

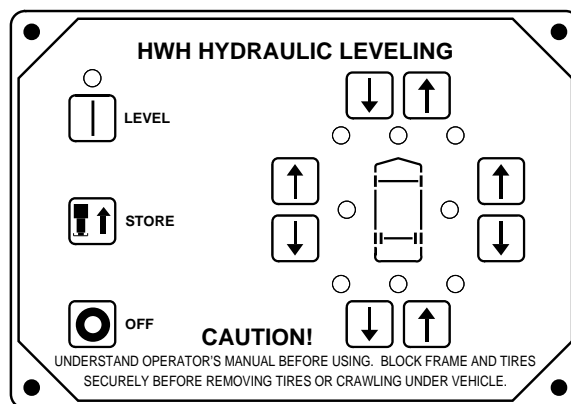


OPERATOR'S MANUAL

HWH® TOUCH PANEL-CONTROLLED 325 SERIES LEVELING SYSTEM AND SPACEMAKER® ROOM EXTENSION SYSTEMS

FEATURING:

- Touch Panel Leveling Control*
- BI-AXIS® Hydraulic Leveling*
- Straight-Acting Jacks*
- Pilot Operated Suspension Air Dump*
- One - Dual Cylinder "In Floor" Slide (With Synchronizing Cylinder)*
- One - Single Cylinder "In Floor" Slide*
- One - Single Cylinder Bed Slide*
- One - Single Cylinder Generator Slide*



HWH CORPORATION
(On I-80, Exit 267 South)
2096 Moscow Road | Moscow, Iowa 52760
Ph: 800/321-3494 (or) 563/724-3396 | Fax: 563/724-3408
www.hwh.com

OPERATOR'S MANUAL

CAUTION !

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

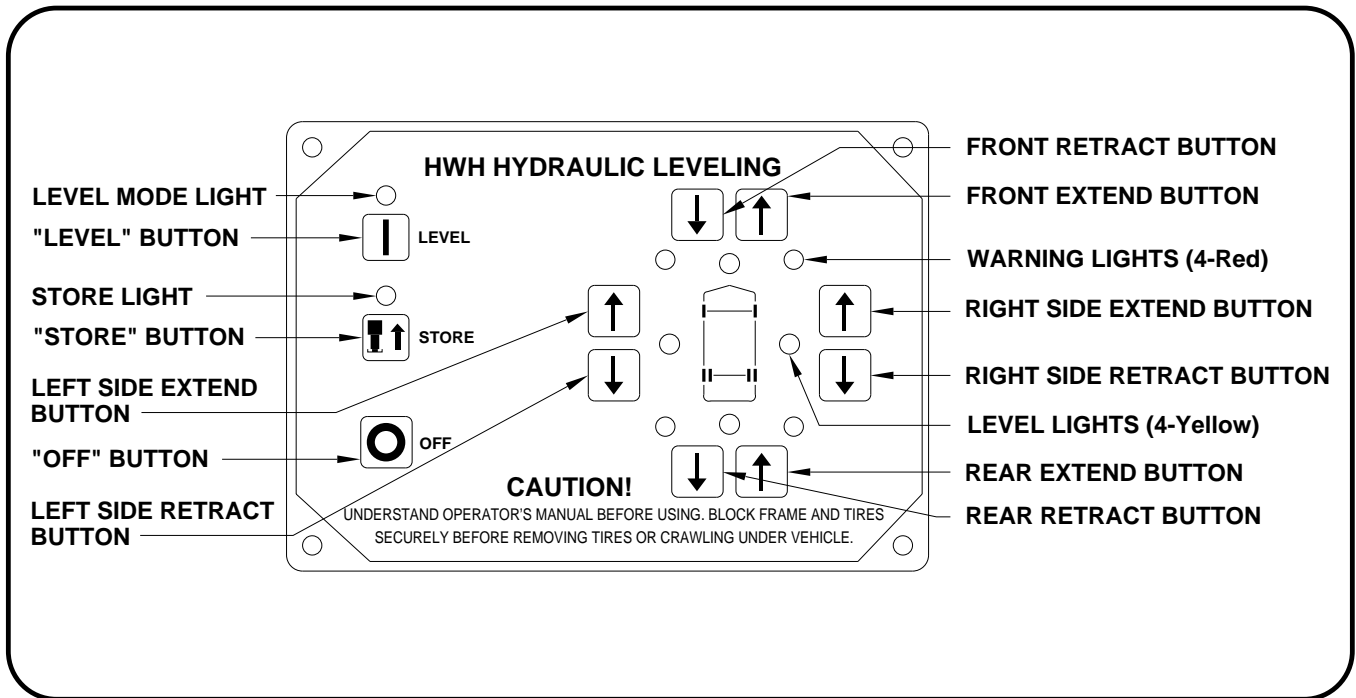
HWH CORPORATION strives to maintain the highest level of customer satisfaction. Therefore, if you discover a defect or problem, please do the following:

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



CONTROL FUNCTIONS

CONTROL BUTTONS

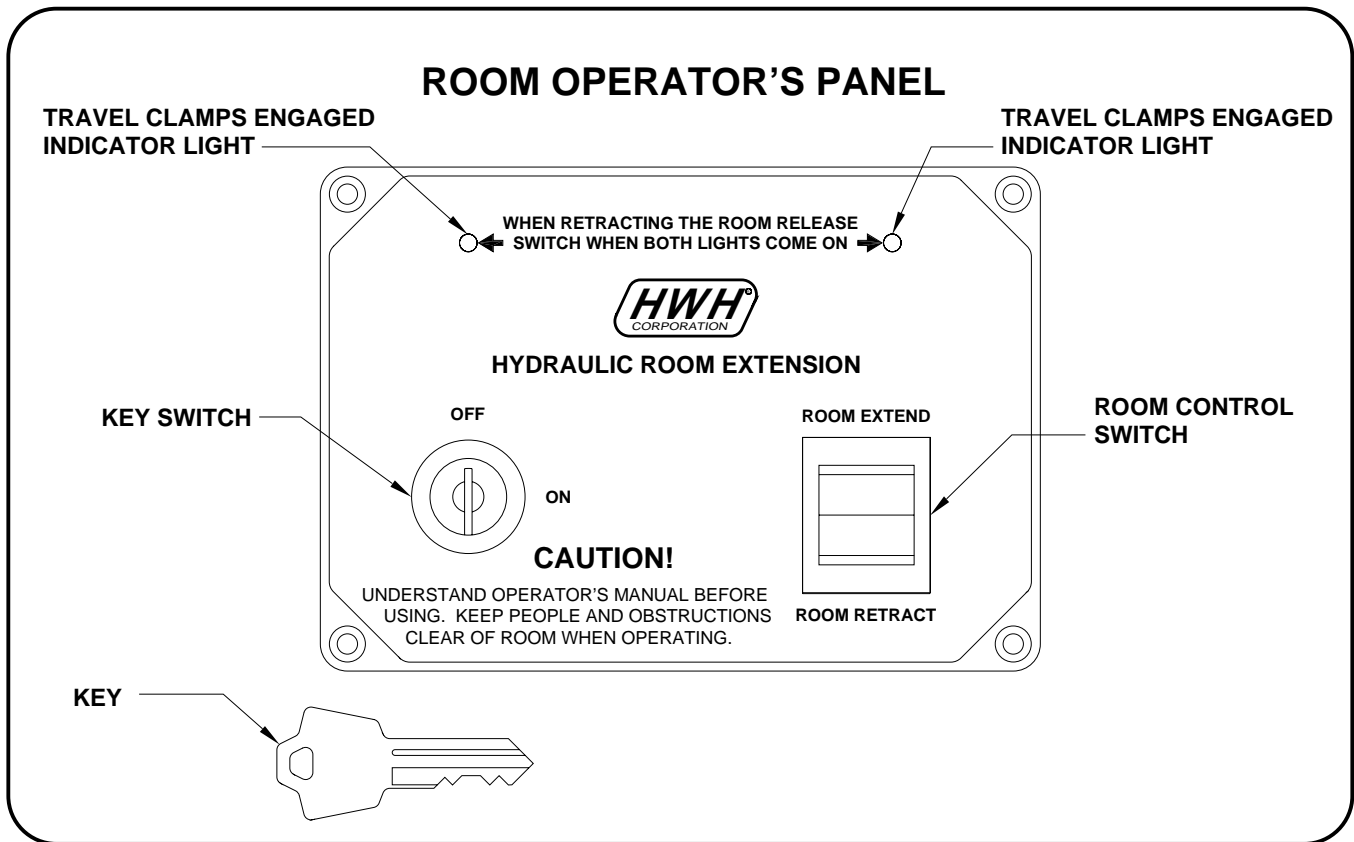
- "LEVEL" BUTTON:** This button places the system in leveling mode.
- "OFF" BUTTON:** This button turns off control power to the leveling system.
- "STORE" BUTTON:** This button will retract all four jacks. (The panel must be off before pressing the "STORE" button)
- EXTEND BUTTONS (UP ARROWS):** These 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

- LEVEL MODE LIGHT:** This light indicates the system is in the leveling mode.
- STORE LIGHT:** This light will be on when the system is in the store mode.
- 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:** A red WARNING light will be on whenever the corresponding jack is extended approximately 1/2 inch, provided the ignition is in the "ACC" or "ON" position. Some vehicles are equipped with a dash mounted master "JACKS DOWN" light which will be on when one or more jacks are extended approximately 1/2 inch and the ignition is in the "ON" position.
- 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

ROOMS WITH TRAVEL CLAMPS



CONTROL FUNCTIONS

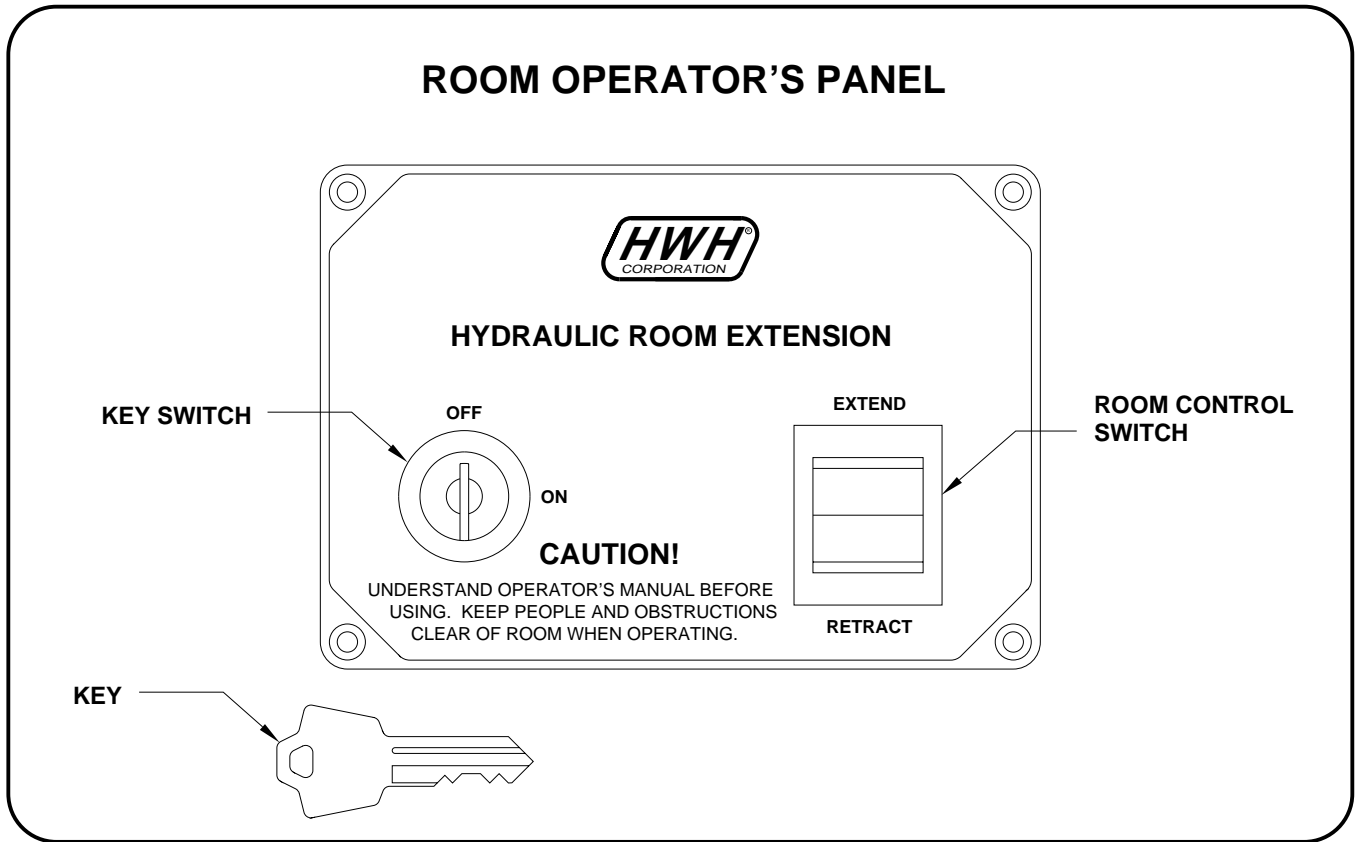
KEY SWITCH: The KEY SWITCH controls power to the ROOM CONTROL SWITCH. When the KEY SWITCH is in the "ON" position the room can be operated and the key cannot be removed. When the KEY SWITCH is in the "OFF" position the room cannot be operated, and the key can be removed.

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.

TRAVEL CLAMPS ENABLED INDICATOR LIGHT: These lights only come on if the Room Control Switch is being pushed to ROOM RETRACT. The ignition must be on and the room panel Key Switch must be on. These lights will come on when the room is fully retracted and the Travel Clamps are fully extended.

CONTROL IDENTIFICATION

ROOMS WITHOUT TRAVEL CLAMPS



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.

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. The vehicle must be at the proper ride height before traveling.

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.

NOTE: If the park brake is not set the panel will not turn on. The "NOT IN PARK/BRAKE" light will be on only while the "ON" button is being pushed.

2. Turn ignition switch to "ACCESSORY".

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

4. Push the "DUMP" button. The air will dump from the vehicle suspension. Continue with leveling when air has stopped exhausting from the suspension.

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

6. 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 NECESSARY, 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.

7. 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.

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

9. Turn the ignition switch off.

OPERATING PROCEDURES

RETRACT PROCEDURE

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

NOTE: If the Leveling Mode light is on, the "STORE" button will not function.

NORMAL RETRACT PROCEDURE

NOTE: It is recommended that all room extensions are retracted before storing the jacks.

1. Start engine. Immediately store the jacks.

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. If the jacks are stored with the ignition in the accessory position, it is important to push the "STORE" button after starting the engine.

2. Press OFF.

3. Press STORE. The "STORE" light will come on. As each jack retracts it's red warning light will go out. The vehicle suspension should return to the proper ride height for traveling.

IMPORTANT: Pushing the "OFF" button or moving the ignition key will interrupt the STORE mode. The jacks will stop retracting. The STORE mode should be completed before traveling.

NOTE: When traveling, with rising temperatures a jack may extend slightly. If the unit is left in STORE mode the system will automatically retract the jack.

5. The system will stay in the STORE mode until the "OFF" button is pushed or the ignition key is turned.

IMPORTANT: If a red Warning Light and the buzzer come on while traveling and will not go out in a reasonable time, 5 minutes or less, push the "OFF" button to turn the system off. Have the system serviced.

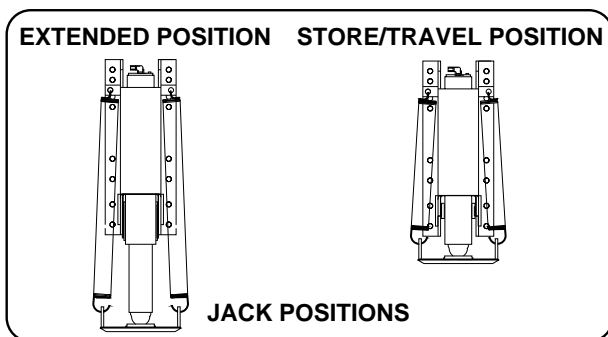
CAUTION: DO NOT MOVE THE VEHICLE WHILE THE JACKS ARE STILL IN CONTACT WITH THE GROUND OR IN THE EXTENDED POSITION. THIS VEHICLE IS EQUIPPED WITH STRAIGHT-ACTING JACKS. MOVING THE VEHICLE WITH THE JACKS EXTENDED CAN CAUSE SEVERE DAMAGE TO THE JACKS AND/OR THE VEHICLE AND CREATE A DRIVING HAZARD. DO NOT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

NOTE: If jacks cannot be retracted by the above procedure see MANUAL JACK RETRACTION Section.

See TRAVEL PROCEDURES before moving the vehicle and traveling.

CAUTION: THIS VEHICLE IS EQUIPPED WITH AN AIR SUSPENSION. THE SUSPENSION MUST BE AT THE PROPER RIDE HEIGHT BEFORE TRAVELING, IT IS THE OPERATOR'S RESPONSIBILITY TO CHECK THAT THE SUSPENSION IS AT THE PROPER RIDE HEIGHT FOR TRAVELING.

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

TRAVEL PROCEDURES

Start the vehicle engine before retracting the jacks. Push the "STORE" button to retract the jacks, the STORE light will come on.

IMPORTANT: Pushing the "OFF" button or moving the ignition key will stop the STORE procedure. The jacks will stop retracting. Thermal expansion can cause a jack to extend slightly.

NOTE: If the jacks are stored with the ignition in the accessory position, the "STORE" button should be pushed after starting the engine.

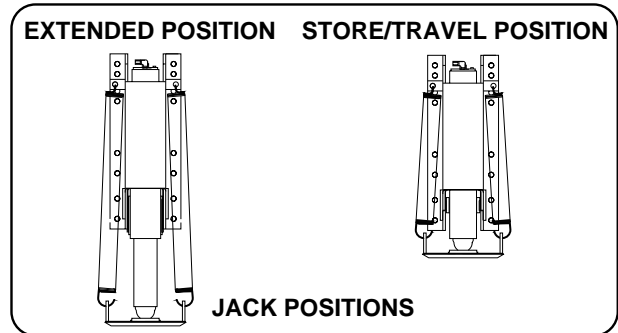
It is important when traveling that the STORE light is on and the system left in the store mode. This allows a jack that extends due to thermal expansion to automatically retract.

CAUTION: A WARNING LIGHT OR BUZZER COMING ON BRIEFLY WHILE TRAVELING DOES NOT INDICATE A DRIVING HAZARD. IF THE "STORE" LIGHT IS ON AND THE WARNING LIGHT AND BUZZER COME ON, STAYING ON MORE THAN 30 SECONDS, THE JACKS SHOULD BE CHECKED.

Due to thermal expansion of the hydraulic fluid in the Leveling System, at times the jacks will extend slightly. The system will automatically retract the jacks, if the STORE light is on when this happens.

Any time the vehicle engine is stopped during traveling, such as for refueling, the STORE button should be pushed after the engine is started again before continuing to travel.

During traveling if the STORE light is not on and the Jacks Down Warning Buzzer comes on, push the "STORE" button and leave the system in the STORE mode.



CAUTION: DO NOT MOVE THE VEHICLE WHILE THE JACKS ARE STILL IN CONTACT WITH THE GROUND OR IN THE EXTENDED POSITION. THIS VEHICLE IS EQUIPPED WITH STRAIGHT-ACTING JACKS. MOVING THE VEHICLE WITH THE JACKS EXTENDED CAN CAUSE SEVERE DAMAGE TO THE JACKS AND/OR THE VEHICLE AND CREATE A DRIVING HAZARD. DO NOT RELY SOLELY UPON THE WARNING LIGHTS. IT IS THE OPERATOR'S RESPONSIBILITY TO CHECK THAT ALL JACKS ARE 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.

OPERATING PROCEDURES

ROOM EXTEND PROCEDURE FOR ROOMS WITH TRAVEL CLAMPS

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.

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

1. The park brake must be set. The room will not operate if the park brake is not set.
2. Follow the LEVELING AND STABILIZING PROCEDURE.

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. Turn the ignition switch to ACCESSORY.
4. Turn the room control panel KEY SWITCH to the "ON" position.
5. To extend the room, press and hold the ROOM CONTROL SWITCH in the "EXTEND" position until the room is fully extended.

IMPORTANT: The room will not start to move until the Travel Clamps are retracted. This will take approximately 15 to 20 seconds after pushing the control switch to "EXTEND". Do not try to manually extend the room if the Travel Clamps will not retract.

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.

6. Turn the room panel Key Switch to the "OFF" position.
7. Turn off the ignition switch.

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

OPERATING PROCEDURES

ROOM RETRACT PROCEDURE FOR ROOMS WITH TRAVEL CLAMPS

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

NOTE: It is recommended to retract room extensions before retracting jacks.

1. The park brake must be set. The room will not operate if the park brake is not set.
2. Turn the ignition switch to ACCESSORY.
3. Turn the room control panel KEY SWITCH to the "ON" position.
4. To retract the room press and hold the ROOM CONTROL SWITCH in the "RETRACT" position until the room is fully retracted and both Travel Clamps Engaged light come on.

IMPORTANT: When the room is fully retracted, a room in limit switch will allow the Travel Clamps to extend. The hydraulic pump will run for approximately 5 seconds after the room is fully retracted. It will take the Travel Clamps approximately 20 seconds to extend after the room is fully retracted. When the Travel Clamps are fully extended, the 2 Travel Clamps Engaged lights will come on. When both Travel Clamps Engaged lights are on, the room control switch should be released. If the Travel Clamps Engaged lights do not come on, DO NOT hold the room control switch to RETRACT for longer than 40 seconds after the room extension is fully retracted.

NOTE: 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: 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.

5. Turn the room panel KEY SWITCH to the "OFF" position.
6. Turn the ignition switch off.
7. If the room will not retract see the MANUAL ROOM RETRACT PROCEDURE.

IMPORTANT: Room-locking devices should be locked while traveling.

OPERATING PROCEDURES

ROOM EXTEND PROCEDURE FOR ROOMS WITHOUT TRAVEL CLAMPS

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.

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

1. The park brake must be set. The room will not operate if the park brake is not set.
2. Follow the LEVELING AND STABILIZING PROCEDURE.
3. 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.

4. Turn the ignition switch to ACCESSORY.
5. Turn the room control panel KEY SWITCH to the "ON" position.

6. 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.

7. Turn the room control panel KEY SWITCH to the "OFF" position.
8. Turn off the ignition switch.

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

OPERATING PROCEDURES

ROOM RETRACT PROCEDURE FOR ROOMS WITHOUT TRAVEL CLAMPS

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

NOTE: It is recommended to retract room extensions before retracting jacks.

1. The park brake must be set. The room will not operate if the park brake is not set.
2. Turn the ignition switch to ACCESSORY.
3. Turn the room control panel KEY SWITCH to the "ON" position.
4. 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.

5. Turn the room control panel KEY SWITCH to the "OFF" position.
6. Turn the ignition switch off.
7. If the room will not retract see the MANUAL ROOM RETRACT PROCEDURE.

IMPORTANT: Room-locking devices should be locked while traveling.

OPERATING PROCEDURES

GENERATOR SLIDE EXTEND PROCEDURE

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

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

1. Turn the ignition key on.

2. THE PARK BRAKE MUST BE SET FOR THE SLIDE TO OPERATE.

3. To extend the slide, press and hold the GENERATOR SLIDE CONTROL SWITCH in the "EXTEND" position. When the slide is fully extended, release the GENERATOR SLIDE CONTROL SWITCH.

IMPORTANT: Do not hold the GENERATOR SLIDE CONTROL SWITCH in the "EXTEND" position for more than ten seconds after the slide is fully extended or stops moving.

NOTE: Releasing the GENERATOR SLIDE CONTROL SWITCH will halt the operation of the slide.

GENERATOR SLIDE RETRACT PROCEDURE

1. Turn the ignition key on.

2. THE PARK BRAKE MUST BE SET FOR THE SLIDE TO OPERATE.

3. To retract the slide, press and hold the GENERATOR SLIDE CONTROL SWITCH in the "RETRACT" position. When the slide is fully retracted, release the GENERATOR SLIDE CONTROL SWITCH.

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

NOTE: Releasing the GENERATOR SLIDE CONTROL SWITCH will halt the operation of the slide.

IN THE EVENT OF FAILURE OF THE GENERATOR SLIDE TO RETRACT, CONTACT HWH CORPORATION CUSTOMER SERVICE AT 1-319-724-3396 OR 1-800-321-3494 FOR ASSISTANCE.

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. DO NOT turn the 1/4" valve release nut more than **1 full turn**. Turning the nut more could damage the valve.

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.

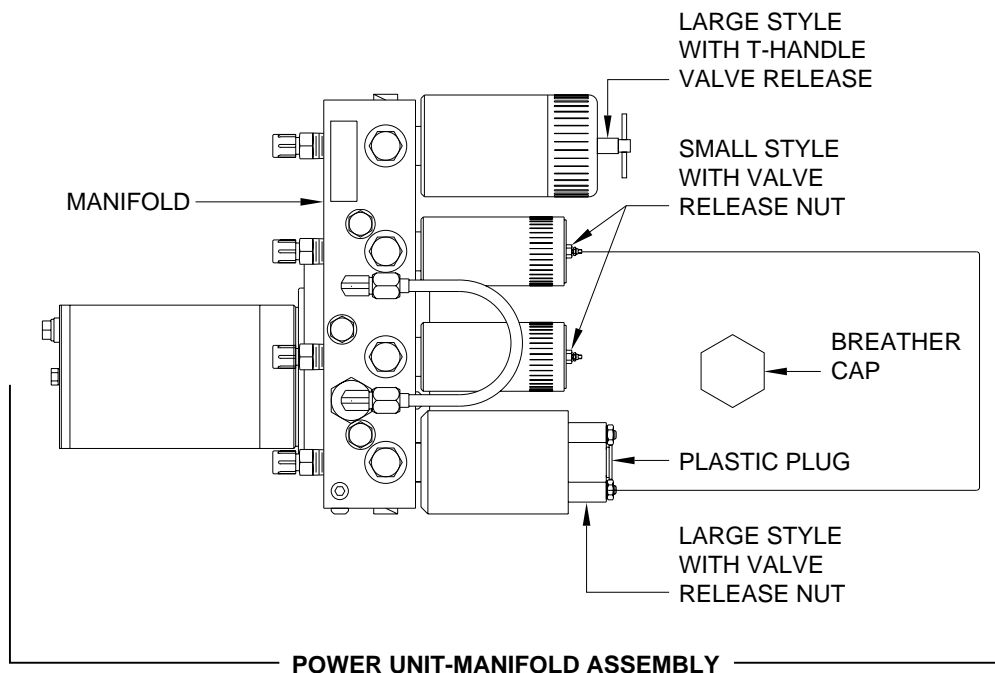
5. Repeat the process by identifying then opening the two outer valves.

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.



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.

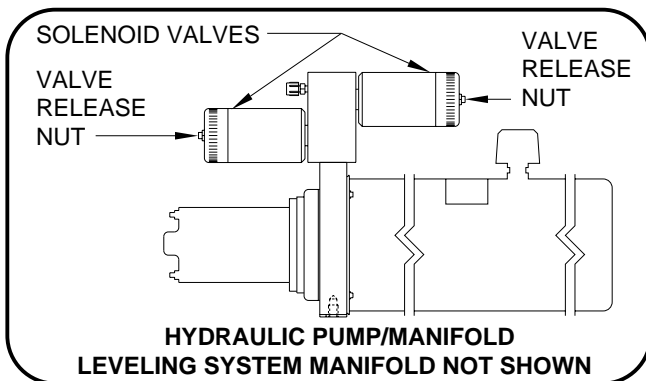
IMPORTANT: If the vehicle is not equipped with a winch, DO NOT use other pulling devices to retract the room. Follow steps 2 and 3 and try pushing the room in. Contact the vehicle manufacturer or HWH Customer Service at 1-800-321-3494 or 563-724-3396 for assistance.

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 : When manually retracting the room, make sure the jacks are retracted before retracting the room.

2. Locate the HYDRAULIC PUMP/MANIFOLD unit.



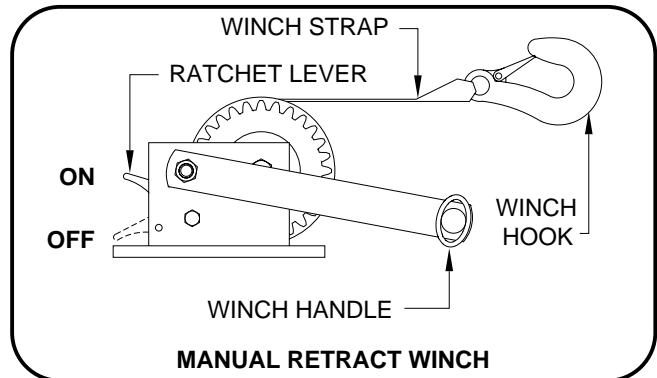
3. Open the Solenoid Valves by slowly turning the valve release nuts counter clockwise using the 1/4" nut driver supplied.

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.

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.

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.

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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 four jacks should be completely retracted before checking the oil level.

Refer to the "HYDRAULIC LINE CONNECTION DIAGRAM - MULTIPLE ROOM EXTENSIONS" page for information concerning the correct position of each room 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.

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.

LEVELING JACKS

There are very few user serviceable parts on the leveling 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 leveling 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 (LEVELING) Section. Note any abnormal operation.

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.

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

SENSING UNIT MAINTENANCE/SERVICE

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 (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.

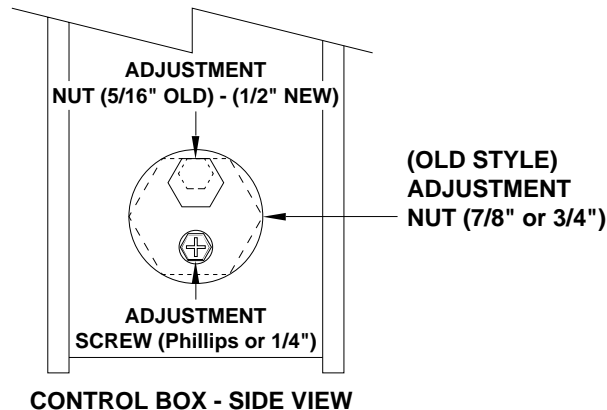
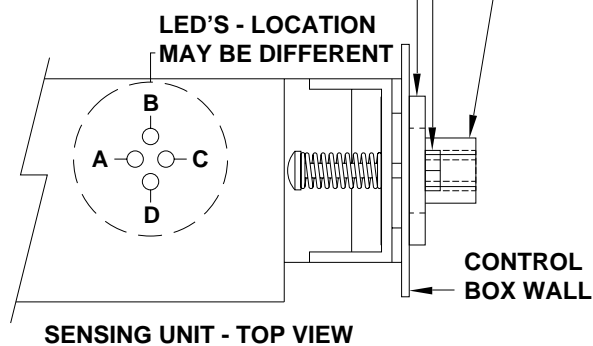
Example: After the initial adjustment and releveling the vehicle, the front is still low. This means the front yellow level light is turning off too soon. Determine which sensing unit light is the front light, A-B-C or D. Move the adjustment for that light very, very, slightly in the OPPOSITE direction 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.

ADJUSTMENT NUT (5/16" OLD) - (1/2" NEW)

ADJUSTMENT SCREW (Phillips or 1/4") (OLD STYLE)

ADJUSTMENT NUT (7/8" or 3/4")



NOT IN PARK/BRAKE CHECK

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

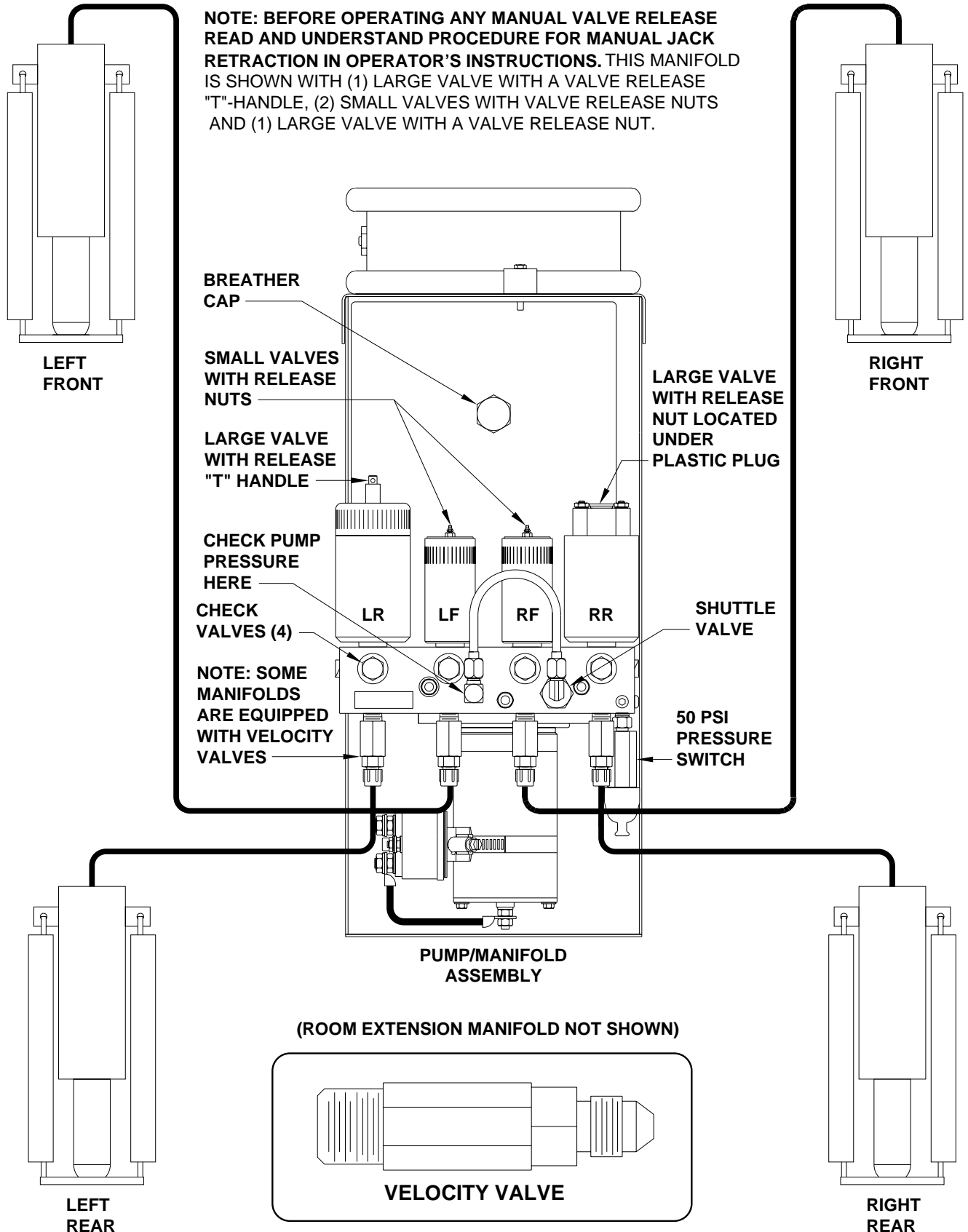
Set the park/brake. Switch the ignition to the "ACC" or "ON" position. Push the "ON/OFF" switch toward "ON". Release the parking brake and confirm that the "PARK" indicator light comes on. Reset the parking brake. The "PARK" indicator light should go out. Switch the ignition to "OFF".

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.

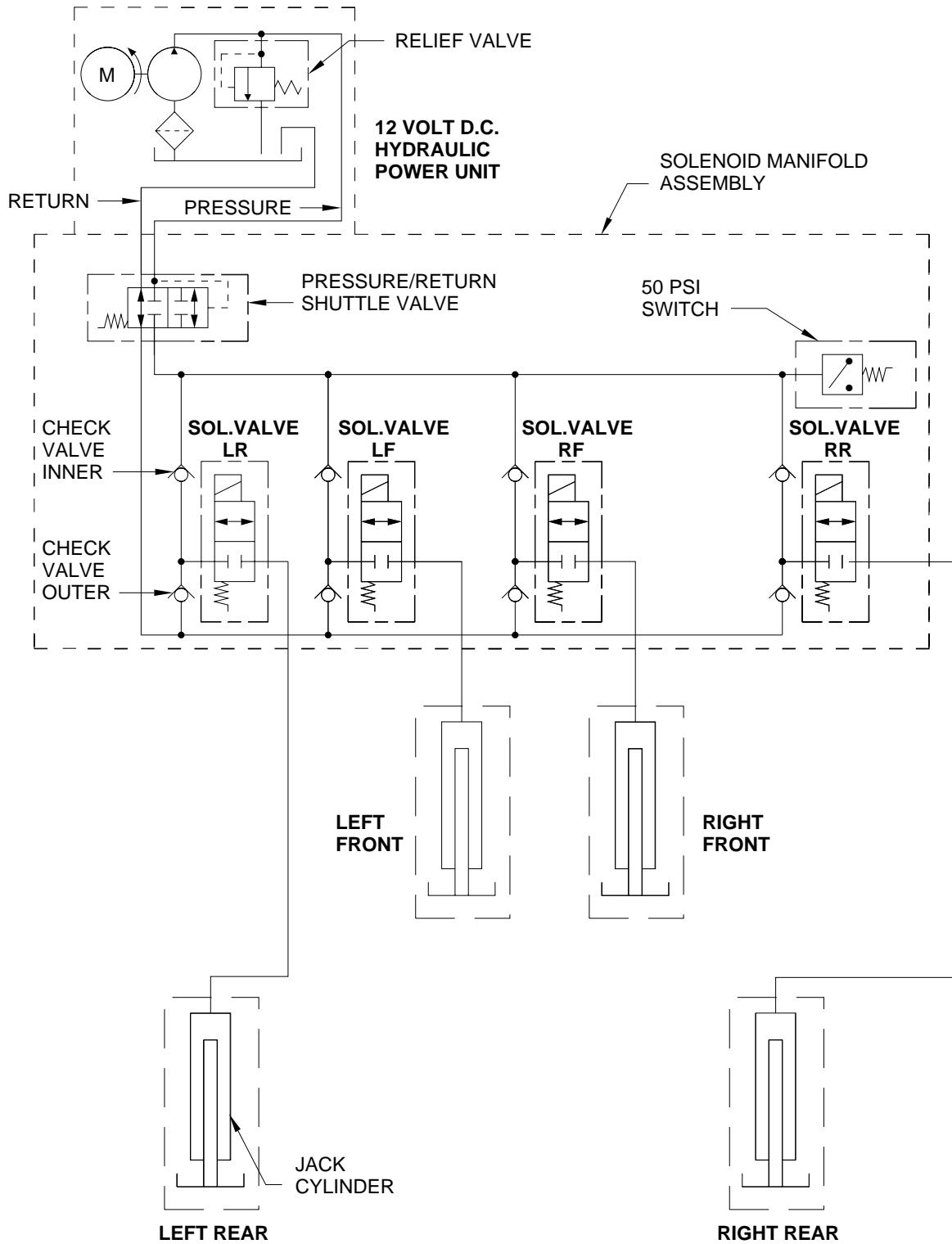
HYDRAULIC LINE CONNECTION DIAGRAM

305/325 SERIES LEVELING SYSTEM

(WITH 4 STRAIGHT-ACTING JACKS)



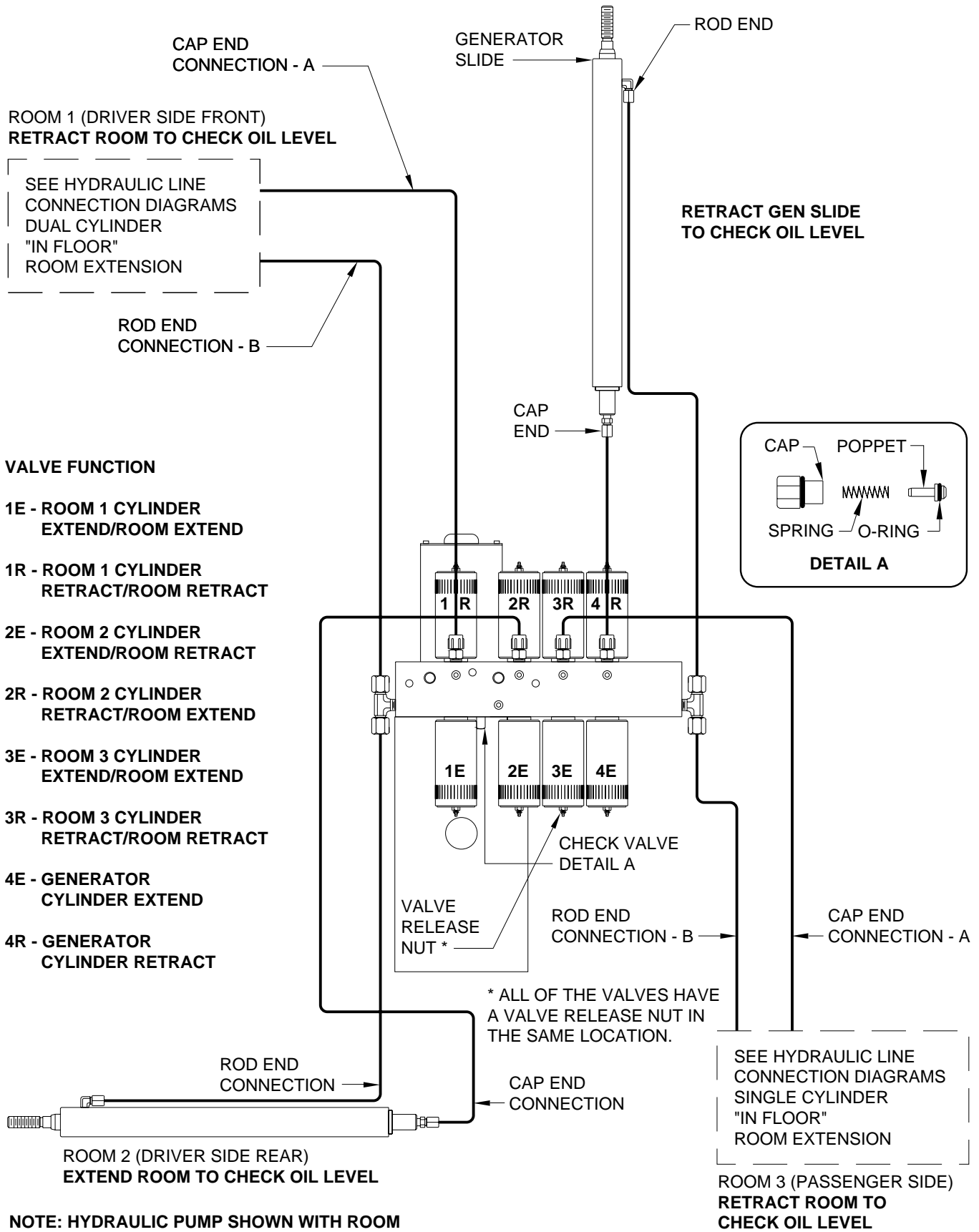
HYDRAULIC SCHEMATIC
305/310/325 SERIES LEVELING SYSTEM
WITH STRAIGHT-ACTING JACKS



HYDRAULIC LINE CONNECTION DIAGRAM

MULTIPLE EXTENSIONS AND A GENERATOR SLIDE

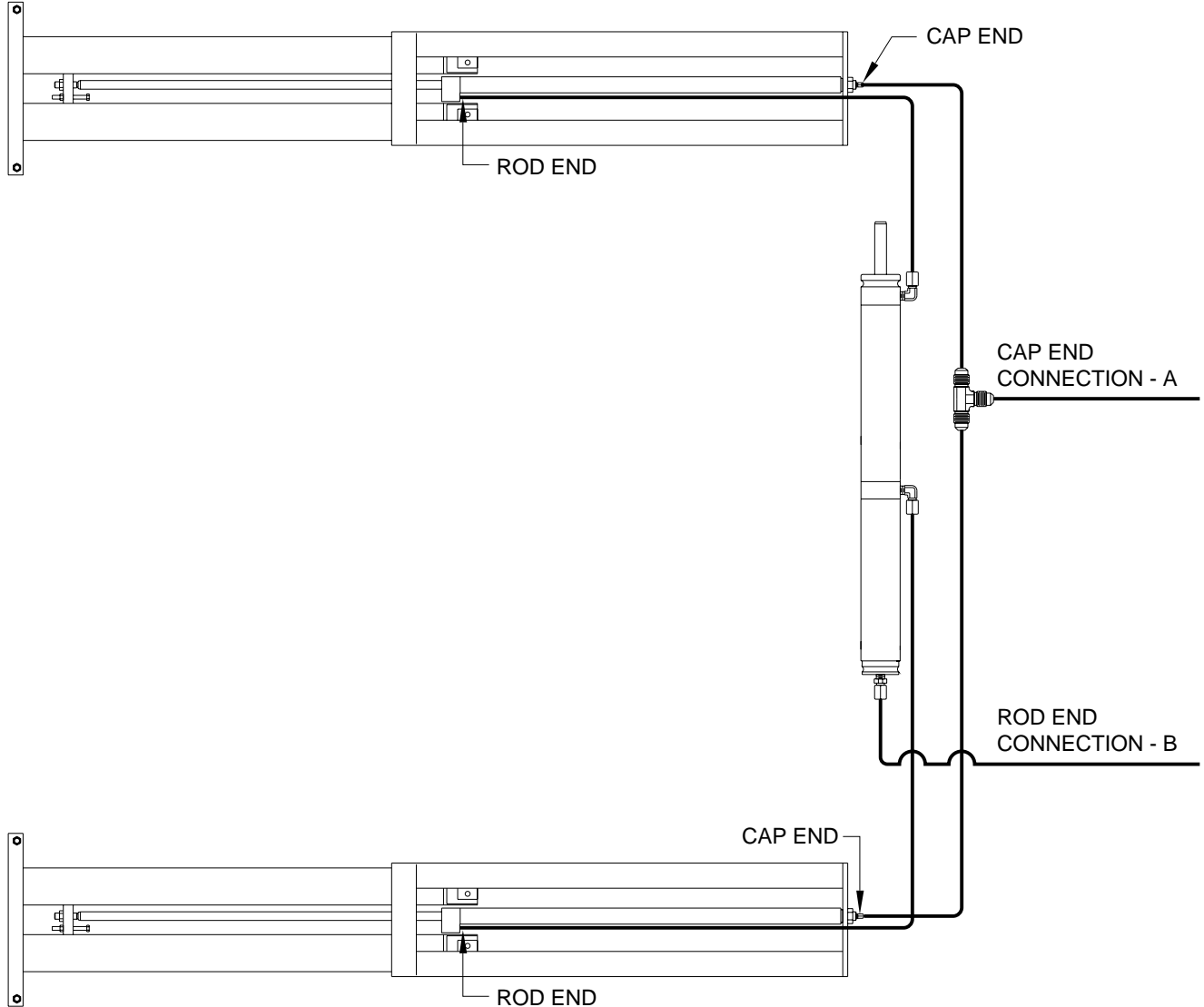
SOLENOID VALVES WITH VALVE RELEASE NUTS



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

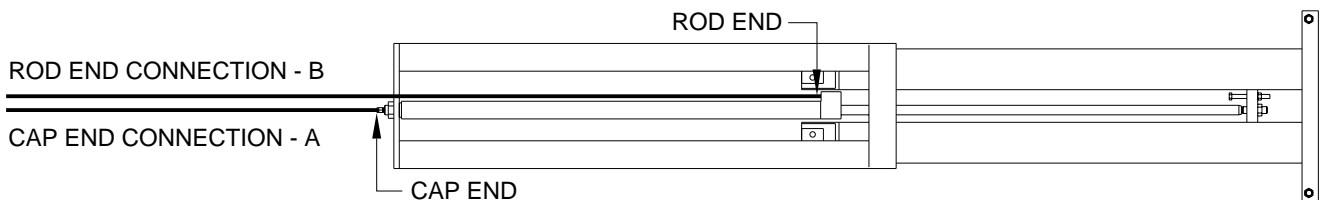
HYDRAULIC LINE CONNECTION DIAGRAM DUAL CYLINDER "IN FLOOR" ROOM EXTENSION (WITH SYNCHRONIZING CYLINDER) SINGLE CYLINDER "IN FLOOR" ROOM EXTENSION

DUAL CYLINDER "IN FLOOR" ROOM EXTENSION (WITH SYNCHRONIZING CYLINDER)



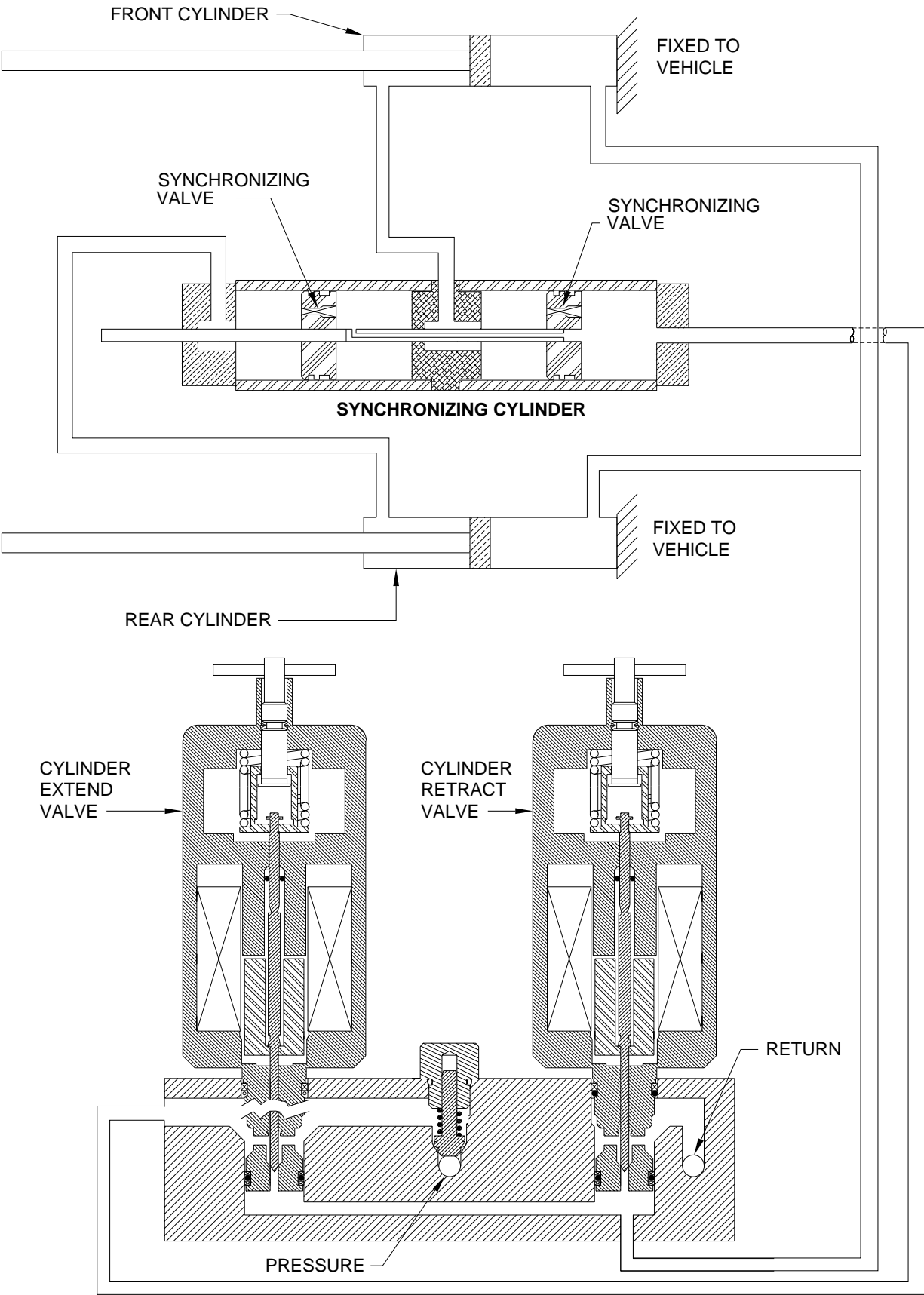
**CYLINDER EXTEND - ROOM EXTEND
CYLINDER RETRACT - ROOM RETRACT**

SINGLE CYLINDER "IN FLOOR" ROOM EXTENSION

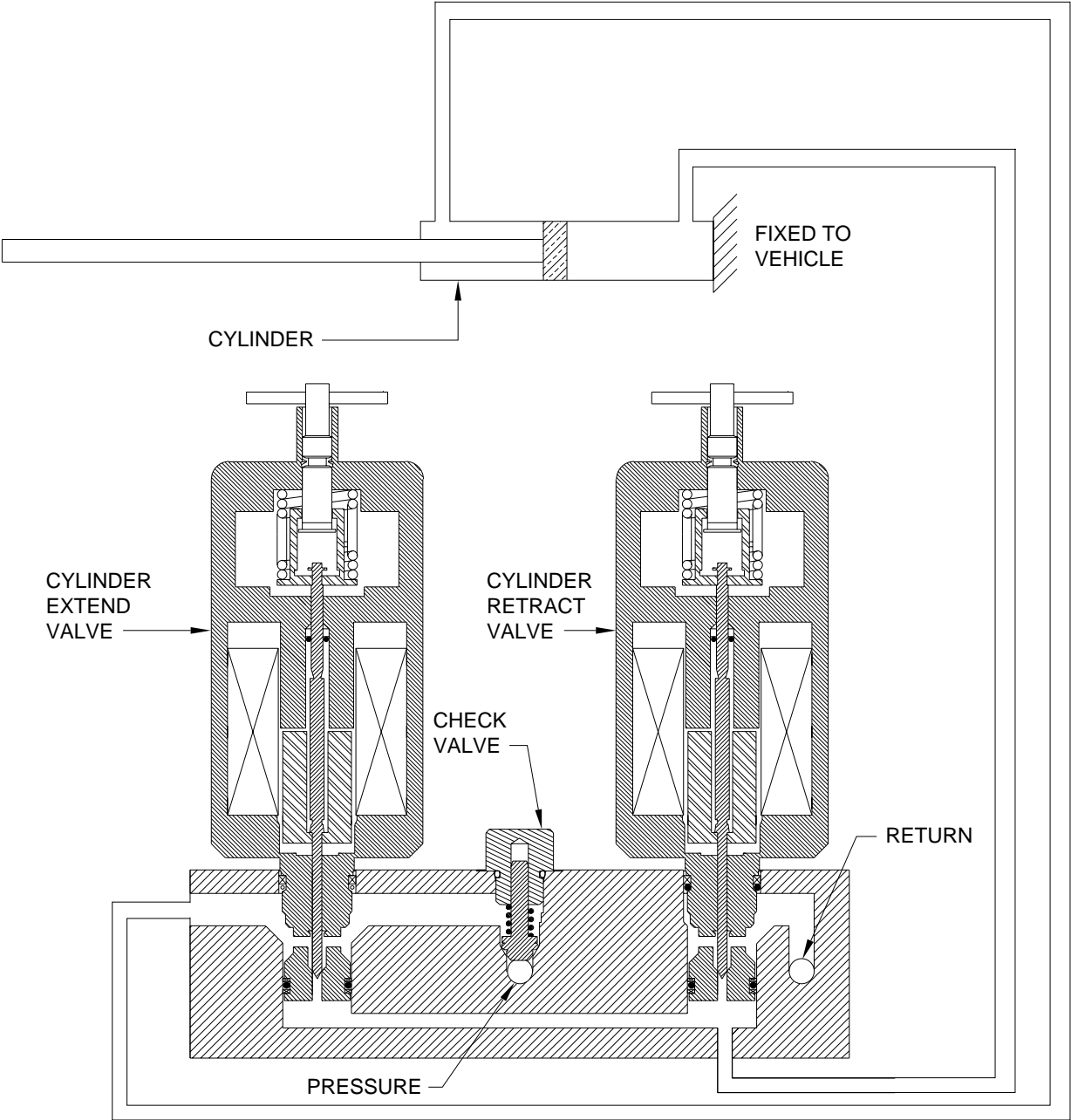


**CYLINDER EXTEND - ROOM EXTEND
CYLINDER RETRACT - ROOM RETRACT**

**HYDRAULIC FLOW DIAGRAM
VERTICAL ARM OR DUAL CYLINDER ROOM EXTENSION
WITH SYNCHRONIZING CYLINDER
STATIONARY POSITION**

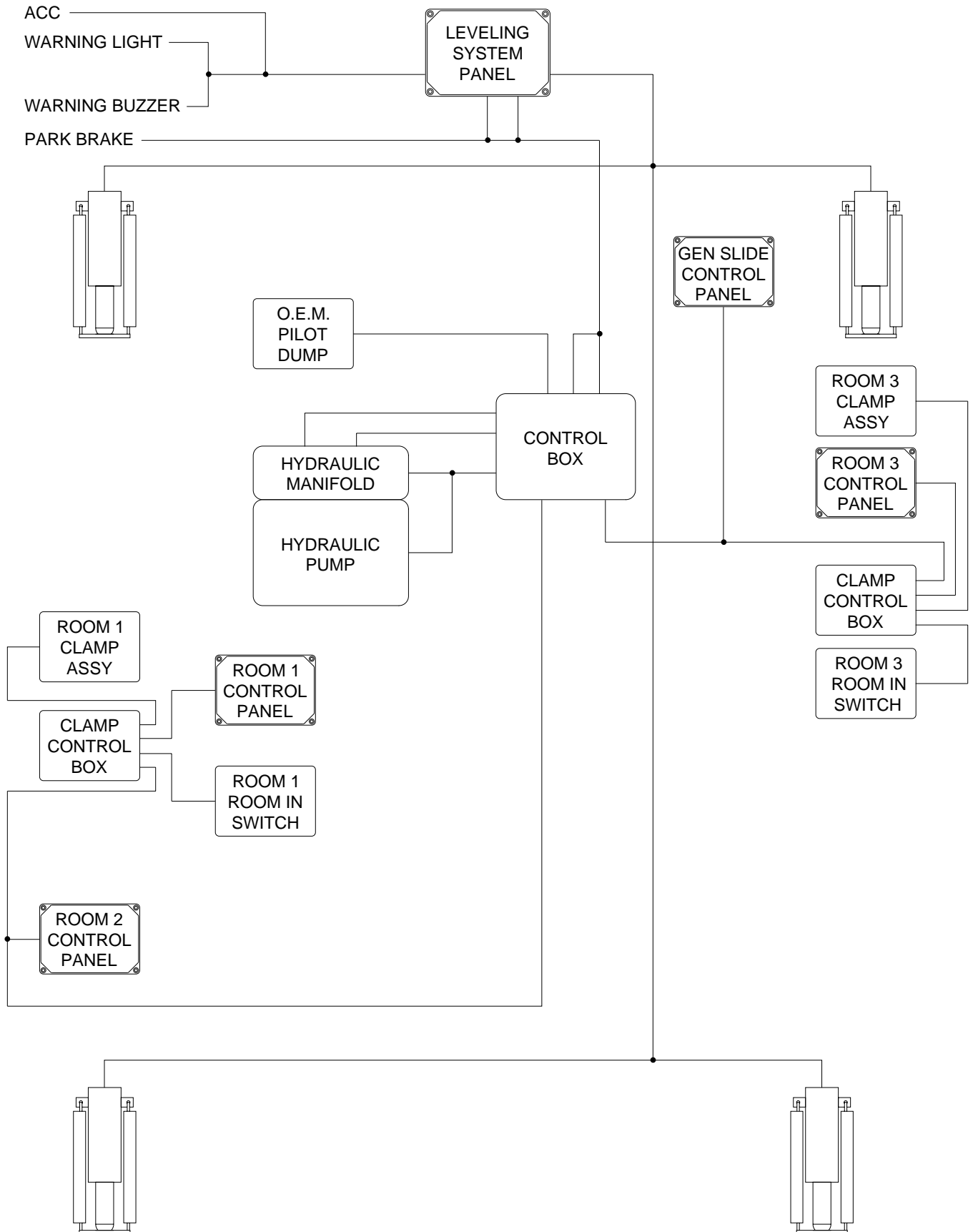


**HYDRAULIC FLOW DIAGRAM
SINGLE CYLINDER ROOM EXTENSION
STATIONARY POSITION**



ELECTRICAL CONNECTION DIAGRAM

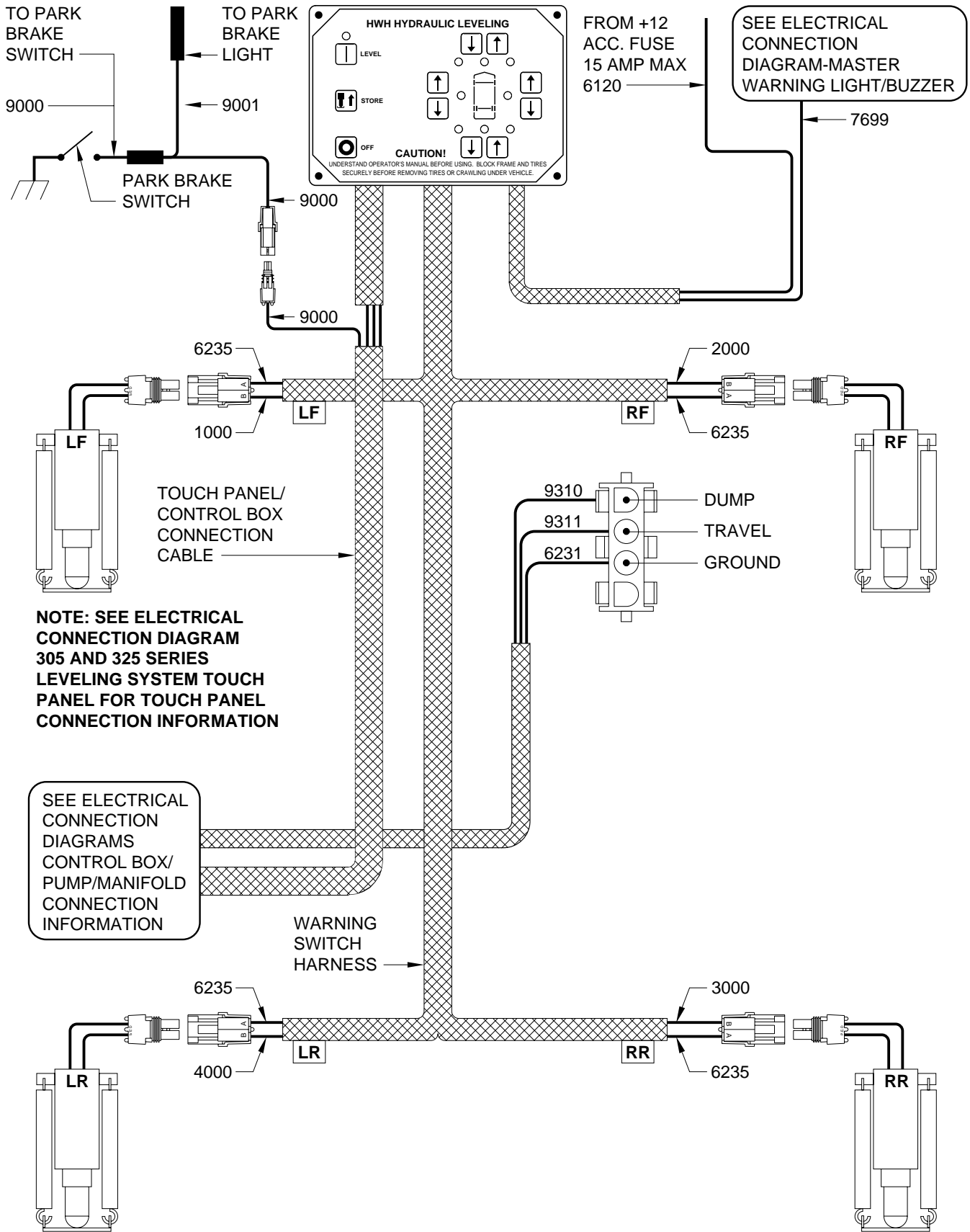
325 SERIES LEVELING SYSTEM



ELECTRICAL CONNECTION DIAGRAM

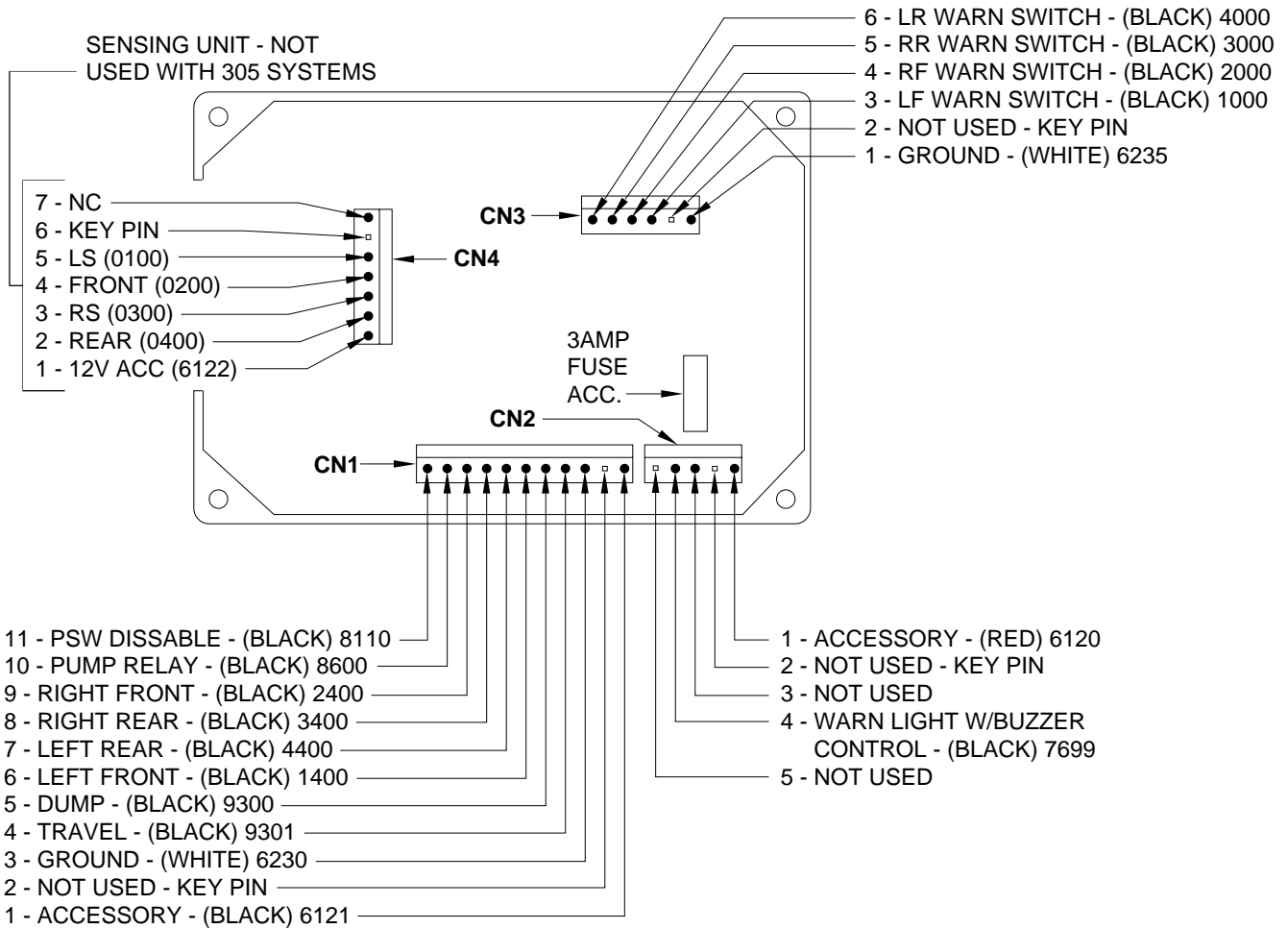
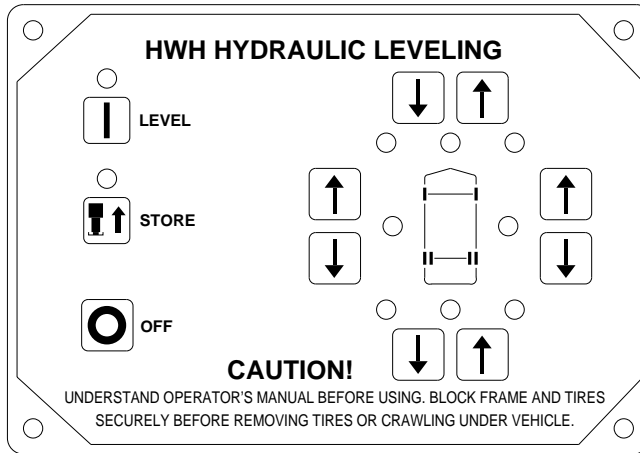
325 SERIES LEVELING SYSTEM (WITH PILOT AIR DUMP)

TOUCH PANEL CONNECTIONS



ELECTRICAL CONNECTION DIAGRAM

325 SERIES LEVELING SYSTEM TOUCH PANEL



NOTE: FOR WIRE FUNCTION INFORMATION SEE ELECTRICAL CONNECTION DIAGRAM - TOUCH PANEL WIRE LEGEND.

ELECTRICAL CONNECTION DIAGRAM

325 SERIES LEVELING SYSTEM

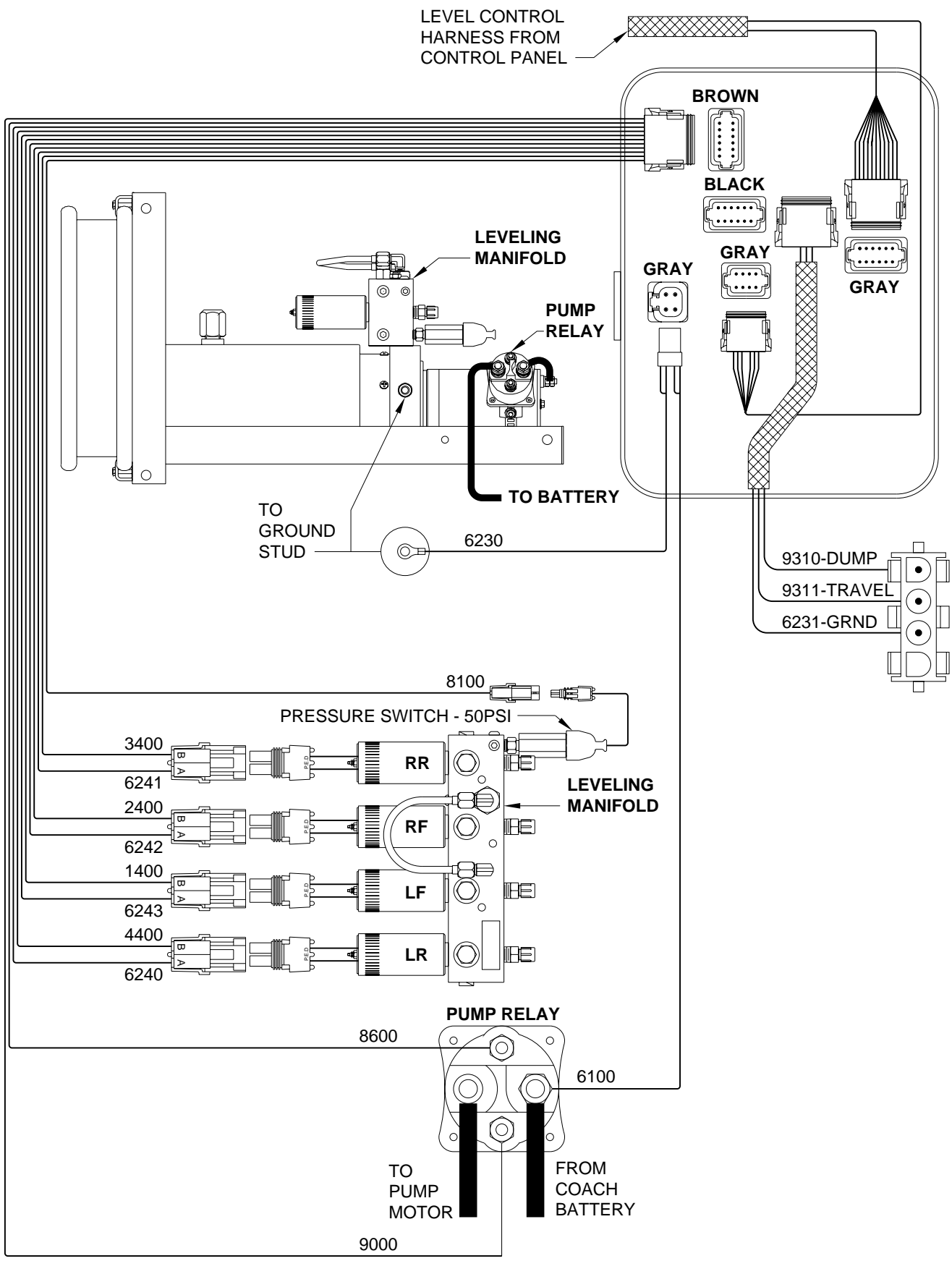
TOUCH PANEL WIRE LEGEND

PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1			
11 PIN CONNECTOR			
1	BLACK	6120	+12V ACC. POWER FOR CONTROL BOX
2			KEY PIN - NO CONNECTION
3	WHITE	6230	CHASSIS GROUND FROM CONTROL BOX
4	BLACK	9301	SWITCHED GROUND TO CONTROL BOX FOR TRAVEL
5	BLACK	9300	SWITCHED GROUND TO CONTROL BOX FOR DUMP
6	BLACK	1400	SWITCHED GROUND TO CONTROL BOX FOR LF SOLENOID VALVE
7	BLACK	4400	SWITCHED GROUND TO CONTROL BOX FOR LR SOLENOID VALVE
8	BLACK	3400	SWITCHED GROUND TO CONTROL BOX FOR RR SOLENOID VALVE
9	BLACK	2400	SWITCHED GROUND TO CONTROL BOX FOR RF SOLENOID VALVE
10	BLACK	8600	SWITCHED GROUND TO CONTROL BOX FOR PUMP RELAY
11	BLACK	8110	SWITCHED GROUND TO CONTROL BOX FOR STORE
CN2			
5 PIN CONNECTOR			
1	RED	6121	+12V ACC. POWER
2			KEY PIN - NO CONNECTION
3			NO CONNECTION
4	BLACK	7699	SWITCHED GROUND FOR WARNING LIGHT/BUZZER CONTROL
5			NO CONNECTION
CN3			
6 PIN CONNECTOR			
1	WHITE	6235	GROUND FOR JACK WARNING SWITCHES
2			KEY PIN - NO CONNECTION
3	BLACK	1000	SWITCHED GROUND FOR LF WARNING LIGHT
4	BLACK	2000	SWITCHED GROUND FOR RF WARNING LIGHT
5	BLACK	3000	SWITCHED GROUND FOR RR WARNING LIGHT
6	BLACK	4000	SWITCHED GROUND FOR LR WARNING LIGHT
CN4			
7 PIN CONNECTOR			
1	BLACK	6122	+12V ACC. POWER FOR LEVEL SENSING UNIT
2	BLACK	0400	SWITCHED GROUND FOR REAR LEVEL LIGHT
3	BLACK	0300	SWITCHED GROUND FOR RIGHT SIDE LEVEL LIGHT
4	BLACK	0200	SWITCHED GROUND FOR FRONT LEVEL LIGHT
5	BLACK	0100	SWITCHED GROUND FOR LEFT SIDE LEVEL LIGHT
6			KEY PIN - NO CONNECTION
7	WHITE		GROUND FOR LEVEL SENSING UNIT (MAY NOT BE USED)

ELECTRICAL CONNECTION DIAGRAM

305/325 SERIES POWER UNIT

LEVELING MANIFOLD - PUMP RELAY - PILOT AIR DUMP

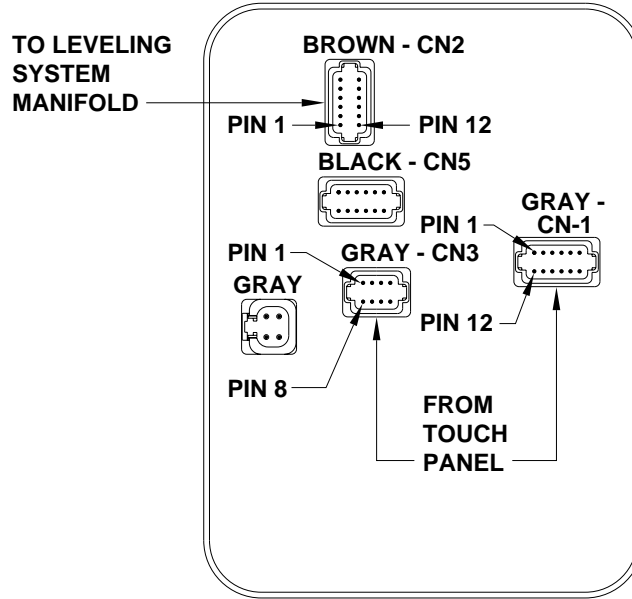


ELECTRICAL CONNECTION DIAGRAM

325 SERIES LEVELING SYSTEM

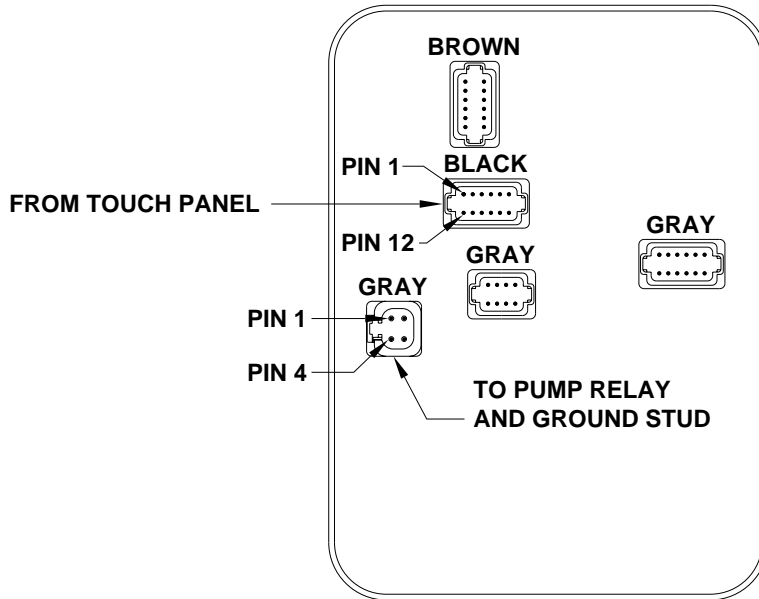
CONTROL BOX CONNECTION INFORMATION

PAGE 1 OF 2



PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1			12 PIN GRAY CONNECTOR
1	BLACK	1400	SWITCHED GROUND FROM TOUCH PANEL LEFT FRONT CONTROL
2	BLACK	3400	SWITCHED GROUND FROM TOUCH PANEL RIGHT REAR CONTROL
3	BLACK	9301	SWITCHED GROUND FROM TOUCH PANEL FOR TRAVEL
4	WHITE	6230	GROUND FOR TOUCH PANEL
5	BLACK	8110	SWITCHED GROUND FROM TOUCH PANEL FOR PRESS SW OVERRIDE
6	BLACK	9300	SWITCHED GROUND FROM TOUCH PANEL FOR DUMP
7	BLACK	9000	SWITCHED GROUND FROM PARK BRAKE SWITCH
8			NO CONNECTION
9	BLACK	2400	SWITCHED GROUND FROM TOUCH PANEL RIGHT FRONT CONTROL
10	BLACK	4400	SWITCHED GROUND FROM TOUCH PANEL LEFT REAR CONTROL
11	BLACK	8600	SWITCHED GROUND FROM TOUCH PANEL PUMP RELAY CONTROL
12	BLACK	6121	+12V ACC. POWER FROM TOUCH PANEL
CN2			12 PIN BROWN CONNECTOR
1			NO CONNECTION
2	WHITE	6243	GROUND FOR LEFT FRONT SOLENOID VALVE
3	WHITE	6242	GROUND FOR RIGHT FRONT SOLENOID VALVE
4	WHITE	6241	GROUND FOR RIGHT REAR SOLENOID VALVE
5	WHITE	6240	GROUND FOR LEFT REAR SOLENOID VALVE
6	BLACK	8100	SWITCHED GROUND FROM MANIFOLD PRESSURE SWITCH
7	BLACK	9000	GROUND FROM PARK BRAKE SWITCH TO PUMP RELAY
8	BLACK	4400	SWITCHED +12 FOR LEFT REAR SOLENOID VALVE
9	BLACK	2400	SWITCHED +12 FOR RIGHT FRONT SOLENOID VALVE
10	BLACK	1400	SWITCHED +12 FOR LEFT FRONT SOLENOID VALVE
11	BLACK	3400	SWITCHED +12 FOR RIGHT REAR SOLENOID VALVE
12	BLACK	8600	SWITCHED +12 FOR PUMP RELAY
CN3			8 PIN GRAY CONNECTOR - SENSING UNIT
1	BLACK	0400	REAR - SWITCHED GROUND
2	BLACK	0300	RIGHT SIDE - SWITCHED GROUND
3	BLACK	0200	FRONT - SWITCHED GROUND
4	BLACK	0100	LEFT SIDE - SWITCHED GROUND
5 THRU 7			NO CONNECTION
8	BLACK	6122	ACCESSORY

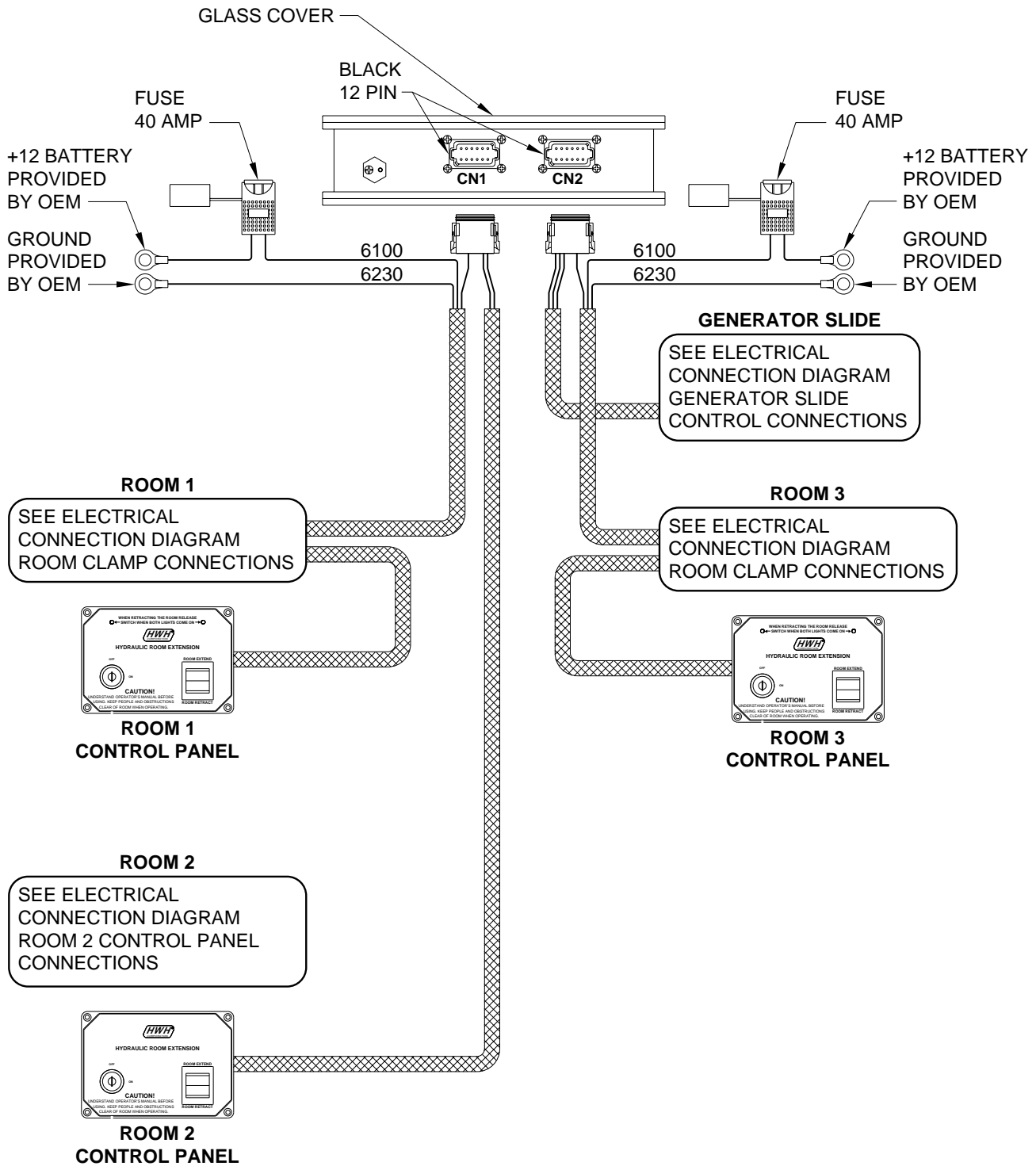
**ELECTRICAL CONNECTION DIAGRAM
325 SERIES LEVELING SYSTEM
CONTROL BOX CONNECTION INFORMATION
PAGE 2 OF 2**



PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
GRAY CONNECTOR			4 PIN GRAY CONNECTOR
1	RED	6100	+12V BATTERY POWER FROM PUMP RELAY
2	RED	6100	+12V BATTERY POWER FROM PUMP RELAY
3	WHITE	6230	GROUND FROM HWH GROUND STUD
4	WHITE	6230	GROUND FROM HWH GROUND STUD
BLACK CONNECTOR			12 PIN BLACK CONNECTOR
1 THRU 5			NO CONNECTION
6	WHITE	6230	GROUND FOR AIR DUMP VALVES
7	BLACK	9310	SWITCHED +12 FOR DUMP
7	BLACK	9311	SWITCHED +12 FOR TRAVEL
9 THRU 12			NO CONNECTION

ELECTRICAL CONNECTION DIAGRAM

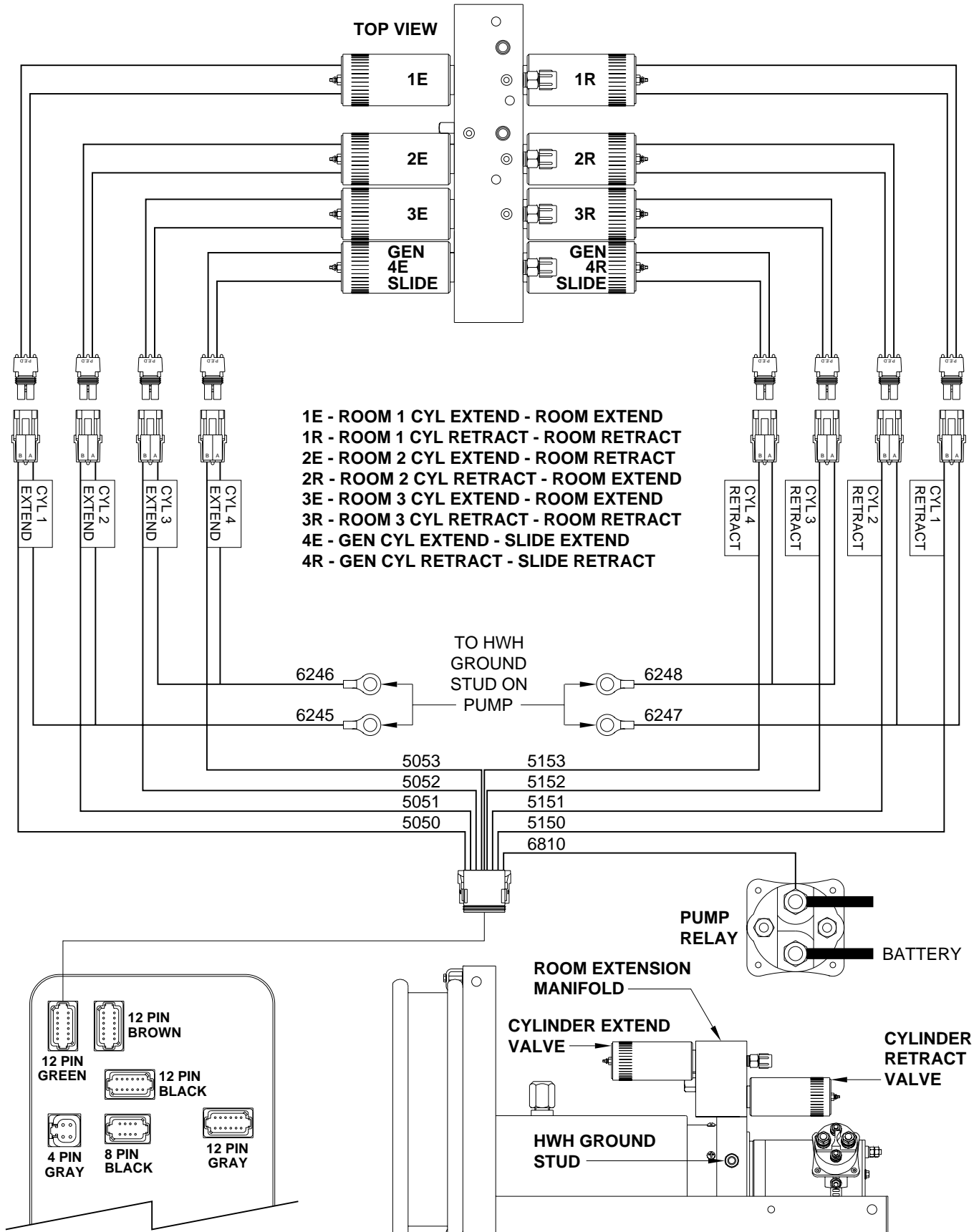
ROOM EXTENSION CONTROLS



ELECTRICAL CONNECTION DIAGRAM

ROOM EXTENSION MANIFOLD CONNECTIONS

ROOM 1 - ROOM 2 - ROOM 3 - GENERATOR SLIDE



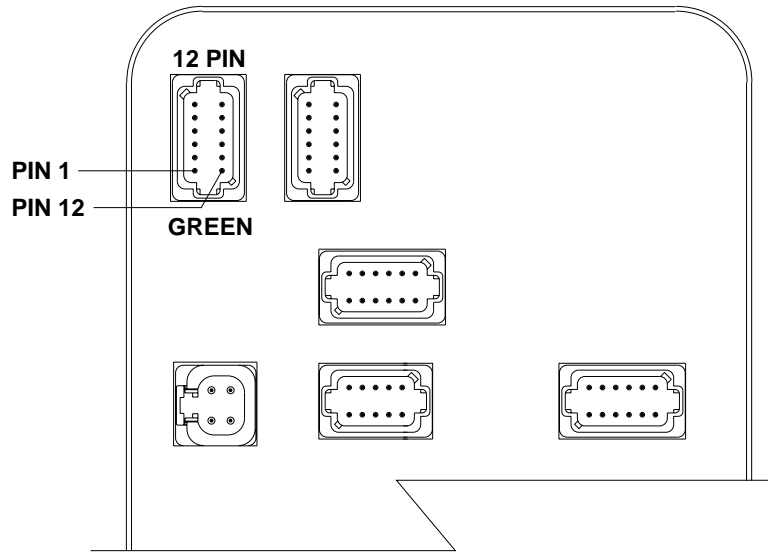
NOTE: LEVELING SYSTEM MANIFOLD NOT SHOWN.

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ELECTRICAL CONNECTION DIAGRAM

MULTIPLE ROOM EXTENSIONS

CONTROL BOX CONNECTION INFORMATION - (PAGE 1 OF 2)

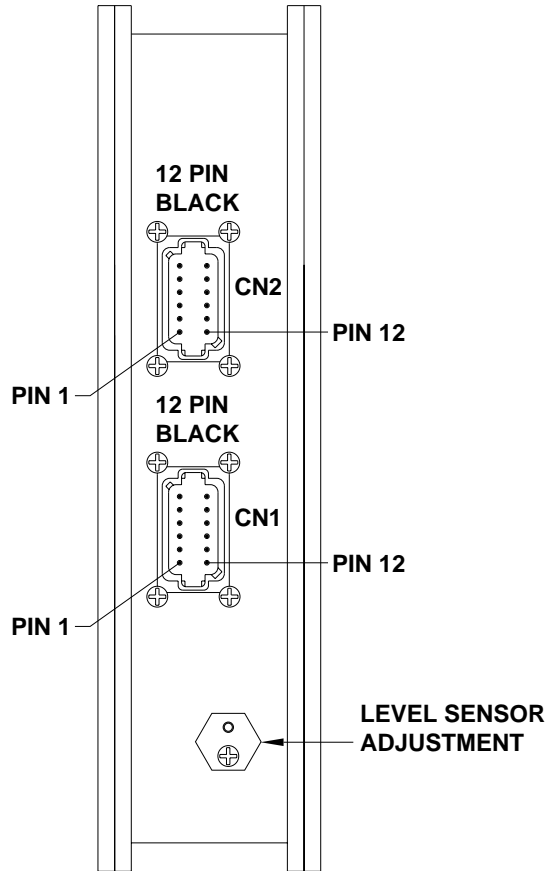


PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
GREEN CONNECTOR		12 PIN GREEN CONNECTOR	
1	BLACK	5050	SWITCHED +12 FOR ROOM 1 CYL EXT SOLENOID VALVE
2	BLACK	5150	SWITCHED +12 FOR ROOM 1 CYL RET SOLENOID VALVE
3	BLACK	5051	SWITCHED +12 FOR ROOM 2 CYL EXT SOLENOID VALVE
4	BLACK	5151	SWITCHED +12 FOR ROOM 2 CYL RET SOLENOID VALVE
5	BLACK	5052	SWITCHED +12 FOR ROOM 3 CYL EXT SOLENOID VALVE
6	BLACK	5152	SWITCHED +12 FOR ROOM 3 CYL RET SOLENOID VALVE
7	BLACK	5053	SWITCHED +12 FOR GEN SLIDE CYL EXT SOLENOID VALVE
8	BLACK	5153	SWITCHED +12 FOR GEN SLIDE CYL RET SOLENOID VALVE
9	BLACK	6810	SWITCHED +12 BATTERY FROM PUMP RELAY
10	BLACK	6810	SWITCHED +12 BATTERY FROM PUMP RELAY
11	BLACK	6810	SWITCHED +12 BATTERY FROM PUMP RELAY
12	BLACK	6810	SWITCHED +12 BATTERY FROM PUMP RELAY

ELECTRICAL CONNECTION DIAGRAM

MULTIPLE ROOM EXTENSIONS

CONTROL BOX CONNECTION INFORMATION - (PAGE 2 OF 2)



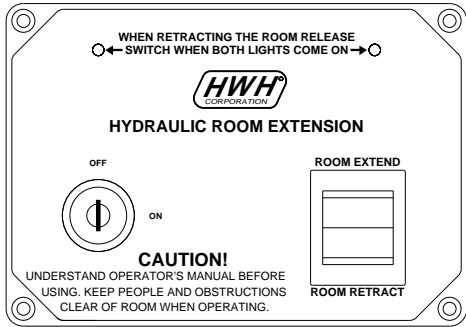
PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1			12 PIN BLACK CONNECTOR
1			NO CONNECTION
2	BLACK	5000	SWITCHED +12 TO CONTROL BOX ROOM 1 EXTEND
3	BLACK	5100	SWITCHED +12 TO CONTROL BOX ROOM 1 RETRACT
4	BLACK	6811	SWITCHED +12 FROM PUMP RELAY TO ROOM 2 CONTROL
5	BLACK	5001	SWITCHED +12 TO CONTROL BOX ROOM 2 RETRACT
6	BLACK	5101	SWITCHED +12 TO CONTROL BOX ROOM 2 EXTEND
7			NO CONNECTION
8			KEYING PIN
9			NO CONNECTION
10	BLACK	8601	SWITCHED +12 TO CONTROL BOX - PUMP CONTROL
11	RED	6101	+12 BATTERY FROM PUMP RELAY TO ROOM 2 CONTROL
12			NO CONNECTION
CN2			12 PIN BLACK CONNECTOR
1			NO CONNECTION
2	BLACK	5002	SWITCHED +12 TO CONTROL BOX ROOM 3 EXTEND
3	BLACK	5102	SWITCHED +12 TO CONTROL BOX ROOM 3 RETRACT
4	BLACK	6813	SWITCHED +12 FROM PUMP RELAY TO GEN SLIDE
5	BLACK	5003	SWITCHED +12 TO CONTROL BOX GEN SLIDE EXTEND
6	BLACK	5103	SWITCHED +12 TO CONTROL BOX GEN SLIDE RETRACT
7			NO CONNECTION
8 & 9			KEYING PINS
10	BLACK	8601	SWITCHED +12 TO CONTROL BOX - PUMP CONTROL
11	RED	6101	+12 BATTERY FROM PUMP RELAY TO GEN SLIDE CONTROL
12			NO CONNECTION

ELECTRICAL CONNECTION DIAGRAM

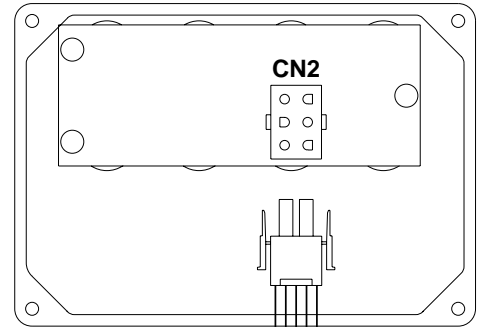
ROOM CLAMP CONNECTIONS

ROOM 1 - ROOM 3

ROOM CONTROL PANEL ROOMS WITH TRAVEL CLAMPS



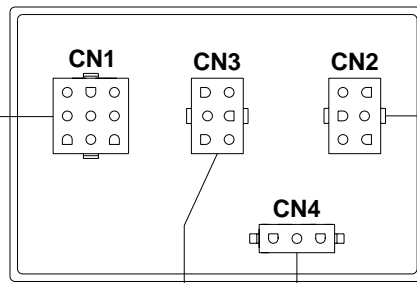
(REVERSE) ROOM CONTROL PANEL



NOTE: CONNECTIONS ARE THE SAME FOR ROOMS 1 AND 3.

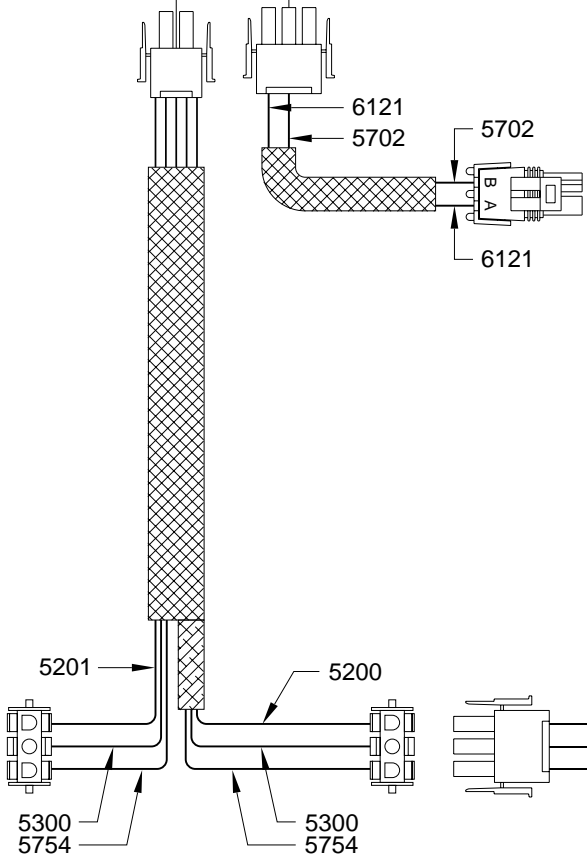
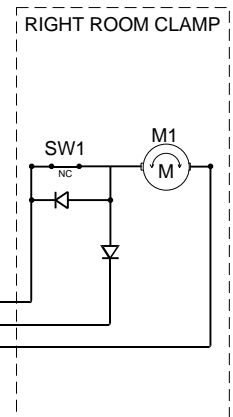
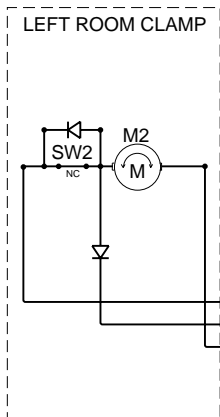
TO CN1 - CN2 OR CN3 ON MAIN CONTROL BOX

CLAMP CONTROL BOX



TO ROOM IN SWITCH. NORMALLY OPEN MAGNETIC SWITCH. CONTACTS CLOSED WHEN ROOM IS RETRACTED

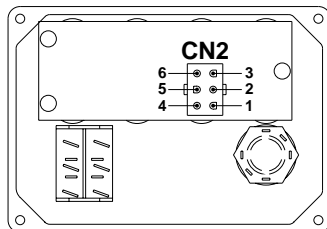
NOTE: SW1 AND SW2 CLAMP LIMIT SWITCHES ARE OPEN WHEN THE CLAMP IS FULLY RETRACTED.



ELECTRICAL CONNECTION DIAGRAM

ROOM CONTROL PANEL - TRAVEL CLAMP CONTROL BOX - PIN OUTS

ROOM CONTROL PANEL

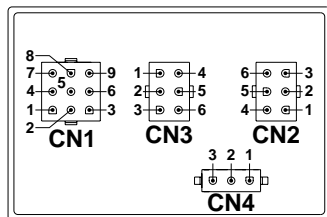


PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN2			6 PIN UML CONNECTOR
1	BLACK	5202	GROUND FOR ROOM PANEL INDICATOR LIGHTS RETRACT ONLY
2	RED	6100	+12 BATTERY TO ROOM CONTROL PANEL
3	BLACK	7501	SWITCHED +12 TO ROOM CLAMP CONTROL BOX ROOM EXTEND
4	BLACK	5200	+12 FOR RIGHT ROOM CLAMP INDICATOR LIGHT CLAMP EXTENDED
5	BLACK	7502	SWITCHED +12 TO ROOM CLAMP CONTROL BOX ROOM RETRACT
6	BLACK	5201	+12 FOR LEFT ROOM CLAMP INDICATOR LIGHT CLAMP EXTENDED

TRAVEL CLAMP CONTROL BOX

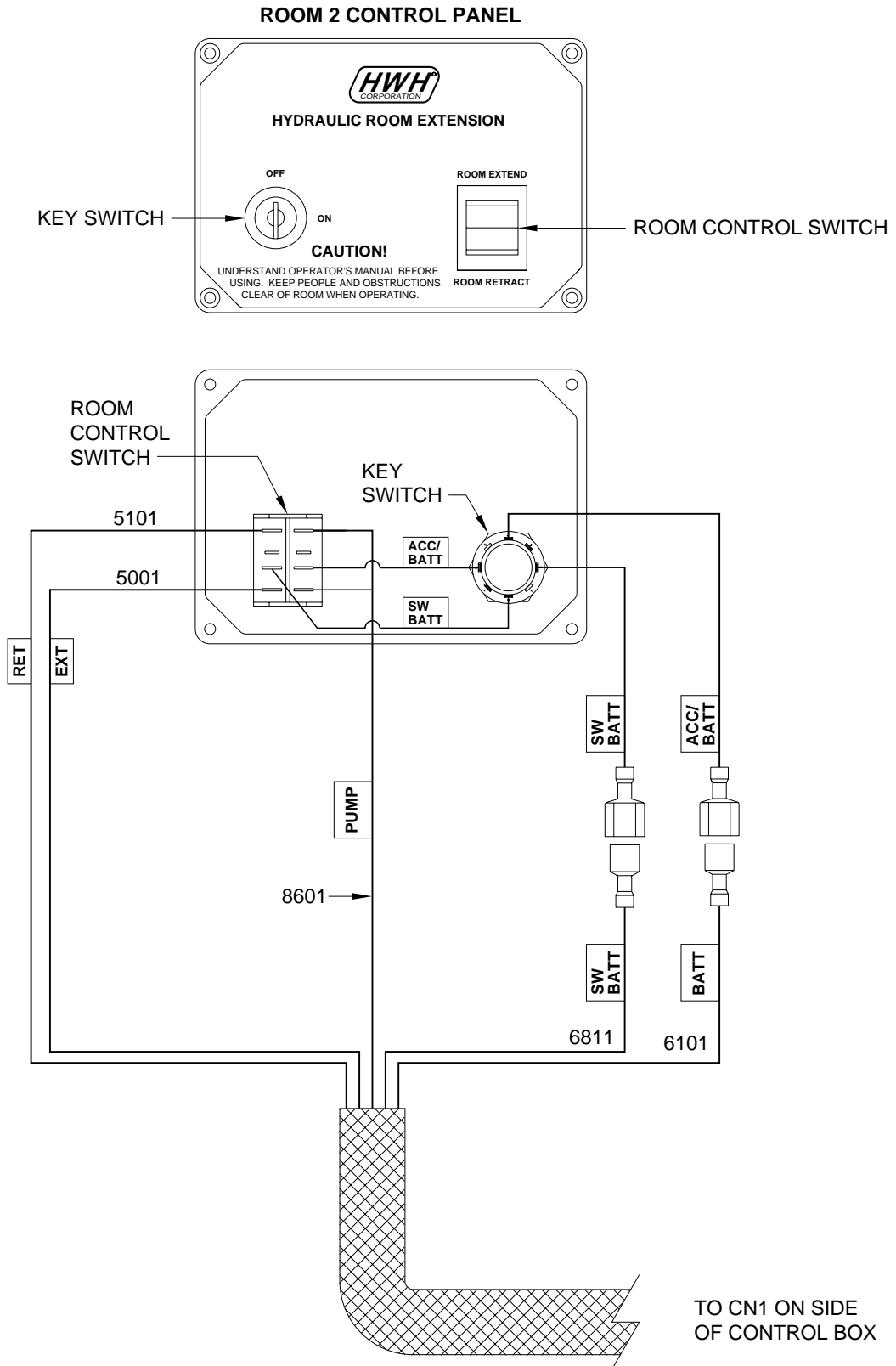
* ROOM 1 - 5000
5100

* ROOM 3 - 5002
5102



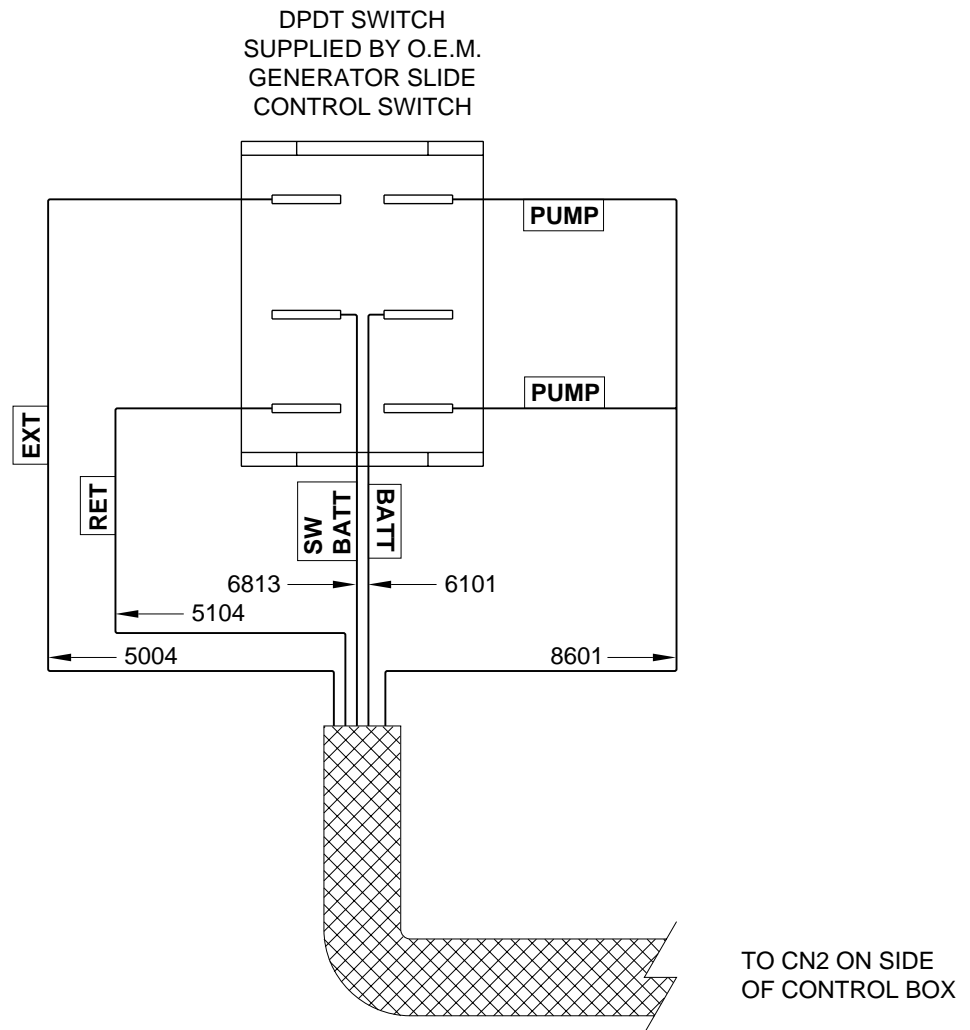
PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1			9 PIN UML CONNECTOR
1	WHITE	6230	GROUND TO ROOM CLAMP CONTROL BOX
2	RED	6100	+12 BATTERY TO ROOM CLAMP CONTROL BOX
3	BLACK	*	SWITCHED +12 TO MAIN CONTROL BOX ROOM EXTEND
4	WHITE	6230	GROUND TO ROOM CLAMP CONTROL BOX
5	RED	6100	+12 BATTERY TO ROOM CLAMP CONTROL BOX
6	BLACK	*	SWITCHED +12 TO MAIN CONTROL BOX ROOM RETRACT
7	WHITE	6230	GROUND TO ROOM CLAMP CONTROL BOX
8	RED	6100	+12 BATTERY TO ROOM CLAMP CONTROL BOX
9	BLACK	8601	SWITCHED +12 TO MAIN CONTROL BOX PUMP CONTROL
CN2			6 PIN UML CONNECTOR
1	BLACK	5202	GROUND FOR ROOM PANEL INDICATOR LIGHTS RETRACT ONLY
2	RED	6100	+12 BATTERY TO ROOM CONTROL PANEL
3	BLACK	7501	SWITCHED +12 TO ROOM CLAMP CONTROL BOX ROOM EXTEND
4	BLACK	5200	+12 FOR RIGHT ROOM CLAMP INDICATOR LIGHT CLAMP EXTENDED
5	BLACK	7502	SWITCHED +12 TO ROOM CLAMP CONTROL BOX ROOM RETRACT
6	BLACK	5201	+12 FOR LEFT ROOM CLAMP INDICATOR LIGHT CLAMP EXTENDED
CN3			6 PIN UML CONNECTOR
1			NO CONNECTION
2	BLACK	5754	CLAMP LIMIT SWITCHES - (+12) WITH CLAMP EXTENDED
3	BLACK	5300	CLAMP EXTEND (+12) - CLAMP RETRACT (GROUND)
4	BLACK	5200	RIGHT CLAMP RETRACT (+12) - RIGHT CLAMP EXTEND (GROUND)
5	BLACK	5201	LEFT CLAMP RETRACT (+12) - LEFT CLAMP EXTEND (GROUND)
6	BLACK	5300	CLAMP EXTEND (+12) - CLAMP RETRACT (GROUND)
CN4			3 PIN UML CONNECTOR
1			NO CONNECTION
2	BLACK	5702	SWITCHED +12 WITH ROOM IN
3	BLACK	6121	SWITCHED +12 BATTERY TO ROOM IN SWITCH (RETRACT ONLY)

ELECTRICAL CONNECTION DIAGRAM ROOM 2 CONTROL PANEL CONNECTIONS



ELECTRICAL CONNECTION DIAGRAM

GENERATOR SLIDE CONTROL SWITCH CONNECTIONS



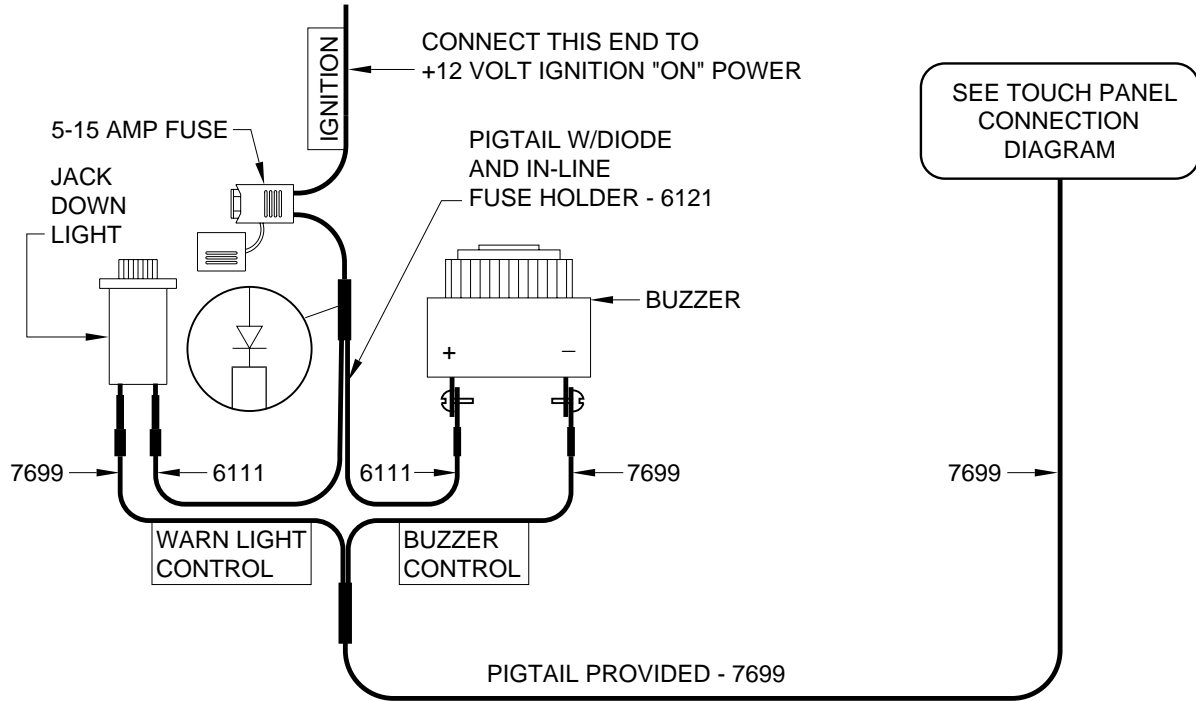
MASTER LIGHT/BUZZER CONNECTION DIAGRAM

MANUAL LEVELING SYSTEMS

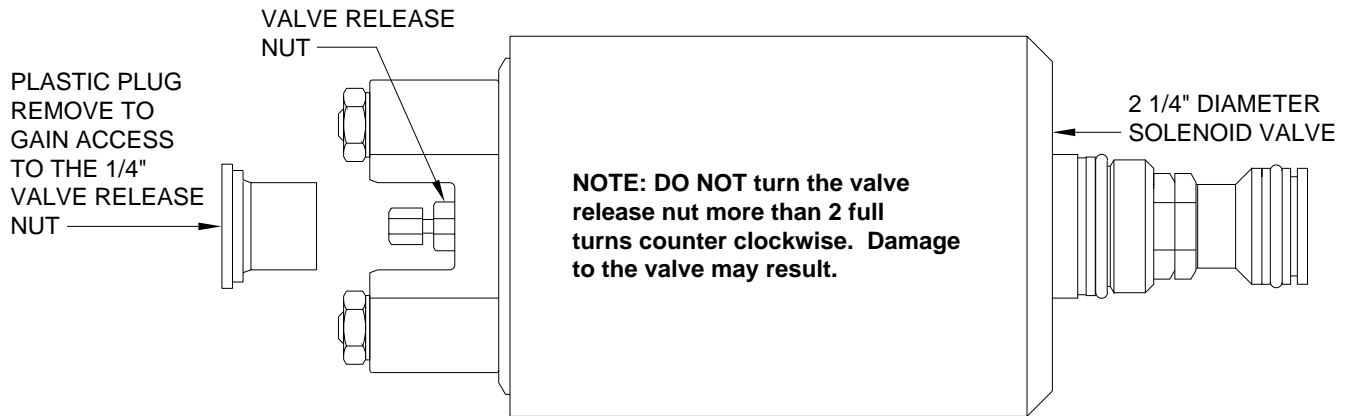
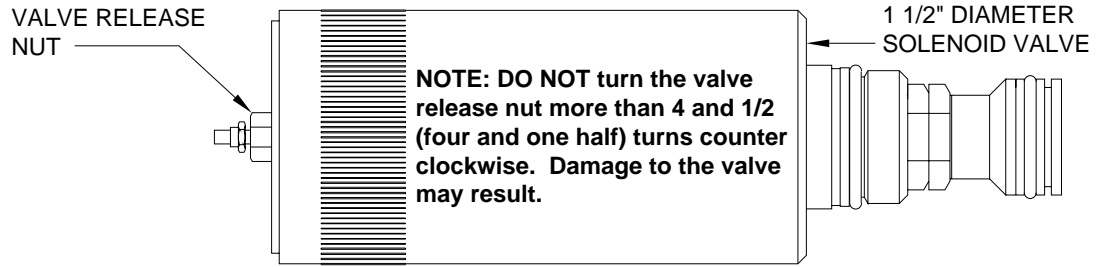
305/310/325 SERIES LEVELING SYSTEM

A MASTER WARNING INDICATOR SHOULD ALWAYS BE USED. WHEN THE LEVELING SYSTEM HAS STRAIGHT-ACTING JACKS A WARNING BUZZER MUST BE USED.

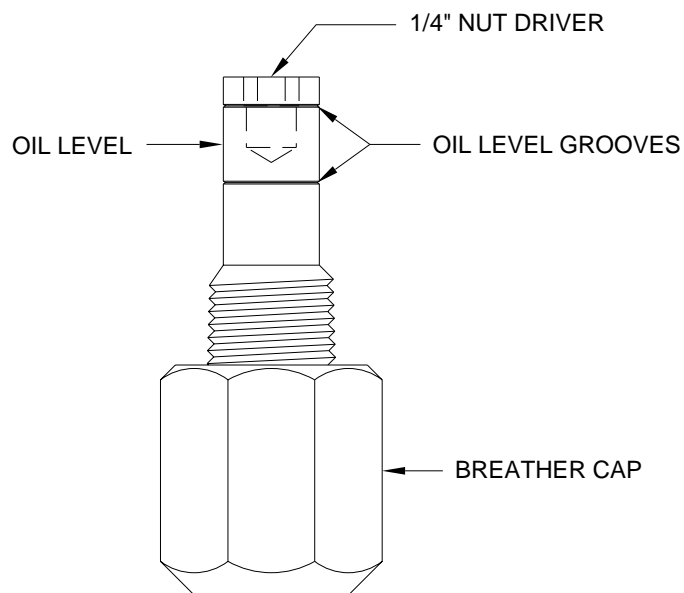
NOTE: BY SUPPLYING IGNITION POWER TO THE WARNING BUZZER AND LIGHT, AND "ACC" POWER TO THE CONTROL BOX, THE SYSTEM MAY BE OPERATED IN ACCESSORY WITHOUT THE BUZZER SOUNDING. THE NEGATIVE SIGNAL FOR THE WARNING INDICATORS MUST ALWAYS COME FROM THE TOUCH PANEL.



BREATHER CAP - DIPSTICK - 1/4" NUT DRIVER



NOTE: THE BREATHER CAP IS LOCATED ON THE TOP SIDE OF THE POWER UNIT RESERVOIR.



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.