



HAPPIJAC[®]

by  Lippert Components[®]

HAPPIJAC[®] BED LIFT OEM INSTALLATION MANUAL

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System Information

These ratings are for the lifting mechanism only. Attachments, such as bed platforms or sofas, are not rated in this document. Load ratings for these items are the responsibility of the manufacturer.

- Voltage = 12V DC
- Nominal current draw = 8 amps (1 bed going up); 12 amps (2 beds going up)
- Load limit = 450 lbs dynamic (moving) load; 500 lbs static (stationary) load

Safety

WARNING

Always make sure that the bed lift platform is clear of people and objects before and during operation of the bed lift.

CAUTION

Always wear eye protection when performing service or maintenance to the bed lift system. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the service.

CAUTION

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

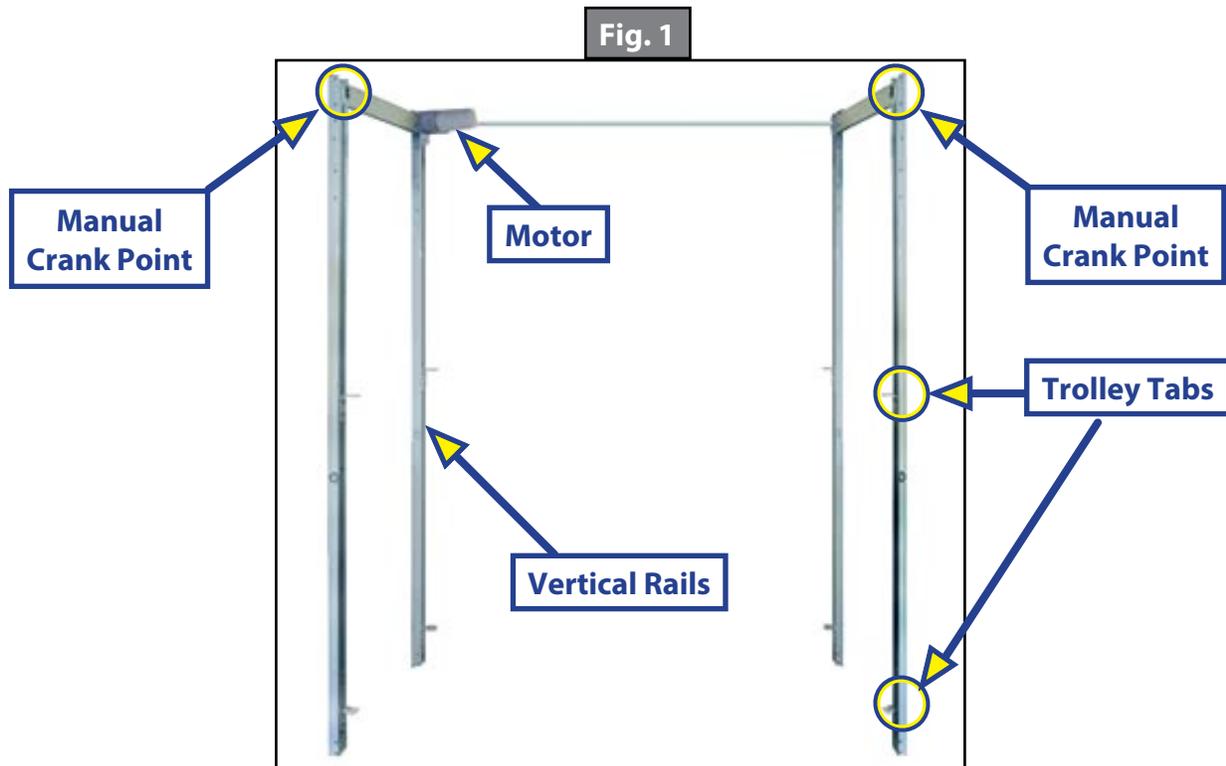
Preparation

Resources Required

- Two people, depending on task
- 1/2" socket wrench
- 1/4" diameter wood or self-tapping sheet metal screws (OEM-supplied)

Pre-Installation

1. The bed lift frame (Fig. 1) must be installed squarely, at the same height side-to-side and at the same distance from front-to-back in the unit with vertical rails parallel side-to-side. Leave wooden packing strips in place until system is secured to the unit.
2. Sufficient backing, a minimum of 1/8" aluminum tube or wood, must be incorporated within the walls of the unit to support the load of the bed lift with bed platforms installed. The bed lift is rated at 500 lbs per platform attachment (static load).



Installation

1. Use 1/4" diameter wood or self-tapping sheet metal screws (OEM-supplied) of sufficient length to safely secure the C-channel vertical rails to hold 500 lbs per platform attachment (static load).

NOTE: Screws **MUST NOT** interfere with any moving parts of the bed lift system.

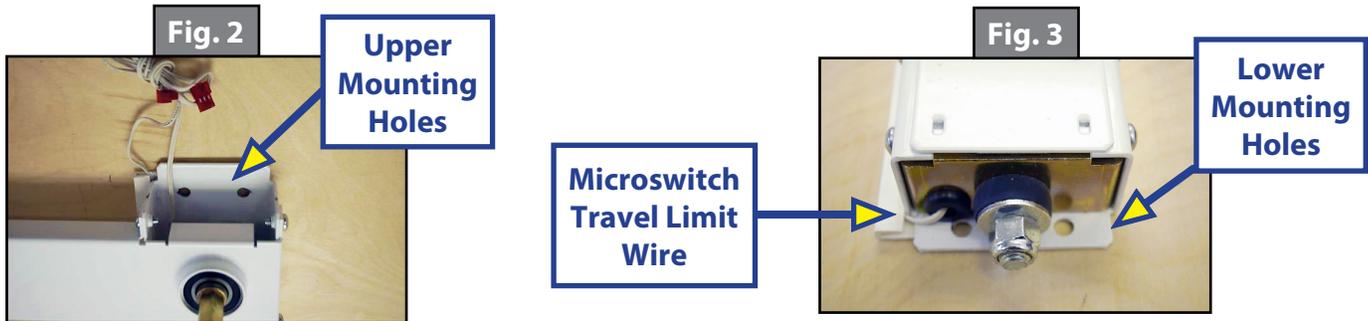
CAUTION

A pinched travel limit microswitch wire can cause damage to the bed lift system. Make sure installed lower vertical rail mounting screws do not pinch, cut, crush or otherwise interfere with any functional element of the bed lift system.

NOTE: The number of mounting holes will vary according to the vertical rail length of the system being installed.

NOTE: Use the smaller holes for alternate mounting locations of the upper bunk stop.

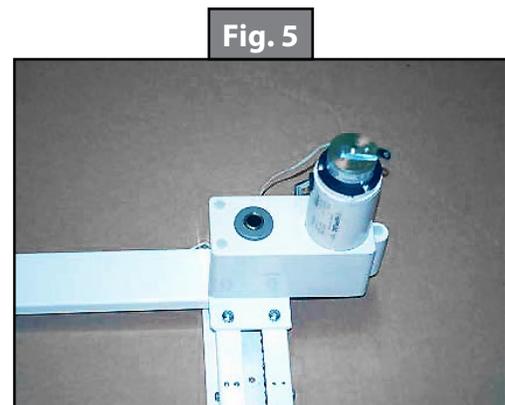
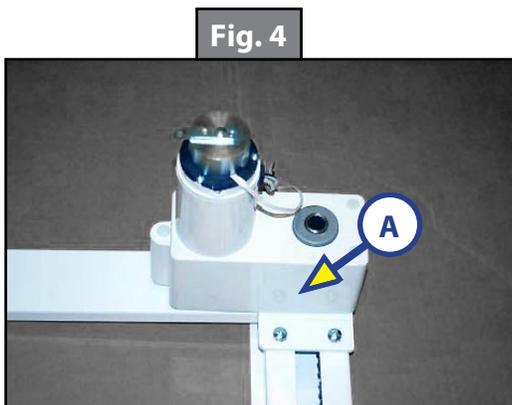
2. The 1/4" diameter wood or self-tapping sheet metal screws (OEM-supplied) must be used in all large holes of the vertical rails, including the large double mounting holes at the top (Fig. 2) and bottom (Fig. 3) of the rails, to prevent rail-twist.



3. After the rails are installed:
 - A. Check the rails for squareness and parallelism.
 - B. Remove wooden packing strips.

Motor and Connecting Shaft

1. Motor may be installed inward (Fig. 4) or outward (Fig. 5) on the rear curb side rail. Motor orientation is determined by the way the motor mounting plate (Fig. 4A) is attached. Attach the motor mounting plate for the desired orientation using the four large countersunk bolts provided.



2. After attaching the motor mounting plate (Fig. 4A), attach the motor to the bed lift system by sliding the hex connecting shaft into the motor. Install the two screws to hold the motor plate tight to the lift rail.
3. Make sure that the drive (lower) trolleys (Fig. 7) are at the same height on both sides of the bed lift.
4. Install connecting shaft by sliding open end of shaft over the hex shaft on the side opposite the motor. The motor side of the cross-connecting shaft needs to be completely seated against the c-channel over the sprocket (Fig. 8).

NOTE: If a gap forms due to the timing shaft "walking", the surface area of the sprocket and timing shaft are reduced and the sprocket will twist because of force of a smaller area.

Fig. 7

Drive Trolley



Fig. 8

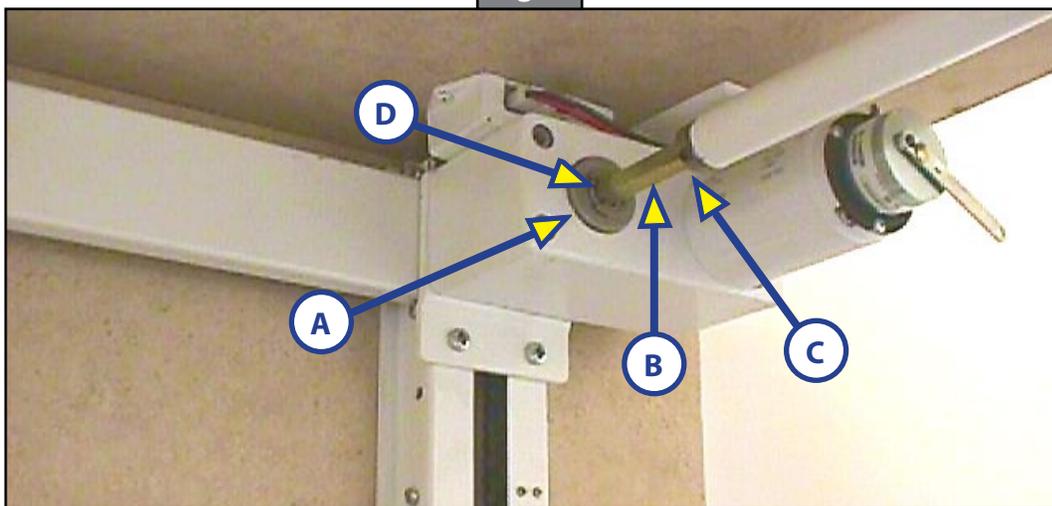


5. Loosen the set screw (Fig. 6C) in the collar of the connecting shaft where the gold hex shaft protrudes.
6. Draw out the hex shaft and insert it into the motor until the E-clip (Fig. 6D) is seated against the motor. Make sure the opposite end of the connecting shaft remains seated.

NOTE: It may be necessary to slightly rotate the connecting shaft back and forth to get the shaft to engage the motor. Side-to-side leveling will be affected by no more than 1/4". The ideal setting is having the non-motor side trolleys 1/2" higher than the motor side to facilitate the lock-up pins. Small incremental changes can be made by utilizing the 12 pt. socket ends on the timing shaft.

7. Tighten the set screw.

Fig. 6



Wiring the System

1. Connect 12V DC and ground from the unit's power supply to the motor's location with 10 AWG stranded wire.
2. Connect a 12V DC line to the solid white wire of the supplied power pigtail and the ground wire to the black striped wire of the pigtail (Fig. 9).
3. Run the RJ-11 COMM cable from the bed lift control switch to the control module.

NOTE: When holding the locking tabs toward you (Fig. 10), the wire colors are the same left-to-right.

Fig. 9

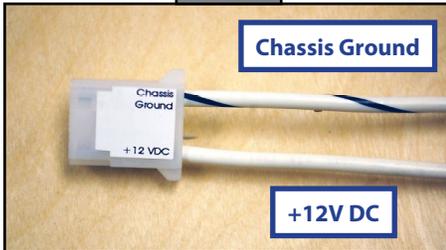
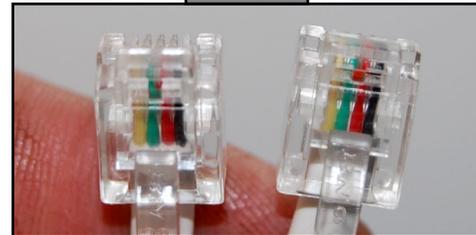


Fig. 10



4. Plug the power pigtail, COMM cable, PnP motor, PnP brake, the 3-pin upper PnP microswitch and the 2-pin lower PnP microswitch into the PnP control module. See Wiring Diagram (Fig. 14).
5. Secure the control module to the unit using the module's two mounting holes.
6. Use a router or 1 1/2" hole saw to create an opening in the wall or cabinet panel where the control switch is to be mounted.
 - A. Run the COMM cable through the opening (Fig. 11).

Fig. 11

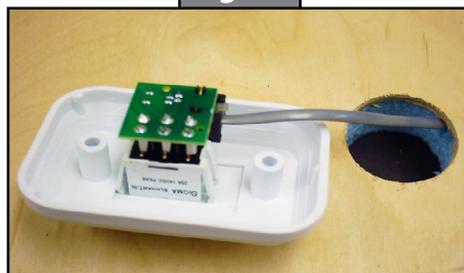


CAUTION

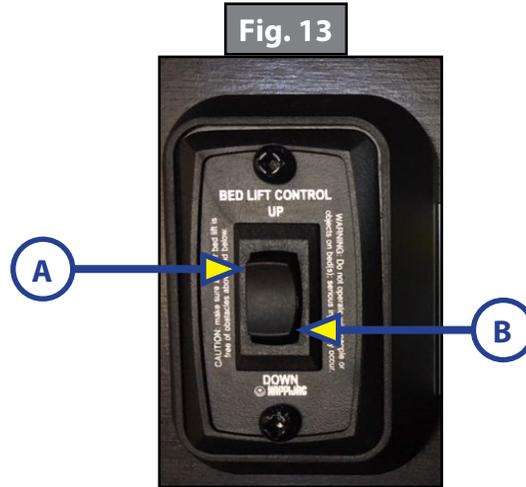
Make sure the printed circuit board is not in contact with any metallic surface or object. Metal-to-metal contact between the circuit board and any other metallic surface can damage (short-circuit) the control switch. A short-circuit may cause the bed lift to operate without pressing the switch, which could cause personal injury or component damage.

- A. Plug the COMM cable into the connector on the printed circuit board located on the back of the control switch (Fig. 12).

Fig. 12



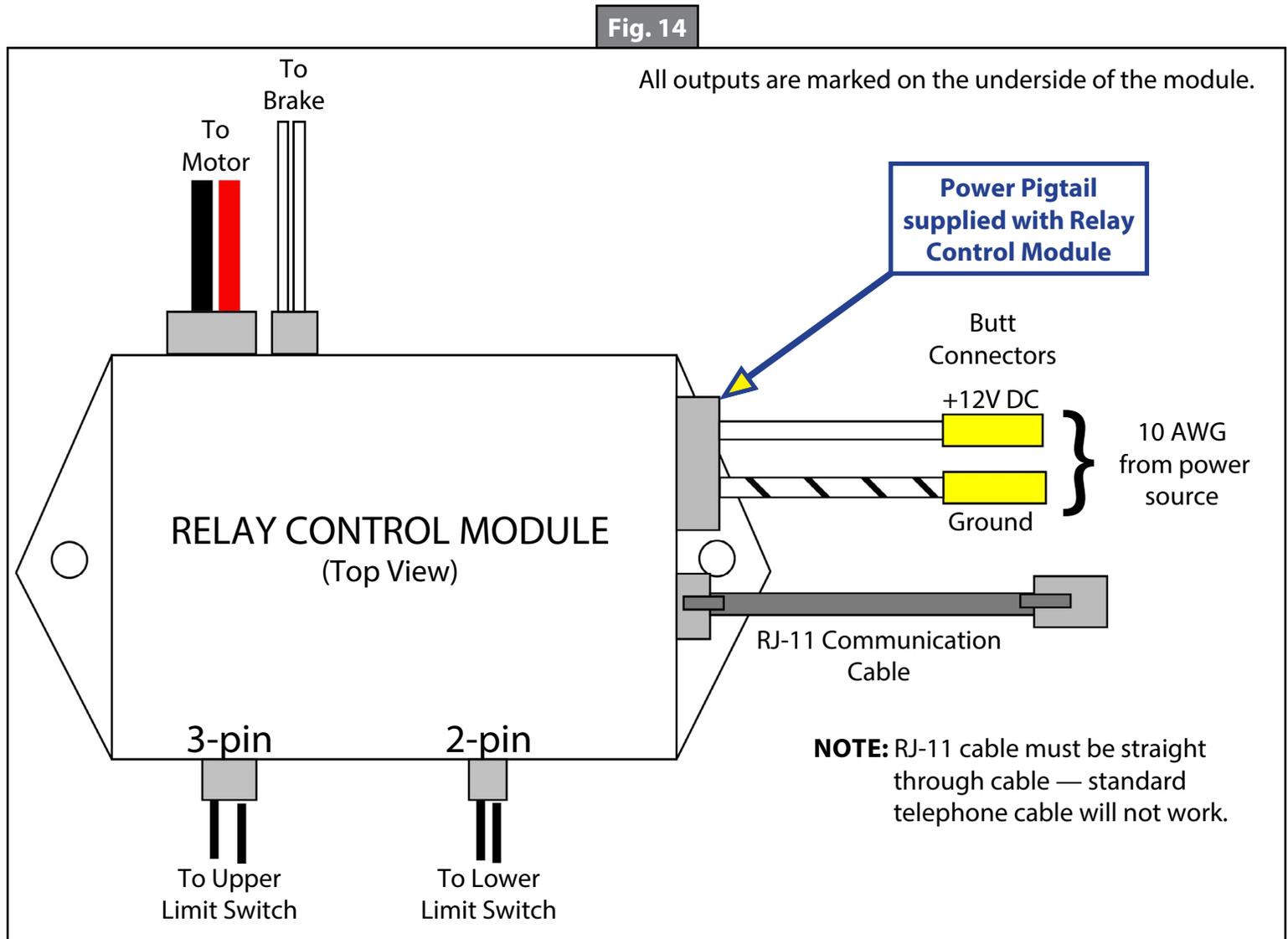
- Place the switch over the hole, and secure it with the screws provided. Make sure the switch is positioned such that both screws will securely hold the switch in place (Fig. 13).



Wiring Diagram

Relay Control Module

RVIA wiring requirements restrict the length of exposed motor leads to a maximum of 10". Therefore, the Relay Control Module must be placed above the motor or on the wall of the vehicle in close enough proximity to the motor that the 10" motor lead will reach.



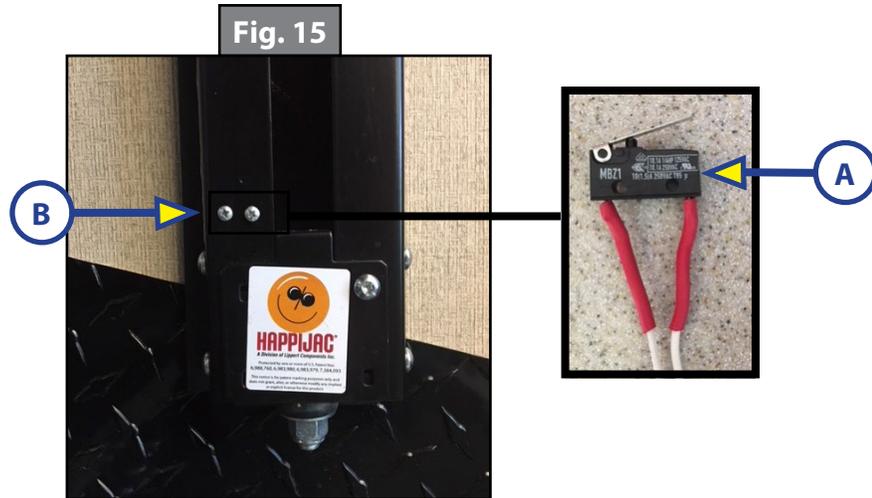
Testing the System

Trolley Travel

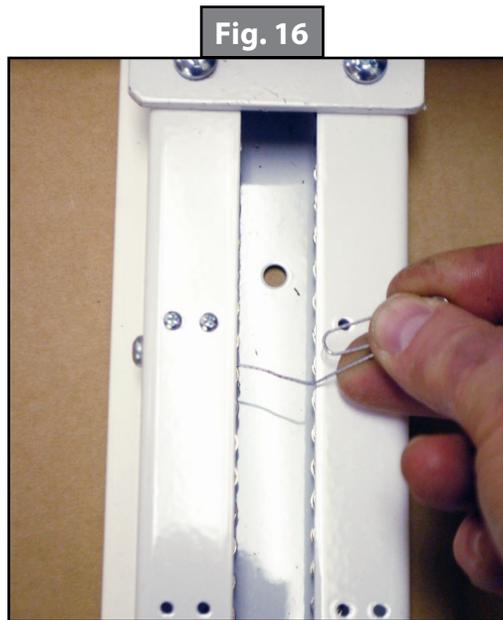
This test requires two people. Each time the micro-limit switch is depressed the drive trolley should stop. If the trolley fails to stop when the switch is depressed, re-check all electrical connections and 12V DC and ground wire connections.

1. Press and hold the control switch UP button (Fig. 13A) to make sure that the trolleys (Fig. 7) travel upward. If the trolleys travel downward, check the orientation of the 12V DC and ground connections to the power pigtail (Fig. 9) Refer to Wiring Diagram (Fig. 14).

NOTE: The limit switches (microswitches) (Fig. 15A) are located behind the two small Phillips screws (Figs. 15B) near the top and bottom of the vertical rail below the motor.



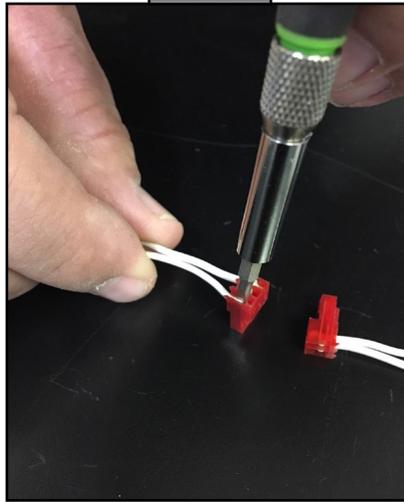
2. While running the system upward, toggle the upper microswitch with a stiff wire or large paper clip (Fig. 16).
3. Check the lower limit switch in the same manner as in steps 2 and 3 while the trolley travels downward.



4. If the system fails to operate, check all electrical connections.

5. Check to make sure that the wires punched down into the microswitch connectors (small red ones) are tightly secured. If necessary, press wires firmly in-place with a small screwdriver blade (Fig 17) to ensure that the pins in the connector bite through the insulation on the wire.

Fig. 17



Bed Lift Operation

1. Press and hold the bed lift control switch UP button (Fig. 13A) to make the lift go up.
2. Continue to hold the UP button until the limit switches (microswitches) stop the lift's movement.
3. Press and hold the DOWN button (Fig. 13B) until the limit switches stop the lift's movement.

Motor and Brake

If the motor does not operate well in this test mode, the problem may still be unrelated to the motor. If uncertain of failure, contact LCI customer service before replacing the motor.

See back cover page for LCI customer service contact information.

1. Position the bed(s) well out of the upper and lower limit switches.

⚠ CAUTION

Moving parts can cut or crush. Keep clear of moving parts.

2. Remove the motor plug from the control module.
3. Release the brake lever on the end of the motor.

NOTE: If the beds are up, they will drift downward.

4. Briefly jump 12V DC from a known good source to the motor wires.
5. Use care not to contact the limit switches. If the beds move too close to the limit switches, reverse the wires to reverse the direction of the beds. Run the beds this way only long enough to verify motor operation.

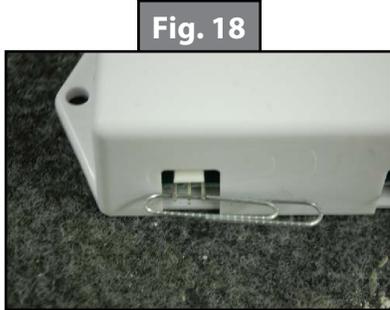
Limit Switches - Microswitches

To determine if there is a limit switch problem, eliminate the switch from the circuit.

1. Remove the small red plugs from the PnP control module.
2. Short the connector pins of the module.
 - A. Lace a paper clip over and under the output pins of the 3-pin connector to create a short (Fig. 18).

NOTE: Alternatively, an alligator clip may be used instead of a paper clip.

- B. Wedge a small screw, or other metallic object, between the output pins of the 2-pin connector to create a short (Fig. 19).



3. Briefly depress the UP/DOWN buttons on the control switch to see if the motor energizes.
 - A. If the motor energizes, then the problem is with the limit switch circuit. Replace the limit switch.
 - B. If the motor does not energize, then the problem is not in the switch, but elsewhere.

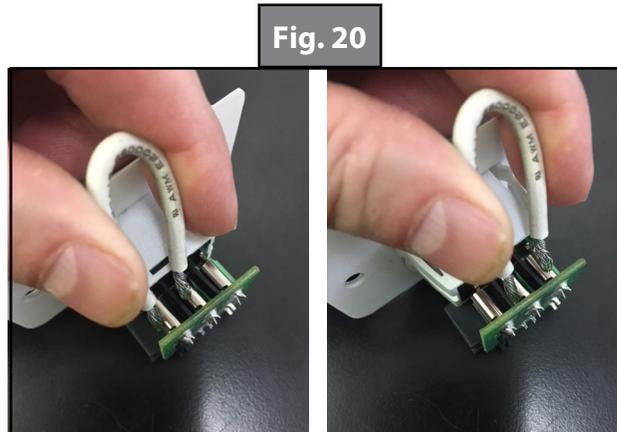
CAUTION

The limit switches are no longer active in the circuit and will not stop the bed. Damage to the switches, mechanism, or coach could occur. Reversing the wire leads will reverse the motor direction.

Bed Lift Control Switch - LCI-supplied Switch Only

The PnP bed lift control switch (rocker switch) is plugged into a circuit board which transitions the signal from the switch to the communication cord. Bypass the switch for testing purposes as follows:

1. Remove the screws from the switch bezel to gain access to the back of the switch.
2. Use a loop of wire to short the switch's center contact to the outer contacts (Fig. 20).



- A. Short from center silver lug to each outside lug. One side should move beds up - the other side down.
 - B. If the bed(s) move while contacts are being shorted, but not when the switch is depressed, the switch is defective. Replace switch.
3. Install switch bezel to the back of the switch with previously removed screws.

Relocating Limit Switches

If desired, the limit switches can be moved from their factory locations to one of the alternate positions.

To relocate the upper limit switch:

1. Remove the two Phillips head screws (Fig. 15).
2. Move the switch to the new location.

NOTE: It may be necessary to add 6P4C (28 AWG) wire to the microswitches to accommodate switch relocation.

⚠ CAUTION

Do not over-tighten screws. Tighten screws slowly until switch is snug and does not move. Over-tightening screws can crack the limit switch body, causing the limit switch to short-out. If there is a short, the bed lift travel will not stop, which could cause catastrophic failures to the system.

3. Reinstall screws to secure switch.

⚠ CAUTION

Failure to relocate stop screws along with relocated microswitches can cause damage to the bed lift system. Relocate, or install new, stop screws when relocating microswitches to prevent possible bed lift damage.

To relocate the lower limit switch:

1. Remove the two Phillips head screws (Fig. 15A).
2. Move the switch to the new location.

NOTE: It may be necessary to add 6P4C (28 AWG) wire to the microswitches to accommodate switch relocation.

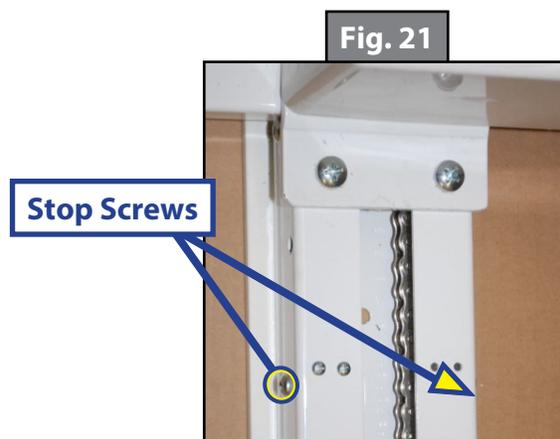
⚠ CAUTION

Do not over-tighten screws. Tighten screws slowly until switch is snug and does not move. Over-tightening screws can crack the limit switch body, causing the limit switch to short-out. If there is a short, the bed lift travel will not stop, which could cause catastrophic failures to the system.

3. Reinstall screws to secure switch.

When limit switch microswitches are relocated from their factory locations, #10 x $\frac{3}{8}$ " self-tapping stop screws located on either side of the microswitches (Fig. 21) must be moved also.

If the lower limit switch is relocated from its lowest position, stop screws must be installed at the new location.

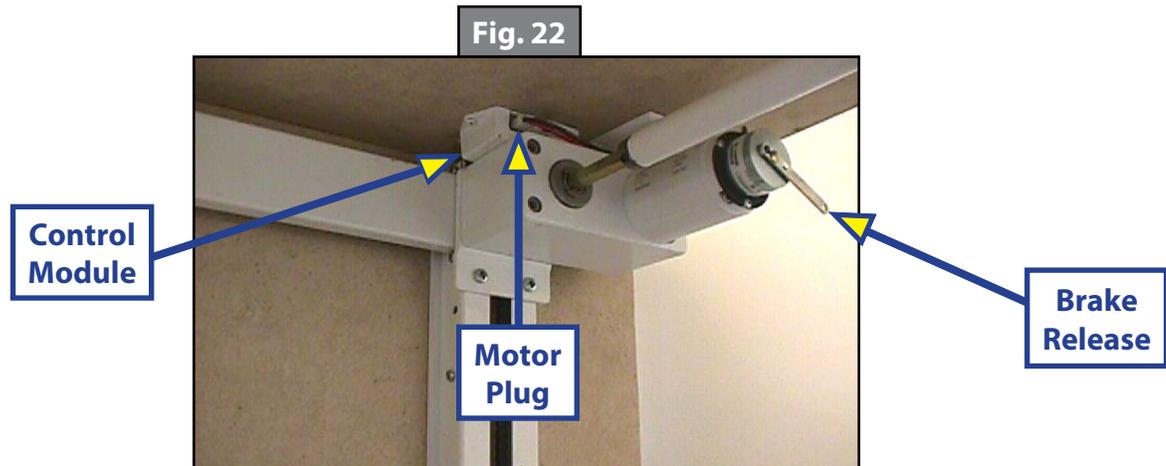


Manual Operation

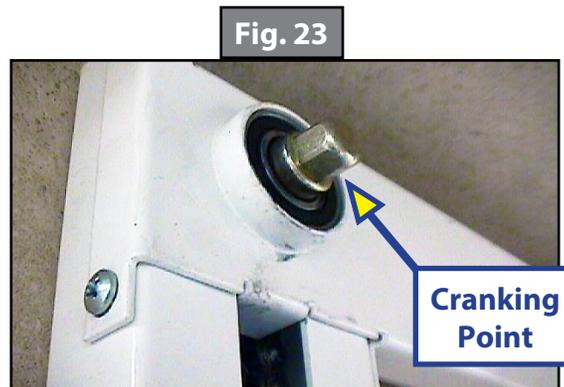
⚠ CAUTION

Before releasing the brake in manual mode, make sure there are no obstacles below the bed platforms. Be prepared to apply the brake, if necessary, and make sure to move the brake back into the ON position once the desired height is reached.

Before manually cranking the bed lift, release the brake and unplug the motor from the PnP control module. The PnP control module is typically installed above the motor (Fig. 23). It can, however, be installed in a different location that is in close proximity to the motor.



Manual crank points (Fig. 24) are located opposite the motor and on opposing vertical rails. Crank points may be covered with a yellow protective cap. Remove caps before starting crank procedure.



Manually Raise the Bed(s)

Do the following in Order:

1. Unplug the motor from the control module (Fig. 23).
2. Release the brake (Fig. 23).
3. Use a 1/2" ratchet on one of the crank points (Fig. 24) to slowly raise the bed lift.

⚠ CAUTION

Use care when manually lifting the bed(s) so the lift does not bind within the rails, resulting in damage to the bed lift system.

- A. Turn the ratchet clockwise to raise the bed(s).

NOTE: Manual operation of the bed lift system is easier with two people cranking on opposing crank points.

- B. Apply the brake (Fig. 23) when bed(s) reach the desired height.
- C. Plug the motor cable into the control module.

Manually Lower the Bed(s)

Do the following in order:

1. Unplug the motor from the control module (Fig. 23).
2. Release the brake (Fig. 23). Bed(s) will drift downward.
3. Apply the brake when bed(s) reach the desired height.
4. Plug the motor cable into the control module.



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For all concerns or questions, please contact
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