WARNING!
UNDERSTAND OPERATOR’S MANUAL BEFORE USING. BLOCK FRAME AND TIRES SECURELY BEFORE REMOVING TIRES OR CRAWLING UNDER VEHICLE.
OPERATOR’S MANUAL

WARNING!

READ THE ENTIRE OPERATOR MANUAL BEFORE OPERATING.

BLOCK FRAME AND TIRES SECURELY BEFORE CRAWLING UNDER VEHICLE. DO NOT USE LEVELING JACKS OR AIR SUSPENSION TO SUPPORT VEHICLE WHILE UNDER VEHICLE OR CHANGING TIRES. VEHICLE MAY DROP AND/OR MOVE FORWARD OR BACKWARD WITHOUT WARNING CAUSING INJURY OR DEATH.

KEEP ALL PEOPLE CLEAR OF VEHICLE WHILE OPERATING LEVELING SYSTEM OR ROOM EXTENSIONS.

KEEP ALL PEOPLE CLEAR OF VEHICLE WHILE DUMPING AIR FROM THE VEHICLE’S SUSPENSION.

DO NOT MOVE THE VEHICLE IF THE VEHICLE IS NOT AT THE PROPER RIDE HEIGHT. CONTACT MANUFACTURER TECHNICAL SERVICE FOR MOVING THE VEHICLE WHEN NOT AT THE PROPER RIDE HEIGHT.

WEAR SAFETY GLASSES WHEN INSPECTING OR SERVICING THE SYSTEM TO PROTECT EYES FROM DIRT, METAL CHIPS, OIL LEAKS, ETC. FOLLOW ALL OTHER APPLICABLE SHOP SAFETY PRACTICES.

IMPORTANT: IF COACH IS EQUIPPED WITH A ROOM EXTENSION, READ ROOM EXTENSION SECTION BEFORE OPERATING LEVELING SYSTEM.

HOW TO OBTAIN WARRANTY SERVICE

THIS IS NOT TO BE INTERPRETED AS A STATEMENT OF WARRANTY

HWH CORPORATION strives to maintain the highest level of customer satisfaction. Therefore, if you discover a defect or problem, please do the following:

FIRST: Notify the dealership where you purchased the vehicle or had the leveling system installed. Dealership management people are in the best position to resolve the problem quickly. If the dealer has difficulty solving the problem, he should immediately contact the Customer Service Department, at HWH CORPORATION.

SECOND: If your dealer cannot or will not solve the problem, notify the Customer Service Department: HWH CORPORATION 2096 Moscow Rd. Moscow IA. 52760 (563) 724-3396 OR (800) 321-3494. Give your name and address, coach manufacturer and model year, date the coach was purchased, or the date of system installation, description of the problem, and where you can be reached during business hours (8:00 a.m. till 5:00 p.m. c.s.t.). HWH CORPORATION personnel will contact you to determine whether or not your claim is valid. If it is, HWH CORPORATION will authorize repair or replacement of the defective part, either by appointment at the factory or by the authorization of an independent service facility, to be determined by HWH CORPORATION. All warranty repairs must be performed by an independent service facility authorized by HWH CORPORATION, or at the HWH CORPORATION factory, unless prior written approval has been obtained from proper HWH CORPORATION personnel.
CONTROL IDENTIFICATION
625 / 2000 SERIES LEVELING SYSTEM
COMPUTER-CONTROL

CONTROL FUNCTIONS

"CANCEL" BUTTON: Push this button to stop any leveling system operation.

"AUTO LEVEL" BUTTON: Push this button any time to start the automatic leveling function.

"AUTO STORE" BUTTON: Push this button to retract all four jacks at the same time.

"MANUAL DUMP" BUTTON: This is a manual button for dumping air from the vehicle suspension.

EXTEND BUTTONS (UP ARROWS): These buttons will extend their respective jack pairs to lift the vehicle.

RETRACT BUTTONS (DOWN ARROWS): These buttons will retract their respective jack pairs to lower the vehicle.

INDICATOR LIGHTS

AUTO LEVEL INDICATOR LIGHT: This light will flash during the automatic leveling function.

STORE INDICATOR LIGHT: This light will flash during the automatic store function.

"NOT IN PARK/BRAKE" LIGHT: This indicator will light when the hand/auto brake is not set and the "AUTO LEVEL" button is being pushed.

LEVELING LIGHTS: The four yellow indicating lights are level sensing indicators. When a yellow light is on, it indicates that its side, end, or corner of the vehicle is low. No more than two lights should be on at the same time. When all four yellow LEVEL lights are out, the vehicle is level.

WARNING LIGHTS: The four red lights surrounding the yellow level indicators are jacks down WARNING lights. They are functional only when the ignition is in the "ON" or "ACC" position, the system is on, and the jacks are extended 1/4 to 1/2 inch.

"EXCESS SLOPE" LIGHT: This indicator will light when the leveling system cannot level the vehicle.

"TRAVEL MODE" LIGHT: This indicator light will be on when the ignition is on, when the jacks are retracted and there are no red WARNING lights on.

MASTER "JACKS DOWN" WARNING LIGHT: This is a light mounted in the dash separate from the touch panel. It will be on when any one or more jacks are extended and the ignition is "ON".

BUZZER: This is a jacks down warning. It will sound if the master "JACKS DOWN" warning light is on.
CONTROL IDENTIFICATION

ROOM OPERATOR’S PANEL

HYDRAULIC ROOM EXTENSION

CAUTION!
UNDERSTAND OPERATOR’S MANUAL BEFORE USING. KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF ROOM WHEN OPERATING.

CONTROL FUNCTIONS

KEY SWITCH: The KEY SWITCH controls power to the ROOM CONTROL SWITCH. When the KEY SWITCH is in the "ON" POSITION the room can be operated, and the key cannot be removed. When the KEY SWITCH is in the "OFF" position the room cannot be operated, and the key can be removed.

ROOM CONTROL SWITCH: The ROOM CONTROL SWITCH is a two position momentary switch. Pressing the switch in the EXTEND POSITION will extend the room. Pressing the switch in the RETRACT POSITION will retract the room. Releasing the ROOM CONTROL SWITCH will halt the operation of the room.
CONTROL IDENTIFICATION
PUMP RUN TIME

PUMP RUN TIME

Pump motors used with HWH leveling systems and room extension systems come in 3 different diameters; 3", 3.7" and 4.5". Contact the vehicle manufacturer or HWH for help with identifying the motor size. It is important that any time the pump runs for more than four minutes with a 3" motor; or six minutes with a 3.7" or 4.5" motor that the motor is allowed to cool for thirty minutes before continuing. Continuous operation of the pump motor without allowing the motor to cool can damage the motor. For cold weather information see "COLD WEATHER OPERATIONS" below.

The HWH systems with a computer processor monitor the pump run time and will turn the pump off if the run time exceeds a specified time. This time can vary with different systems. Due to available electronics or system design, the pump run time programs will also vary. Leveling systems and room extensions that are not controlled by a system processor have no pump run time protection. DO NOT run the pump more than four or six minutes without allowing the pump motor to cool for thirty minutes.

SYSTEM VARIATIONS FOR PUMP RUN TIME

Some systems with rooms run the rooms separate from the system processor. These systems do not monitor pump run time when operating the rooms. DO NOT run the pump more than four or six minutes without allowing the pump motor to cool for thirty minutes.

Some systems can be turned back on immediately after the processor turns the pump off. DO NOT turn the system back on or run the pump without allowing the pump motor to cool for thirty minutes.

When operating some leveling systems manually or operating the room extensions, the pump will turn off and back on while pushing the control button when the pump run time has been exceeded. DO NOT continue without allowing the pump motor to cool for thirty minutes.

With some systems, when the processor has turned the pump off because the run time has been exceeded, power to the HWH system must be turned off and back on before the system will operate. With motorized vehicles, turn the ignition off and back on. With non-motorized vehicles, turn the master power switch for the HWH system off and back on. DO NOT continue without allowing the pump motor to cool for thirty minutes.

Some HWH systems are equipped with a lighted reset switch. If the processor turns the pump off because the run time has been exceeded, the light in the reset switch will turn on. The system will not operate until the reset switch is pushed. DO NOT continue without allowing the pump motor to cool for thirty minutes.

No matter what HWH system is on the vehicle, the pump should not be ran for more than four minutes (3" motors) or six minutes (3.7" or 4.5" motors) without allowing the pump motor to cool for thirty minutes. Continuous operation of the pump motor without allowing the motor to cool can damage the pump motor.

Contact HWH corporation to get specific information about the system in this vehicle.

COLD WEATHER OPERATIONS

HWH leveling and room extension systems are designed to function in cold weather down to 0 degrees Fahrenheit. Below freezing (32 degrees Fahrenheit) the jacks or rooms will operate slower than usual.

For operation in temperatures dropping below -20 degrees Fahrenheit, it is necessary that the system is equipped with oil designed for extreme cold weather application such as a synthetic oil. (Contact HWH for recommendations.)

DO NOT run the pump motor continuously. It is important that any time the pump runs for more than four minutes with a 3" motor; or six minutes with a 3.7" or 4.5" motor that the motor is allowed to cool for thirty minutes before continuing. Continuous operation of the pump motor without allowing the motor to cool can damage the motor. Continuous operation of the pump with slow moving jacks or rooms in cold weather, without allowing the pump motor to cool will cause the pump motor to burn up and damage the pump assembly.

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OPERATING PROCEDURES

GENERAL INSTRUCTIONS

Maintain adequate clearance in all directions for vehicle, room extensions, awnings, doors, steps, etc. Vehicle may move in any direction due to jacks extending or retracting, settling of the jacks or the vehicle, equipment malfunction, etc..

NOTE: This manual is intended for vehicles with a spring or air suspension. If the vehicle has an air suspension with a manual pilot air dump, refer to the vehicle manufacturer for operating instructions.

If parking on soft ground or asphalt paving, a wood block or pad should be placed under each jack.

Any time a hydraulic leveling process is interrupted, retract the jacks according to the JACK RETRACTION Section and then restart the leveling process.

If the hand / auto brake is not set when the "AUTO LEVEL" button is pressed, the "NOT IN PARK/BRAKE" light will come on. When the "AUTO LEVEL" button is released the "NOT IN PARK/BRAKE" light will go out. The Automatic Leveling function will not start.

If the hand / auto brake is not set when the "AUTO LEVEL" button is pressed, the "NOT IN PARK/BRAKE" light will go out. The Automatic Leveling function will not start.

Press the "CANCEL" button or turn the ignition switch "OFF" at any time to stop the operation of the system.

Any room extension or generator slide should be fully retracted before traveling.

Any time a hydraulic leveling process is interrupted, retract the jacks according to the JACK RETRACTION Section and then restart the leveling process.

WARNING: If one or more jacks are extended to the ground.

PREPARATION FOR TRAVEL

IMPORTANT: Before traveling, the red jack warning lights must be off the "TRAVEL MODE" light must be on and the vehicle should be at the proper height for travel. If lights are not correct for travel, retract jack as described in the JACK RETRACTION Section.

If the jacks are retracted but a red "WARNING" light is lit the system needs to be serviced.

Any room extension or generator slide should be fully retracted before traveling.

WARNING: If one or more jacks are extended to the ground.

HAZARD. DO NOT RELY SOLELY UPON WARNING LIGHTS. IT IS THE OPERATOR'S RESPONSIBILITY TO CHECK THAT ALL JACKS ARE FULLY RETRACTED INTO THE STORE/TRAVEL POSITION AND THE VEHICLE IS AT THE PROPER RIDE HEIGHT FOR TRAVELING. CONTACT MANUFACTURER TECHNICAL SERVICE BEFORE MOVING A VEHICLE THAT IS NOT AT PROPER TRAVEL HEIGHT.

If the jacks cannot be retracted according to the JACK RETRACTION Section, retract the jacks according to the MANUAL JACK RETRACTION Section. The system should then be checked.

NOTE: If the vehicle is parked or stored with the jacks extended for an extended period of time and the jacks fail to retract completely, extend the jacks back down to the ground then retract the jacks again.

ROOM EXTENSION PROCEDURES

IMPORTANT: If the vehicle is equipped with a room extension read this section carefully.

It is recommended to complete the Leveling Procedure before operating room extensions. It is recommended to retract room extensions before retracting jacks.

Refer to the vehicle owners manual for proper operation of room extensions.

IMPORTANT: Do not use a room extension support when the vehicle is supported by the leveling system.

HAWH LIGHTED RESET SWITCH

The HWH lighted reset switch is located on the vehicle dash. If there is a failure at any time in the HWH CAN network, the network will shut down. The leveling system will not operate. If the ignition is off, no indicator lights will come on. If the ignition is in the "ON" or "ACC" position, the lighted reset switch and the MASTER WARNING Light will come on.

If the lighted reset switch is on, the switch must be pushed before the leveling system can be operated.

If the lighted reset switch will not go out when pushed, there is a problem with the central control module of the network system. The Leveling System will not operate.

WARNING: DO NOT MOVE THE VEHICLE WHILE THE LEVELING JACKS ARE STILL IN CONTACT WITH THE GROUND OR IN THE EXTEND POSITION. THIS VEHICLE IS EQUIPPED WITH STRAIGHT-ACTING JACKS. MOVING THE VEHICLE WITH THE LEVELING JACKS EXTENDED CAN CAUSE SEVERE DAMAGE TO THE JACKS AND OR THE VEHICLE AND CREATE A DRIVING HAZARD. DO NOT RELY SOLELY UPON WARNING LIGHTS. IT IS THE OPERATOR'S RESPONSIBILITY TO CHECK THAT ALL JACKS ARE FULLY RETRACTED INTO THE STORE/TRAVEL POSITION AND THE VEHICLE IS AT THE PROPER RIDE HEIGHT FOR TRAVELING. CONTACT MANUFACTURER TECHNICAL SERVICE BEFORE MOVING A VEHICLE THAT IS NOT AT PROPER TRAVEL HEIGHT.

NOTE: If the vehicle is parked or stored with the jacks extended for an extended period of time and the jacks fail to retract completely, extend the jacks back down to the ground then retract the jacks again.

If the lighted reset switch is on, the switch must be pushed before the leveling system can be operated.

If the lighted reset switch will not go out when pushed, there is a problem with the central control module of the network system. The Leveling System will not operate.

IMPORTANT: If the vehicle is equipped with a room extension read this section carefully.

It is recommended to complete the Leveling Procedure before operating room extensions. It is recommended to retract room extensions before retracting jacks.

Refer to the vehicle owners manual for proper operation of room extensions.

IMPORTANT: Do not use a room extension support when the vehicle is supported by the leveling system.
AUTOMATIC HYDRAULIC LEVELING

1. Place transmission in the recommended position for parking the vehicle and set parking brake. Turn the coach engine off. Turn the ignition to the “ACCESSORY” position.

2. At this time, the operator may want to check the jacks and place a pad under each jack if the ground will not support the vehicle.

WARNING: PRIOR TO PUSHING THE “AUTO LEVEL” BUTTON THE OPERATOR MUST BE SURE THAT ALL PERSONS AND OBJECTS ARE CLEAR OF THE VEHICLE. THE VEHICLE SUSPENSION WILL START TO DUMP AIR AND LOWER AS SOON AS THE AUTO LEVEL BUTTON IS PUSHED.

3. Press the “AUTO LEVEL” button one time. The AUTO LEVEL light will start to flash. Air will begin to dump air from the vehicle suspension. After approximately 25 seconds, the leveling process will begin.

IMPORTANT: During the Automatic Leveling procedures, pushing the “AUTO LEVEL”, “AUTO STORE” or the “CANCEL” button on the HWH touch panel will stop the automatic leveling function.

AUTO LEVEL SEQUENCE: During the automatic leveling sequence, after the system has extended the appropriate jacks to level the vehicle and has turned the yellow level indicator lights off, the system will then stabilize the vehicle. While the system is stabilizing the vehicle, the yellow level indicator lights are inhibited from coming on. Stabilizing the vehicle is accomplished by extending any jacks to the ground that were not used to level the vehicle. This is done by monitoring a pressure switch on each jack. Any jack used to stabilize the vehicle will lift the vehicle approximately one half (½) inch. This “bumps” the vehicle up slightly when leveling. Due to the ½ degree accuracy tolerance of the sensing unit, one or two yellow level indicator lights may come on after the red auto level indicator light turns off.

The slight lift experienced during the stabilizing procedure normally is not sufficient to cause a level issue for the motor home. However, a feature of the single step leveling system is the manual leveling buttons will function anytime the ignition is in the ON or ACC. position and the park brake is set. If desired, the operator can use the UP ARROWS (extend jacks) that correspond to any lit yellow level indicator light to “bump” the vehicle up slightly to turn that yellow indicator light off.

EXCESS SLOPE SITUATION: In the event the jacks are unable to level the coach, the “EXCESS SLOPE” light will come on. Excess slope is when two jacks are fully extended without turning the yellow level light out. The system will not stabilize the vehicle if the “EXCESS SLOPE” light comes on. One or more jacks may not be extended. The system will shut off leaving the “EXCESS SLOPE” light on. The “EXCESS SLOPE” light will remain on if there is power to the control box, until the jacks have been fully retracted using the “STORE” button, turning the red warning lights out. Move the vehicle to a more level position or level the vehicle as close as possible according to the MANUAL LEVELING section. Manual leveling will operate when the EXCESS light is on.

5. Turn the ignition switch to the “OFF” position.
OPERATING PROCEDURES
2000 SERIES LEVELING SYSTEM

JACK RETRACTION

**WARNING:** THE OPERATOR MUST BE SURE THAT THERE ARE NO OBJECTS UNDER THE VEHICLE AND THAT ALL PEOPLE ARE CLEAR OF THE VEHICLE.

1. Start the engine. Store the jacks immediately.

2. Press the "STORE" button. The store indicator light will flash. The vehicle should start to return to ride height. As each jack retracts, its red WARNING light will go out. The pump will run with all retract loads staying on until 10 seconds after the last red warning light goes out. If any warning light remains on the pump and all retract loads will remain on for (6) six minutes from the time the "AUTO STORE" button was pushed.

**IMPORTANT:** DO NOT interrupt power to the leveling system while the "STORE" indicator light is blinking. DO NOT push the "OFF" button or turn the ignition key. The system must be allowed to completely finish the STORE mode.

**WARNING:** DO NOT MOVE THE VEHICLE WHILE THE LEVELING JACKS ARE STILL IN CONTACT WITH THE GROUND OR IN THE EXTEND POSITION. THIS VEHICLE IS EQUIPPED WITH STRAIGHT-ACTING JACKS. MOVING THE VEHICLE WITH THE LEVELING JACKS EXTENDED CAN CAUSE SEVERE DAMAGE TO THE JACKS AND OR THE VEHICLE AND CREATE A DRIVING HAZARD. DO NOT RELY SOLELY UPON WARNING LIGHTS. IT IS THE OPERATOR’S RESPONSIBILITY TO CHECK THAT ALL JACKS ARE FULLY RETRACTED INTO THE STORE/TRAVEL POSITION AND THE VEHICLE IS AT THE PROPER RIDE HEIGHT.

3. The vehicle can be moved as soon as the red warning lights are out, the jacks are in the STORE/TRAVEL position, the green "TRAVEL" light is on, and the suspension air bags are inflated to the vehicles proper ride height.

**IMPORTANT:** If a red warning light and buzzer come on while traveling, the jacks should be checked as soon as a safe parking location is found.

4. If jacks cannot be retracted by the above procedure see MANUAL JACK RETRACTION Section.
OPERATING PROCEDURES

MANUAL HYDRAULIC OPERATION

1. Place transmission in the recommended position for parking the vehicle, and set the parking brake. Turn the ignition to the "ACCESSORY" position.

2. The air must be dumped from the vehicle suspension before leveling. Push the "DUMP" button. Wait until all air is exhausted from the vehicle suspension.

3. Place pads under the jack feet if the ground will not support the vehicle on the jacks.

4. The vehicle may be leveled using the manual EXTEND (UP ARROW) buttons on the right half of the panel. If a yellow LEVEL SENSING light is on, that side or end of the vehicle is low. It is best to level the vehicle side to side first, if needed, before front to rear.

Jacks will extend (or retract) in pairs to raise (or lower) a side or end of the vehicle. Any jack not used for leveling can be extended to the ground. This provides additional stability against wind and activity in the vehicle. Jacks used to stabilize the vehicle after leveling is complete should lift the vehicle slightly after touching the ground.

IMPORTANT: Do not continue to push an EXTEND button for more than ten (10) seconds after that pair of jacks are fully extended.

5. When leveling is completed, turn the ignition switch to the "OFF" position.

IMPORTANT: Push the "STORE" button before traveling when manual operation of the leveling system is used.
OPERATING PROCEDURES

ROOM EXTEND PROCEDURE

**WARNING:** OPERATING A ROOM WITH ANY ROOM LOCKING, CLAMPING OR MANUAL RETRACTING DEVICES ATTACHED OR ENGAGED CAN CAUSE PERSONAL INJURY AND VEHICLE DAMAGE. IT IS THE OPERATOR’S RESPONSIBILITY TO ENSURE THAT ALL ROOM LOCKING, CLAMPING OR MANUAL RETRACTING DEVICES ARE DETACHED OR DEISENGAGED BEFORE OPERATING THE ROOM.

NOTE: It is recommended to complete any applicable Leveling Procedure before operating room extensions. It is recommended to retract room extensions before retracting a leveling system.

1. Follow applicable LEVELING AND STABILIZING PROCEDURES.

2. Unlock all room-locking devices to include travel clamps/locks supplied by manufacturers other than HWH.

**NOTE:** If a MANUAL RETRACT WINCH is attached to the room remove it before extending the room.

**WARNING:** KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF ROOM WHEN OPERATING.

**NOTE:** Make sure there is adequate clearance to fully extend the room.

3. The ignition must be ON or in the ACC. position for the rooms to function.

4. Turn the room control panel KEY SWITCH to the "ON" position.

**NOTE:** The park brake must be set to operate the rooms.

5. To extend the room, press and hold the ROOM CONTROL SWITCH in the "EXTEND" position until the room is fully extended.

**IMPORTANT:** If the room extension is a level out room, hold the room control switch to the extend position until the room is fully extended and has dropped to the completely lowered position.

**NOTE:** Hold the switch to "EXTEND" three or four seconds after the room is fully extended. This assures proper pressurization of the cylinders. During normal operation of the room, do not reverse direction of the room until the room is fully extended. If necessary, the direction of the room may be reversed, but watch for binding of the room. If the direction of the room has been reversed, DO NOT re-extend the room until the room has been fully retracted.

**IMPORTANT:** Do not hold the ROOM CONTROL SWITCH in the "EXTEND" position for more than ten seconds after the room is fully extended (and down if applicable) or stops moving. If either side of the room stops moving, release the room control switch immediately. DO NOT force the room. DO NOT reverse direction of the room, contact HWH Customer Service for assistance 1-800-321-3494.

**NOTE:** Releasing the ROOM CONTROL SWITCH will halt the operation of the room.

6. Turn the room control panel KEY SWITCH to the "OFF" position.

**IMPORTANT:** Do not use a room extension support when the vehicle is supported by the leveling system.
OPERATING PROCEDURES

ROOM RETRACT PROCEDURE

**WARNING:** KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF ROOM WHEN OPERATING.

Refer to vehicle manufacturer for proper sequence of room extension and leveling system operation.

1. The park brake must be set and the ignition must be ON. The room will not operate if the park brake is not set.

2. Turn the room control panel KEY SWITCH to the "ON" position.

3. To retract the room press and hold the ROOM CONTROL SWITCH in the "RETRACT" position until the room is fully retracted.

**IMPORTANT:** If the room extension is a level-out room, the room must raise completely before it will retract. If the room will not raise, do not force the room. Refer to the MANUAL ROOM LIFT PROCEDURES page.

**NOTE:** Hold the switch to "RETRACT" three or four seconds after the room is fully retracted. This assures proper pressurization of the cylinders. **During normal operation of the room, do not reverse direction of the room until the room is fully retracted. If necessary, the direction of the room may be reversed, but watch for binding of the room. If the direction of the room has been reversed, DO NOT retract the room until the room has been fully extended.**

**IMPORTANT:** Do not hold the ROOM CONTROL SWITCH in the "RETRACT" position for more than ten seconds after the room is fully retracted or stops moving.

If either side of the room stops moving, release the room control switch immediately. **DO NOT force the room. DO NOT reverse direction of the room, contact HWH Customer Service for assistance 1-800-321-3494.**

**NOTE:** Releasing the ROOM CONTROL SWITCH will halt the operation of the room.

4. Turn the room control panel KEY SWITCH to the "OFF" position.

5. If the room will not retract see the MANUAL ROOM RETRACT PROCEDURE.

**IMPORTANT:** Room-locking devices should be locked while traveling.
OPERATING PROCEDURES
"UNIVERSAL STRAIGHT OUT" ROOM EXTENSION MECHANISM
MANUAL ROOM RETRACTION PROCEDURES

1. Determine which extend and retract solenoid valves are assigned to the room. Manually open both valves by moving the valve release cams to the open position. See the HYDRAULIC PUMP/ MANIFOLD diagram.

IMPORTANT: ONLY MOVE THE RELEASE CAM IN THE DIRECTION SHOWN. MOVING THE CAM IN THE OPPOSITE DIRECTION CAN DAMAGE THE VALVES.

2. Start both threaded rods until resistance is met, one for the front and one for the rear mechanism should be provided.

NOTE: To access the threaded blocks refer to vehicle manufacturer.

3. Do Not use an impact wrench. Using wrench provided, a personal wrench or a tire iron with a 1-1/8" opening rotate either mechanism’s threaded rod clockwise 6 complete turns.

4. Move to the other room extension mechanism, rotate the threaded rod clockwise 12 complete turns.

5. Return to the first room extension mechanism and rotate the threaded rod clockwise 12 complete turns.

6. Repeat steps 4 and 5 alternating from mechanism to mechanism rotating each threaded rod 12 complete turns until room is sealed. (DO NOT exceed 15 ft.lbs) Make sure the room does not bind.

IMPORTANT: If at any stage something is not understood or if the room begins to bind DO NOT force the room, contact HWH Customer Service for assistance 1-800-321-3494.

NOTE: Leave the solenoid valves open and the threaded rods in place until the room has been serviced.

IMPORTANT: DO NOT EXTEND THE ROOM UNTIL THE ROOM HAS BEEN SERVICED. ANY SOLENOID VALVES LEFT OPEN SHOULD BE CLOSED AND THE THREADED RODS SHOULD BE COMPLETELY REMOVED.

NOTE: If there is not enough room to remove both threaded rods completely, alternate backing the threaded rods out and slightly extending the room. Be careful to not extend the room so far that the threaded rods impact the coach wall or the mechanism.
OPERATING PROCEDURES

AUXILIARY PUMP RUN SWITCH OPERATION

WARNING: KEEP AWAY FROM WHEELS, DO NOT CRAWL UNDER THE VEHICLE, KEEP A SAFE DISTANCE IN FRONT AND REAR OF THE VEHICLE. THE VEHICLE MAY DROP AND / OR MOVE FORWARD OR BACKWARD WITHOUT WARNING AS THE VALVE RELEASE IS OPERATED.

EXTEND JACKS OR ROOMS

NOTE: It is best if jacks are extended in pairs; both front, both rear, right front & right rear or left front & left rear. Only try to extend one room or step mechanism at a time.

1. Use the hydraulic connection diagrams to locate the appropriate valve(s) to extend the desired jack(s), room or step.

2. Locate the pump run switch on the power unit assembly.

3. Move the valve release cam(s) to the “VALVE OPEN” position.

4. Push the pump run toggle switch to the “RUN” position. Hold the toggle switch to “RUN” until the equipment is in the desired position.

5. Move the valve release cam(s) to the “VALVE CLOSED” position and release the the pump run toggle switch.

NOTE: If the pump toggle switch is released before closing a valve when extending a jack, the vehicle will drop until the valve is closed.

IMPORTANT: RELEASE CAM MIGHT BE ROTATED TO ANY DIRECTION ON THE VALVE. MAKE SURE TO MOVE THE RELEASE CAMS IN THE CORRECT DIRECTION. INCORRECT MOVEMENT OF THE CAMS CAN DAMAGE THE VALVES.

RETRACTING

POWER - EXTEND / POWER - RETRACT JACKS ROOMS OR STEPS

IMPORTANT: POWER - EXTEND / SPRING - RETRACT JACKS (SINGLE ACTING CYLINDERS) CAN NOT BE RETRACTED WHEN THE PUMP IS RUNNING.

WARNING: DO NOT CRAWL UNDER THE VEHICLE TO OPEN JACK MANIFOLD VALVES. ALLOW AMPLE ROOM FOR THE VEHICLE TO MOVE IN ANY DIRECTION WHEN A JACK MANIFOLD VALVE IS OPENED. OPEN THE VALVE RELEASE CAMS SLOWLY TO KEEP THE VEHICLE FROM DROPPING RAPIDLY.

1. Use the hydraulic connection diagrams to locate the appropriate valve(s) to retract the desired jack(s), room or step.

2. Locate the pump run switch on the power unit assembly.

3. Move the valve release cam(s) to the “VALVE OPEN” position.

IMPORTANT: WHEN RETRACTING JACKS, THE VEHICLE WILL START TO DROP AS SOON AS A JACK VALVE IS OPENED.

4. Push the pump run toggle switch to the “RUN” position. Hold the toggle switch to “RUN” until the equipment is fully retracted.

5. Move the valve release cam(s) to the “VALVE CLOSED” position and release the the pump run toggle switch.

NOTE: WHEN RETRACTING JACKS - Start with the front jacks. Alternate between the left and right jack several times, partially opening the jack valve slowly. This will allow the jacks to retract slightly each time, until the weight of the vehicle is off the jacks. This will reduce the possibility of twisting the vehicle. With the weight of the vehicle off the front jacks, open the front jack valves and use the pump run toggle switch. When both front jacks completely retracted, repeat the process with the rear jacks.

IMPORTANT: DO NOT hold the pump toggle switch to “PUMP RUN” for more than 4 minutes without allowing the pump motor to cool.

PUMP RUN

4 MINUTE

RUN LIMIT

PUMP RUN

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AUXILIARY HAND PUMP OPERATION

NOTE: Each hydraulic function requires a pair of solenoid valves one each for the extend and retract procedures. The number of functions and the items controlled by each pair of solenoid valves will vary for each system. The diagrams shown on this page represent a (3) function system of (2) jacks and (1) room as indicated by the labels shown in FIG 1. Use the labels specific to your system when following these procedures. Room control solenoid valves may be located at the synchronizing cylinder, not on the pump manifold.

The auxiliary hand pump can be used to extend or retract the landing gear, jacks or room extensions anytime the pump will not function.

The auxiliary hand pump is a two stage pump that will produce enough pressure to extend the landing gear and lift the vehicle as well as retract the landing gear. When operating the auxiliary pump to lift the vehicle or when the jacks are fully retracted, the pump handle will seem to "snap" as the pump goes to the second stage. The pumping action will be easier at first as the second stage starts to create more pressure.

NOTE: The hand pump will swivel to any position which will ease the operation of the hand pump.

NOTE: If a room cannot be retracted using the auxiliary hand pump, see "MANUAL ROOM RETRACTION PROCEDURES".

WARNING: THE VEHICLE SHOULD BE SUPPORTED BY AUXILIARY STANDS OR SECURELY HITCHED TO THE TOW VEHICLE BEFORE OPENING ANY VALVES.

The auxiliary hand pump may work easier if only one valve is open at a time. Be careful to not twist the vehicle if only one solenoid valve is open.

IMPORTANT: FOLLOW THE "SET UP" AND "PREPARATION FOR TRAVEL" PROCEDURES WHEN USING THE AUXILIARY HAND PUMP.

It is recommended to operate the auxiliary hand pump occasionally to check its operation.

IMPORTANT: ONLY MOVE THE RELEASE CAM IN THE DIRECTION SHOWN. MOVING THE CAM IN THE OPPOSITE DIRECTION CAN DAMAGE THE VALVES.
MAINTENANCE

OIL LEVEL

All maintenance should be done as part of the normal servicing of the coach.

The oil level should be checked when the vehicle is first purchased and then once every two years. More often if there is an oil leak in the system.

Any HWH hydraulic equipment, including jacks, slide-outs and steps should be fully retracted before checking fluid level. The oil reservoir is part of the pump / manifold assembly. The oil level is checked and filled through the breather cap. Clear any dirt away from the breather / filler cap before removing.

The oil level should be within one inch of the top of the reservoir. Most breather caps have a dipstick. Fluid level should be between the bottom of the dipstick and the center mark.

NOTE: Overfilling the tank can cause leakage of oil through the breather cap.

FLUID: HWH Specialty Hydraulic Oil is recommended. In an emergency Dexron automatic transmission fluid can be used. NOTE: Dexron automatic transmission fluid contains red dye and can cause staining should a leak occur. DO NOT USE brake fluid or hydraulic jack fluid. Use of these can damage seals.

UNUSUAL CONDITIONS

In general, to insure the smooth operation of the leveling system, it is a good idea to occasionally check the individual leveling units to prevent problems. This is especially true under the unusual conditions stated in the following:

If driving conditions are unusually muddy, the units may become caked or clogged with mud. This condition may hamper the proper operation of the leveling system. This problem may be prevented or remedied by cleaning off each leveling unit if they become excessively muddy.

In wet or icy weather leveling units may become encrusted with ice. This may cause the leveling system to function improperly. To eliminate this problem, periodically check the leveling units and break loose any ice which may be causing improper operation.

Do not move the trailer while the leveling units are still in contact with the ground. Visually check to see if the leveling units have returned to the STORE/TRAVEL position before moving the trailer.

NOTE: All major components of the system can be replaced with rebuilt units or can be sent to HWH CORPORATION to be rebuilt, when the system is out of warranty.

WINTER WEATHER DRIVING

Anti-icing / deicing agents when splashed on your vehicle, continue to absorb moisture from the air even after they have dried. This can facilitate corrosion of metallic components, such as HWH jacks.

To help reduce the corrosion of jacks after exposure to anti-icing / deicing agents, thoroughly wash jacks with warm soapy water.
To prime the hand pump, it will be necessary to remove a hose from one of the jacks. One of the front jacks would be best, but use the easiest hose to get to.

If the system has Double-Acting cylinders on the front, remove the rod end hose from either of the front jacks. Place the end of the hose in a bucket. Make sure the tank is at least half full. Pump the hand pump until a healthy flow of oil is coming from the hose.

**IMPORTANT: DO NOT ALLOW THE FLUID LEVEL IN THE TANK TO LOWER MORE THAN 1 INCH BEFORE ADDING FLUID.**

Reattach the hose and retry the hand pump. Repeat the procedure if the hand pump does not move the jacks.

If the system has only Single-Acting jacks with return springs, remove the easiest hose to access and place the end in a bucket. Using the release cam, manually open the EXTEND solenoid valve for that jack (if equipped with solenoid valves) or move the jack control hydraulic switch to "EXTEND" for that jack. Make sure the tank is at least half full. Pump the hand pump until a healthy flow of fluid comes from the hose.

**IMPORTANT: DO NOT ALLOW THE FLUID LEVEL IN THE TANK TO LOWER MORE THAN 1 INCH BEFORE ADDING FLUID.**

Reattach the hose and retry the hand pump. Repeat the procedure if the hand pump does not move the jacks.
SENSING UNIT MAINTENANCE/SERVICE

SENSING UNIT ACCURACY TOLERANCE

The sensing unit has an accuracy tolerance of ± 5.4 inches front to rear and ± 1 inch side to side on a 36 foot vehicle. Typical leveling results will be better.

SENSING UNIT ADJUSTMENT

Level the vehicle by placing a bubble level in the center of the freezer floor or upon whichever surface within the vehicle that is to be level. Using the Leveling System and the bubble level, ignoring the yellow LEVEL lights on the Touch Panel, level the vehicle until the bubble is centered.

With the vehicle level according to the bubble level, if there are no yellow lights lit on the Touch Panel, the sensing unit is properly adjusted. If there are yellow LEVEL lights lit on the Touch Panel, manual adjustments to the Sensing Unit are needed. A Phillips screw driver or sockets w/driver or box end wrenches of 7/8, 3/4, 1/2, 5/16 or 1/4 sizes will be needed.

The Sensing Unit is mounted inside the Control Box. The Control Box is mounted to the power unit/valve assembly.

There are four LED’s on the Sensing Unit, A, B, C and D. Refer to the drawing below. The Sensing Unit is adjusted by turning the adjustment nut to turn out LED’s B and D. The adjustment screw will turn out LED’s A and C. If the adjustment nut has to be turned more than 1/2 flat or the adjustment screw has to be turned more than 3/4 turn to turn the LED out, there may be a problem with the Sensing Unit or the mounting of the Control Box. If two LED’s are on, it is best to make the B-D adjustments first, then hold the adjustment nut from moving while making the A-C adjustment.

NOTE: If opposing LED’s are lit, there is a problem with the Sensing Unit.

If LED (A) is lit: Turn the adjustment screw COUNTER CLOCKWISE until the LED is off.

If LED (B) is lit: Turn the adjustment nut COUNTER CLOCKWISE until the LED is off.

If LED (C) is lit: Turn the adjustment screw CLOCKWISE until the LED is off.

If LED (D) is lit: Turn the adjustment nut CLOCKWISE until the LED is off.

IMPORTANT: When all 4 LED’s are off, move the vehicle to an unlevel position so one or two yellow lights are on. Level the vehicle according to the yellow LEVEL lights. Recheck the level. If more adjustment is needed, DO NOT try to adjust the sensing unit until the yellow level lights go out, instead just “tweak” the sensing unit, ignoring the LED’s on the sensing unit.

Example: After the initial adjustment and releveling the vehicle, the front is still low. This means the front yellow level light is turning off too soon. Determine which sensing unit light is the front light, A-B-C or D. Move the adjustment for that light very, very, slightly in the OPPOSITE direction that is given in the above instructions for LED’s A, B, C, and D. This will allow the front yellow light to stay on slightly longer to bring the front up more. Again, unlevel the vehicle then relevel the vehicle using the yellow level lights on the touch panel. Recheck with a level. Repeat the "tweaking" process until the system levels the vehicle properly.
HYDRAULIC LINE CONNECTION DIAGRAM

2000 SERIES LEVELING SYSTEM

4 - STRAIGHT-ACTING, POWER-EXTEND/POWER-RETRACT JACKS

JACK EXTEND VALVES (4)
OPPOSING VALVES ARE
JACK RETRACT VALVES (4)

TALL FITTING

CAP END HOSE

ROD END HOSE

RETURN LINE
PRESSURE LINE

SEE HYDRAULIC LINE
CONNECTION DIAGRAM
ROOM EXTENSION
REMOTE MANIFOLDS

LEFT FRONT JACK

LEFT REAR JACK

RIGHT FRONT JACK

RIGHT REAR JACK

MP64.3922A
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HYDRAULIC LINE CONNECTION DIAGRAM
REMOTE ROOM MANIFOLDS

SEE HYDRAULIC LINE CONNECTION DIAGRAM
2000 SERIES LEVELING SYSTEM

ROOM 3
EXTEND ROOM TO
CHECK OIL LEVEL

SEE HYDRAULIC LINE
CONNECTION DIAGRAMS
UNIVERSAL STRAIGHT OUT
SLIDE OUT

3E - ROOM 3 CYLINDER EXTEND
ROOM EXTEND

3R - ROOM 3 CYLINDER RETRACT
ROOM RETRACT

2E - ROOM 2 CYLINDER EXTEND
ROOM EXTEND

2R - ROOM 2 CYLINDER RETRACT
ROOM RETRACT

1E - ROOM 1 CYLINDER EXTEND
ROOM RETRACT

1R - ROOM 1 CYLINDER RETRACT
ROOM EXTEND

NOTE: ROOMS MAY BE PLUMBED
AND WIRED DIFFERENTLY THAN SHOWN.

SEE HYDRAULIC LINE
CONNECTION DIAGRAMS
UNIVERSAL STRAIGHT OUT
SLIDE OUT

ROOM 1
EXTEND ROOM TO
CHECK OIL LEVEL

ROOM 2
EXTEND ROOM TO
CHECK OIL LEVEL

TOP VIEW OF
MANIFOLDS

PRESSURE
RETURN

CAP END
CONNECTION - B

ROD END
CONNECTION - A

CAP END
CONNECTION - B

ROD END
CONNECTION - A
For connection clarity, only the room cylinders are shown.

C - Hoses must be high pressure hose and they must be equal length.
D - Hose must be equal length and the same type of hoses.
E & F - Hoses are high pressure hose supplied with the mechanisms.

See hydraulic line connection diagram - remote room manifolds.
KEY SWITCH
PIN 2 - BLACK (W6810 - 12) FROM HARNESS
PIN 4 - RED (W6100) FROM HARNESS
PIN 6 - BLACK TO PIN 24 OF ROCKER SWITCH
PIN 8 - BLACK TO PIN 11 OF ROCKER SWITCH

ROCKER SWITCH
PIN 11 - BLACK TO PIN 8 OF KEY SWITCH
PIN 12 - BLACK (W5000 - 02) FROM HARNESS
PIN 13 - BLACK (W5100 - 02) FROM HARNESS
PIN 24 - BLACK TO PIN 6 OF KEY SWITCH
PIN 25 - BLACK (W8601) FROM HARNESS
PIN 26 - BLACK (W8601) FROM HARNESS
SEE ELECTRICAL CONNECTION DIAGRAMS - REMOTE STEP MANIFOLD & MASTER AND PUMP RELAYS PAGE 1 OF 2

SEE ELECTRICAL CONNECTION DIAGRAM - MASTER AND PUMP RELAYS PAGE 2 OF 2

SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL MODULE - WIRE AND CONNECTION INFORMATION - PAGE 3 OF 5

SEE ELECTRICAL CONNECTION DIAGRAM - LEVELING SYSTEM HYDRAULIC MANIFOLD

CENTRAL CONTROL MODULE

SIDE VIEW

GRAY
GREEN
BLACK

LEFT FRONT JACK

RIGHT FRONT JACK

LEFT REAR JACK

RIGHT REAR JACK

MP84.4562
10APR12
## ELECTRICAL CONNECTION DIAGRAM
### CENTRAL CONTROL MODULE

**Wire and Connection Information - Page 1 of 5**

### Pin # | Wire Color | Wire Number | Wire Description and Function
---|---|---|---
CN1 | | 8 PIN BLACK CONNECTOR | NO CONNECTION
1 AND 2 | | 6800 | SWITCHED +12 TO TOUCH PANEL
3 | RED | 6100 | GROUND
4 | WHITE | 6230 | CAN SHIELD
5 | | | IGNITION +12 - NOT USED
6 | RED | 6110 | CAN LOW
7 | GREEN | | CAN LOW
8 | YELLOW | | CAN LOW

**CN10** | | 6 PIN GRAY CONNECTOR | NO CONNECTION
1 | BLACK | 7599 | RESET SWITCH LIGHT CONTROL - SWITCHED +12
2 | RED | 6100 | RESET SWITCH SUPPLY +12
3 | BLACK | 7550 | RESET SWITCH OUTPUT +12
4 | RED | 6121 | WARNING LIGHT AND BUZZER SUPPLY +12
5 | WHITE | 6230 | RESET SWITCH LIGHT GROUND
6 | BLACK | 7699 | WARNING LIGHT AND BUZZER CONTROL - SWITCHED GROUND

**CN11** | | 12 PIN GRAY CONNECTOR | NO CONNECTION
1 | RED | 6110 | SWITCHED +12 FROM IGNITION
2 THRU 4 | | | NO CONNECTION
5 | RED | 6110 | SWITCHED +12 FROM IGNITION
6 | RED | 6100 | BATTERY +12
7 | WHITE | 6230 | GROUND FOR PROCESSOR
8 THRU 10 | | | NO CONNECTION
11 | BLACK | 9000 | FROM PARK BRAKE SWITCH - SWITCHED GROUND
12 | RED | 6100 | BATTERY +12

**CN9** | | 8 PIN GREEN CONNECTOR | NO CONNECTION
1 | BLACK | 8500 | MASTER RELAY CONTROL SWITCHED +12
2 | BLACK | 8100 | SWITCHED GROUND FROM 3000 LB PRESSURE SWITCH
3 | | | NO CONNECTION
4 | BLACK | 8600 | PUMP RELAY CONTROL SWITCHED +12
5 | | | NO CONNECTION
6 | BLACK | 9901 | PUMP MONITOR - SWITCHED +12 FROM PUMP RELAY
7 AND 8 | | | NO CONNECTION

---

**Notes:**
- TWO 12 PIN BLACK CONNECTORS ON TOP RING ARE NOT SHOWN.
- FRONT VIEW:
  - PIN 8
  - PIN 1
  - PIN 1
  - PIN 6
  - PIN 12
  - PIN 1
  - PIN 8
  - PIN 1

---

**MP84.4610A**

**21MAR11**
### Wire and Connection Information

#### Front View

![Diagram of CN1 and CN2 Black Connectors](image)

<table>
<thead>
<tr>
<th>PIN #</th>
<th>Wire Color</th>
<th>Wire Number</th>
<th>Wire Description and Function</th>
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<tbody>
<tr>
<td>1</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 FROM PUMP RELAY TO ROOM 1 CONTROL</td>
</tr>
<tr>
<td>2</td>
<td>BLACK</td>
<td>5000</td>
<td>SWITCHED +12 TO CONTROL BOX ROOM 1 EXTEND</td>
</tr>
<tr>
<td>3</td>
<td>BLACK</td>
<td>5100</td>
<td>SWITCHED +12 TO CONTROL BOX ROOM 1 RETRACT</td>
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<td>4</td>
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<td>6811</td>
<td>SWITCHED +12 FROM PUMP RELAY TO ROOM 2 CONTROL</td>
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<td>5</td>
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<td>5001</td>
<td>SWITCHED +12 TO CONTROL BOX ROOM 2 EXTEND</td>
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<td>6</td>
<td>BLACK</td>
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<td>SWITCHED +12 TO CONTROL BOX - PUMP CONTROL</td>
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<td>11</td>
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</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>+12 BATTERY</td>
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</tbody>
</table>

**Note:** The diagram shows the connection points for CN1 and CN2, with each connection point labeled with its corresponding wire color and number. The table lists the wire numbers and their respective functions, including switched +12 connections and connections to control boxes for extend and retract operations.
## ELECTRICAL CONNECTION DIAGRAM
### CENTRAL CONTROL MODULE
### WIRE AND CONNECTION INFORMATION - PAGE 3 OF 5

### FRONT VIEW

![Front View Diagram]

### SIDE VIEW

![Side View Diagram]

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE COLOR</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
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<tr>
<td>3</td>
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<td>5151</td>
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<tr>
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<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
</tr>
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<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
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<td>SWITCHED +12 FROM MASTER RELAY</td>
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<td>GROUND FROM GROUND STUD</td>
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<td>GROUND FROM GROUND STUD</td>
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<td>LEFT FRONT JACK WARNING SWITCH - SWITCHED GROUND</td>
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<tr>
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<td>2000</td>
<td>RIGHT FRONT JACK WARNING SWITCH - SWITCHED GROUND</td>
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<td>LEFT FRONT JACK PRESSURE SWITCH - SWITCHED GROUND</td>
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</table>
### LED - Fuse Location and Description - Page 4 of 5

#### Central Control Mother Board

**LEGEND:**
- +12V: +12V
- FRONT: Front
- LEFT SIDE: Left Side
- GROUND: Ground
-+12V REAR: Rear
- RIGHT SIDE: Right Side

#### Electrical Connection Diagram

<table>
<thead>
<tr>
<th>LED</th>
<th>Description</th>
<th>CN and Pin</th>
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<tr>
<td>1-RED</td>
<td>MASTER RELAY CONTROL</td>
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<td>PUMP RELAY CONTROL</td>
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<td>3-RED</td>
<td>SWITCHED 12V FROM MASTER RELAY</td>
<td>CN 1 - PIN 3</td>
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<td>4-RED</td>
<td>ENGINE BATTERY - IN</td>
<td>CN 11 - PIN 12</td>
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<tr>
<td>5-RED</td>
<td>NOT USED</td>
<td>CN 9 - PIN 5</td>
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<tr>
<td>7-RED</td>
<td>LINK LIGHT</td>
<td>CN 1 - PIN 7 &amp; 8</td>
</tr>
<tr>
<td>8-RED</td>
<td>NOT USED</td>
<td>CN 11 - PIN 8 &amp; 9</td>
</tr>
<tr>
<td>9-NOT USED</td>
<td>NOT USED</td>
<td>NOT USED</td>
</tr>
<tr>
<td>10-RED</td>
<td>3000 LBS PRESS SWITCH - ON</td>
<td>CN 9 - PIN 2</td>
</tr>
<tr>
<td>11-RED</td>
<td>PARK BRAKE - ON</td>
<td>CN 11 - PIN 11</td>
</tr>
</tbody>
</table>

#### Fuse Description

- **PF1 - POLY FUSE** - POWER TO
  - MASTER WARNING LIGHT AND RESET SWITCH
  - F1 - 7.5AMP IGNITION - IN
  - F2 - 15AMP HOUSE BATTERY - IN
  - F3 - 5AMP MASTER RELAY CONTROL
  - F4 - 5AMP PUMP RELAY CONTROL
  - F5 - 15AMP SWITCHED BATTERY - IN
  - F6 - 3AMP RESET OUT
  - F7 - 3AMP ACCESSORY - IN
  - F9 - 3AMP POWER TO CN100 (IF APPLICABLE)

**NOTE:** For detailed input/output information about pin connections see Electrical Connection Diagram - Central Control / Module Connection Information - Page 1 of 5.
HYDRAULIC PRESSURE AND WARNING SWITCH INPUTS

<table>
<thead>
<tr>
<th>LED</th>
<th>RELAY DESCRIPTION</th>
<th>FUSE</th>
<th>BLACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-YELLOW</td>
<td>LEFT FRONT EXT. - COIL</td>
<td>F1-15 AMP</td>
<td>PIN 1</td>
</tr>
<tr>
<td>2-RED</td>
<td>LEFT FRONT EXT. - CONTACT</td>
<td>F2-15 AMP</td>
<td>PIN 2</td>
</tr>
<tr>
<td>3-RED</td>
<td>LEFT FRONT RET. - CONTACT</td>
<td>F3-15 AMP</td>
<td>PIN 3</td>
</tr>
<tr>
<td>4-YELLOW</td>
<td>RIGHT FRONT EXT. - COIL</td>
<td>F4-15 AMP</td>
<td>PIN 4</td>
</tr>
<tr>
<td>5-YELLOW</td>
<td>RIGHT FRONT EXT. - CONTACT</td>
<td>F5-15 AMP</td>
<td>PIN 5</td>
</tr>
<tr>
<td>6-RED</td>
<td>RIGHT FRONT RET. - CONTACT</td>
<td>F6-15 AMP</td>
<td>PIN 6</td>
</tr>
<tr>
<td>7-RED</td>
<td>LEFT REAR EXT. - COIL</td>
<td>F7-15 AMP</td>
<td>PIN 7</td>
</tr>
<tr>
<td>8-YELLOW</td>
<td>LEFT REAR EXT. - CONTACT</td>
<td>F8-15 AMP</td>
<td>PIN 8</td>
</tr>
<tr>
<td>9-YELLOW</td>
<td>RIGHT REAR EXT. - COIL</td>
<td>F9-15 AMP</td>
<td>PIN 9</td>
</tr>
<tr>
<td>10-RED</td>
<td>LEFT REAR EXT. - CONTACT</td>
<td>F10-15 AMP</td>
<td>PIN 10</td>
</tr>
<tr>
<td>11-RED</td>
<td>LEFT REAR RET. - CONTACT</td>
<td>NOT USED</td>
<td></td>
</tr>
<tr>
<td>12-YELLOW</td>
<td>LEFT REAR RET. - COIL</td>
<td>NOT USED</td>
<td></td>
</tr>
<tr>
<td>13-YELLOW</td>
<td>RIGHT REAR EXT. - COIL</td>
<td>NOT USED</td>
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<tr>
<td>14-RED</td>
<td>RIGHT REAR EXT. - CONTACT</td>
<td>NOT USED</td>
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<tr>
<td>15-RED</td>
<td>RIGHT REAR RET. - CONTACT</td>
<td>NOT USED</td>
<td></td>
</tr>
<tr>
<td>16-YELLOW</td>
<td>RIGHT REAR RET. - COIL</td>
<td>NOT USED</td>
<td></td>
</tr>
<tr>
<td>17-YELLOW</td>
<td>NOT USED</td>
<td></td>
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<tr>
<td>18-RED</td>
<td>NOT USED</td>
<td></td>
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</tr>
<tr>
<td>19-RED</td>
<td>NOT USED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-YELLOW</td>
<td>NOT USED</td>
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</tr>
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NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL MODULE CONNECTION INFORMATION - PAGE 3 OF 5.

LED - FUSE LOCATION AND DESCRIPTION - PAGE 5 OF 5

NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CONTROL MODULE CONNECTION INFORMATION - PAGE 3 OF 5.

NOTE: A LIT YELLOW LED INDICATES THERE IS A GROUND SIGNAL TO TURN THE CORRESPONDING RELAY ON.

IF A YELLOW LED IS LIT AND THE CORRESPONDING RED LED IS OFF, EITHER IT'S FUSE IS BLOWN OR THE RELAY IS BAD.

IF THE YELLOW LEDS ARE WORKING BUT NO RED LED IS COMING ON THERE MAY BE A PROBLEM WITH INPUT VOLTAGE FROM THE 4-PIN CONNECTOR.

IF A YELLOW LED IS NOT LIT, THIS INDICATES A POSSIBLE PROBLEM WITH THE MODULE.
ELECTRICAL CONNECTION DIAGRAM
2000 SERIES CAN SYSTEM
LEVELING MANIFOLD CONNECTIONS

* THIS MAY BE A SMALL VALVE ON SOME UNITS

TOP VIEW (TANK NOT SHOWN)

MOTOR

LR-E = LEFT REAR JACK EXTEND
LR-R = LEFT REAR JACK RETRACT
LF-E = LEFT FRONT JACK EXTEND
LF-R = LEFT FRONT JACK RETRACT
RF-E = RIGHT FRONT JACK EXTEND
RF-R = RIGHT FRONT JACK RETRACT
RR-E = RIGHT REAR JACK EXTEND
RR-R = RIGHT REAR JACK RETRACT

6246 6245

2500 8100
1500 2400
3500 1400
4500 3400

6230

TO HWH CENTRAL GROUND ON PUMP

SEE ELECTRICAL CONNECTION DIAGRAM
MASTER AND PUMP RELAYS - PAGE 1 OF 2

SIDE VIEW

GREEN
GRAY
BLACK

TO CHASSIS PILOT AIR DUMP

SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL MODULE - WIRE AND CONNECTION INFORMATION - PAGE 3 OF 5 FOR WIRE AND CONNECTOR PIN INFORMATION

MP84.6004B
08AUG12
ELECTRICAL CONNECTION DIAGRAM
REMOTE ROOM MANIFOLD CONNECTIONS
ROOM 1 - ROOM 2 - ROOM 3

1E - ROOM 1 CYL EXTEND - ROOM RETRACT
1R - ROOM 1 CYL RETRACT - ROOM EXTEND
2E - ROOM 2 CYL EXTEND - ROOM RETRACT
2R - ROOM 2 CYL RETRACT - ROOM EXTEND
3E - ROOM 3 CYL EXTEND - ROOM RETRACT
3R - ROOM 3 CYL RETRACT - ROOM EXTEND

SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL MODULE - WIRE AND CONNECTION INFORMATION - PAGE 3 OF 5 FOR WIRE AND CONNECTOR PIN INFORMATION
MASTER AND PUMP RELAYS

FROM BATTERY
RELAY (A)
(MASTER RELAY)
GROUND
RELAY (B)
(PUMP RELAY)
SWITCHED BATTERY
FROM MASTER RELAY
GROUND
TO PUMP MOTOR
PUMP RELAY CONTROL

SEE ELECTRICAL CONNECTION DIAGRAM - LEVELING SYSTEM HYDRAULIC MANIFOLD - CONNECTIONS AT PUMP

TO 4 PIN GRAY CONNECTOR ON SIDE OF CONTROL MODULE

TO THE GREEN CN9 CONNECTOR ON THE FRONT OF CONTROL MODULE

FUSE 40 AMP
RELAY 6245
RELAY 6245
SWITCHED BATTERY FROM MASTER RELAY
8500
8600
9901

8500

HWH CENTRAL GROUND

MASTER RELAY CONTROL

RELAY CONTROL
NOTE: WIRING FOR LEVELING SYSTEM AND RELAY GROUNDS ARE NOT SHOWN. REFER TO ELECTRICAL CONNECTION DIAGRAM - MASTER AND PUMP RELAYS - PAGE 1 OF 2
HWH® COMPUTERIZED LEVELING

Caution!

Understand operator’s manual before using. Block frame and tires securely before removing tires or crawling under vehicle.

PIN # | WIRE COLOR | WIRE NUMBER | WIRE DESCRIPTION AND FUNCTION
--- | --- | --- | ---
1 | YELLOW | | CAN HIGH
2 | GREEN | | CAN LOW
3 | | | CAN SHIELD
4 | WHITE | 6230 | GROUND FROM CONTROL BOX
5 | RED | 6800 | SWITCHED BATTERY FROM CONTROL BOX
A MASTER WARNING INDICATOR SHOULD ALWAYS BE USED. WHEN THE LEVELING SYSTEM HAS STRAIGHT-ACTING JACKS A WARNING BUZZER MUST BE USED.

NOTE: BY SUPPLYING IGNITION POWER TO THE WARNING BUZZER, AND "ACC" POWER TO THE WARNING LIGHT, THE SYSTEM MAY BE OPERATED IN ACCESSORY WITHOUT THE BUZZER SOUNDING. THE GROUND SIGNAL FOR THE WARNING INDICATORS MUST ALWAYS COME FROM THE TOUCH PANEL.

SEE ELECTRICAL CONNECTION DIAGRAM
CENTRAL CONTROL MODULE
WIRE AND CONNECTION INFORMATION

MP84.9961
03OCT11
NOTE: When opening the valve do not turn the valve release nut more than 4 and 1/2 turns counter clockwise. Damage to the valve may result.

PLASTIC PLUG: REMOVE TO GAIN ACCESS TO THE 1/4" VALVE RELEASE NUT

NOTE: Old style hex shaped solenoid valves have no manual valve release.

Turn T-handle counterclockwise to open the valve. T-handle should turn easy at first, then harder as it compresses a spring. It takes approximately 4 1/2 turns to fully open the valve. Do not over tighten when closing.