Owner's Manual
Slim Rack Bunk Lift System with Control Box 1510000199 or 1510000260

 # **3010002678**, Rev. 0D

CONTENTS

Owner's Manual Dual Planetary Gearmotor Bunk Lift System (Slim Rack)

Introduction

SYSTEM DESCRIPTION:
The Power Gear Slim Rack Bunk Lift System is a rack and pinion design operated by a pair of 12 Volt DC electric motors. The system is designed to move a bunk of no more than 100 pounds vertically. Bunk Lift systems rated for higher weight or longer strokes can be obtained. Please contact Power Gear for application assistance.

MAJOR COMPONENTS:

- Touchpad with indicator LED's that mounts to the wall. The touchpad communicates with the control to allow bunk movement and provides end user feedback via LED's. **(See Figure 1)**
  - "UP" and DOWN" buttons move the bunk lift in the corresponding direction when button is pressed. Push and hold until bunk reaches pre-programmed stop point.
  - "ENGAGE PARK BRAKE" will light red if park brake is not engaged when trying to operate the bunk lift.
  - "LOW VOLTAGE" LED will light red when the voltage is below the operating threshold of the control.
  - "FAULT CODE" LED will flash red a certain number of times to alert user of specific fault conditions.(**See Figure 5, page 4**)
  - "BUNK LIFT MOVEMENT" LED will flash green when the bunk lift is moving.

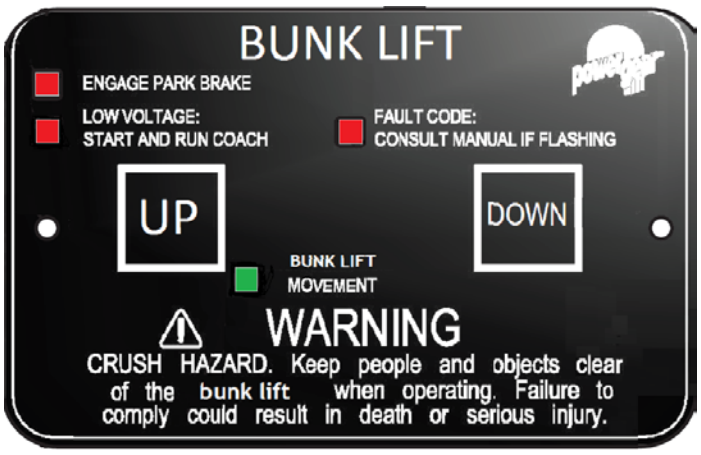

Figure 1 Touchpad

- A specially designed control that gives the user full control of the bunk movement, up or down. The control has programmed stops that control the motor when the bunk is fully raised or lowered, and the ability to detect faults for ease in troubleshooting. **(See Figure 2)**
- Two to four vertical channels with 12V DC gear motors which mount to the bunk, and gear rack arms that mount to the vertical structure. **(See Figure 2)**
- Harnesses to connect touchpad and motors to control box. **(Not shown)**

WARNING

- Always make sure that the bunk lift path is clear of people and objects before and during operation of the bunk lift.
- Always keep away from the gear racks when the bunk lift is being operated. The gear assembly may pinch or catch on loose clothing causing personal injury.
- Do not operate bunk lift with anyone physically lying or sitting in the bunk.

1217 E. 7th St.
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www.powergearus.com

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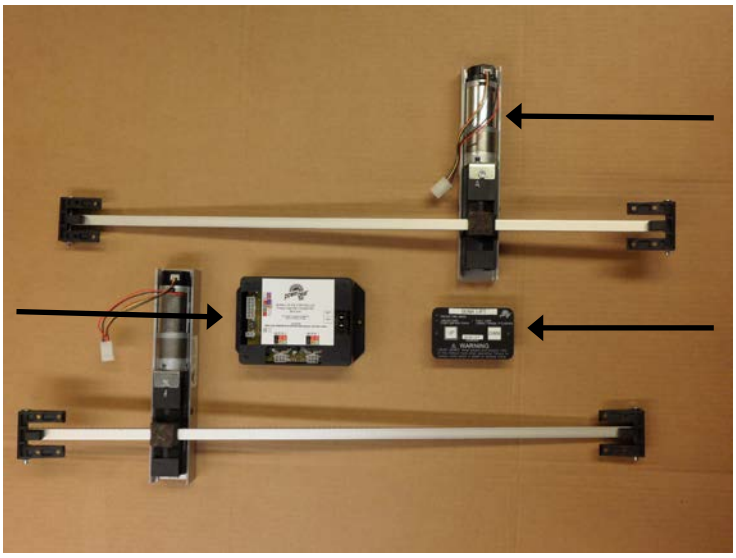

Figure 2 Bunk Lift System Components

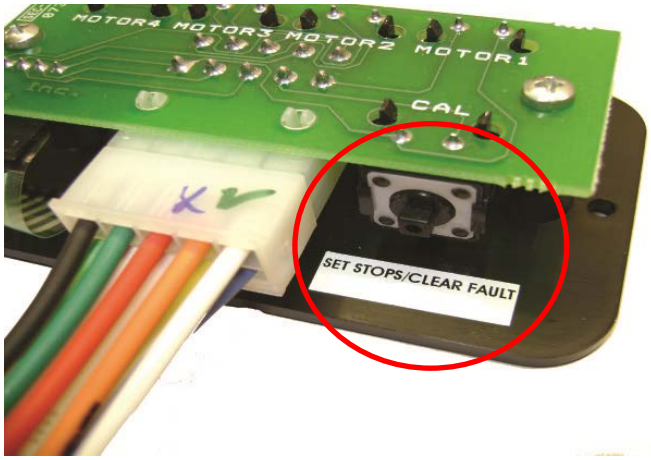

Figure 3 Set Stops/Clear Fault Button (Back bottom of touch pad shown)

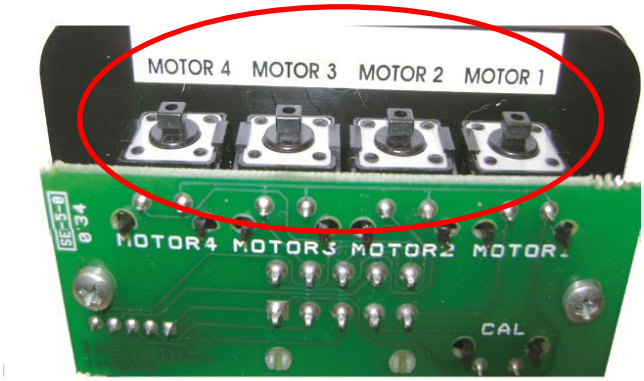

Figure 4 Bunk Lift Motor Buttons (Back top of touch pad shown)

Operation Mode

Please note:

- The bunk lift system will not function until the stops are properly programmed, or faults are cleared. **OEM coach manufacturer will complete programming during installation.**
- The **GREEN** LED (**FIGURE 1 page 1**) indicates the system operation.
  - A solid **GREEN** LED indicates bunk movement.
- The **RED** LED (**FIGURE 1, page 1)** indicates a fault or a problem with the system. Refer to the **FAULT DIAGNOSTICS/TROUBLESHOOTING** (**page 3**) for additional information.

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Operation Mode (Continued)

Lowering the bunk:

1. The engine or generator must be running, or plugged into shore power.
2. Transmission must be in PARK or NEUTRAL.(if equipped)
3. Level the unit. (if equipped)
4. Remove the locking pins**.** (if equipped) **(Contact OEM for details)**
5. Turn "on" the on/off switch or key. (if equipped) (**Contact OEM for details)**
6. Press and hold the **DOWN** button (**FIGURE 1, page 1**). A slight delay is normal before the bunk begins to move.
7. Release the button when the bunk is fully lowered and stops moving.
8. Turn "off" the on/off switch or key. (if equipped) (**Contact OEM for details)**

Raising the bunk:

1. The engine or generator must be running, or plugged into shore power.
2. Transmission must be in PARK or NEUTRAL.(if equipped)
3. Remove locking pins. (if equipped) (**Contact OEM for details)**
4. Turn "on" the on/off switch or key. (if equipped) (**Contact OEM for details)**
5. Press and hold the **UP** button (**FIGURE 1, page 1**). A slight delay is normal before the bunk begins to move.
6. Release the button when the bunk is fully raised and stops moving.
7. Turn "off" the on/off switch or key. (if equipped)
8. Install the locking pins. (if equipped) (**Contact OEM for details)**

Preventative Maintenance

Your Power Gear bunk lift system has been designed to require very little maintenance. To ensure the long life of your bunk lift system, read and follow these few simple procedures:

- When the bunk is in the down position, visually inspect the gear rack assemblies. Check for excess build up of dirt or other foreign material; remove any debris items that may be present.
- If the system squeaks or makes any noises, blow out any debris from the gear rack arms and apply a non-silicone based dry lubricant to prevent and/or stop squeaking.

If you have any problems or questions, please see the contact tab on our website at www.powergearus.com

Fault Diagnostics/Troubleshooting

This control has the ability to detect and display several faults. When a fault is detected, the bunk movement will stop and two (2) different LED's will flash in a pattern.

- The **FAULT CODE** LED (**FIGURE 1, page 1**) on the touchpad will flash **RED** a number of times corresponding to a specific fault code. Refer to the **TROUBLESHOOTING** chart **(Figure 5, page 4)** to best determine what caused the fault.
- The **BUNK MOVEMENT** LED (**FIGURE 1, page 1**) on the touchpad will flash **GREEN** a number of times corresponding to which motor had the associated fault.
  - For example: if you are seeing four (4) **RED** flashes and two (2) **GREEN** flashes, it means that there is a motor fault on motor 2.

There are two (2) types of faults, **MINOR** and **MAJOR**, and fault must be cleared in order for the bunk to operate.

- **MINOR** faults can be cleared by pushing and releasing the **UP** or **DOWN** buttons on the bunk lift touchpad (**FIGURE 1, page 1**).
- After the problem has been repaired, **MAJOR** faults must be cleared by pushing and releasing the **SET STOPS/CLEAR FAULTS** button located the back of the bunk lift touchpad (**FIGURE 3, page 2**).

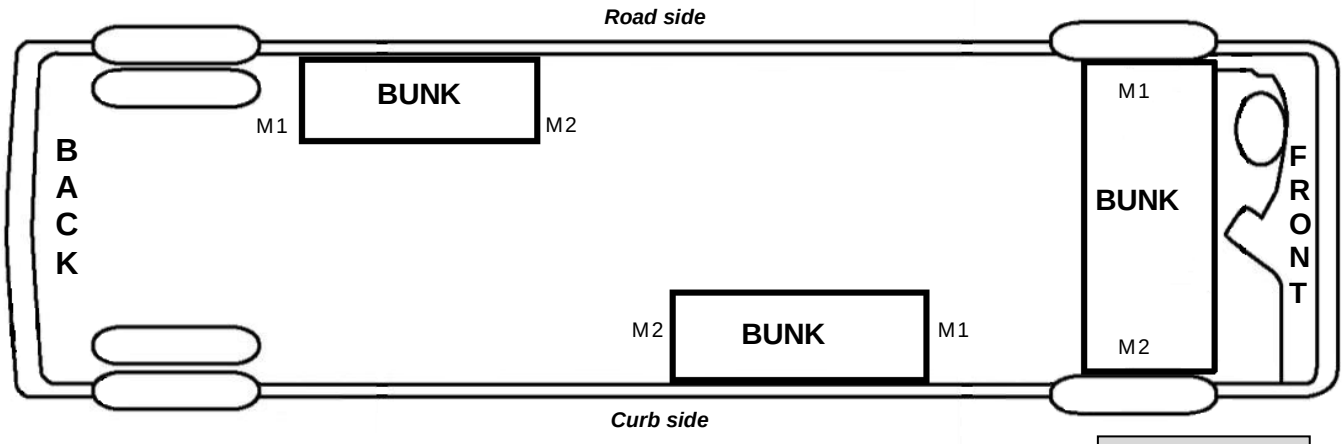
Note: *For major faults, the control must be overridden by following the **EMERGENCY BUNK MOVEMENT** in the **OVERRIDE MODES** section on starting on **page 4**. The control will then have to be re-programmed by an O.E.M authorized dealer when the problem is repaired.*

FIGURE 5 ***FAULT CODES***

Fault Code	Fault Type	Description	Possible Cause	Possible Solutions
1	Major	Stops not programmed	• Stops have not been set • Stops were cleared • Stops were improperly set	Stops need to be programmed.
2	Minor	System Fault	• Obstruction present • Excessive system drag	Run bunk lift in opposite direction. If bunk continues to move in the opposite direction, remove obstruction, excessive weight in bunk or repair of damaged component. If bunk stops moving in opposite direction, observe fault code and refer to this chart.
4	Major	Motor Fault	• Bad wire connection • Bad motor	Refer to TIP Sheet 82-S0530 for troubleshooting.*
6	Minor	Excessive Battery Voltage	Supply voltage to control is 17 V DC or greater.	Consult manufacturer of unit charging system for troubleshooting assistance.

*This tip sheet and other updated troubleshooting information can be found on our website at www.powergearus.com.

Possible Bunk Lift Locations



Proper designation of motor locations

1217 E. 7th St.
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WARNING

- Always make sure that the bunk lift path is clear of people and objects before and during operation of the bunk.
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# of RED flashes	# of GREEN flashes

Figure 6

Figure 7

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Override Modes (continued)

In the event of component failure or loss of system power, your bunk can be manually overridden and bunk moved for travel.

Note: *At any time during the override procedure, the unit will exit this mode if the bunk has not been moved for two (2) minutes or if a fault is detected during bunk movement. The **FAULT CODE** and **BUNK MOVEMENT** LED's will flash rapidly for 10 seconds to indicate that the override procedure failed. After the 10 seconds of flashing, the control will automatically default to **FAULT CODE 1** (see **FAULT CODES, FIGURE 5**) and programming must be restarted.*

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

A. EMERGENCY BUNK MOVEMENT TO UP POSITION:
*Use this procedure when there is **NO** loss of power or electrical problem with the system.*

1. Remove the touchpad (**FIGURE 1, page 1**) from the wall.
2. Prior to clearing the MAJOR fault, record the number of RED and GREEN flashes (**FIGURE 6**) observed on the touchpad. This information will help your dealer/service center in troubleshooting the bunk lift system.
3. Press and hold the **SET STOPS/CLEAR FAULTS** button (**FIGURE 3, page 2**) on the back for the touchpad for five (5) seconds. Both **RED** and **GREEN** LED's will be on solid while this button is pressed. After five (5) seconds, the **GREEN** LED will begin flashing and the **RED** LED will remain lit.
4. The unit is now ready to raise the bunk. Press and hold the **BUNK LIFT MOTOR** buttons 1 and 2 on the back of the **TOUCHPAD** (**FIGURE 4, page 2**).

    a. **Caution:** ***It is very important to note that during this procedure, the bunk lift control has NO stop locations. Damage to the bunk lift can occur if the bunk is raised or lowered too far.***

5. Press the UP button on the front of the wall touchpad until the bunk is fully raised position. If one side of the of the bunk needs to be raised further in order to fully raise, press and hold the motor button corresponding to only the motor you want to move. Press the UP button on the front of the touchpad to raise the bunk the remainder of the way. Install lock pins. (if equipped)
6. Re-install the wall touchpad.
7. Take the unit to a O.E.M authorized dealer for repairs.

B. MANUAL EMERGENCY BUNK MOVEMENT TO UP POSITION.
Use this procedure when the above procedures do not work.

In the event that power is lost to the bunk motor(s) or **OVERRIDE MODE "A"** (**page 4**) will not work, the bunk can be manually raised by following these steps:

1. Use a voltmeter and check to see if power is being delivered to the control module.
2. If no DC power is being delivered from coach, use another 12 VDC battery power source to power the module and retract the bunk using the **UP** button on the touchpad.
3. If power source is not available, then use the following steps:
    a. **Gain access to channel assemblies on each side of the bunk by first contacting the OEM manufacturer for access details.**
    b. Once access is gained, remove the top cover plate of each channel assembly.
    c. Loosen motor retainer screw or unhook spring, do not remove screw. (FIGURE 7)
    d. Remove each motor from the channel assembly. Bunk will drop if in the raised position.
    e. Disconnect motor connectors and place motors in a safe location. They will be needed when bunk lift is serviced.
    f. Manually push up bunk lift.
4. When bunk in fully raised position, install pins to keep it in place. **(Contact OEM for details)**

Note: ***The bunk lift will have to be inspected at a certified dealer for troubleshooting and repairs. The bunk control will need to be re-programmed by an authorized dealer after the system has been overridden.***

Additional Reference publications located at www.powergearus.com

3010002675	Installation and service manual slim rack bunk lift system with control box 1510000199 or 1510000260
82-S0530	Trouble shooting Bunk Lift control box 1510000199 or 1510000260 for In-Wall Slim Rack Systems
82-S0531	Encoder Test 1 Dual Planetary Gear Motor Sync with Control Box 1510000199 or 1510000260
82-S0532	Encoder Test 2 Dual Planetary Gear Motor Sync with Control Box 1510000199 or 1510000260

Power Gear Limited Warranty

Power Gear warrants its manufacturer installed Power Gear and Kwikee brand products to be free of material and workmanship defects for two (2) years from the date of the original sale of the motor vehicle/recreation vehicle (RV) in which they are installed, provided that these products are installed and operated according to the purpose for which they were intended, designed and specified. This warranty does not cover product that is incorrectly installed, or upon examination has been misused or abused by the vehicle owner.

Warranty coverage includes:

- Repair or replacement of the defective component(s) of the malfunctioning system. Entire systems are not replaced unless either the faulty component is not replaceable or all components comprising the system are defective.
- Labor costs for the diagnosis and repair work associated with the repair or replacement of the defective component(s) by a licensed servicing center.

This warranty does not include payment or reimbursement of:

- Normal system maintenance and preventive maintenance.
- Mobile service or towing expenses related to field repairs and/or the transportation of the vehicle to a repair facility.
- Living or travel related expenses incurred in the repair of the vehicle.

By filing a warranty claim in accordance with Power Gear's Warranty Administration Procedure, service providers agree that the replacement part(s) will be provided to the vehicle owner at no cost and that the total labor charges for the completion of warranty repairs will be billed to Power Gear. Accordingly, under no circumstances will Power Gear reimburse the vehicle owner directly for costs covered under this warranty policy.

Warranty coverage runs concurrently with any vehicle warranty period provided by the manufacturer, and is transfer-able to subsequent owners. Proof of original date of purchase of vehicle, and if applicable subsequent owner's proof of purchase, is required to confirm coverage.

Power Gear reserves the right to change the terms of our warranty policy at any time. For the most current information on product warranty and our warranty claim procedure, visit our website at www.powergearus.com.