad wire connection or sensor	Repair bad wire connection or replace motor
9	Major	No signal on motor sensor Out 2 (blue) wire	Bad wire connection or sensor	Repair bad wire connection or replace motor
10	Major	No signal on motor sensor wires yellow or blue	Bad wire connection or sensor	Repair bad sensor or motor lead connections. Lastly, replace motor.
11	Minor	Room lock motor drawing excessive current	Excessive drag or obstruction or damaged component	Remove obstruction or replace damaged component
12	Major	Room lock motor short	Shorted wiring or motor	Inspect motor harness wires and motor for shorts. Replace shorted component
13	Major	Room lock motor open	Bad connection or motor	Repair bad connection or replace motor
14	Minor	Room lock timeout	Bad wire connection, obstruction, broken component or low voltage	Remove obstruction, replace battery, repair bad wire connection or fix broken component in room lock

Troubleshooting - Touch Pad B



Use this troubleshooting chart if your touchpad looks like the picture above.
(Usually used with Control Box 1510000143 and 1510000198)

CODE	TYPE	DESCRIPTION	PROBABLE CAUSE	POSSIBLE SOLUTIONS
1	Major	Stops Not Programmed	No stop locations have been set for the control	Stops need to be reprogrammed by an authorized dealer
2	Minor	Slideout motor drawing excessive current	Excessive system/room drag, obstruction, improper stop locations or damaged component	Remove obstruction, re-adjust room, reset stops, or replaced damaged component
3	Minor	Slideout Motor Short	Shorted wiring or motor	Inspect motor harness wires and motor for shorts. Replace shorted component
4	Minor	Slideout Motor Open	Bad connection, motor or blown fuse	Repair bad wire connection, replace motor or fuse
5	Major	No signal on sensor wire	Bad wire connection or sensor	Repair bad wire connection or replace motor
6	Minor	Excessive Battery Voltage (above 18V when room movement requested)	Bad Battery	Replace battery
7	Major	Rail did not resync with opposing rail	Excessive system/room drag, obstruction, improper stop locations or damaged component	Remove obstruction, re-adjust room, reset stops, or replaced damaged component
8	Minor	Room lock motor drawing excessive current	Excessive drag or obstruction or damaged component	Remove obstruction or replace damaged component
9	Minor	Room Lock Motor Short	Shorted wiring or motor	Inspect motor harness wires and motor for shorts. Replace shorted component
10	Minor	Room Lock Motor Open	Bad connection or motor	Repair bad connection, or replace motor
11	Minor	Room Lock Timeout	Bad wire connection, obstruction, broken component or low voltage	Remove obstruction, replace battery, repair bad wire connection or fix broken components in room lock

! WARNING

After the room has been moved in the desired direction, the brake levers on each motor **MUST** be returned to the "engaged" position. When the motor brake is disengaged the slideout room will not lock into place; therefore, the room will not be sealed. When the room has been manually retracted, be sure to install the transit bars (if so equipped) and return the motor brake lever to its normal engaged position in order to seal and lock the room into position. Do not travel unless each motor brake is in the "engaged" position!

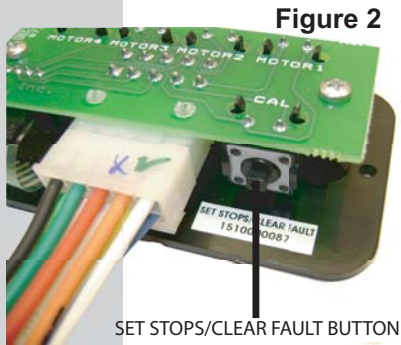


Figure 2

! CAUTION

During override mode the control has no stop locations. Use another individual to assist in determining when the room is retracted. Damage to the room can occur during over travel.

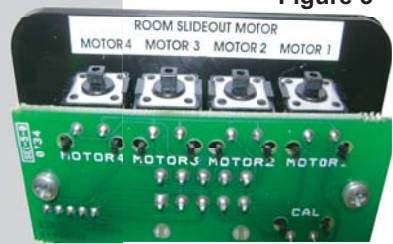


Figure 3

SLIDEOUT ROOM MOTOR BUTTONS

Override Modes

In the event of component failure or loss of system power, your system can be manually overridden.

NOTE: At anytime during the override procedure, the unit will exit override mode if the room had not been moved for 2 minutes (note: on early production models, the 2 minute timeout was only 45 seconds) or if a fault is detected during overriding, the Fault Code and Room Movement LED's will flash rapidly for 10 seconds to indicate that the override procedure failed. After 10 seconds of flashing, the control will automatically default to fault code 1 (stops not programmed) and the override mode must be re-done.

NOTE: The room control will need to be re-programmed by an authorized dealer after the system has been overridden.

A. Emergency Retract Mode - use this procedure when there is NO loss of power or electrical problem with the system.

1. Remove the touchpad (Fig 1) from the wall
2. **Prior to clearing the major fault**, write down the number of flashes that you are seeing in the table below. This information will help your dealer / service center in the troubleshooting of the slideout system.

# of RED flashes	# of GREEN flashes

3. Press and hold the "Set Stops/Clear Fault" button on the back of the wall touchpad for 5 seconds (Figure 2). Both LED's will light while the button is held down. (Figure 1)

NOTE: After 5 seconds, the GREEN LED will begin flashing and the Fault Code LED will remain lit.

- If the room is equipped with room locks and the room locks are extended, the room locks will retract automatically.

4. The unit is now ready to retract the room.
 - a. Press and hold all SLIDEOUT motor buttons (Motor1, Motor 2, Motor 3, and Motor 4) on the back of the wall touchpad. (Figure 3)
 - b. Press the IN button on the front of the wall touchpad (Figure 1) until the room is fully retracted
5. Re-install the wall touchpad.
6. Take your unit to a certified dealer for repairs.

B. -or- Emergency Retract Module (ERM) - This procedure is an alternate to the above procedure. This kit (P/N 1010001197) can be purchased from Power Gear. The kit contains a module that will bypass the control and send power to the slideout motors.

C. -or- Manual Crank Mode - use this procedure when the above procedures do not work. (see next page)

**WARNING**

If the room has been moved while the motor sensing control harness has been unplugged, do not attempt to use the room again until a service center has reprogrammed the computerized controller according to the service manuals instructions. Failure to reset the controller may cause damage to the system or coach.

Override Modes, cont.

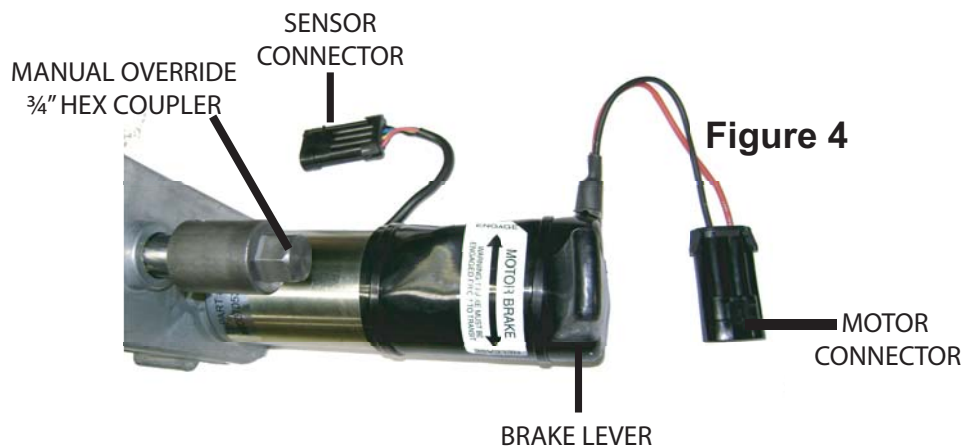
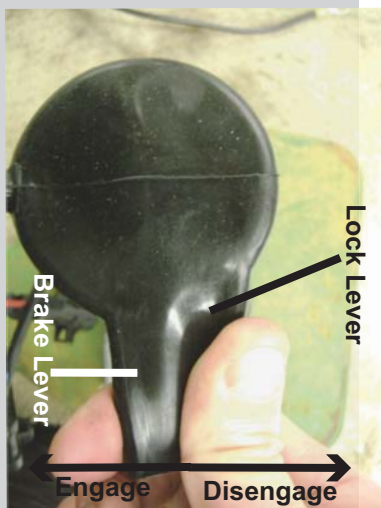
The system has been equipped with 3/4" hex override couplers located on the back side of the motors. Due to the size and weight of the room, assistance will be needed and care taken during the process. Use the following steps to mechanically operate the room:

1. Locate each motor and 3/4" hex coupler. (Figure 4)
2. Unplug each motor connector.
3. With your thumb, depress the spring lock lever on the right hand side of the boot cover. Then, rotate the override lever counter clockwise with your index finger to disengage the motor brake. (Figure 5)
4. If enough people and wrenches for each override coupler are available, the room can be moved in or out quickly as long as all shafts are turned at the same time. Use a wrench or socket and ratchet to turn each override coupler in the direction required.

NOTE:

If only one or two people are available to move the room the following procedure must be followed:

- Start at the front of the coach, release the motor brake, rotate that shaft approximately 1/8 turn, re-apply the motor brake.
 - Proceed to the next rail with motor. Release the motor brake, rotate that shaft approximately 1/8 turn, re-apply the motor brake.
 - Repeat this procedure until the room has been fully opened or closed as desired.
5. Once room is fully retracted, re-engage brake lever on motor. (Fig 5)
 6. Reconnect the motor leads to the connector.
 7. Take the unit to an authorized dealer for service.

**Figure 4****Figure 5**

Additional Reference Documents

Additional Reference Documents Located at www.lci1.com:

3010001343	Installation and Service Manual for Slideout Control Box 1510000122
3010002088	Installation and Service Manual for Slideout Control Boxes 1510000143 and 1510000198
82-SO521	Encoder Test 1: Dual Sync Slide Controllers (M ²) 1510000122, 1510000143, and 1510000198
82-SO522	Encoder Test 2: Dual Sync Slide Controllers (M ²) 1510000122, 1510000143, and 1510000198