

Installation and Service Manual Medical Trailer Leveling System

Part #3010001273 Rev. 0B

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Hydraulic Leveling System

(800) 745-4142

info@powerpackerus.com

www.powerpackerus.com

1.0 Important Receiving Instructions

Visually inspect all components for shipping damage prior to installation. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting in damage from shipment. For most current manual, see www.powerpackerus.com.

Product descriptions and specifications are subject to change. For specific versions related to your product, contact us.

2.0 Safety Issues

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Power-Packer cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Do not remove warning labels, tags or decals. Contact Power-Packer when in doubt as to the safety precautions and operations.

This manual follows a system of safety alert symbols, signal words and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in serious personal injury or death, as well as damage to equipment or other property.

This is a Safety Alert Symbol that appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid possible serious personal injury or death.

Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are WARNING, CAUTION, and NOTICE.

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE indicates information considered important, but not hazard-related (e.g. messages related to property damage.)



WARNING

CAUTION

NOTICE

⚠ WARNING

Failure to observe and comply with the following precautions could result in death or serious personal injury, as well as property damage.

- Keep hands and feet away from hydraulic legs during operation.
- Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin. If oil is injected under the skin, see a doctor immediately.
- Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the system. Overloading can cause equipment failure.
- Never set relief valve to a higher pressure than specified. Higher settings may result in equipment failure.
- Be sure setup is stable before lifting load. Hydraulic legs should be placed on a flat surface that can support the load. Do not bridge. Where applicable, use support pads for added stability. Do not weld or otherwise modify the hydraulic leg to attach a base or other support.
- Immediately replace worn and damaged parts. To protect warranty, use only Power-Packer parts.

⚠ CAUTION

Failure to observe and comply with the following precautions could result in minor or moderate personal injury, as well as property damage.

- Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.
- Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to damaged hose may cause it to rupture.
- Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. Protect hoses and hydraulic legs from weld spatter.

NOTICE

Hydraulic equipment must only be serviced by a qualified hydraulic technician.

Specific safety messages appear throughout this manual in the left hand column.

NOTICE

Mixtures of hydraulic fluid and fuel oil can cause seal damage resulting in subsequent sticking or sluggish action of the system (and voids warranty). Damaged seals must be replaced.

▲ WARNING**▲ WARNING****▲ WARNING****▲ CAUTION**

Read all operating instructions before leveling your trailer.

3.0 Hydraulic Fluid Specifications**RECOMMENDED HYDRAULIC FLUIDS FOR POWER-PACKER**

Power-Packer recommends using a quality ISO 32 Anti-wear hydraulic fluid for most applications. If operating in cold temperatures (below freezing), slow operation will occur. If slower operation in cold weather affects your operations, we recommend using a fluid specially-formulated for cold temperatures. We have found that ISO 15 High Viscosity Index Anti-wear hydraulic fluids work well with Power-Packer systems to -20° F. Some examples of these are:

- Mobil DTE 10 Excel 15
- Chevron Rando HDZ 15
- Kendall Hyken Glacial Blu

If consistently operating at temperatures below -20°F, then we recommend hydraulic fluids conforming to MIL-PRF-5606H or MIL-H-5606A (obsolete). If you have any questions regarding fluid recommendations, please call us.

4.0 Leveling System Operating Parameters

Your trailer should be supported at the front with jack stands before working underneath; failure to do so may result in personal injury or death.

To prevent movement, use wheel chocks.

Do not use the Power-Packer Leveling system (or air suspension) to support the vehicle while changing tires or under the trailer service for any reason. The leveling system is designed as a “leveling” system only. Tire repairs should only be done by trained professionals. Attempts to change tires while supporting the vehicle with the leveling system could result in damage to your trailer and/or cause serious injury or even death.

Keep people clear of trailer while leveling system is in use.

Never lift the wheels off the ground to level the trailer. Doing so may create an unstable condition.

4.0 Leveling System Operating Parameters cont.



Park the trailer on a solid surface, which meets or exceeds the trailer manufacturer's pad specifications.

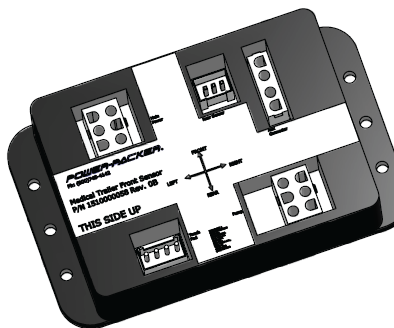
Check that potential jack contact locations are clear of obstructions or depressions before operation.

Never expose hands or other parts of the body near hydraulic leaks. High pressure oil leaks may cut and penetrate the skin causing serious injury.

If your trailer is equipped with a slide out(s), always level your unit first and then operate the slide out room(s). Always retract any slide out rooms prior to retracting the leveling jacks. Following this procedure will produce the least amount of stress on your trailer frame.

5.0 Introduction to Leveling System

This trailer is equipped with a high precision, dual sensor, auto leveling hydraulic jack system. The system uses touch pad #1510000061, front sensor #1510000058 and rear sensor #1510000059.



Front Sensor PN 1510000058



Rear Sensor PN 1510000059



Touch Pad PN 1510000061

6.0 Operating Instructions

POWER: Turns the touch pad on and off.

SEL: Select button is for scrolling through the displayed information on the touch-pad screen

MAN: Initiates the manual leveling cycle. In manual mode only the EXT and RET buttons can be engaged to extend or retract individual pairs of jacks.

AUTO: Initiates the automatic leveling cycle

EXT: Facilitates manual extension of the jacks. To manually extend the jacks, push the MAN button. The corresponding LED will turn on and remain on. Pushing any directional button will extend the corresponding pair of jacks. Releasing the directional button will stop the jacks from extending.

RET: Facilitates manual retraction of the jacks. To manually retract the jacks, push the MAN button. At this time, pushing any of the directional buttons will momentarily retract a pair of corresponding jacks. Releasing the directional button will stop the jacks from retracting.

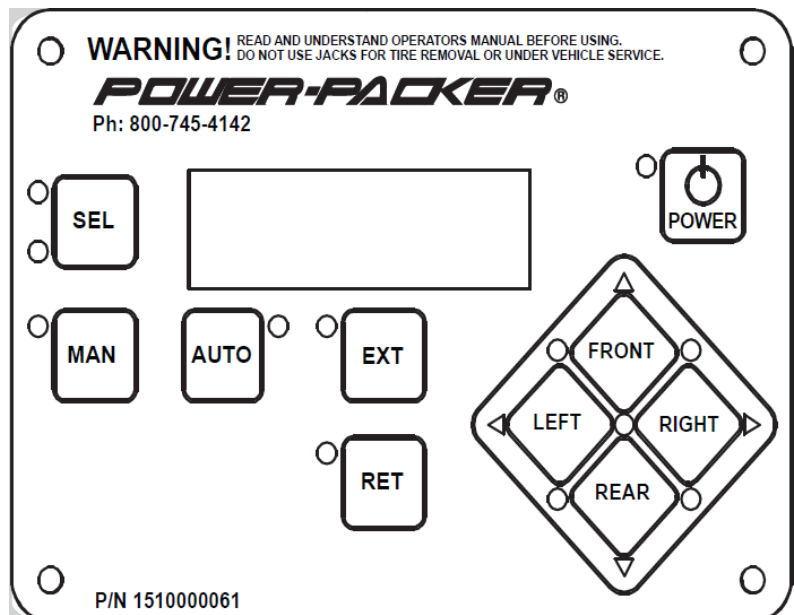
Directional Buttons (LEFT, RIGHT, FRONT and REAR): When in manual mode, directional buttons extend or retract that pair of jacks. In addition, if an appropriate pair of directional buttons is pushed and held simultaneously (for example Front & Right), an individual jack (front right) will extend or retract.

NOTICE

The touch pad will automatically shut down after 5 minutes of inactivity.

Voltage at the front sensor of the system can be displayed by using the SEL button.

Low voltage will prevent the control from operating.



7.0 Automatic Leveling

CAUTION

Extending or retracting any one jack affects all three leveling states, therefore operation of individual jacks should be used sparingly, only during the final minor adjustments.

It is possible to twist the chassis by extending only one corner, therefore, it is advised that operation of an individual jack should be used sparingly and only for minor adjustments.

CAUTION

Due to the weight of the trailer pushing down, the speed of retraction is faster than the extension of the jacks. Therefore, it is advised that leveling be done only during the extend cycle.

1. Park the trailer on a solid surface, which meets or exceeds the trailer manufacturer's pad specifications.
2. Turn the touch-pad ON, by pushing POWER button
3. Select AUTO LEVEL from the menu pressing the ENTER button
4. This will automatically extend front two jacks to the ground to facilitate tractor removal. When the two front legs are on the ground and have lifted the trailer off the tractor 5th wheel, the system will pause. Make sure 5th wheel is disengaged, then drive the tractor away.
5. Acknowledge that the tractor has been disconnected by pressing the ENTER button. The Auto-Leveling cycle will resume.
6. The display will provide output indicating cycle status.
7. After the trailer has finished auto-leveling, the LED in the middle of the directional button turns ON and stays on.
8. Touch-pad screen will display "COMPLETE"
9. The LED light in the middle of the directional arrows will turn on and stay on as long as the touch pad is on and the trailer is level.
10. If equipped, the Remote Lamp Status lamp will turn ON when the trailer is level.

Auto-Leveling from Leveled State

Change in temperature, leaking of air-bags if leveled with inflated air-bags will cause system to go out of level.

To re-level the trailer, turn the touch pad ON by pushing POWER button. Select AUTO LEVEL from the menu, read and confirm the safety alert message by pressing ENTER, and the trailer will auto-level.

State of Leveling

At any point, after parking the trailer, after manual leveling or after Auto-Leveling, the accuracy of leveling can be checked using the screen on the touch-pad. The screen displays angle of inclination in degrees. Push MENU buttons to cycle through three states of leveling: side to side front, side to side rear, or front to back.

8.0 Manual Leveling

CAUTION

If during manual leveling cycle, one runs out of stroke or is in danger of lifting the tires off the ground, retract a few inches more than necessary and re-level using this procedure. Anytime the RETRACT button is pushed to retract front jacks, ensure that appropriate device is supporting the trailer nose from coming down to the ground.

NOTICE

During extend or retract operation, operator can watch the leveling accuracy angles change.

Trailer angle display is always in the main menu by scrolling using the MENU buttons.

In some cases, when Auto-Leveling option is unable to level the trailer, the manual leveling option is available. To level the trailer manually, follow this procedure:

1. Park the trailer on a solid surface, which meets or exceeds the trailer manufacturer's pad specifications.
2. Turn the touch-pad ON, by pushing POWER button.
3. Scroll using the MENU buttons and select Manual mode by pressing the ENTER button.
4. Manually extend front two jacks to the ground to facilitate tractor removal. Push and hold FRONT until the two front legs are on the ground and have just lifted the trailer off the tractor 5th-wheel. Make sure 5th-wheel is disengaged, and then drives the tractor away. Push REAR until the Rear legs touch the ground.
5. The LED's around the directional diamond indicate the low side or end of the trailer (more than one may be lit). Press the indicated directional button to Extend the indicated pair of jacks. The system will automatically stop and the directional indicator light will go out when the level threshold is reached for the given direction.
6. Repeat step 5 as indicated by the remaining directional LED's. When level, the LED in the center of the directional diamond will stop flashing and remain lit.

Sensor Reading	Value	Correction
Front to Back	+	Retract FRONT Jacks or Raise REAR Jacks
Front to Back	-	Raise FRONT Jacks or Retract REAR Jacks
Side to Side	+	Raise LEFT Jacks or Retract Right Jacks
Side to Side	-	Retract LEFT Jacks or Raise RIGHT Jacks

7. After using the above procedure, final minor adjustments can be made by pushing a pair of buttons to lift the individual jack. For example, if "Side to Side, Front" and "Front to Back" are within the accuracy desired accuracy level, but "Side to Side, Rear" is out, a pair of buttons LEFT+REAR can be used to lift that corner to get the "Side to Side, Rear" value to desired accuracy.

▲WARNING

Since there are no supports in the front of the trailer, it is very critical to have either jack stands in the front of the trailer or a tractor supporting the trailer before the jacks are retracted. Operator assumes all responsibility arising out of improper retraction of jacks.

9.0 Jack Retraction

1. See warning information to left.
2. Turn the touch-pad ON, by pushing the POWER button.
3. Scroll using the MENU buttons and select Auto Retract mode by pressing the ENTER button.
4. The rear jacks will retract and the front jacks will return to the saved hitch height.
5. Reconnect the tractor.
6. Press the ENTER button to acknowledge that the tractor is reconnected. The front jacks will then auto retract.
7. Turn the system off by pressing the POWER button.

10.0 Preventive Maintenance

Hydraulic Power Unit

1. The fluid level should be between min. and max levels as indicated on the reservoir. Check every 2 months, add if necessary. In most applications, Type A automatic transmission fluid (ATF, Dexron III, etc.) will work satisfactorily. Mercon V is also recommended as an alternative fluid. For cold weather applications (below -10°F), fluid specially formulated for low temperatures may be desirable.
2. Change fluid every 12 months. With legs retracted, drain the reservoir fluid by removing the drain plug at the bottom of the reservoir.
3. Inspect and clean all hydraulic pump electrical connections every 12 months. Inspect for rust on the connectors, kinks and signs of overheating in the wires.

Hydraulic Jacks

1. On a daily basis, remove dirt and road debris from jacks as needed.
2. Grease the legs every 6 months with NLGI Grade "00" or "0" grease. Pump grease through the grease jerks until grease is observed exiting the lower area close to the shoe. Always grease legs in the fully retracted position. Frequency of jack greasing needs to be increased if the jacks are down for extended periods of time or if the jacks are frequently used at low temperatures or if the trailer is frequently located in coastal areas (within 60 miles of the coast).
3. Seals and check valves: no maintenance is required. Repair only if malfunction occurs.

11.0 Warranty

For warranty information, please contact the Power-Packer
Warranty Claims Department.

Warranty Claims Department
(608) 296-1107
techservice@powerpackerus.com

**Power-Packer
516 Hillcrest Drive
Westfield, WI 53964**

**(800) 745-4142
info@powerpackerus.com
www.powerpackerus.com**