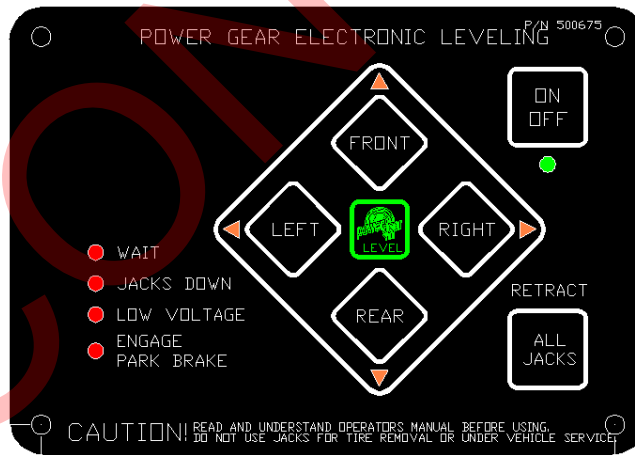




HYDRAULIC LEVELING SYSTEMS OPERATIONS MANUAL

(For systems with touch pad part number 500675)



touchpad 500675

82-L0140-00 REV.3

WARNING

- **DO NOT USE THE POWER GEAR HYDRAULIC LEVELING SYSTEM (OR AIR SUSPENSION) TO SUPPORT VEHICLE WHILE UNDER COACH OR CHANGING TIRES. THE HYDRAULIC LEVELING SYSTEM IS DESIGNED AS A 'LEVELING' SYSTEM ONLY. TIRE REPAIRS SHOULD BE PERFORMED BY A TRAINED PROFESSIONAL. ATTEMPTS TO CHANGE TIRES WHILE SUPPORTING THE VEHICLE WITH THE HYDRAULIC SYSTEM COULD RESULT IN DAMAGE TO THE MOTOR HOME AND/OR CAUSE SERIOUS INJURY OR EVEN DEATH.**
- **KEEP PEOPLE CLEAR OF COACH WHILE LEVELING SYSTEM IS IN USE.**
- **NEVER LIFT THE WHEELS OFF THE GROUND TO LEVEL THE COACH. DOING SO MAY CREATE AN UNSTABLE CONDITION.**
- **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.**

CAUTION - PARK THE COACH ON A REASONABLY SOLID SURFACE OR THE JACKS MAY SINK INTO GROUND. ON SOFT SURFACES, USE LOAD DISTRIBUTION PADS UNDER EACH JACK.

CAUTION - CHECK THAT POTENTIAL JACK CONTACT LOCATIONS ARE CLEAR OF OBSTRUCTIONS OR DEPRESSIONS BEFORE OPERATION.

BEFORE YOU OPERATE THE SYSTEM:

The leveling system shall only be operated under the following conditions:

1. The coach is parked on a reasonably level surface.
2. The coach "PARKING BRAKE" is engaged.
3. The coach transmission should be in the neutral or park position.
4. The ignition is in the run position, or engine is running.

SYSTEM DESCRIPTION

Please read and study the operating manual before you operate the leveling system.

SYSTEM DESCRIPTION - The Power Gear electro-hydraulic leveling system consists of the following major components:

- (A)** Spring return jacks rated at a lifting capacity appropriate for your coach. Each jack has a large 10" diameter (78.5 square inch) shoe for maximum surface area on soft surfaces.
- (B)** Each jack is powered from a central 12VDC motor/pump assembly, which also includes the hydraulic oil reservoir tank, control valve manifold, and solenoid valves.
- (C)** The semi-automatic control which uses touch pad 500675 controls the system.

RECOMMENDED HYDRAULIC FLUIDS FOR YOUR POWER GEAR LEVELING SYSTEM

The fluids listed here are acceptable to use in your pump assembly. Contact coach manufacturer or selling dealer for information about what specific fluid was installed in your system.

Please consult factory before using any other fluids.

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 Power Gear leveling systems operating in environments with large temperature swings

Operating in cold temperatures (less than -10° F) may cause the jacks may extend and retract slowly. For cold weather operation, fluid specially-formulated for low temperatures may be desirable,

- Mobil DTE 11M, Texaco Rando HDZ-15HVI, Kendall Hyden Glacial Blu, or any Mil. Spec. H5606 hydraulic fluids are recommended for cold weather operation.

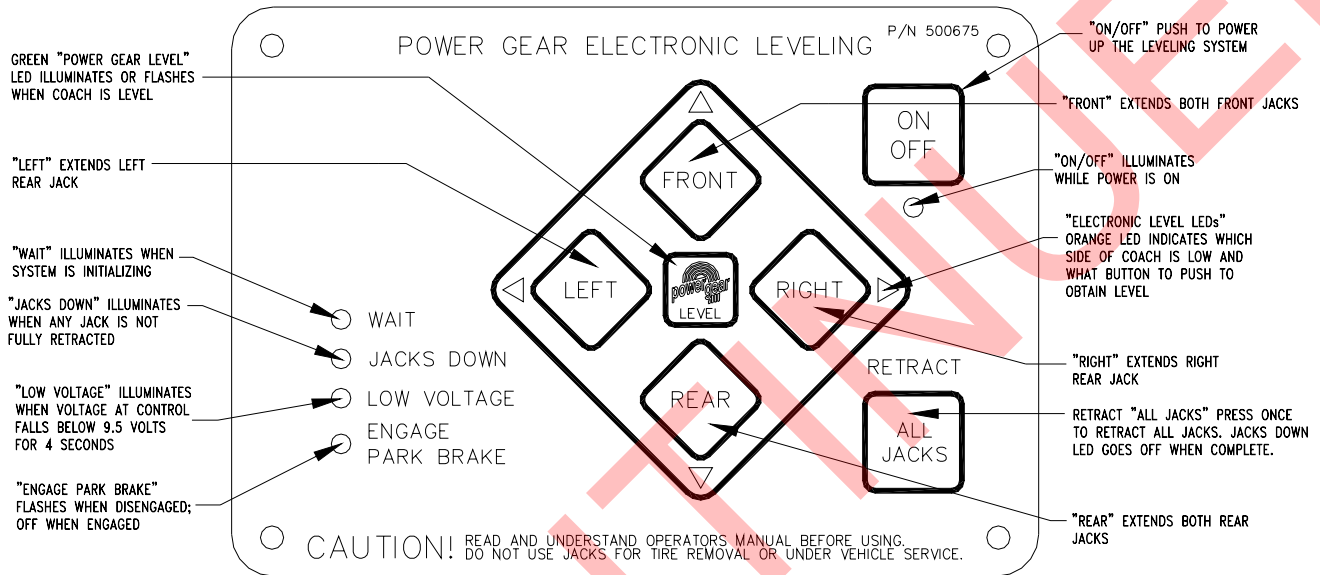
PREVENTATIVE MAINTENANCE PROCEDURES

WARNING:

Your coach should be supported at both front and rear axles with jack stands before working underneath, failure to do so may result in personal injury or death.

1. **Check the fluid level every month.** Fill the reservoir with the jacks in the fully retracted position. On 1998 - PRESENT model year coaches, the fluid should be within 1/4 inch of the fill port lip and checked only with all jacks retracted. On pre-1998 model year coaches the fluid level should be approximately 1/8 inch on the dipstick and checked only with all jacks retracted.
2. **Change fluid every 24 months.**
3. **Inspect and clean all hydraulic pump electrical connections every 12 months.**
4. **Remove dirt and road debris from jacks as needed.**
5. If jacks are down for extended periods, it is recommended to **spray exposed chrome rods with a silicone lubricant** every seven days for protection. If your coach is located in a salty environment (within 60 miles of coastal areas), it is recommended to spray the rods every 2 to 3 days.
6. Jacks equipped with grease fittings at the **bottom of the cylinder should be greased with a light weight lithium grease** using a hand pump style grease gun only. 2 or 3 pumps should be sufficient for 20-30 uses.

SEMI AUTO SYSTEM LEVELING PROCEDURES FOR COACHES WITH PART NUMBER 500675 TOUCHPAD



SELECTING A SITE

When the coach is parked on an excessive slope the leveling requirements may exceed the jack lift stroke capability. If the coach is parked on an excessive slope, the coach should be moved to a more level surface before the leveling system is deployed.

EXCESS SLOPE

When the coach is parked on an excessive slope the leveling requirements may exceed the jack lift stroke capability. When this occurs, the 4 orange jack lights and the center all level green light will blink. The coach must be moved to a more level surface before the leveling jacks are deployed.

AUTOMATIC SAFETY SHUTOFF FEATURE

If the touch panel is left on and inactive for four minutes it will shut off automatically. To reset the system the coach ignition must be turned off, then back on.

Caution: Never lift the wheels off the ground when leveling the motor home.

LEVELING PROCEDURES

1. Push "ON/OFF" pad on control panel. The system is now operational and the electronic level lights will become active.
2. Check to see that the touch-pad parking brake light is not flashing. **Engage parking brake if parking brake light is flashing.**
3. Push the "FRONT" pad until the jacks contact the ground. After the jacks contact the ground continue to depress the front pad to lift the front of the coach at least 3 inches.
4. Push the "REAR" pad until the jacks contact the ground.
5. Observe the "FRONT" and "REAR" orange electronic level lights (arrows). Push and hold the corresponding pad that has the light on. The controls will automatically stop the pump for 5 seconds once a front to rear level has been attained.
6. Observe the "LEFT" and "RIGHT" orange electronic level lights (arrows). Push and hold the corresponding pad that has the light on. The controls will automatically stop the pump for 5 seconds once a side to side level has been attained.

NOTE (Step 5 and Step 6): If operator continues to push and hold the pad for more than 5 seconds after the light has gone out the system will be overridden. This will cause the pump motor to begin running again which in turn will raise the coach.

7. The green center light "Power Gear Level" should now be lit. Repeat steps 5 and 6 if this is not the case
8. Push "ON/OFF" pad to de-energize the system.

JACK RETRACT PROCEDURES

1. Coach ignition must be on. Energize the system by pushing "ON/OFF" pad on control panel. The "ON/OFF" and "JACKS DOWN" lights will be lit.
2. Push and release the "RETRACT ALL JACKS" pad. All the jacks will start to retract and return to the full retract position automatically. When all jacks return to full retract position the "JACKS DOWN" light will go out.
3. When the "JACKS DOWN" light goes out push the "ON/OFF" pad on the control panel to de-energize the system. After a visual inspection around the coach to verify the jacks are fully retracted, you may proceed to travel.

Trouble shooting guide

The following information will guide you to repairs that may be made on site. For problems not covered here, contact your service center or our website for more extensive trouble shooting information in the service manual for your system.

SYSTEM WILL NOT TURN ON, INDICATOR LIGHT DOES NOT LIGHT		
PROBABLE CAUSE		CORRECTIVE ACTION
COACH IGNITION NOT IN RUN POSITION		TURN IGNITION TO RUN POSITION
TRANSMISSION NOT IN PARK OR NEUTRAL		PLACE TRANSMISSION IN PARK OR NEUTRAL
PARKING BRAKE NOT SET		SET BRAKE
CONTROL HAS BEEN LEFT ON FOR MORE THAN FOUR MINUTES, AUTO SHUT OFF		PUSH ON/OFF BUTTON TWICE
NO POWER TO CONTROL		CHECK COACH FUSE OR BREAKER
JACKS WILL NOT EXTEND, PUMP IS NOT RUNNING		
PROBABLE CAUSE		CORRECTIVE ACTION
NO POWER FROM BATTERY TO PUMP		RECHARGE BATTERY RESET BREAKER OR REPAIR POWER CABLE AS NECESSARY.
JACKS WILL NOT EXTEND, PUMP IS RUNNING		
PROBABLE CAUSE		CORRECTIVE ACTION
FLUID LEVEL LOW; PUMP CAVITATING		FILL TANK TO PROPER LEVEL WITH AUTOMATIC TRANSMISSION FLUID SEE TIP SHEET 140
ALL JACKS WILL NOT RETRACT OR WILL NOT RETRACT FULLY		
PROBABLE CAUSE		CORRECTIVE ACTION
SYSTEM OVERFILLED WITH FLUID		DRAIN FLUID TO RECOMMENDED LEVEL-SEE TIP 140
ANY ONE OR TWO JACKS WILL NOT RETRACT AT ALL		
PROBABLE CAUSE		CORRECTIVE ACTION
BROKEN JACK SPRING (S)		REPLACE JACK SPRING SEE TIP SHEET 34
JACK ROD GUIDE IS RUSTED OR DIRTY		CLEAN CHROME ROD, GREASE ROD GUIDE IF EQUIPPED WITH GREASE FITTINGS. OTHERWISE LUBRICATE WITH SILICONE SPRAY. IT MAY BE NECESSARY TO RESEAL JACK OR REPLACE.

ANY JACK RETRACTS VERY SLOWLY		
PROBABLE CAUSE		CORRECTIVE ACTION
JACK ROD GUIDE IS RUSTED OR DIRTY		CLEAN CHROME ROD, GREASE ROD GUIDE IF EQUIPPED WITH GREASE FITTINGS. OTHERWISE LUBRICATE WITH SILICONE FLUID. IT MAY BE NECESSARY TO RESEAL JACK OR REPLACE.
ANY JACK RETRACTS WITH NO POWER, WITH POSSIBLE POPPING SOUND		
PROBABLE CAUSE		CORRECTIVE ACTION
AIR IN SYSTEM		CHECK FOR COILS IN HOSE. REMOVE THE COIL IF PRESENT THEN EXTEND ALL JACKS TO FULL EXTENSION, WAIT 30 SECONDS, THEN RETRACT FULLY, REPEAT 4 CYCLES WAITING A FEW MINUTES BETWEEN CYCLES, CHECK FLUID LEVEL IN BETWEEN CYCLES
CONTAMINATED FLUID		REPLACE FLUID, SEE PAGE A3, TIP SHEET 140 AND 141.
JACK LEGS CREATE POPPING SOUND		EXTEND JACK LEGS, CLEAN ROD, LUBRICATE LOWER GREASE FITTING WITH LIGHT WEIGHT GREASE IF EQUIPPED OR LUBRICATE CHROME ROD WITH SILICONE SPRAY
		DUE TO CHANGES IN TEMPERATURE, EXPANDING AND CONTRACTING OF FLUID WILL MAGNIFY THE PROBLEM OF POPPING JACKS, TO HELP MINIMIZE THIS REPLACE FLUID WITH MERCON V SYNTHETIC FLUID
PANEL JACKS DOWN LIGHT WILL NOT GO OFF WITH JACKS RETRACTED		
PROBABLE CAUSE		CORRECTIVE ACTION
LOW FLUID LEVEL		FILL TANK WITH AUTOMATIC TRANSMISSION FLUID SEE TIP SHEET 140
PANEL JACKS DOWN LIGHT AND ALARM WILL GO ON WHILE DRIVING, JACKS RETRACTED		
PROBABLE CAUSE		CORRECTIVE ACTION
LOW FLUID LEVEL		FILL TANK WITH AUTOMATIC TRANSMISSION FLUID SEE TIP SHEET 140
SYSTEM DOES NOT GO TO CORRECT LEVEL POSITION		
PROBABLE CAUSE		CORRECTIVE ACTION
CONTROL / LEVEL NEEDS TO BE RECALIBRATED		CONTACT YOUR SERVICE CENTER OR SEE TIP SHEET 152

TOUCH PAD LIGHTS ARE FLASHING

PROBABLE CAUSE		CORRECTIVE ACTION
JACKS ARE STILL DOWN PARTIALLY		PRESS RETRACT ALL JACKS BUTTON TO ALLOW JACKS TO FULLY RETRACT
POSSIBLE TROUBLE CODE BEING DISPLAYED		SEE YOUR SERVICE CENTER OR TIP SHEET 184 FOR TROUBLE CODES AND CORRECTIONS
COACH IS IN EMERGENCY RETRACT MODE		FLUID LOW, SEE TIP SHEET 140
SYSTEM TURNS ON BUT TURNS OFF AS SOON AS A BUTTON IS PUSHED		
PROBABLE CAUSE		CORRECTIVE ACTION
LOW SYSTEM VOLTAGE		VOLTAGE MUST REMAIN ABOVE 10 VOLTS WHILE IN OPERATION-CHECK BATTERY CONDITION AND CONNECITONS.

DISCONTINUED

This document has been modified from the original Power Gear Rev. 3 release. All former references to the Power Gear warranty and contact information were removed.

**For all concerns or questions, please contact
Lippert Components, Inc.**

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