Caution!
Understand operator’s manual before using. Block frame and tires securely before removing tires or crawling under vehicle.
OPERATOR’S MANUAL

CAUTION!

READ THE ENTIRE OPERATOR’S 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 LEVELING SYSTEM AND ROOM EXTENSION ARE BEING OPERATED.

NEVER PLACE HANDS OR OTHER PARTS OF THE BODY NEAR HYDRAULIC LEAKS. OIL MAY PENETRATE SKIN CAUSING INJURY OR DEATH.

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.

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CONTROL BUTTONS

"ON" BUTTON: This is the ON button for the leveling system.

"OFF" BUTTON: This button turns off control power to the leveling system.

"STORE" BUTTON: This button will retract all four jacks.

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

POWER ON LIGHT: This light indicates the system is on.

STORE LIGHT: This light will be on when the system is in the store mode.

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

LEVELING LIGHTS: If a yellow LEVELING light is on, that indicates a side, corner, or end of the vehicle is low. Extend the appropriate jack pairs to put out the yellow light. One or two yellow LEVELING lights can be on at a time. The vehicle is level when all yellow lights are out.

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 corresponding jack is extended 1/4 to 1/2 of an inch.

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

WARNING BUZZER: A buzzer will sound if a jack is extended approximately 1/2 inch or more and the ignition switch is in the "ON" position.
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.
OPERATING PROCEDURES

GENERAL INSTRUCTIONS

Site selection - 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 jacks or vehicle, equipment malfunction, etc. If parking on soft ground or asphalt paving, a wood block or pad should be placed under each jack.

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

Read all room extension operating procedures before before extending or retracting any room.

It is the operator’s responsibility to check that the jacks are completely retracted and any room extension or generator slide is completely retracted before moving the vehicle.

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

LEVELING PROCEDURE

1. Place gear selector in the parking position, apply park brake and block tires securely.

2. Turn ignition switch to "ACCESSORY".

3. Push the "ON" button on the touch panel. The POWER ON light will come ON.

NOTE: If the park brake is not set the panel will have power but the pump will not run. The jacks can not be extended until the park brake is set.

4. Place a pad under each jack, if needed, at this time.

5. A lit yellow LEVEL light indicates that end, side or corner is low. Push an EXTEND (up arrow) button to extend jack pairs according to a lit yellow light.

ALWAYS LEVEL THE VEHICLE FROM SIDE TO SIDE IF NEEDED BEFORE LEVELING THE VEHICLE FRONT TO REAR. One or two yellow LEVEL lights can be on at one time. Extend jack pairs accordingly until all yellow lights are out.

NOTE: If the ground is too uneven, the jacks may not have enough stroke to level the vehicle. The vehicle may have to be moved.

6. After the vehicle is level, the jacks not used for leveling may be extended until they touch the ground. The remaining jacks used to stabilize the vehicle should lift the vehicle slightly after touching the ground. This provides additional stability against wind and activity in the vehicle. Do this by pushing the front and/or rear EXTEND buttons as needed to extend any remaining jacks. Do not use the right or left EXTEND buttons.

7. Push the "OFF" button on the Touch Panel.

8. Turn the ignition switch off.
OPERATING PROCEDURES
325 SERIES LEVELING SYSTEM

JACK RETRACTION

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

1. Turn the ignition to "ON" or "ACC" or start the engine.

NOTE: When the jacks are stored with the ignition in the ON position, the warning buzzer will sound until the jacks have retracted to the STORE position. If desired, the jacks can be stored with the ignition key in the accessory position. This will eliminate the warning buzzer while the jacks are retracting.

2. Press the "STORE" button. The store indicator light will flash. As each jack retracts, its red WARNING light will go out. The system will automatically shut down two minutes after the four individual red "WARNING" lights are out. If any one red "WARNING" light does not go out, the system will continue to store for thirty minutes, then shut down regardless of the "WARNING" lights condition. If this occurs, do not push the "STORE" button again for at least 30 minutes. The system should be serviced.

NOTE: When traveling thermal expansion may cause a jack to extend slightly. When the "STORE" button has been used to retract the jacks, the system will automatically retract any jack that extends due to thermal expansion.

IMPORTANT: Pushing the "OFF" button or turning the ignition key will stop the STORE procedure. Any time the STORE procedure is stopped before all 4 red Warning Lights go out, the jacks should be completely retracted by pushing the "STORE" button before traveling.

3. The vehicle can be moved as soon as the red warning lights are out, the jacks are in the STORE/TRAVEL position.

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.

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.
OPERATING PROCEDURES
MANUAL JACK RETRACTION

MANUAL JACK RETRACTION

WARNING: KEEP AWAY FROM THE 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.

IMPORTANT: HWH recommends that all HWH room extensions are fully retracted prior to performing manual jack retraction procedures.

Use the manual valve release for retracting the jacks only if the STORE feature on the HWH control panel will not retract the jacks.

1. Locate your power unit-manifold assembly.
   (The diagram below represents a typical Power Unit-Manifold Assembly it may not be an exact match to yours).

NOTE: Multiple manifolds may be present on the power unit. The upper most manifold should control jack functions. (Valve styles and arrangements will vary)

2. Allow clearance for the vehicle to lower.

3. Using the diagram below identify the style of your two center valves.

NOTE: As of APRIL 2002 a 1/4” Nut Driver has been incorporated into the Breather Cap. Before using read and understand the last page of this manual.

Large style with T-Handle valve release: The T-Handle will turn several turns easily. As the valve starts to open, the T-Handle will turn harder. Make sure the valves have been opened far enough to allow the jacks to retract.

Small style with Valve Release Nut: DO NOT turn the 1/4” valve release nut more than 4 and 1/2 turns. Turning the nut more could damage the valve.

Large style with Valve Release Nut: The 1/4” Valve release nut is located under a plastic plug that must be removed to gain access. Open valve 1-1/2 to 2 full turns. DO NOT turn the 1/4” valve release nut more than 2 full turns. Turning the nut more could damage the valve. Replace the protective plastic plug.

4. Retract the front jacks by opening the two center valves. Slowly turn the manual valve releases counter clockwise until the jacks start to retract.

5. Repeat the process by identifying then opening the two outer valves, if applicable.

6. Check that all jacks are now retracted. If yes, continue. If no, notify the dealership where you purchased the vehicle or had the leveling system installed or contact HWH Corporation customer service.

7. Close the valves by turning each valve release clockwise.

IMPORTANT: Once the manual valve release is snug, DO NOT tighten the manual valve release past this point as internal damage may occur to the solenoid.

8. The system should now be repaired before using again.
OPERATING PROCEDURES

ROOM EXTEND PROCEDURE

NOTE: The park brake must be set before a room can be extended or retracted.

CAUTION: 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 DISENGAGED BEFORE OPERATING THE ROOM.

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

1. Level the vehicle using the hydraulic leveling system.
2. Unlock all room-locking devices.

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

CAUTION: KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF ROOM WHEN OPERATING.

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

3. To extend the room, press and hold the ROOM CONTROL SWITCH in the “EXTEND” position until the room is fully extended.

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 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.

ROOM RETRACT PROCEDURE

NOTE: The park brake must be set before a room can be extended or retracted.

CAUTION: KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF ROOM WHEN OPERATING.

It is recommended to retract room extensions before retracting jacks.

1. To retract the room press and hold the ROOM CONTROL SWITCH in the “RETRACT” position until the room is fully retracted.

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.

2. Engage all room-locking devices.

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

IMPORTANT: Room-locking devices should be locked while traveling.
MANUAL ROOM AND GENERATOR SLIDE RETRACT PROCEDURE
(WITH SOLENOID VALVES WITH VALVE RELEASE NUTS)
(USE ONLY WHEN THE ROOM WILL NOT RETRACT WITH THE ROOM CONTROL SWITCH)

OVERVIEW
The room can be retracted manually if a hydraulic or electric failure prevents the room from being retracted using the CONTROL SWITCH. For normal retract sequence see the ROOM SLIDE RETRACT PROCEDURES. Refer to the vehicle manufacturer for storage location of the winch and information for connecting the winch to the room.

IMPORTANT: If the vehicle is not equipped with a winch, DO NOT use other pulling devices to retract the room. Follow steps 2 and 3 and try pushing the room in. Contact the vehicle manufacturer or HWH Customer Service at 1-800-321-3494 or 563-724-3396 for assistance.

CAUTION: THE MANUAL RETRACT WINCH IS EQUIPPED FOR MANUALLY RETRACTING THE ROOM ONLY. IT IS NOT TO BE USED FOR LIFTING OR ANY OTHER APPLICATION. HIGH FORCES ARE CREATED WHEN USING A WINCH, CREATING POTENTIAL SAFETY HAZARDS. FAILURE TO FOLLOW ALL CAUTIONS AND INSTRUCTIONS MAY CAUSE FAILURE OF THE MANUAL RETRACT WINCH OR CONNECTIONS RESULTING IN DAMAGE OR PERSONAL INJURY. MAINTAIN FIRM GRIP ON THE WINCH HANDLE AT ALL TIMES. NEVER RELEASE THE HANDLE WHEN RATCHET LEVER IS IN THE OFF POSITION AND THE WINCH IS LOADED. THE WINCH HANDLE COULD SPIN VIOLENTLY AND CAUSE PERSONAL INJURY. CHECK THE WINCH AND STRAPS FOR DAMAGE OR WEAR, AND CHECK FOR PROPER RATCHET OPERATION ON EACH USE OF THE WINCH. DO NOT USE IF DAMAGED OR WORN.

1. Retract jacks following the LEVELING SYSTEM RETRACT PROCEDURE.

NOTE: Prior to APRIL 2002 a 1/4” Nut Driver was sent with the Operators Manual. As of APRIL 2002 the 1/4” Nut Driver has been incorporated into the Breather Cap. See the back page of this manual for further info.

NOTE: The room may move slightly as the SOLENOID VALVES are opened and internal pressure is released.

2. Locate the HYDRAULIC PUMP/MANIFOLD unit.

4. Locate the MANUAL RETRACT WINCH and connect it to the room according to the vehicle manufacturer’s instructions. To extend the WINCH STRAP firmly grasp WINCH HANDLE, place RATCHET LEVER in its OFF position, and slowly rotate the WINCH HANDLE counter clockwise, keeping a firm grip on the handle. When enough WINCH STRAP is extended, place the RATCHET LEVER in its ON position and slowly rotate the WINCH HANDLE clockwise until the RATCHET LEVER locks.

5. Slowly winch the room in by turning the WINCH HANDLE clockwise. The RATCHET LEVER should produce a loud, sharp, clicking noise.

NOTE: Winching the room in quickly will raise pressure in the hydraulic fluid and make winching more difficult.

CAUTION: OPERATE THE MANUAL RETRACT WINCH BY HAND POWER ONLY. IF THE WINCH CANNOT BE CRANKED EASILY WITH ONE HAND IT IS PROBABLY OVERLOADED. IF WINCHING BECOMES TOO DIFFICULT STOP AND CHECK FOR OBSTRUCTIONS OR RESTRICTIONS ON THE ROOM AND ROOM EXTENSION MECHANISM.

6. When the room is fully retracted, engage the room locking devices. Leave the retract winch engaged and the solenoid valves open.

CAUTION: THE ROOM EXTENSION SOLENOID VALVE RELEASE NUTS MUST BE IN THE OPEN POSITION WHEN THE MANUAL RETRACT WINCH IS ENGAGED.

7. The system should be repaired before using again.

NOTE: After repairs are made, when closing the VALVE RELEASE NUTS, do not over tighten the nuts.

NOTE: The system may move slightly as the SOLENOID VALVES are opened and internal pressure is released.

IMPORTANT: Only open the valves enough to retract the room. DO NOT turn the release nuts more than 4 and 1/2 turns. Turning the nuts more could damage the valves.
OPERATING PROCEDURES
"LEVEL-OUT" (ANGLE MOUNT) ROOM EXTENSION MECHANISM
MANUAL ROOM RETRACTION PROCEDURES

IMPORTANT: READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING TO USE THE MANUAL RETRACT BOLTS TO RETRACT THE ROOM.

1. Determine which extend and retract solenoid valves are assigned to the room. Manually open the valve release nuts for the extend and retract solenoid valves by turning the 1/4" release nuts counter clockwise 4 and 1/2 turns. Turning the nuts more could damage the valves. If necessary, open all valves on the pump/manifold arrangement. There are 4 valves for the leveling system (if applicable) and 2 valves for each HWH room extension.

NOTE: The breather cap dip stick is also a 1/4" nut driver.

2. Gain access to the 13/16" Manual Retraction Bolts (one on each mechanism) by raising the STORE-MORE access panel.

3. Remove the Thumb Screws (one on each mechanism) completely by turning them counterclockwise.

4. Using wrench provided, a personal wrench or a tire iron with a 13/16" or 21mm opening rotate either mechanism’s Manual Retraction Bolt clockwise 6 complete turns.

5. Move to the second room extension mechanism, rotate the Manual Retraction Bolt clockwise 12 complete turns.

6. Return to the first room extension mechanism and rotate the Manual Retraction Bolt clockwise 12 complete turns.

7. Repeat steps 4 and 5 alternating from mechanism to mechanism rotating each Manual Retraction Bolt 12 complete turns until room is sealed. (DO NOT EXCEED 15 FT.LBS. FORCING THE MANUAL RETRACT BOLT MAY DAMAGE THE MANUAL RETRACT MECHANISM.) Make sure the room does not bind.

8. Replace both Thumb Screws. Leave the manual valve releases open.

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.

IMPORTANT: DO NOT EXTEND THE ROOM UNTIL THE STEPS BELOW HAVE BEEN COMPLETED!

1. Gain access to the 13/16" Manual Retraction Bolts (one on each mechanism) by raising the STORE-MORE access panel.

2. Remove the Thumb Screws (one on each mechanism) completely by turning them counterclockwise.

3. If needed, using wrench provided, a personal wrench or a tire iron with a 13/16" or 21mm opening rotate either mechanism’s Manual Retraction Bolt counterclockwise until resistance is met.

4. Move to the second room extension mechanism and repeat step 3.

5. Replace both Thumb Screws.

6. Close both manual valve releases assigned to the room. Turn the valve release nuts clockwise until snug. DO NOT over tighten.
1. Determine which extend and retract solenoid valves are assigned to the room. Manually open the valve release nuts for the extend and retract solenoid valves by turning the 1/4” release nuts counter clockwise 4 and 1/2 turns. Turning the nuts more could damage the valves.

**NOTE: The breather cap dip stick is also a 1/4” nut driver.**

2. Gain access to the 13/16” Manual Retraction Bolts (one on each mechanism) by raising the STORE-MORE access panel.

3. Remove the Thumb Screws (one on each mechanism) completely by turning them counterclockwise.

4. Using wrench provided, a personal wrench or a tire iron with a 13/16” or 21mm opening rotate either mechanism’s Manual Retraction Bolt clockwise 6 complete turns.

5. Move to the second room extension mechanism, rotate the Manual Retraction Bolt clockwise 12 complete turns.

6. Return to the first room extension mechanism and rotate the Manual Retraction Bolt clockwise 12 complete turns.

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

8. Replace both Thumb Screws. Leave the manual valve releases open.

**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.**

**IMPORTANT: DO NOT EXTEND THE ROOM UNTIL THE STEPS BELOW HAVE BEEN COMPLETED!**

1. Gain access to the 13/16” Manual Retraction Bolts (one on each mechanism) by raising the STORE-MORE access panel.

2. Remove the Thumb Screws (one on each mechanism) completely by turning them counterclockwise.

3. If needed, using wrench provided, a personal wrench or a tire iron with a 13/16” or 21mm opening rotate either mechanism’s Manual Retraction Bolt counterclockwise until resistance is met.

4. Move to the second room extension mechanism and repeat step 3.

5. Replace both Thumb Screws.

6. Close both manual valve releases assigned to the room. Turn the valve release nuts clockwise until snug. **DO NOT over tighten.**
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.

All jacks and any HWH room extension cylinders should be completely retracted before checking the oil 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.

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.

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

ELECTRICAL SYSTEM

The batteries should be in good condition and fully charged. Weak batteries can cause erratic operation. Battery cable terminals and battery posts and connections should be kept clean.

All electrical connections, especially ground connections, should be clean, tight, free from corrosion and protected from weathering.

JACKS

There are very few user serviceable parts on the jacks. The jacks require very little maintenance. If the jacks are extremely dirty with caked on mud they should be washed.

The jack rods should NOT be wiped and do not need to be oiled or sprayed with anything.

ROOM EXTENSIONS

The HWH room mechanisms need no maintenance. DO NOT grease or lubricate any parts of the HWH mechanism.

Any visible mechanism can be kept clean by washing with water. Refer to the vehicle manufacturer for correct maintenance of the room seals.

VISUAL INSPECTION

Periodically inspect the system for oil leaks and damaged or missing parts, such as pivot bolts or springs. Check the hydraulic lines and wiring for damage and wear. Check that the jacks do not interfere with any parts of the vehicle when they are in the "STORE" position.

The system will operate better if kept clean and free from caked on mud or ice.

OPERATIONAL CHECK

Review the OPERATOR MANUAL. Run the system according to the SYSTEM OPERATION Section. Note any abnormal operation.

Check that all lights work according to the "INDICATOR LIGHT" Section. Correct function of the red "WARNING" light is important.

Review the "JACK RETRACTION" Section. Make sure the jacks will fully retract to the "STORE" position. Jacks should not interfere with any of the coach when in the "STORE" position.
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 screwdriver 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 (C) is lit: Turn the adjustment screw CLOCKWISE until the LED is off.

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

NOT IN PARK/BRAKE CHECK

CAUTION: WHEN MAKING THIS CHECK, BLOCK THE COACH WHEELS SECURELY SO THE COACH CANNOT ROLL FORWARD OR BACKWARD.

Set the park/brake. Switch the ignition to the "ACC" or "ON" position. Push the "ON/OFF" switch toward "ON". Release the parking brake and confirm that the "PARK" indicator light comes on. Reset the parking brake. The "PARK" indicator light should go out. Switch the ignition to "OFF".

If any of the above checks or inspections reveal a problem or if there are other problems or questions, consult a qualified RV repair center, your vehicle or coach manufacturer, or HWH CORPORATION for service or repair.
NOTE: BEFORE OPERATING ANY MANUAL VALVE RELEASE READ AND UNDERSTAND PROCEDURE FOR MANUAL JACK RETRACTION IN OPERATOR’S INSTRUCTIONS. THIS MANIFOLD IS SHOWN WITH (1) LARGE VALVE WITH A VALVE RELEASE "T" HANDLE, (2) SMALL VALVES WITH VALVE RELEASE NUTS AND (1) LARGE VALVE WITH A VALVE RELEASE NUT.

- BREATHER CAP
- SMALL VALVES WITH RELEASE NUTS
- LARGE VALVE WITH RELEASE "T" HANDLE
- CHECK PUMP PRESSURE HERE
- CHECK VALVES (4)
- NOTE: SOME MANIFOLDS ARE EQUIPPED WITH VELOCITY VALVES

(RIGHT REAR)

- LARGE VALVE WITH RELEASE NUT LOCATED UNDER PLASTIC PLUG
- 50 PSI PRESSURE SWITCH
- SHUTTLE VALVE

(PUMP/MANIFOLD ASSEMBLY)

- (ROOM EXTENSION MANIFOLD NOT SHOWN)

(FRONT)

- VELOCITY VALVE

(LEFT REAR)

- LEFT FRONT
- RIGHT FRONT
- LEFT FRONT
- RIGHT REAR

NOTE: SOME VALVES MANIFOLDS ARE EQUIPPED WITH VELOCITY VALVES.
HYDRAULIC SCHEMATIC
305/310/325 SERIES LEVELING SYSTEM
WITH STRAIGHT-ACTING JACKS

12 VOLT D.C. HYDRAULIC POWER UNIT

RELIEF VALVE

RETURN PRESSURE

PRESSURE

PRESSES/RETURN SHUTTLE VALVE

50 PSI SWITCH

SOLNOID MANIFOLD ASSEMBLY

CHECK VALVE INNER

CHECK VALVE OUTER

SOL.VALE LR

SOL.VALE LF

SOL.VALE RF

SOL.VALE RR

LEFT FRONT

RIGHT FRONT

LEFT REAR

RIGHT REAR

JACK CYLINDER

MP65.3005
07MAR03
HYDRAULIC LINE CONNECTION DIAGRAM
MULTIPLE ROOM EXTENSIONS

FRONT OF VEHICLE

ROOM 1 (A)
SEE HYDRAULIC LINE CONNECTION DIAGRAMS FOR ROOM EXTENSIONS FOR SPECIFIC CYLINDER CONNECTION DIAGRAMS RETRACT ROOM TO CHECK OIL LEVEL

ROOM 2 (A)
SEE HYDRAULIC LINE CONNECTION DIAGRAMS FOR ROOM EXTENSIONS FOR SPECIFIC CYLINDER CONNECTION DIAGRAMS RETRACT ROOM TO CHECK OIL LEVEL

ROOM 3 (A)
SEE HYDRAULIC LINE CONNECTION DIAGRAMS FOR ROOM EXTENSIONS FOR SPECIFIC CYLINDER CONNECTION DIAGRAMS RETRACT ROOM TO CHECK OIL LEVEL

NOTE: HYDRAULIC PUMP SHOWN WITH ROOM EXTENSION MANIFOLD ONLY. THE LEVELING SYSTEM MANIFOLD (NOT SHOWN) IS MOUNTED ON TOP OF THE ROOM EXTENSION MANIFOLD.

MP65.315C
05AUG03

NOTE: DIFFERENT TYPES OF HOSE, ESPECIALLY HIGH PRESSURE HOSE, HAS BEEN USED. THE PRINTING ON A 1/8" OR 3/16" HOSE BEING REPLACED MUST MATCH THE ORIGINAL HOSE. ALL HWH 1/4" HOSE IS THE SAME.
HYDRAULIC LINE CONNECTION DIAGRAM
SINGLE CYLINDER "GUIDED" ROOM EXTENSION

NOTE: THE ROD END CONNECTION FROM THE MANIFOLD TO THE ROOM CYLINDER IS ALWAYS PRESSURIZED.

CYLINDER EXTEND - ROOM EXTEND
CYLINDER RETRACT - ROOM RETRACT
CHECK OIL LEVEL WITH ROOM RETRACTED.
HYDRAULIC FLOW DIAGRAM

VERTICAL ARM OR DUAL CYLINDER ROOM EXTENSION
WITH SYNCHRONIZING CYLINDER
STATIONARY POSITION

- FRONT CYLINDER
- FIXED TO VEHICLE
- SYNCHRONIZING VALVE
- SYNCHRONIZING CYLINDER
- REAR CYLINDER
- FIXED TO VEHICLE
- CYLINDER EXTEND VALVE
- CYLINDER RETRACT VALVE
- RETURN
- PRESSURE
ELECTRICAL CONNECTION DIAGRAM
325 SERIES LEVELING SYSTEM
PARK BRAKE - MASTER WARNING LIGHT AND BUZZER
TOUCH PANEL AND JACK WARNING LIGHTS

SEE ELECTRICAL CONNECTION DIAGRAM - 325 SERIES LEVELING SYSTEM - LEVELING MANIFOLD - PUMP AND MASTER RELAYS
ELECTRICAL CONNECTION DIAGRAM
325 SERIES LEVELING SYSTEM
LEVELING MANIFOLD
PUMP RELAY

TO 50 LB PRESSURE SWITCH - 8101

LEVELING MANIFOLD

TO HWH GROUND STUD - 6240

NOTE: ROOM EXTENSION MANIFOLD NOT SHOWN

6231 - TO HWH GROUND STUD
6230 - TO HWH GROUND STUD

6100

8601

TO +12V BATTERY

TO PUMP MOTOR

PUMP RELAY

6240

4 PIN GRAY

12 PIN BROWN

12 PIN BLACK

8 PIN BLACK

12 PIN GRAY

4 PIN GRAY

12 PIN BROWN

12 PIN BLACK

8 PIN BLACK

12 PIN GRAY

TO 50 LB PRESSURE SWITCH - 8101

LEVELING MANIFOLD

TO HWH GROUND STUD - 6240

NOTE: ROOM EXTENSION MANIFOLD NOT SHOWN

6231 - TO HWH GROUND STUD
6230 - TO HWH GROUND STUD

6100

8601

TO +12V BATTERY

TO PUMP MOTOR

PUMP RELAY

3400
6241
2400
6241
1400
6240
4400
6240

3400
6241
2400
6241
1400
6240
4400
6240

NOTE: ROOM EXTENSION MANIFOLD NOT SHOWN

6231 - TO HWH GROUND STUD
6230 - TO HWH GROUND STUD

6100

8601

TO +12V BATTERY

TO PUMP MOTOR

PUMP RELAY
ELECTRICAL CONNECTION DIAGRAM
325 SERIES LEVELING SYSTEM
TOUCH PANEL CONNECTIONS

HWH HYDRAULIC LEVELING

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

PIN 1

LINK LIGHT

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE COLOR</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>YELLOW</td>
<td>6230</td>
<td>GROUND FROM CONTROL BOX</td>
</tr>
<tr>
<td>2</td>
<td>GREEN</td>
<td>6800</td>
<td>SWITCHED BATTERY FROM CONTROL BOX</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>CAN HIGH</td>
</tr>
<tr>
<td>4</td>
<td>WHITE</td>
<td>6230</td>
<td>CAN LOW</td>
</tr>
<tr>
<td>5</td>
<td>RED</td>
<td>6800</td>
<td>CAN SHEILD</td>
</tr>
</tbody>
</table>
### ELECTRICAL CONNECTION DIAGRAM
#### 325 SERIES LEVELING SYSTEM
#### CONTROL BOX CONNECTION INFORMATION

**4 PIN GRAY CONNECTOR**

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE COLOR</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RED</td>
<td>6100</td>
<td>+12V BATTERY POWER FROM PUMP RELAY</td>
</tr>
<tr>
<td>2</td>
<td>RED</td>
<td>6100</td>
<td>+12V BATTERY POWER FROM PUMP RELAY</td>
</tr>
<tr>
<td>3</td>
<td>WHITE</td>
<td>6230</td>
<td>GROUND FROM HWH GROUND STUD</td>
</tr>
<tr>
<td>4</td>
<td>WHITE</td>
<td>6230</td>
<td>GROUND FROM HWH GROUND STUD</td>
</tr>
</tbody>
</table>

**12 PIN BROWN CONNECTOR**

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 2</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>8101</td>
<td>50 LB PRESSURE SWITCH - SWITCHED GROUND</td>
</tr>
<tr>
<td>4</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1400</td>
<td>SWITCHED +12 FOR LEFT FRONT SOLENOID VALVE</td>
</tr>
<tr>
<td>6 &amp; 7</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4400</td>
<td>SWITCHED +12 FOR LEFT REAR SOLENOID VALVE</td>
</tr>
<tr>
<td>9</td>
<td>3400</td>
<td>SWITCHED +12 FOR RIGHT REAR SOLENOID VALVE</td>
</tr>
<tr>
<td>10</td>
<td>2400</td>
<td>SWITCHED +12 FOR RIGHT FRONT SOLENOID VALVE</td>
</tr>
<tr>
<td>11</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>8600</td>
<td>PUMP RELAY CONTROL - SWITCHED +12</td>
</tr>
</tbody>
</table>

**12 PIN BLACK CONNECTOR**

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>9000</td>
<td>SWITCHED GROUND FROM PARK BRAKE SWITCH</td>
</tr>
<tr>
<td>8</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>7699</td>
<td>BUZZER &amp; MASTER WARNING LIGHT CONTROL - SWITCHED GROUND</td>
</tr>
<tr>
<td>12</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
</tbody>
</table>

**8 PIN BLACK CONNECTOR**

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 2</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6800</td>
<td>SWITCHED BATTERY</td>
</tr>
<tr>
<td>4</td>
<td>6230</td>
<td>GROUND</td>
</tr>
<tr>
<td>5</td>
<td>CAN SHIELD</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6120</td>
<td>SWITCHED +12 ACCESSORY</td>
</tr>
<tr>
<td>7</td>
<td>CAN LOW</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>CAN HIGH</td>
<td></td>
</tr>
</tbody>
</table>

**12 PIN GRAY CONNECTOR**

<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 2</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1000</td>
<td>SWITCHED GROUND FROM LEFT FRONT WARNING SWITCH</td>
</tr>
<tr>
<td>4</td>
<td>2000</td>
<td>SWITCHED GROUND FROM RIGHT FRONT WARNING SWITCH</td>
</tr>
<tr>
<td>5</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3000</td>
<td>SWITCHED GROUND FROM RIGHT REAR WARNING SWITCH</td>
</tr>
<tr>
<td>10</td>
<td>4000</td>
<td>SWITCHED GROUND FROM LEFT REAR WARNING SWITCH</td>
</tr>
<tr>
<td>11</td>
<td>NO CONNECTION</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>6235</td>
<td>SHARED GROUND FOR WARNING SWITCHES</td>
</tr>
</tbody>
</table>
LED | RELAY DESCRIPTION | FUSE
---|-------------------|-----
1-YELLOW | RIGHT REAR COIL | F1 - 15 AMP
2-RED | RIGHT REAR OUTPUT | F1 - 15 AMP
3-YELLOW | LEFT REAR COIL | F2 - 15 AMP
4-RED | LEFT REAR OUTPUT | F2 - 15 AMP
5-YELLOW | RIGHT FRONT COIL | F3 - 15 AMP
6-RED | RIGHT FRONT OUTPUT | F3 - 15 AMP
7-YELLOW | LEFT FRONT COIL | F4 - 15 AMP
8-RED | LEFT FRONT OUTPUT | F4 - 15 AMP
11-YELLOW | DUMP - NOT USED | F6 - 5 AMP
12-RED | DUMP - NOT USED | F6 - 5 AMP
15-YELLOW | PUMP COIL | F8 - 5 AMP
16-RED | PUMP OUTPUT | F8 - 5 AMP
17-YELLOW | TRAVEL - NOT USED | F9 - 5 AMP
18-RED | TRAVEL - NOT USED | F9 - 5 AMP
21-YELLOW | LEFT FRONT WARN SW | F10 - 5 AMP
22-YELLOW | RIGHT FRONT WARN SW | F10 - 5 AMP
23-YELLOW | RIGHT REAR WARN SW | F10 - 5 AMP
24-YELLOW | LEFT REAR WARN SW | F10 - 5 AMP
29-RED | NOT USED | PF4 (F11)
30-YELLOW | NOT USED | PF4 (F11)
32-RED | MASTER WARN CONTROL | PF4 (F11)
33-GREEN | 50 LB PRESS SW INPUT | PF4 (F11)
34-RED | JACK INTERRUPT | PF4 (F11)
35-RED | PARK BRAKE | PF4 (F11)
36-RED | BOARD ENABLE | PF4 (F11)
37-RED | ACCESSORY IN | PF4 (F11)
38-RED | ACCESSORY OUT | PF4 (F11)
(39) 9-RED | LINK LIGHT | PF4 (F11)

NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CONTROL BOX CONNECTION INFORMATION.

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

A LIT RED LED INDICATES THERE IS VOLTAGE ON IT'S CORRESPONDING OUTPUT PIN.

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 LED'S ARE WORKING BUT NO RED LED IS COMING ON THERE MAY BE PROBLEM WITH INPUT VOLTAGE IN THE 4-PIN CONNECTOR.

IF A YELLOW LED IS NOT LIT, THERE IS A PROBLEM WITH THE CONTROL BOX, TOUCH PANEL OR CONNECTION CABLE.

NOTE: THE TRAVEL RELAY IS WIRED AS A NORMALLY CLOSED RELAY. WHEN THE YELLOW LED (17) IS ON THE RELAY CONTACTS WILL OPEN. THE RED LED (18) WILL NOT BE ON. THE RED LED WILL BE ON IF THE LEVELING SYSTEM IS IN THE TRAVEL MODE AND THE IGNITION IS ON.

CN1 - SENSING UNIT CONNECTIONS
PIN1 - RED - (+12 ACC) FOR SENSING UNIT
PIN2 - RED - GROUND FOR REAR YELLOW LEVEL LIGHT
PIN3 - GREEN - GROUND FOR RIGHT SIDE YELLOW LEVEL LIGHT
PIN4 - BLACK - GROUND FOR FRONT YELLOW LEVEL LIGHT
PIN5 - YELLOW - GROUND FOR LEFT SIDE YELLOW LEVEL LIGHT
PIN6 - WHITE - GROUND FOR SENSING UNIT

NOTE: ON NEWER CONTROL BOXES, FUSE F11 AND FUSE F12 HAVE BEEN REPLACED WITH POLY SWITCHES PF4 AND PF3. POLY SWITCHES PROTECT A COMPONENT OR WIRE AS A FUSE DOES EXCEPT THE POLY SWITCH WILL ALLOW CURRENT THROUGH WHEN THE OVERLOAD OR SHORT IS REMOVED. POLY SWITCHES ARE NOT REPLACEABLE.
ELECTRICAL CONNECTION DIAGRAM
MULTIPLE ROOM EXTENSIONS

NOTE: LEVELING SYSTEM MANIFOLD NOT SHOWN.

ROOM EXTENSION MANIFOLD

CYLINDER EXTEND VALVE

HWH GROUND STUD

TO HWH GROUND STUD ON PUMP

TO PUMP MOTOR

FROM BATTERY

MP85.6080
19AUG03
ELECTRICAL CONNECTION DIAGRAM
MULTIPLE ROOM EXTENSIONS
ROOM CONTROL CONNECTIONS

PIN 1 - HWH (BLACK 5000) - ROOM 1 EXTEND
WINNEBAGO (DR)
PIN 2 - HWH (BLACK 5100) - ROOM 1 RETRACT
WINNEBAGO (DU)
PIN 3 - HWH (BLACK 6810) - ROOM 1 SWITCHED BATTERY
WINNEBAGO (CCZ)
PIN 4 - HWH (BLACK 5001) - ROOM 2 EXTEND
WINNEBAGO (BBM)
PIN 5 - HWH (BLACK 5101) - ROOM 2 RETRACT
WINNEBAGO (BBN)
PIN 6 - HWH (BLACK 6811) - ROOM 2 SWITCHED BATTERY
WINNEBAGO (KKK)
PIN 7 - HWH (BLACK 5002) - ROOM 3 EXTEND
WINNEBAGO (HHE)
PIN 8 - HWH (BLACK 5102) - ROOM 3 RETRACT
WINNEBAGO (HHF)
PIN 9 - HWH (BLACK 6812) - ROOM 3 SWITCHED BATTERY
WINNEBAGO (KKL)
PIN 10 THRU 12 - NO CONNECTION
PIN 13 - HWH (BLACK 8601) - PUMP RELAY CONTROL
WINNEBAGO (DDA)
PIN 14 - HWH (RED 6100) - BATTERY
WINNEBAGO (CCY)
PIN 15 - NO CONNECTION

NOTE: THE BOX CONNECTORS ARE
KEYED TO PREVENT PLUGGING THE
CONNECTORS IN THE WRONG POSITION.
<table>
<thead>
<tr>
<th>PIN #</th>
<th>WIRE COLOR</th>
<th>WIRE NUMBER</th>
<th>WIRE DESCRIPTION AND FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BLACK</td>
<td>5050</td>
<td>SWITCHED +12 FOR ROOM 1 CYL EXT SOLENOID VALVE</td>
</tr>
<tr>
<td>2</td>
<td>BLACK</td>
<td>5150</td>
<td>SWITCHED +12 FOR ROOM 1 CYL RET SOLENOID VALVE</td>
</tr>
<tr>
<td>3</td>
<td>BLACK</td>
<td>5051</td>
<td>SWITCHED +12 FOR ROOM 2 CYL EXT SOLENOID VALVE</td>
</tr>
<tr>
<td>4</td>
<td>BLACK</td>
<td>5151</td>
<td>SWITCHED +12 FOR ROOM 2 CYL RET SOLENOID VALVE</td>
</tr>
<tr>
<td>5</td>
<td>BLACK</td>
<td>5052</td>
<td>SWITCHED +12 FOR ROOM 3 CYL EXT SOLENOID VALVE</td>
</tr>
<tr>
<td>6</td>
<td>BLACK</td>
<td>5152</td>
<td>SWITCHED +12 FOR ROOM 3 CYL RET SOLENOID VALVE</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td></td>
<td></td>
<td>NO CONNECTION</td>
</tr>
<tr>
<td>9</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>10</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>11</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>12</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>PIN #</td>
<td>WIRE COLOR</td>
<td>WIRE NUMBER</td>
<td>WIRE DESCRIPTION AND FUNCTION</td>
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<tr>
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<td>------------</td>
<td>-------------</td>
<td>-------------------------------</td>
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<tr>
<td></td>
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<td>CN2 - 12 PIN BLACK CONNECTOR (SIDE MOUNTED)</td>
</tr>
<tr>
<td>1</td>
<td>BLACK</td>
<td>6810</td>
<td>SWITCHED +12 BATT FROM PUMP RELAY - ROOM 1</td>
</tr>
<tr>
<td>2</td>
<td>BLACK</td>
<td>5000</td>
<td>SWITCHED +12 FOR ROOM EXT FROM CONTROL PANEL - ROOM 1</td>
</tr>
<tr>
<td>3</td>
<td>BLACK</td>
<td>5100</td>
<td>SWITCHED +12 FOR ROOM RET FROM CONTROL PANEL - ROOM 1</td>
</tr>
<tr>
<td>4</td>
<td>BLACK</td>
<td>6811</td>
<td>SWITCHED +12 BATT FROM PUMP RELAY - ROOM 2</td>
</tr>
<tr>
<td>5</td>
<td>BLACK</td>
<td>5001</td>
<td>SWITCHED +12 FOR ROOM EXT FROM CONTROL PANEL - ROOM 2</td>
</tr>
<tr>
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<td>BLACK</td>
<td>5101</td>
<td>SWITCHED +12 FOR ROOM RET FROM CONTROL PANEL - ROOM 2</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td></td>
<td></td>
<td>NO CONNECTION</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>KEY PIN (NO CONNECTION)</td>
</tr>
<tr>
<td>10</td>
<td>BLACK</td>
<td>8601</td>
<td>SWITCHED +12 FOR PUMP RELAY FROM CONTROL PANEL</td>
</tr>
<tr>
<td>11</td>
<td>RED</td>
<td>6100</td>
<td>+12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>NO CONNECTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CN1 - 12 PIN BLACK CONNECTOR (SIDE MOUNTED)</td>
</tr>
<tr>
<td>1</td>
<td>BLACK</td>
<td>6812</td>
<td>SWITCHED +12 BATT FROM PUMP RELAY - ROOM 3</td>
</tr>
<tr>
<td>2</td>
<td>BLACK</td>
<td>5002</td>
<td>SWITCHED +12 FOR ROOM EXT FROM CONTROL PANEL - ROOM 3</td>
</tr>
<tr>
<td>3</td>
<td>BLACK</td>
<td>5102</td>
<td>SWITCHED +12 FOR ROOM RET FROM CONTROL PANEL - ROOM 3</td>
</tr>
<tr>
<td>4 THRU 9</td>
<td></td>
<td></td>
<td>NO CONNECTION</td>
</tr>
<tr>
<td>10</td>
<td>BLACK</td>
<td>8601</td>
<td>SWITCHED +12 FOR PUMP RELAY FROM CONTROL PANEL</td>
</tr>
<tr>
<td>11</td>
<td>RED</td>
<td>6100</td>
<td>+12 BATTERY FROM PUMP RELAY</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>NO CONNECTION (KEY PIN)</td>
</tr>
</tbody>
</table>

LEVEL SENSOR ADJUSTMENT

12 PIN BLACK CONNECTOR (SIDE MOUNTED)

CN1 - 12 PIN BLACK CONNECTOR (SIDE MOUNTED)
NOTE: DO NOT turn the valve release nut more than 4 and 1/2 (four and one half) turns counter clockwise. Damage to the valve may result.

IMPORTANT: PRIOR TO REMOVING THE BREATHER CAP, EITHER TO CHECK THE OIL LEVEL OR TO USE THE 1/4" NUT DRIVER, CLEAN ANY DEBRIS FROM THE TOP OF THE RESERVOIR. BEFORE RETURNING THE BREATHER CAP TO THE RESERVOIR, REMOVE ANY PAINT CHIPS OR OTHER DEBRIS FROM THE DIPSTICK INCLUDING DEBRIS INSIDE THE 1/4" NUT DRIVER.