

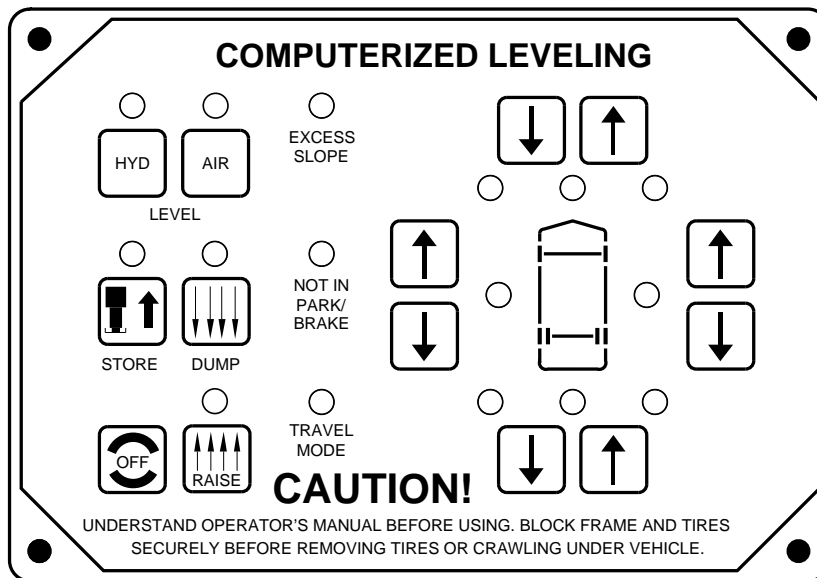


# OPERATOR'S MANUAL

## HWH® COMPUTER-CONTROLLED 2000 SERIES LEVELING SYSTEM

### FEATURING:

*Touch Panel Leveling Control*  
*BI-AXIS® Hydraulic Leveling*  
*Air Leveling*  
*Straight-Acting Jacks*  
*Generator Slide*



### HWH CORPORATION

(On I-80, Exit 267 South)

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[www.hwh.com](http://www.hwh.com)

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# OPERATOR'S MANUAL

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## 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.

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

DO NOT USE THE DUMP OR RAISE BUTTONS IF THE VEHICLE IS MOVING IN EXCESS OF 5 MPH.

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

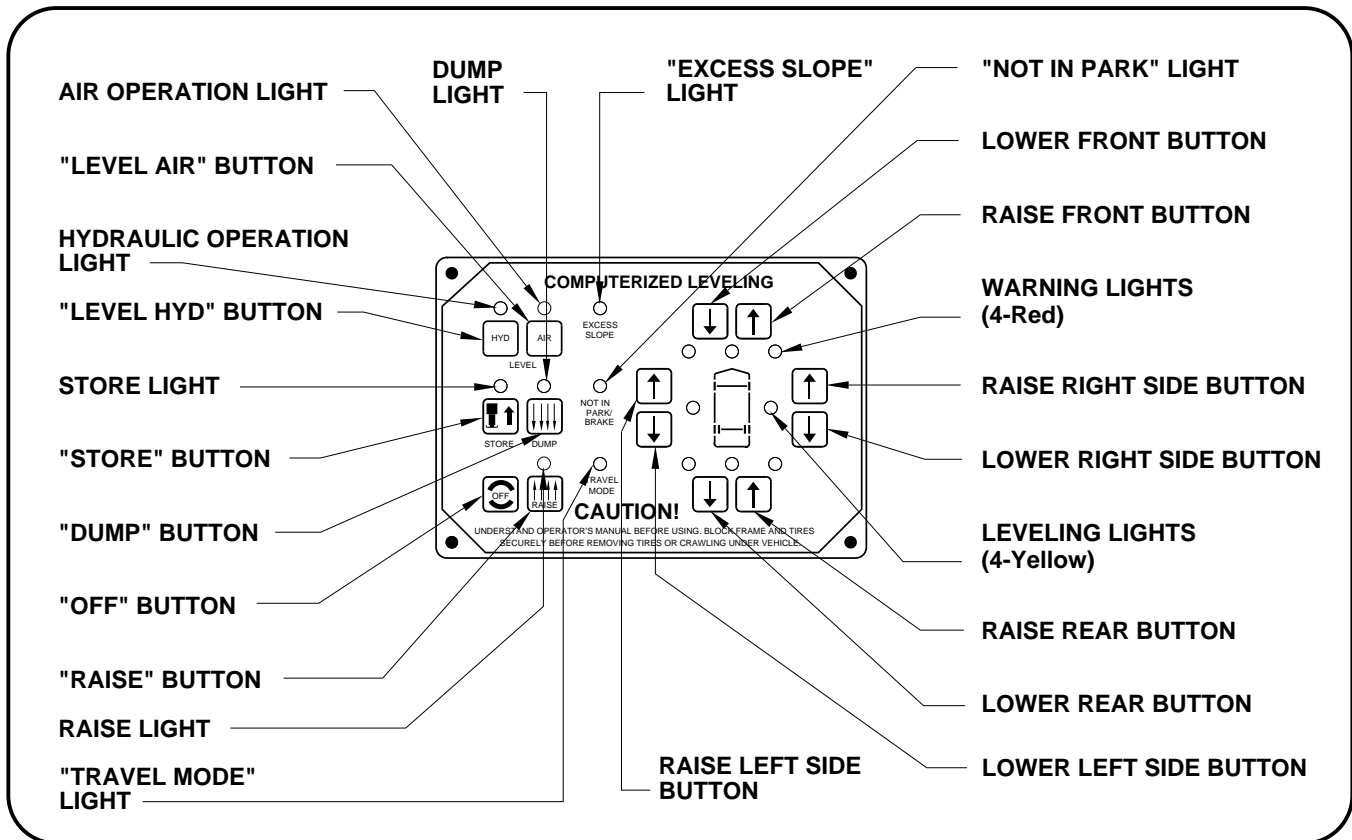
HWH CORPORATION strives to maintain the highest level of customer satisfaction. Therefore, if you discover a defect or problem, please do the following:

**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

**"OFF" BUTTON:** Push the "OFF" button to stop the hydraulic or air operation. **Pushing OFF will not put the system in the TRAVEL MODE.**

**"LEVEL HYD" BUTTON:** This is a system active and automatic operation button for hydraulic leveling.

**"STORE" BUTTON:** This button is used to automatically retract the jacks into the STORE/TRAVEL position. It will also return the system to the travel mode if air leveling was used.

**"LEVEL AIR" BUTTON:** This is a system active and automatic operation button for air leveling.

**"DUMP" BUTTON:** This button will lower the whole vehicle by exhausting air from the suspension system.

**"RAISE" BUTTON:** This button will raise the whole vehicle by adding air to the suspension system.

**IMPORTANT:** READ "DUMP" AND "RAISE" FUNCTIONS SECTION CAREFULLY.

**RAISE BUTTONS (UP ARROW):** These momentary buttons are used for manually operating the air or hydraulic leveling systems. Sides or ends of the vehicle will raise while these buttons are pushed.

**LOWER BUTTONS (DOWN ARROWS):** These are momentary buttons used for manually operating the air or hydraulic leveling systems. Sides or ends of the vehicle will lower while these buttons are pushed in manual Air Leveling. The jacks will retract when in manual Hydraulic Leveling.

### INDICATOR LIGHTS

**AIR OPERATION LIGHT:** This light indicates the system is active in the AIR LEVELING mode. This light will flash during a leveling procedure.

**HYDRAULIC OPERATION LIGHT:** This light indicates the system is active in the HYDRAULIC LEVELING mode. This light will flash during a leveling procedure.

**STORE LIGHT:** This light will flash indicating the hydraulic system is in the STORE mode.

**RAISE LIGHT:** This light will flash when the "RAISE" button is pushed.

**DUMP LIGHT:** This light will flash when the "DUMP" button is pushed.

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# CONTROL IDENTIFICATION

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## CONTROL FUNCTIONS (CONT'D)

### INDICATORS (CONT'D)

**"EXCESS SLOPE" INDICATOR LIGHT:** This light will be on if the leveling system can NOT level the vehicle.

**"TRAVEL MODE" INDICATOR LIGHT:** This light will be on if the ignition is "ON" and the Master Warning light is off.

**"NOT IN PARK" INDICATOR LIGHT:** This light will be on if the "AIR" or "HYD" button is being pushed and the park brake is not set, provided the ignition is in the "ON" position.

**WARNING INDICATOR LIGHTS:** When a jack is extended 1 inch or more, the respective red WARNING light will be on, if the HYDRAULIC OPERATION indicator light is on. If the AIR OPERATION indicator light is on and the ignition is in the "ON" position all four red warning lights will be on.

**LEVEL INDICATOR LIGHTS:** There are four yellow LEVEL indicator lights. A lit LEVEL indicator light indicates a side, end or corner of the vehicle is low. These lights can be on only if the AIR or HYDRAULIC indicator lights are on. Only one or two LEVEL indicator lights can be on at once. When all LEVEL indicator lights are out the vehicle is level.

**MASTER WARNING LIGHT:** This light will be on if the ignition is in the "ON" position and a jack is extended 1 inch or more, or if a suspension air bag has low air pressure.

**WARNING BUZZER:** The buzzer will sound if the ignition is in the "ON" position and a jack is extended 1 inch or more, or if a suspension air bag has low air pressure.

**NOTE:** The vehicle can be moved at speeds not exceeding 5 MPH if the "DUMP" or "RAISE" buttons are being used. The TRAVEL MODE LIGHT will be off.

## HWH LIGHTED RESET SWITCH

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

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

If the lighted reset switch will not go out when pushed, there is a problem with the central control module of the network system. The Leveling System will not operate. The vehicle suspension will return to the travel mode if the ignition key is in the "ON" position.

**CAUTION:** IF THE IGNITION IS IN THE "ON" POSITION AND THE LIGHTED RESET SWITCH IS ON, THE VEHICLE CAN RETURN TO RIDE HEIGHT WITHOUT RELEASING THE PARK BRAKE.

## MASTER WARNING INDICATORS

The HWH Master Warning light and Buzzer are used to indicate a jack has not been retracted or has extended slightly due to thermal expansion, the air pressure in any suspension air bag drops below 20 psi or the system air pressure drops below 85 psi. When the Master Warning light and Buzzer are on the Travel Mode Light will be off. A jack that extends slightly does not create a driving hazard. A jack that remains extended more than several inches or low air pressure can create a driving hazard.

If the HWH buzzer and light are on when ready to travel, possible problems should be checked and corrected before proceeding.

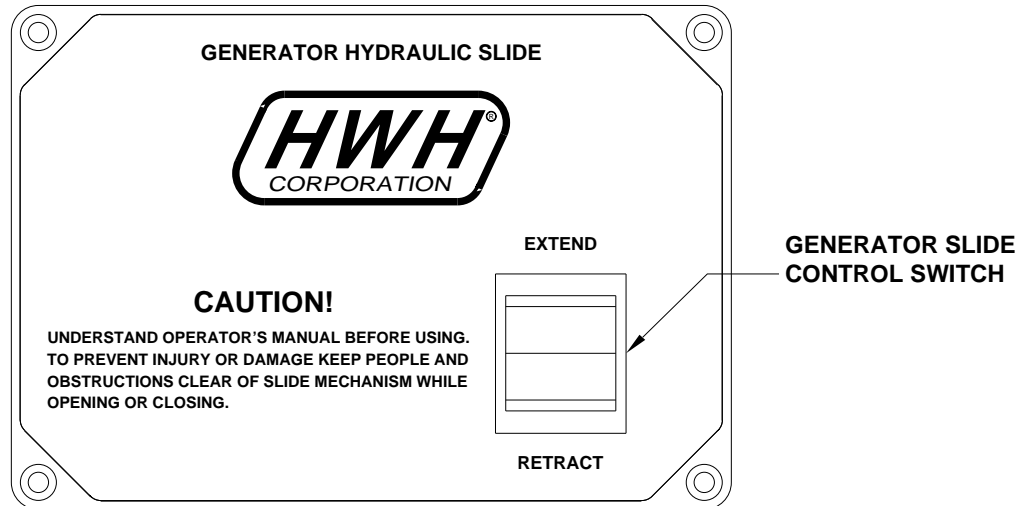
If the HWH buzzer and light come on briefly while traveling, possible problems should be checked when convenient, but it is not necessary to stop traveling when the warning buzzer and light do not stay on.

If the HWH buzzer and light come on and stay on, the vehicle should be pulled over as soon as it is safe to do so. Any problem found should be corrected before continuing. It is not recommended to stop on a traveled portion of the road or anywhere that does not have adequate room to safely inspect the vehicle.

If a problem that could create a driving hazard is not found, proceed with caution. The problem may be a faulty indicator or warning switch. If a driving hazard is found, the problem should be corrected before traveling. When in doubt, contact the vehicle manufacturer or HWH customer service for assistance.

## CONTROL IDENTIFICATION

### GENERATOR SLIDE OPERATOR'S PANEL



## CONTROL FUNCTIONS

**GENERATOR SLIDE CONTROL SWITCH:** The GENERATOR SLIDE CONTROL SWITCH is a two position momentary switch. Pressing the switch in the EXTEND position will extend the GENERATOR SLIDE. Pressing the switch in the RETRACT position will retract the GENERATOR SLIDE. Releasing the GENERATOR SLIDE CONTROL SWITCH will halt the operation of the GENERATOR SLIDE.

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# CONTROL IDENTIFICATION

## PUMP RUN TIME

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### 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 three 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 three 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 three or six minutes without allowing the pump motor to cool for thirty minutes.**

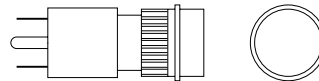
Some systems can be turned back on immediately after the processor turns the pump off. **DO NOT turn the system back on or run the pump without allowing the pump motor to cool for thirty minutes.**

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.**



LIGHTED RESET SWITCH

**No matter what HWH system is on the vehicle, the pump should not be ran for more than three 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 three minutes with a 3" motor; or six minutes with a 3.7" or 4.5" motor that the motor is allowed to cool for thirty minutes before continuing. Continuous operation of the pump motor without allowing the motor to cool can damage the motor.** Continuous operation of the pump with slow moving jacks or rooms in cold weather, without allowing the pump motor to cool will cause the pump motor to burn up and damage the pump assembly.

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# OPERATING PROCEDURES

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## NETWORK INFORMATION

The HWH 2000 series CAN system is a computerized modular network. It controls all functions of the leveling system and HWH room extensions. The network is active any time the ignition is in the "ON" or "ACC" position or when any room extension control panel key is "ON". Certain functions and indicator lights for the leveling system will work when the network is active. Certain functions and lights will work ONLY if the the ignition is in the "ON" or "ACC" position to start the function.

**NOTE:** The network will stay active for 10 minutes after the ignition key has been turned "OFF". If the leveling system was turned "ON", the network will stay active for 10 minutes after automatic leveling is complete or the system goes "EXCESS SLOPE". If manual leveling buttons were used, the network stays active for 10 minutes after the last manual button is released.

## GENERAL INSTRUCTIONS

If parking on soft ground or asphalt paving, pads should be placed under the jacks for hydraulic leveling.

Press the "OFF" button at any time to stop the operation of the system. The vehicle will not return to TRAVEL MODE.

Pushing the "STORE" button or releasing the park brake will allow the vehicle to return to travel height if the ignition is on and a leveling system was used.

**NOTE:** The ignition switch must be "ON" before the vehicle's air suspension can return to travel height.

If the ignition is in the "ON" position and the park brake is not set, the "NOT IN PARK/BRAKE" light will come on, and the system will not turn on when either the "AIR" or "HYD" button is pressed. If the ignition is in the "ON" position, either air or hydraulic leveling will be stopped anytime the park brake is released. The system will shut off and the vehicle suspension system will return to travel height.

Air and hydraulic leveling can not be used simultaneously.

The "DUMP" and "RAISE" buttons will function with the system and park brake off if the ignition is in the "ON" position. See AIR DUMP AND RAISE FUNCTIONS.

The MASTER WARNING light and buzzer will be on if a jack is extended two inches or more or if an air bag has low air pressure if the ignition is in the "ON" position.

**CAUTION:** DO NOT MOVE THE VEHICLE IF A WARNING LIGHT OR BUZZER IS ON, OR IF THE ROOM EXTENSION IS EXTENDED. (SEE "MASTER WARNING INDICATORS")

## PREPARATION FOR TRAVEL

Start the vehicle's engine and allow air pressure to build to recommended level for traveling.

Check that the generator slide is fully retracted.

If air leveling was used, the "STORE" button must be pushed or the park brake must be released before the vehicle can return to travel height.

Visually check that the jacks are in the STORE/TRAVEL position. Also check that the vehicle's suspension is at the proper height for travel.

The "TRAVEL" light on the leveling panel must be on.

Before traveling, the MASTER WARNING light and buzzer must be off.

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

**CAUTION:** IT IS THE OPERATOR'S RESPONSIBILITY TO VISUALLY CHECK THAT THE VEHICLE IS AT THE PROPER RIDE HEIGHT AND THE SLIDE-OUT IS FULLY RETRACTED BEFORE MOVING THE VEHICLE.

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# OPERATING PROCEDURES

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## AUTOMATIC HYDRAULIC LEVELING

1. Place transmission in the recommended position for parking vehicle and set parking brake. Turn the coach engine off. Turn the ignition to the "ACCESSORY" position.
2. Press the "LEVEL" button to enter the hydraulic operation mode. The ON light will glow steady.
3. At this time, the operator may want to check the jacks and place pads under the jacks if the ground will not support the vehicle.
4. Press the "LEVEL" button a second time. The ON light will start to flash.

**NOTE: After pushing the "LEVEL" button a second time, the system will begin to dump air from the vehicle suspension. After approximately 25 seconds, the leveling process will begin.**

The system will automatically extend the jacks to level the vehicle and then extend any remaining jacks for stabilizing. After the system has finished leveling and stabilizing, and has completed the air dump cycle, it will automatically shut off.

**EXCESS SLOPE SITUATION:** In the event the jacks are unable to level the coach, the "EXCESS SLOPE" light will come on. Excess slope is two jacks fully extending without turning the yellow level light out. The system will not stabilize the vehicle if the "EXCESS SLOPE" light comes on. One or more jacks may not be extended. The system will shut off leaving the "EXCESS SLOPE" light on. The "EXCESS SLOPE" light will remain on if the ignition is in the "ON" or "ACC" position, until the jacks have been fully retracted turning the red warning lights out. Push the "STORE" button to retract the jacks. Move the vehicle to a more level position or level the vehicle as close as possible according to the MANUAL HYDRAULIC OPERATION section.

5. Turn the ignition switch to the "OFF" position.

## 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. Start the engine.
2. Press the "STORE" button. The store indicator light will flash. Air will be pumped into the vehicle suspension for 10 seconds before the jacks start to retract and the system goes into the TRAVEL MODE. The two front jacks will retract for approximately 5 seconds before the rear jacks start to retract. As each jack retracts, its red WARNING light will go out. The system will automatically shut down one minute 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 until the ignition is turned off. The panel will remain on in the STORE mode for ten minutes after the ignition is turned off. After ten minutes the panel will turn off.

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

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

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

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

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

**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.**



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# OPERATING PROCEDURES

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## MANUAL HYDRAULIC OPERATION

1. Place transmission in the recommended position for parking the vehicle, and set the parking brake. Turn the ignition to the "ACCESSORY" position.
2. Press the "HYD" button. The indicator light will glow steady.
3. Place pads under the jack feet if the ground will not support the vehicle on the jacks.
4. Push the "DUMP" button. Wait until all of the air is exhausted from the vehicles suspension system.
5. The vehicle may be leveled using the manual EXTEND (UP ARROW) buttons on the right half of the panel. If a yellow LEVEL SENSING light is on, that side or end of the vehicle is low. It is best to level the vehicle side to side first, if needed, before front to rear.

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

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

6. When leveling is completed, push the "OFF" button on the touch panel and turn the ignition switch to the "OFF" position.

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

# OPERATING PROCEDURES

## 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.

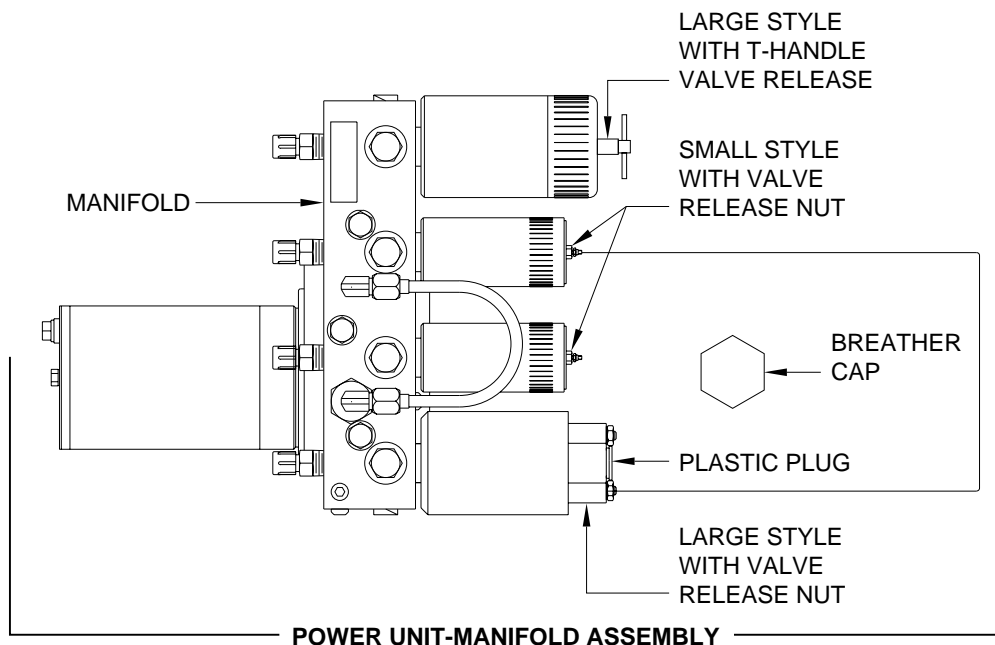
5. Repeat the process by identifying then opening the two outer valves, if applicable.

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.



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# OPERATING PROCEDURES

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## AUTOMATIC AIR OPERATION

**NOTE: The ignition must be in the "ON" or "ACC" position to use the "AIR" button. Once the operation is started, the ignition can be moved to the "OFF" position and the operation will continue.**

1. Place the transmission in the proper position for parking and set the park brake. The air leveling system can only be turned on if the ignition is in the "ON" or "ACC" position. Leaving the engine running during leveling is recommended. This will provide a better air supply for leveling. The vehicle will level with the engine shut off, however more time will be required for leveling.

**NOTE: If the ignition key is in the "ON" or "ACC" position, the panel will not turn on if the park brake is not set. The "NOT IN PARK/BRAKE" light will be on while the "AIR" button is being pushed.**

2. Press the "AIR" button once to enter the air mode. The LEVELING SYSTEM ACTIVE LIGHT will glow steady. When the ignition is in the "ON" or "ACC" position, the four red WARNING lights on the panel will come on. This indicates that the height control valves have been locked out. The vehicle should not be moved when these lights are on.

3. Press the "AIR" button a second time. The LEVELING SYSTEM ACTIVE LIGHT will start flashing and air leveling will begin. The system will attempt to level the vehicle by exhausting air from the air bags. If a level position is not achieved by lowering the high side and/or end of the vehicle, the low side and/or end of the vehicle will be raised by adding air to the air bags. When all four yellow LEVEL SENSING lights are out the leveling is complete.

**NOTE: Only one or two yellow LEVEL SENSING lights may be ON at one time.**

4. When all four yellow level lights are out, the LEVELING SYSTEM ACTIVE LIGHT will stop flashing and start pulsating dimly. The Leveling System is now in the SLEEP MODE. The vehicle's engine/ignition may now be turned OFF.

**NOTE: After the ignition and all room extension KEY SWITCHES are turned OFF, the CAN Network stays active for 10 minutes before shutting down. Leveling System touch panel lights will stay ON during this time and go out when the CAN Network shuts down. If the Leveling System is in the SLEEP MODE when the Network shuts down, the computer will stay ON. The Leveling System touch panel lights will all be OFF, but the Leveling System will still be in the SLEEP MODE.**

5. 30 minutes after the Leveling System enters the SLEEP MODE, the computer will monitor the LEVELING SENSING UNIT for one minute. If no leveling is needed, the computer will continue to monitor the LEVELING SENSING UNIT every 30 minutes. No light will be seen on the Touch Panel.

6. If the vehicle needs to be relevelled, the CAN Network will become active. The Leveling System touch panel lights will come ON during the leveling procedure. The LEVELING SYSTEM ACTIVE LIGHT will flash. One or two yellow LEVELING LIGHTS will be ON. When the yellow LEVELING LIGHTS are all out, the LEVELING SYSTEM ACTIVE LIGHT will stop flashing and start pulsating dimly. The Leveling System will remain in the SLEEP MODE with the computer monitoring the LEVELING SENSING UNIT every 30 minutes, releveling the vehicle as needed.

**NOTE: The CAN Network will stay active for 10 minutes after releveling the vehicle and then shut down, turning the touch panel lights OFF. This happens every time the system relevels the vehicle.**

7. The SLEEP MODE will continue until the "EMERGENCY STOP" button is pushed or the park brake is released, if the ignition is in the "ON" position.

**EXCESS SLOPE:** The system will attempt to level the vehicle for approximately 15 to 20 minutes. After the 15 to 20 minutes, if a LEVEL SENSING light is still on, the "EXCESS SLOPE" light will come on. The LEVEL LIGHT indicator light will go out. The "EXCESS SLOPE" light will be on whenever the network is active.

**NOTE: Due to factors such as wind or movement in the vehicles, the time needed to go into an EXCESS SLOPE situation may exceed 20 minutes.**

The "EXCESS SLOPE" light will be on whenever the network is active until the vehicle is leveled with all yellow LEVEL indicator lights off.

The system will only return to the TRAVEL MODE if the "STORE" button is pushed or the park brake is released. In either case, the ignition key must be in the "ON" position.

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# OPERATING PROCEDURES

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## MANUAL AIR OPERATION

**NOTE: The ignition must be in the "ON" or "ACC" position to use the "AIR" button. Once the operation is started, the ignition can be moved to the "OFF" position and the operation will continue.**

1. Place the transmission in the proper position for parking and set the park brake. The air leveling system can only be turned on if the ignition is in the "ON" position. Running the vehicle engine during leveling is recommended. This will provide a better air supply for leveling. The vehicle will level with the engine shut off, however more time will be required for leveling.

**NOTE: If the "NOT IN PARK/BRAKE" light is on, the leveling system cannot be turned on.**

2. Press the "AIR" button once to enter the air mode. The LEVELING SYSTEM ACTIVE LIGHT indicator light will glow steady. When the ignition is in the "ON" position, the four red WARNING lights on the panel will come on. This indicates that the height control valves have been locked out. The vehicle should not be moved when these lights are on.

3. The vehicle can now be leveled using the RAISE (up arrow) and LOWER (down arrow) buttons on the right half of the

panel in conjunction with the yellow LEVEL indicator lights. **Any side to side leveling should be done, if needed, before leveling the vehicle front to rear.** The yellow LEVEL indicator light indicates that side or end is low. When all yellow lights are out the vehicle is level. Try leveling the vehicle by lowering the high side or end (opposite of the lit yellow level lights). If a level position is not achieved use the RAISE (up arrow) button to raise the low side or end.

**NOTE: In either manual or automatic leveling when either front air manifold air bag pressure switch is on a front lower procedure is halted. When either rear air manifold air bag pressure switch is on, a rear lower procedure is halted. Air bag pressure switches will not interfere with either a right or left lower procedure.**

4. Turn the ignition to the "OFF" position.

5. Turn the system off.

**NOTE: If the "DUMP" or "RAISE" buttons are pushed while manually leveling the vehicle with air and the ignition is in the "ON" position, the system will latch into the dump or raise mode until the "EMERGENCY STOP" button is pushed or the ignition is turned off.**

## "DUMP" AND "RAISE" FUNCTIONS

The "DUMP" and "RAISE" functions are provided for operator convenience for purposes such as dumping the air suspension when parked.

Leave the engine running if the "RAISE" function is to be used. The park brake does not have to be set to use the "DUMP" or "RAISE" buttons.

**IMPORTANT: If the ignition is ON and the park brake is OFF, the "DUMP" and "RAISE" features will latch in and remain on. If the vehicle exceeds 10 MPH, the "DUMP" or "RAISE" functions will automatically turn off and the system will return to the TRAVEL MODE. If the park brake is set, the "TRAVEL MODE" button must be pushed before the vehicle can return to ride height.**

**CAUTION: REREAD CAUTIONS ON THE FIRST PAGE OF THIS MANUAL. THE VEHICLE MAY DROP OR RAISE AND/OR MOVE FORWARD OR BACKWARD WITHOUT WARNING CAUSING INJURY OR DEATH.**

DO NOT OPERATE THE VEHICLE UNLESS THE AIR SUSPENSION IS AT THE PROPER HEIGHT FOR TRAVEL.

The "RAISE" and "DUMP" buttons can be used at any time the network is active. The park brake does not have to be on.

If the ignition is in the "ON" position and the park brake is off, the "RAISE" or "DUMP" buttons will latch in. The vehicle will raise or lower completely and stay in that position.

The vehicle can not return to ride height until the "TRAVEL MODE" button or the "EMERGENCY STOP" button is pushed or the vehicle exceeds 10 M.P.H, putting the system in the TRAVEL MODE.

If the ignition is in the "OFF" position the "RAISE" and "DUMP" buttons will not latch in. The vehicle will remain in the position it was when the button was released. The vehicle can return to ride height when the ignition is turned to "ON" if the park brake is released or the "TRAVEL MODE" button is pushed.

**DO NOT operate the vehicle for extended distances unless the air suspension is at the proper height for travel. The vehicle can not return to ride height until the "EMERGENCY STOP" button is pushed or the vehicle exceeds 10 MPH, putting the system in the TRAVEL MODE.**

**CAUTION: IT IS THE OPERATOR'S RESPONSIBILITY TO CHECK THAT THE VEHICLE IS AT PROPER RIDE HEIGHT BEFORE TRAVELING.**

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# OPERATING PROCEDURES

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## 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. **THE PARK BRAKE MUST BE SET FOR THE SLIDE TO OPERATE.**

2. 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. **DO NOT FORCE THE SLIDE.**

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

## GENERATOR SLIDE RETRACT PROCEDURE

1. **THE PARK BRAKE MUST BE SET FOR THE SLIDE TO OPERATE.**

2. 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. **DO NOT FORCE THE SLIDE.**

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

3. If the slide will not retract see the MANUAL SLIDE RETRACT PROCEDURE.

# SENSING UNIT MAINTENANCE/SERVICE

## SENSING UNIT ACCURACY TOLERANCE

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

## SENSING UNIT ADJUSTMENT

To adjust the sensing unit, first the vehicle must be level. Either position the vehicle on a level surface or use the leveling system to manually level the vehicle. It is recommended to use the vehicle trim line to determine level. An alternative would be to use a small bubble level. If using a bubble level, the level should be placed on a flat surface close to the mounting location of the control box/sensing unit.

With the vehicle level, if there are no yellow light 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.**

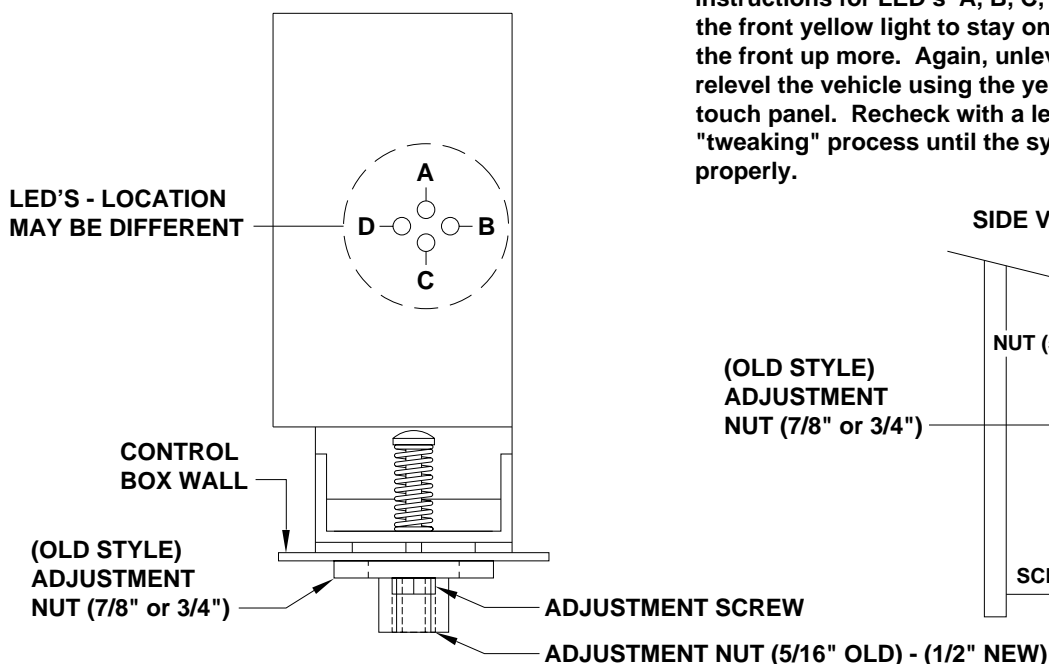
**If LED (B) is lit: Turn the adjustment nut COUNTER CLOCKWISE until the LED is off.**

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

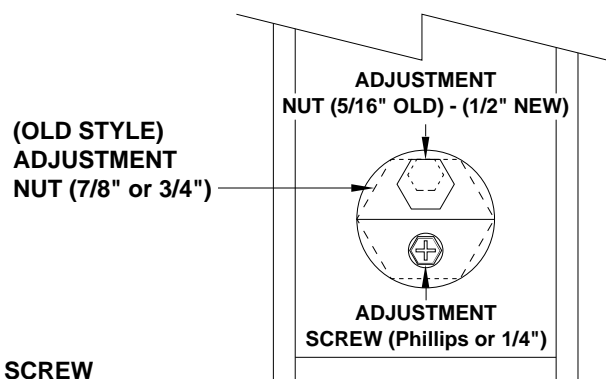
**IMPORTANT: When all 4 LED's are off, move the vehicle to an unlevel position so one or two yellow lights are on. Level the vehicle according to the yellow LEVEL lights. Recheck the level. If more adjustment is needed, DO NOT try to adjust the sensing unit until the yellow level lights go out, instead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

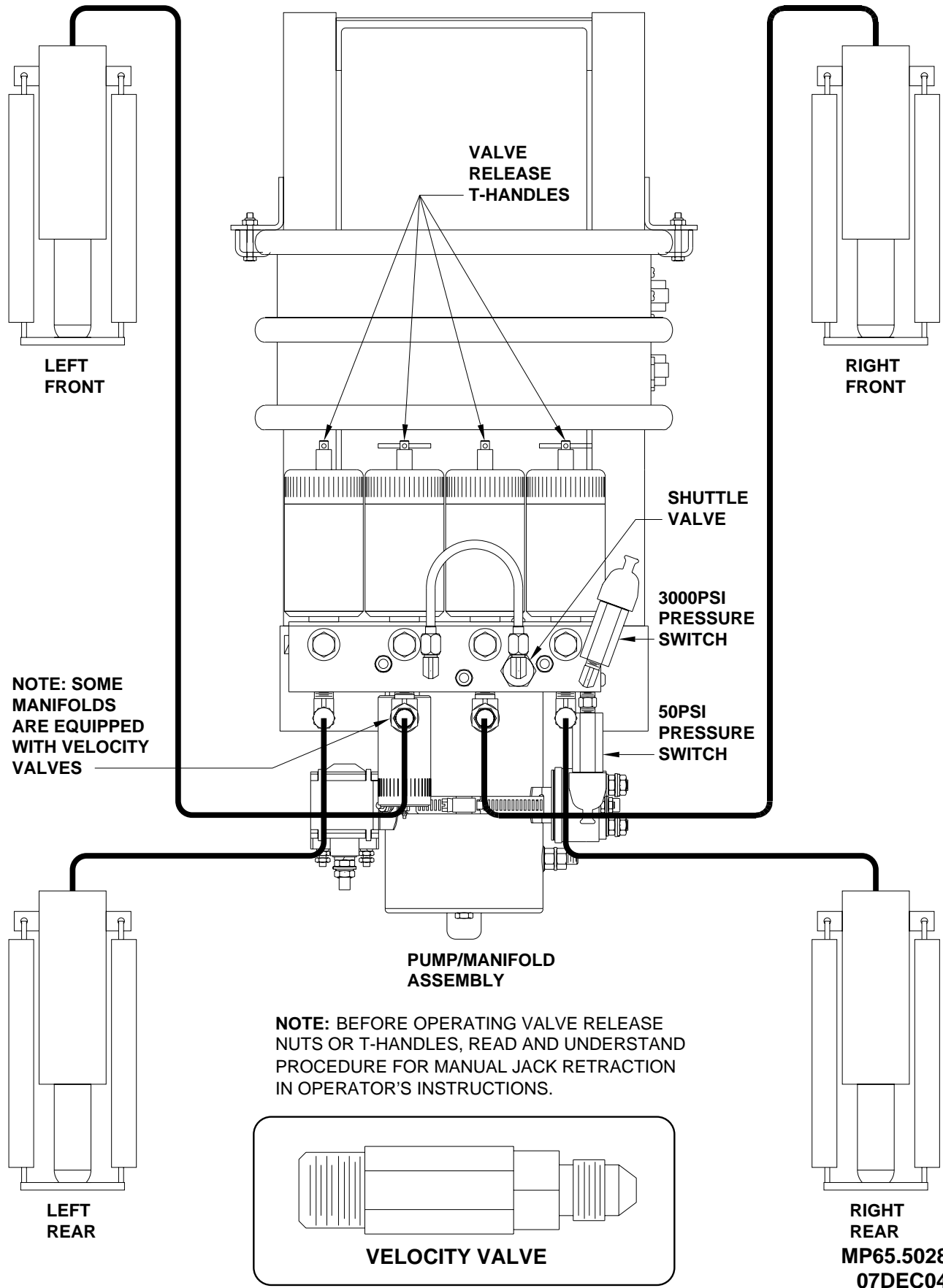
TOP VIEW - SENSING UNIT



SIDE VIEW - CONTROL BOX

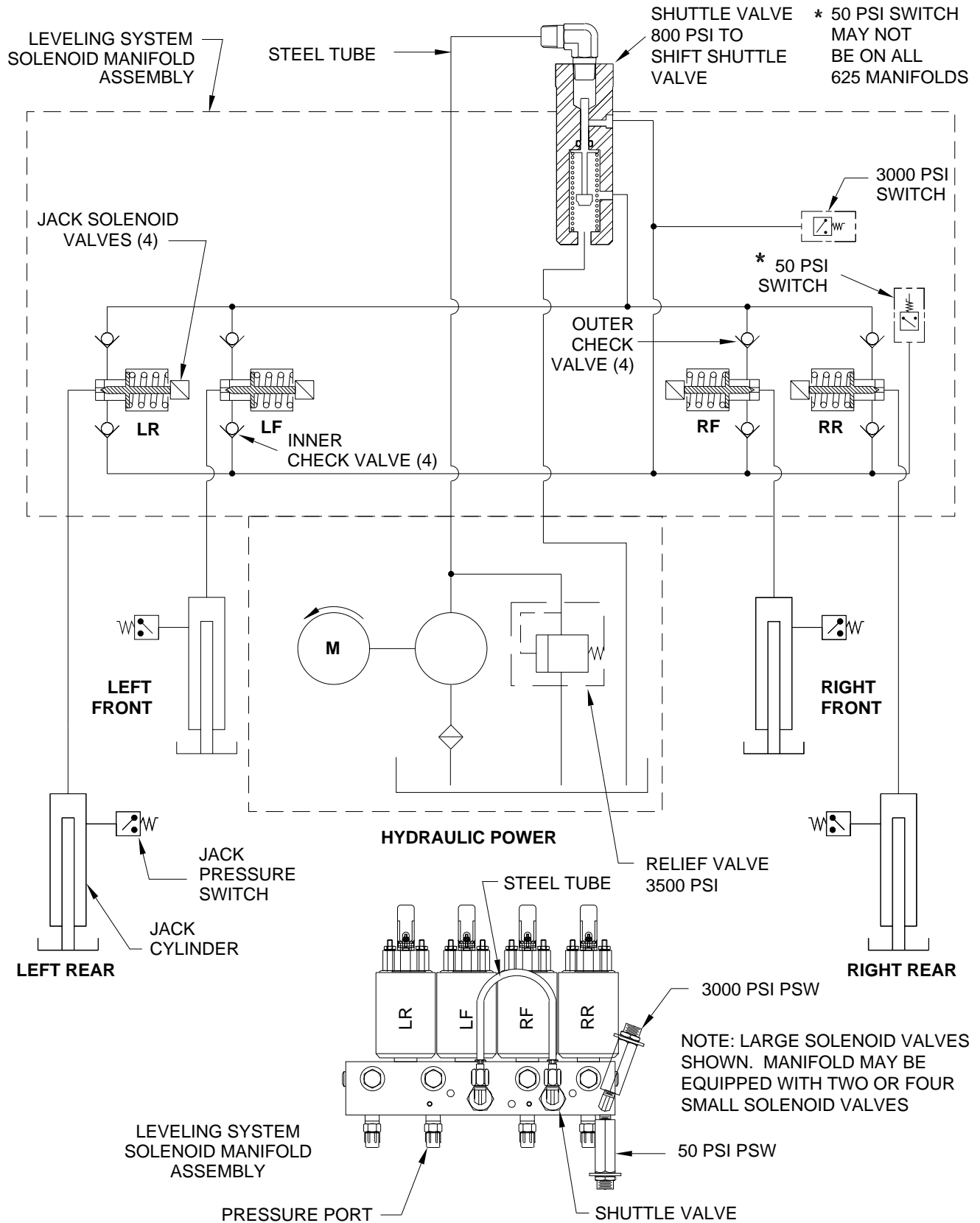


**HYDRAULIC LINE CONNECTION DIAGRAM  
2000 SERIES LEVELING SYSTEM  
(WITH 4 STRAIGHT-ACTING JACKS)**



# HYDRAULIC SCHEMATIC DIAGRAM

## 625 - 625S - 725 SERIES LEVELING SYSTEM

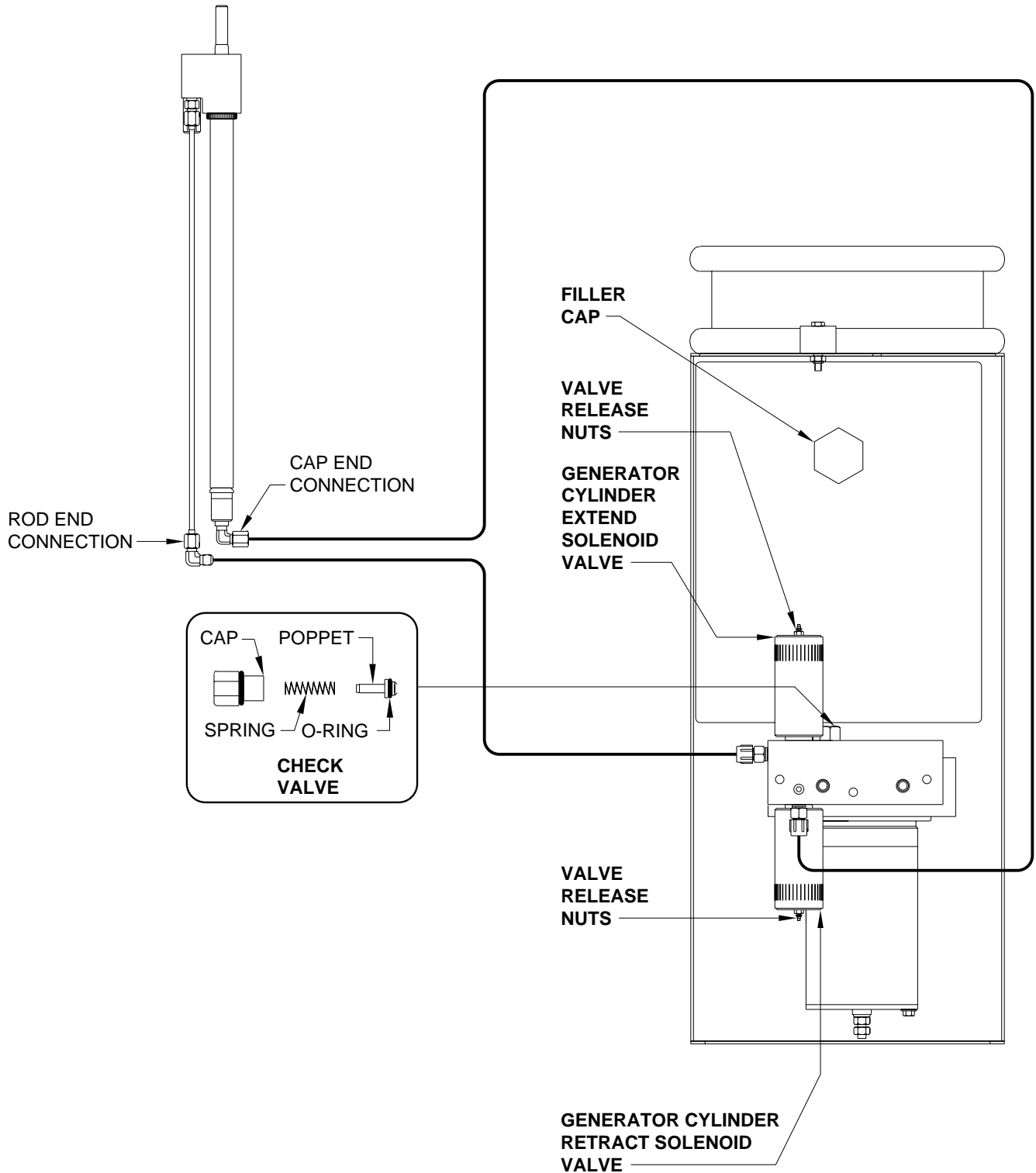


TOP VIEW



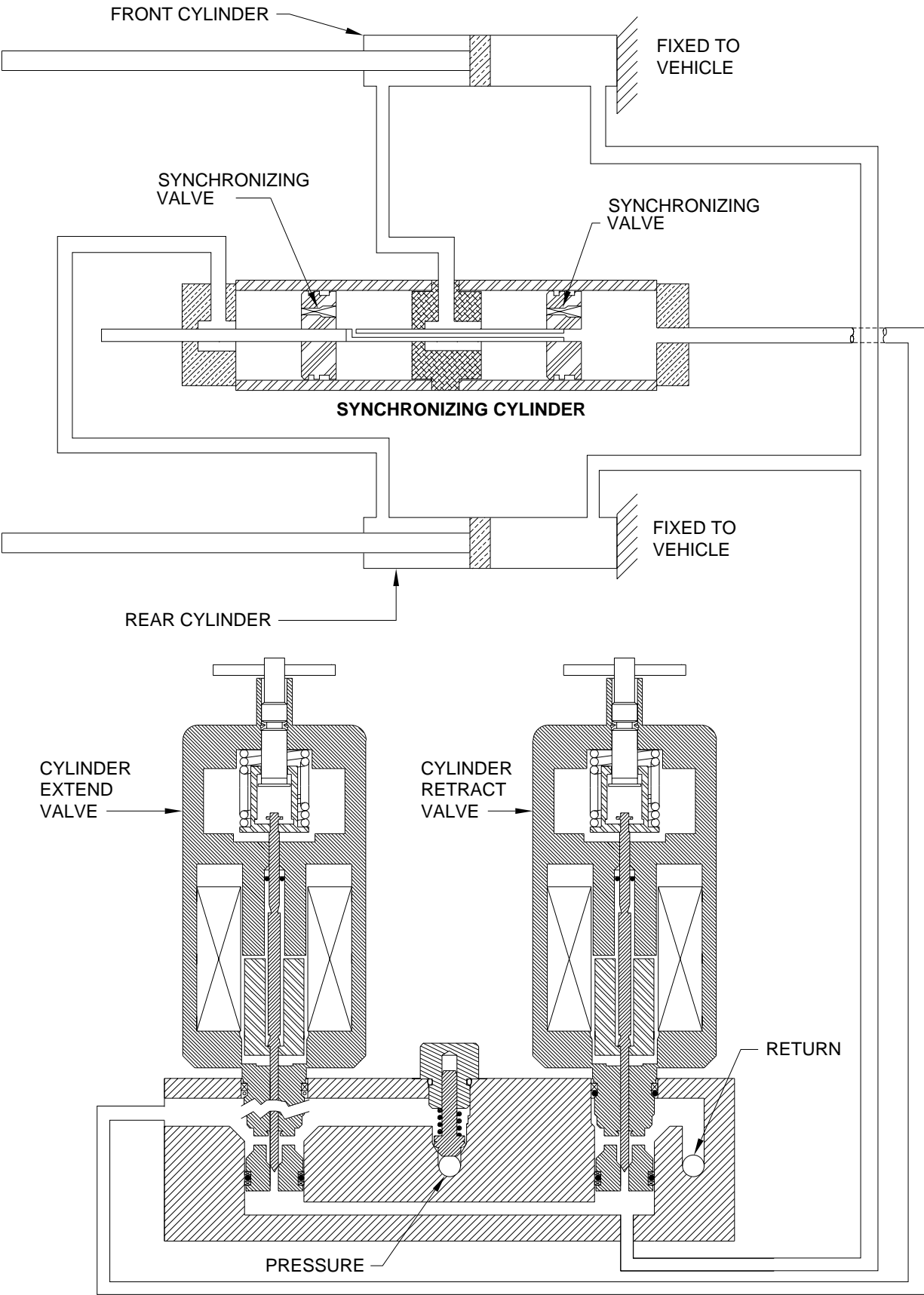
# HYDRAULIC LINE CONNECTION DIAGRAM

## SINGLE CYLINDER GENERATOR SLIDE

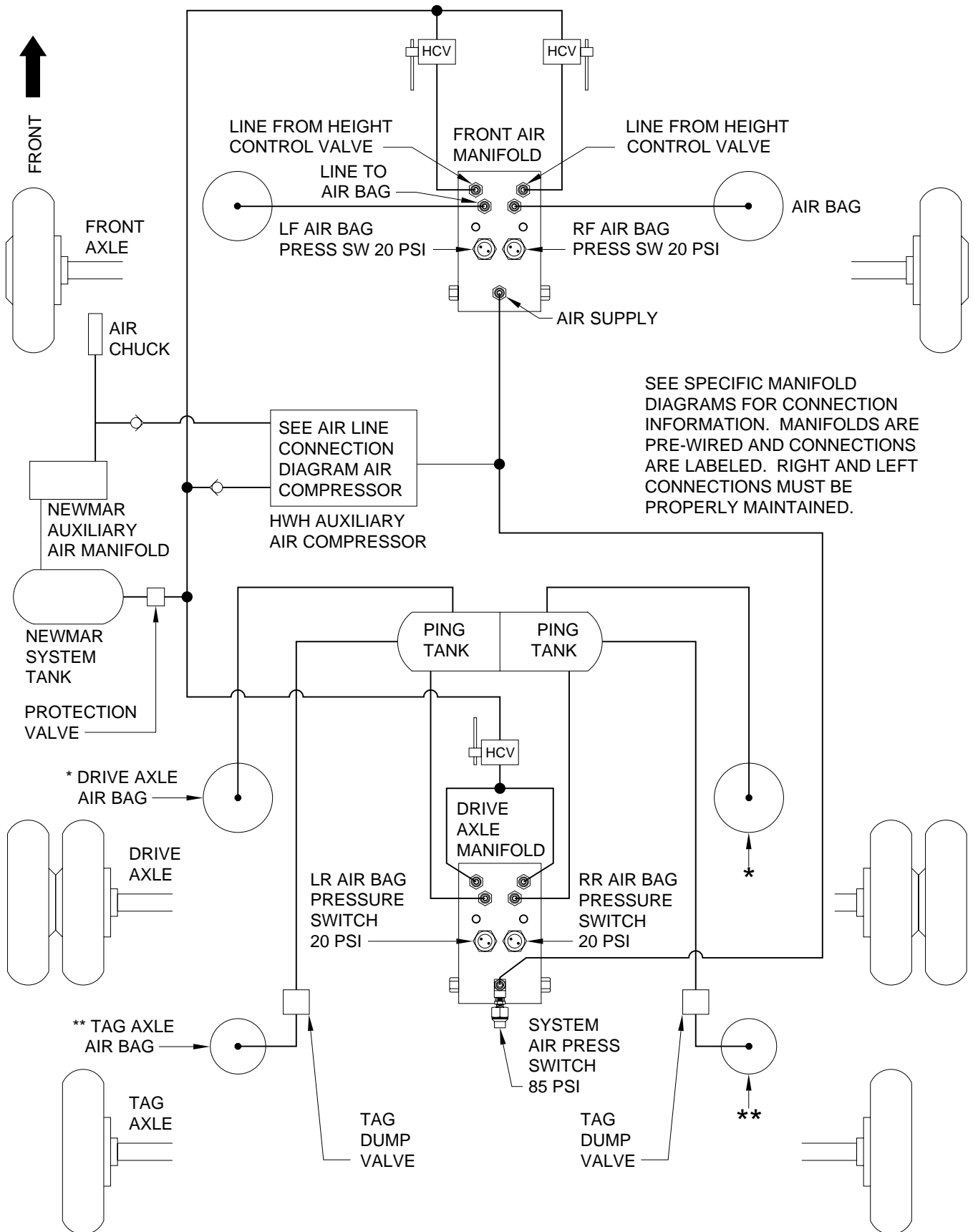


**NOTE: HYDRAULIC PUMP SHOWN WITH ROOM EXTENSION MANIFOLD ONLY. THE LEVELING SYSTEM MANIFOLD (NOT SHOWN) IS MOUNTED ON TOP OF THE ROOM EXTENSION MANIFOLD.**

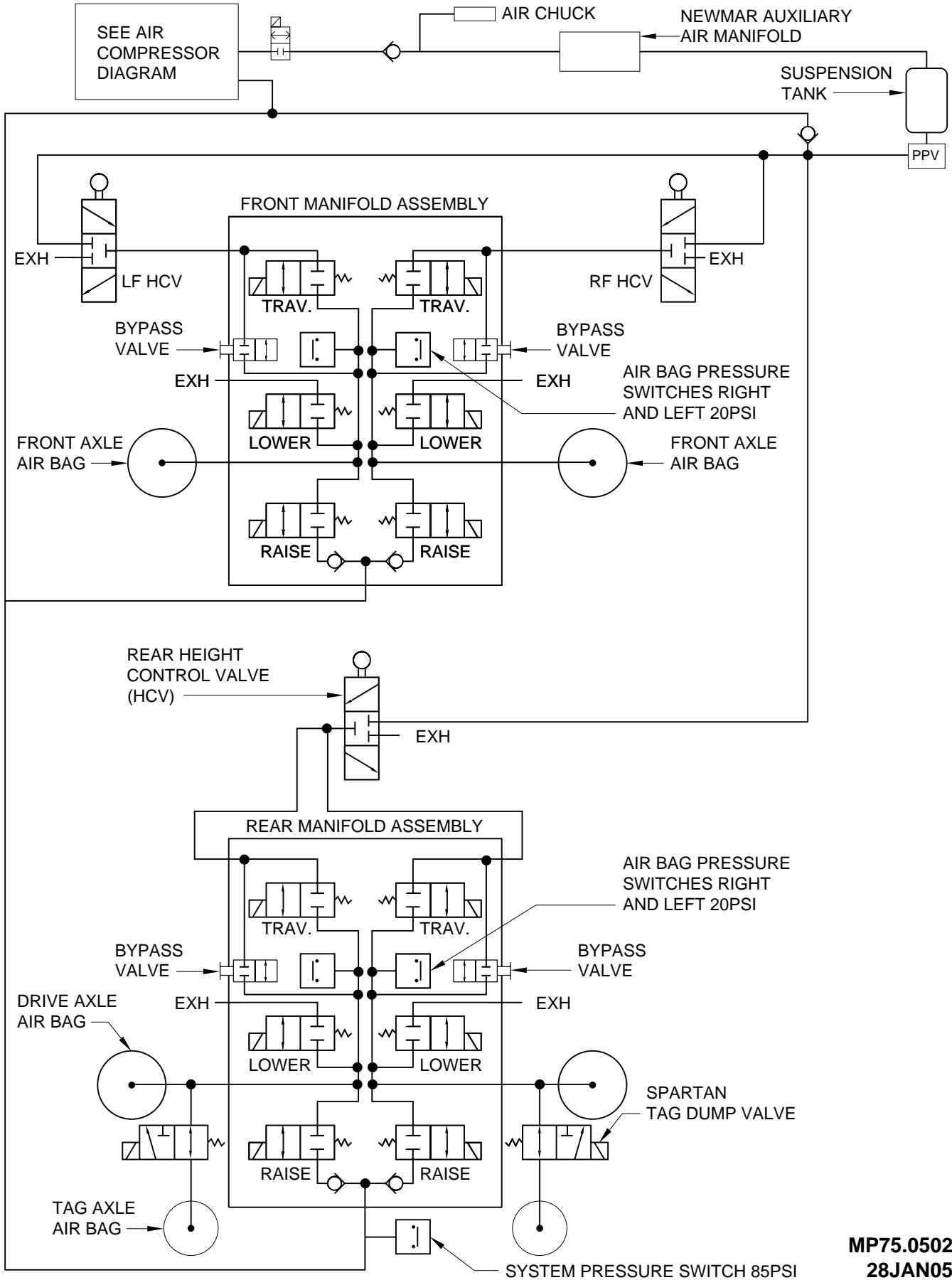
**HYDRAULIC FLOW DIAGRAM  
VERTICAL ARM OR DUAL CYLINDER ROOM EXTENSION  
WITH SYNCHRONIZING CYLINDER  
STATIONARY POSITION**



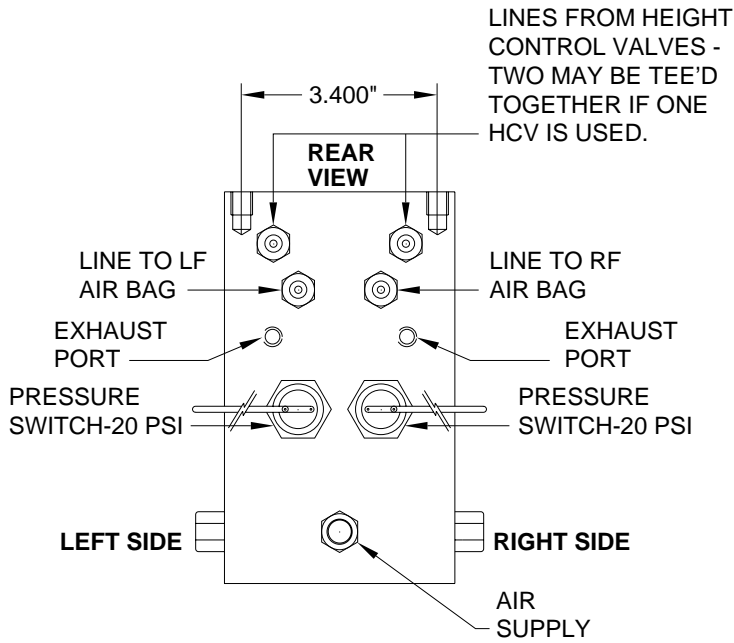
# AIR LINE CONNECTION DIAGRAM FRONT / DRIVE AND TAG AXLES



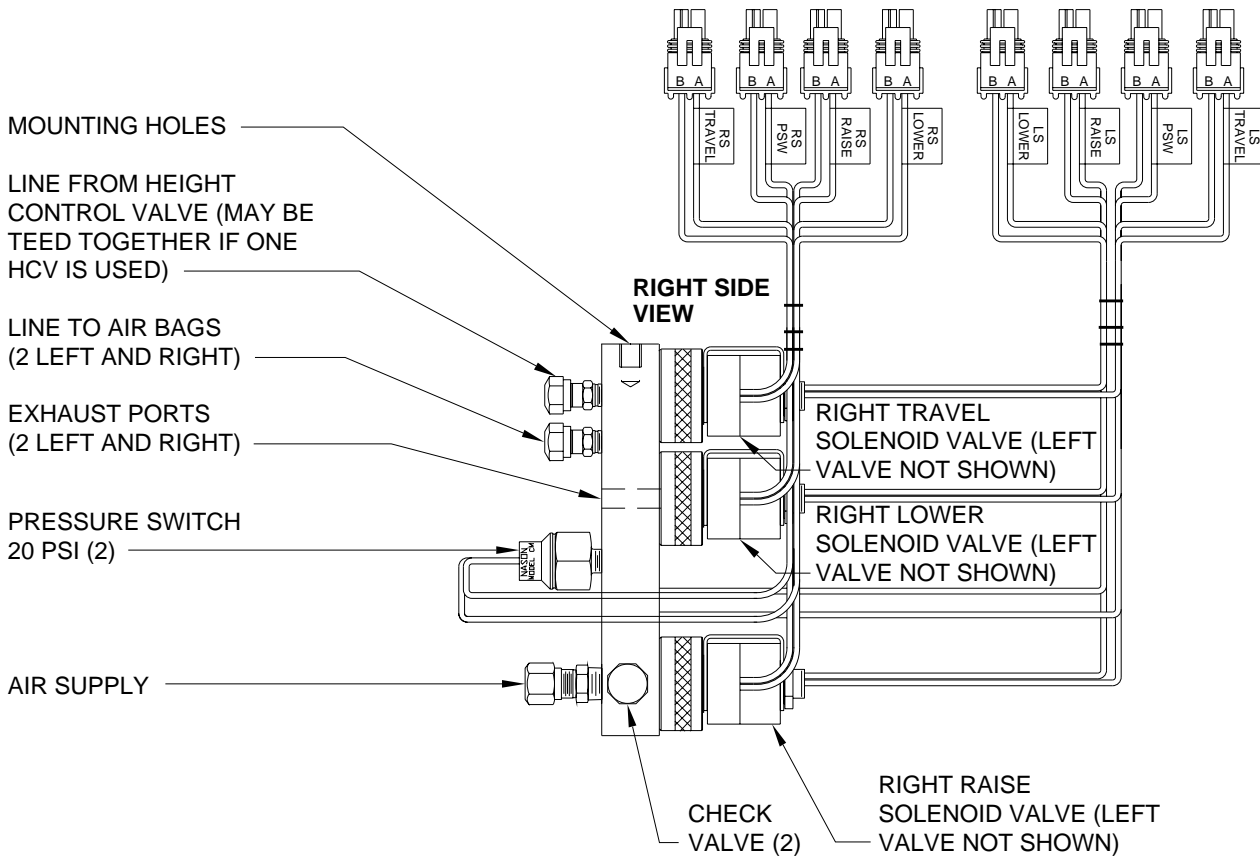
# AIR LEVEL SCHEMATIC 4-POINT LEVELING PRESSURE SWITCHES FRONT AND REAR



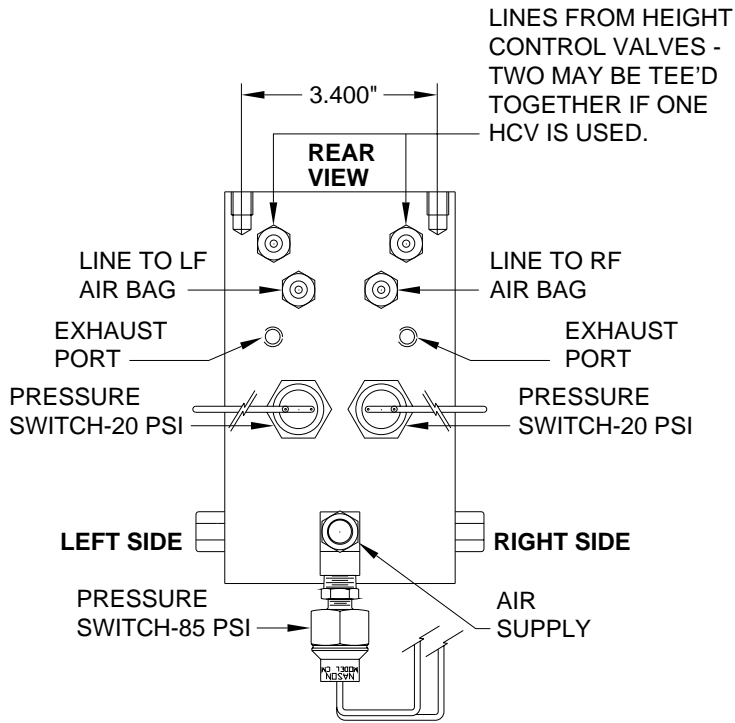
# AIR SOLENOID MANIFOLD - FRONT AXLE 6 VALVE WITH TWO PRESSURE SWITCHES



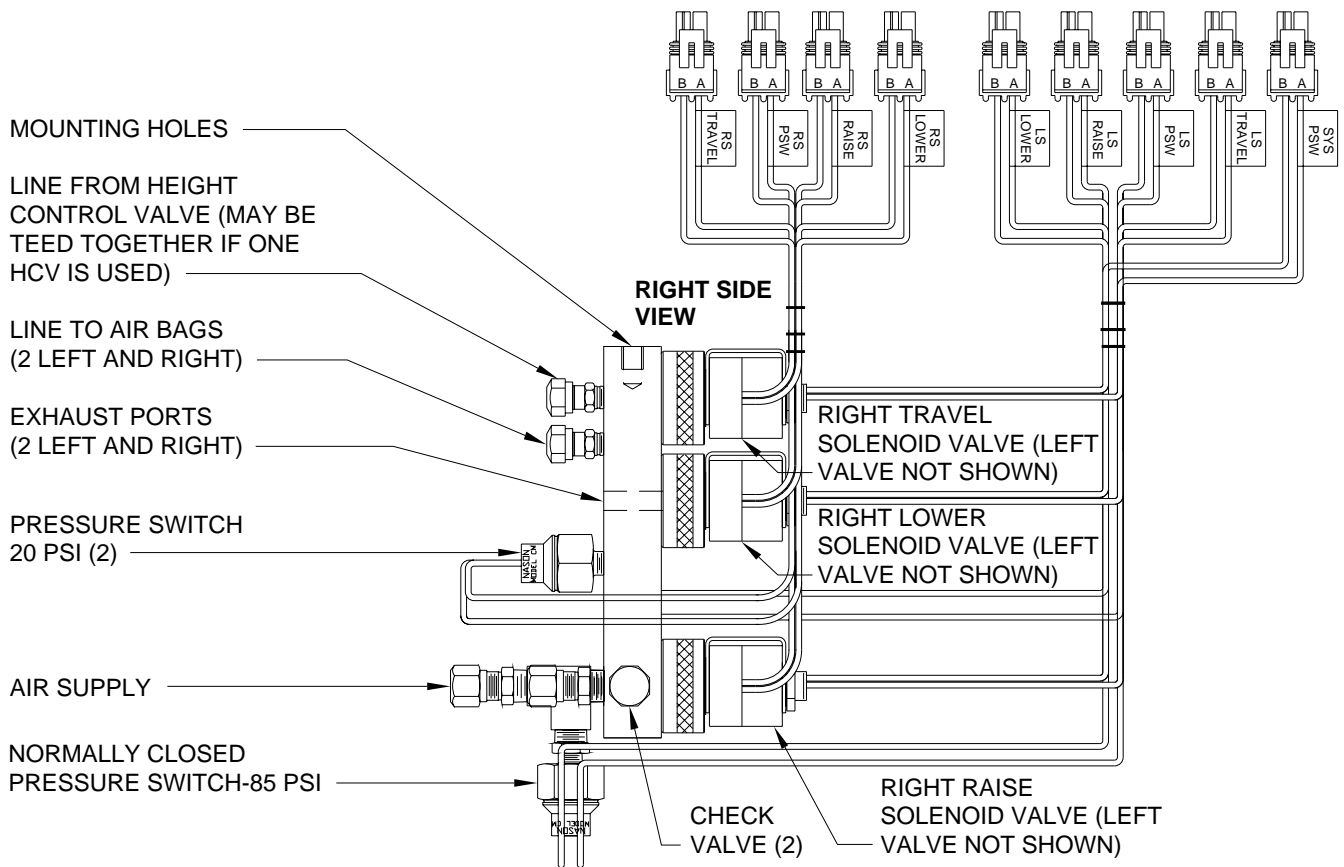
**NOTE: ALL AIR MANIFOLD PRESSURE SWITCHES ARE NORMALLY CLOSED AND OPEN AT THE PRESSURE INDICATED.**



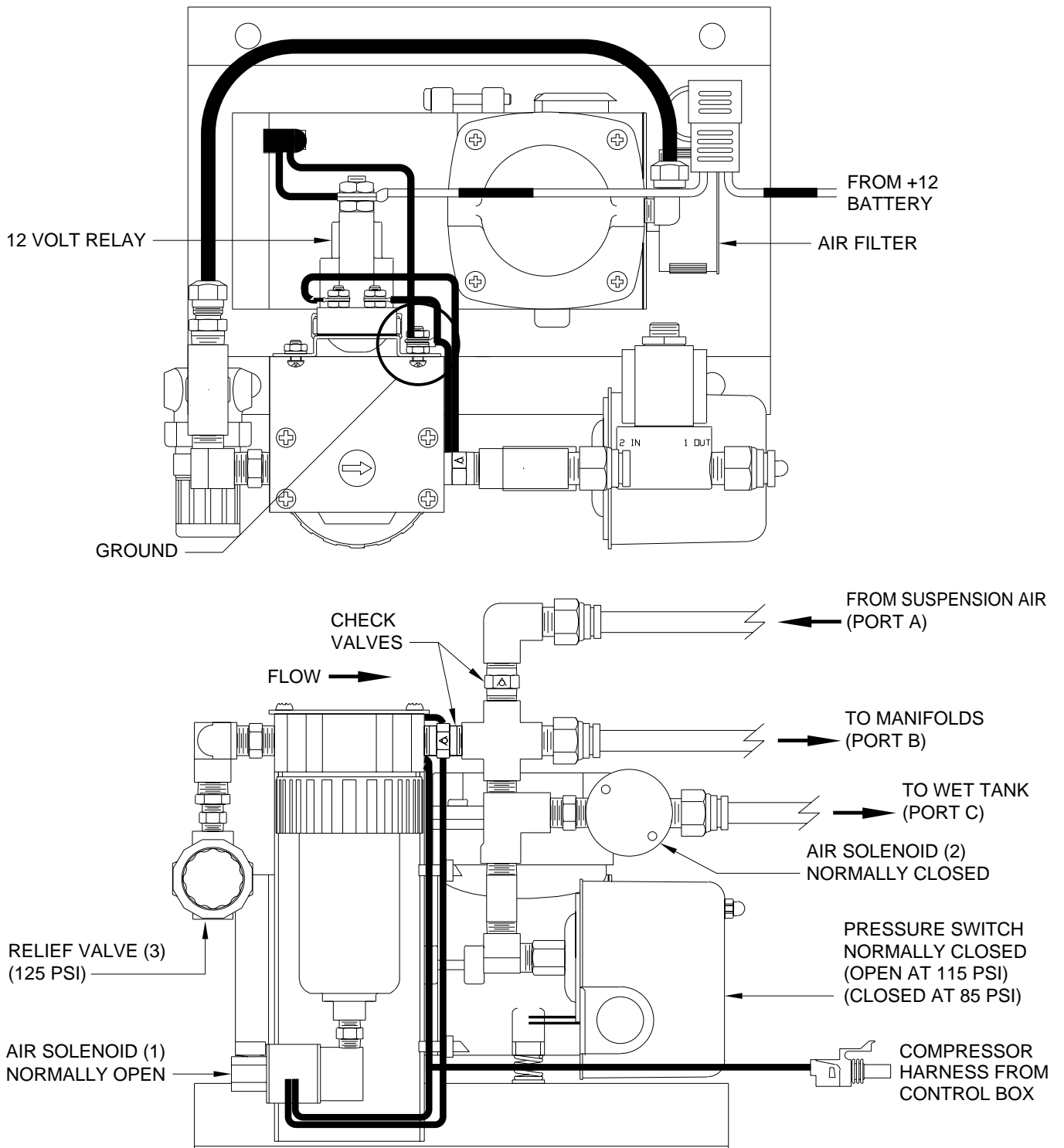
# AIR SOLENOID MANIFOLD - REAR AXLE 6 VALVE WITH THREE PRESSURE SWITCHES



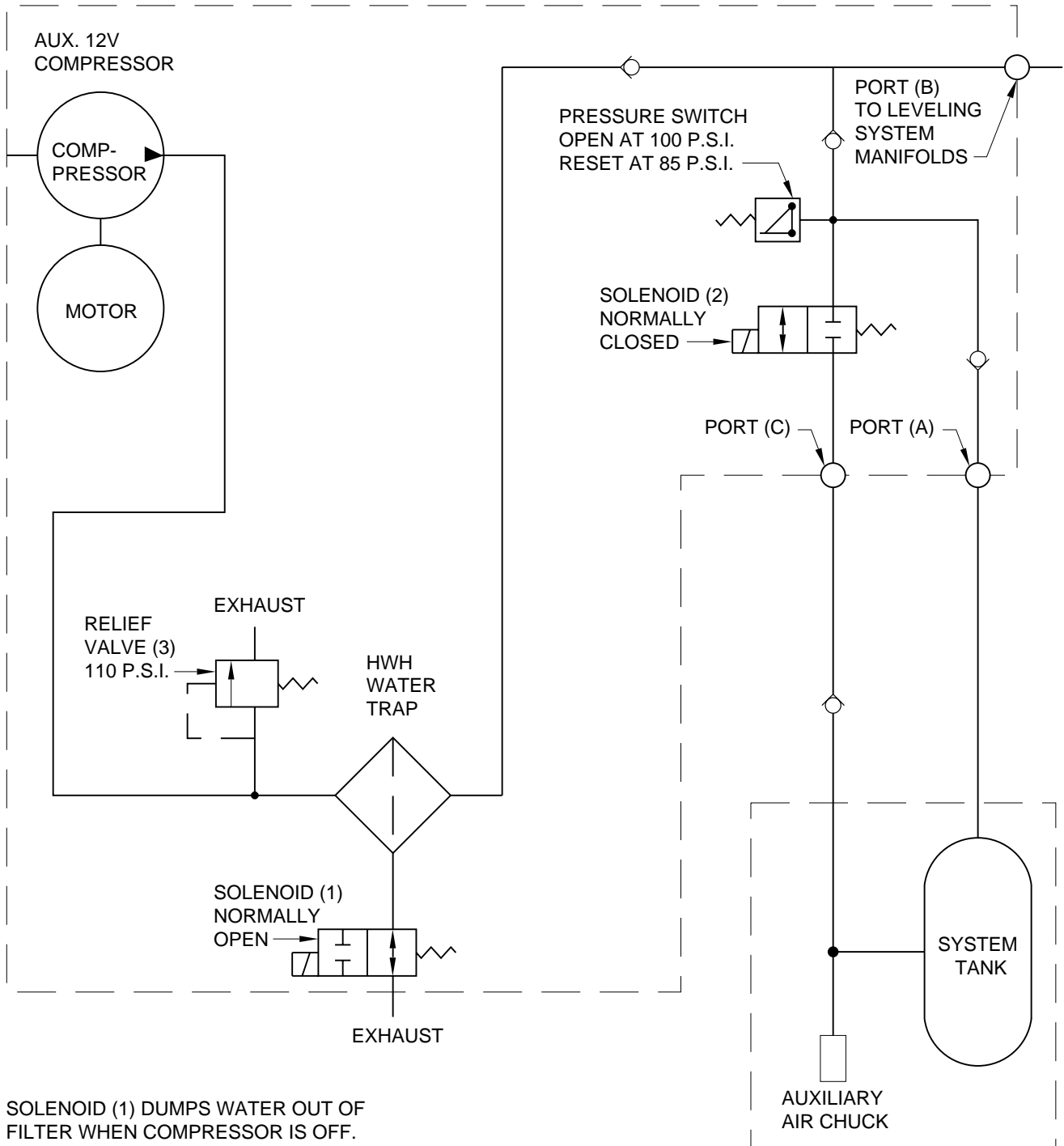
**NOTE: ALL AIR MANIFOLD PRESSURE SWITCHES ARE NORMALLY CLOSED AND OPEN AT THE PRESSURE INDICATED.**



# COMPRESSOR DIAGRAM



# AIR CONNECTION DIAGRAM AIR COMPRESSOR SCHEMATIC



SOLENOID (1) DUMPS WATER OUT OF FILTER WHEN COMPRESSOR IS OFF.

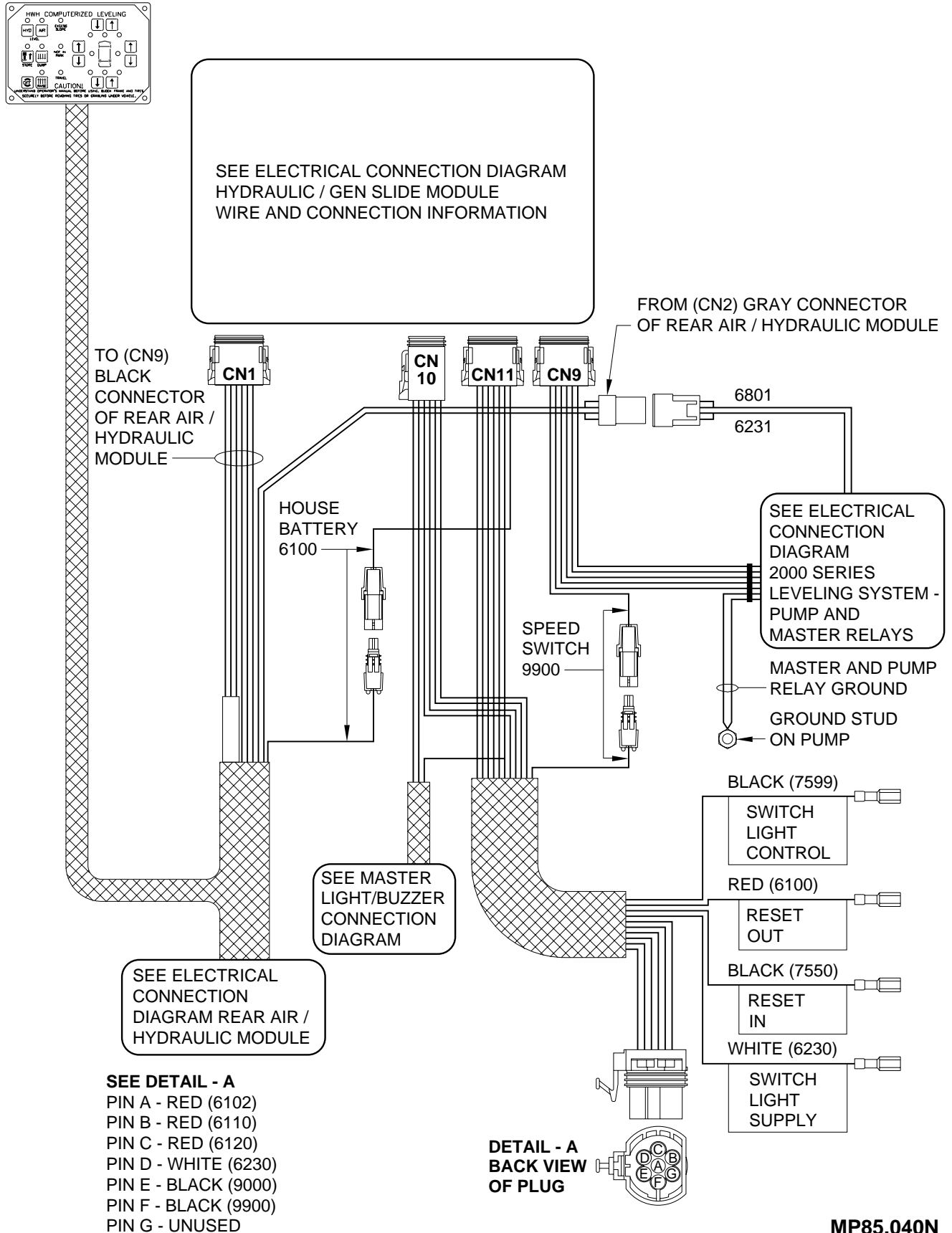
SOLENOID (2) ALLOWS COACH AIR TO BE PUMPED UP FROM AUX. COMPRESSOR.



# ELECTRICAL CONNECTION DIAGRAM

## CENTRAL CONTROL / FRONT AIR / HYDRAULIC / GEN SLIDE MODULE

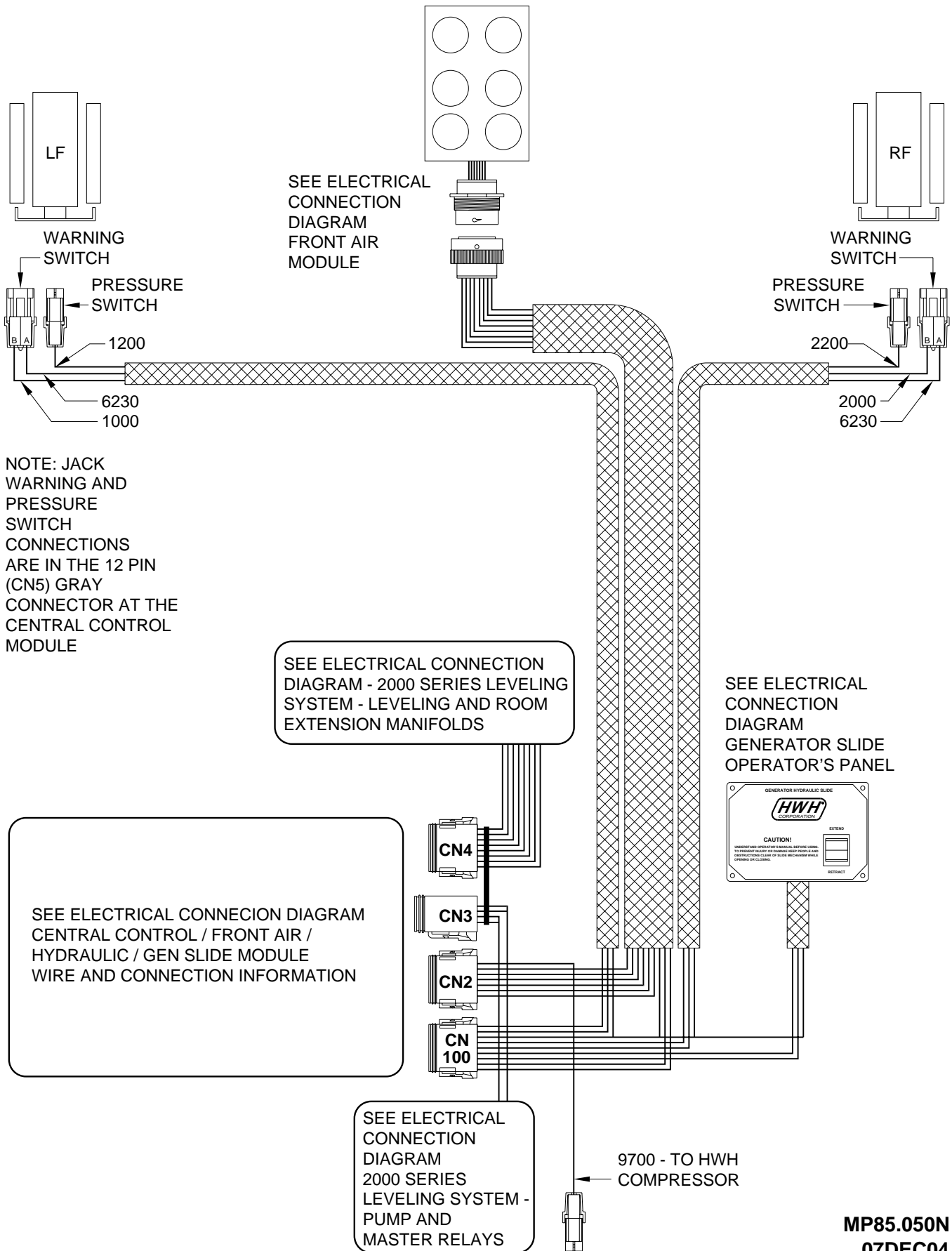
### HARNESS ROUTING PAGE 1 OF 2



# ELECTRICAL CONNECTION DIAGRAM

## CENTRAL CONTROL / FRONT AIR / HYDRAULIC / GEN SLIDE MODULE

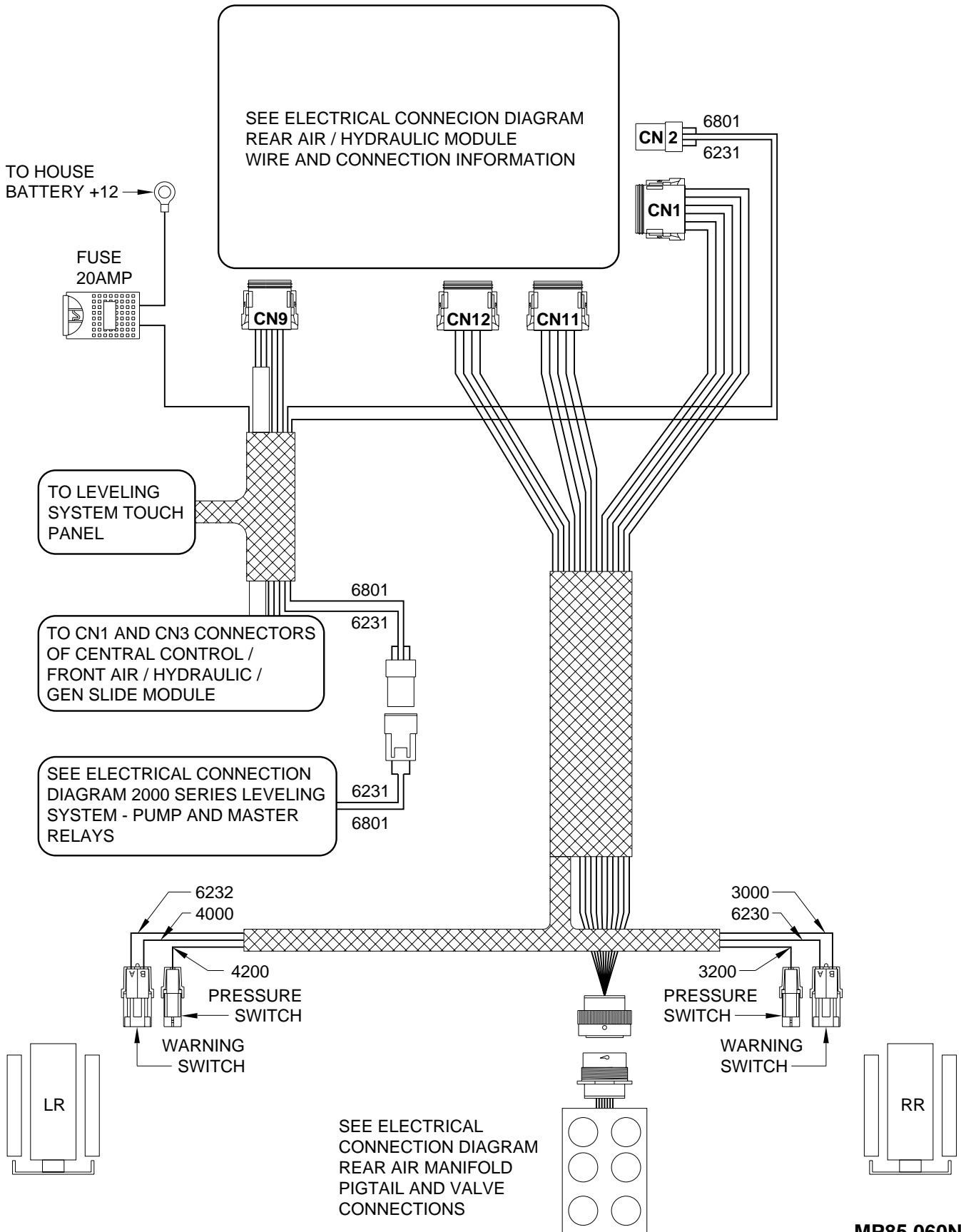
### HARNES ROUTING PAGE 2 OF 2



# ELECTRICAL CONNECTION DIAGRAM

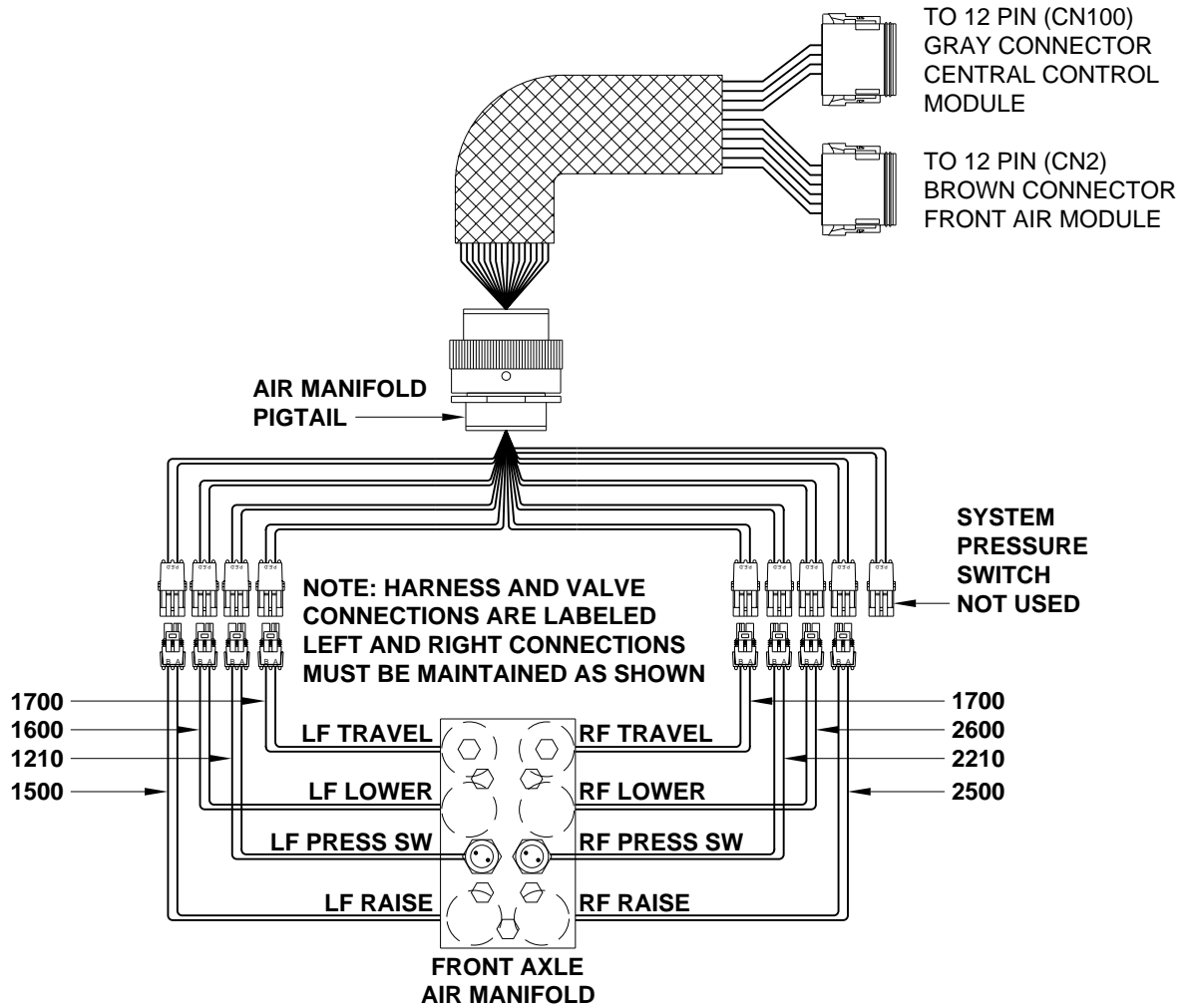
## REAR AIR / HYDRAULIC MODULE

### HARNESS ROUTING

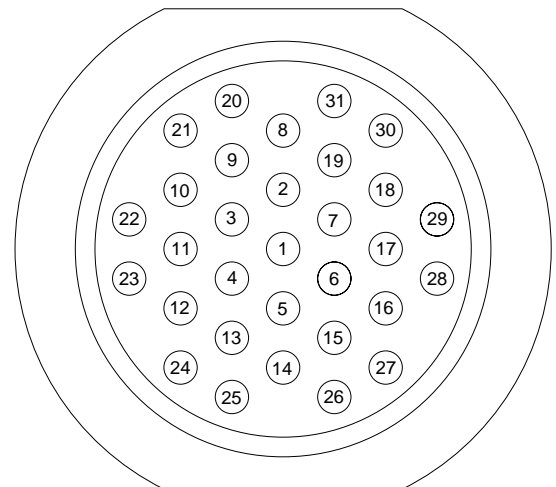


# ELECTRICAL CONNECTION DIAGRAM

## FRONT AIR MANIFOLD PIGTAIL AND VALVE CONNECTIONS

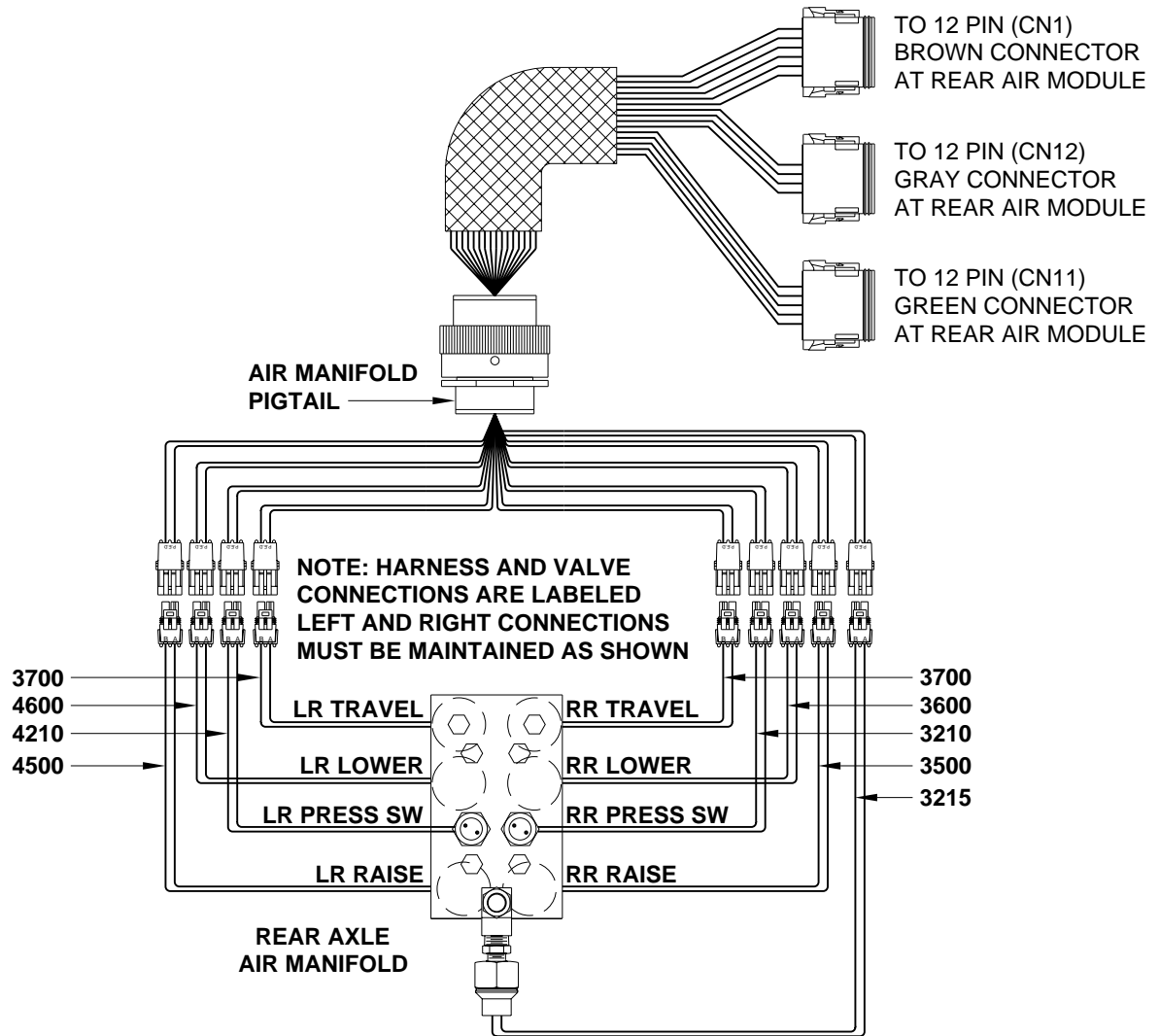


PIN	COLOR	DESCRIPTION
1	BLACK	TRAVEL - 1700 SW +12
2	WHITE	GROUND - 6254
3	BLACK	RIGHT SIDE PRESSURE SWITCH - 2210 SW GRND
4	WHITE	GROUND - 6230
5	BLACK	RIGHT SIDE RAISE - 2500 SW +12
6	WHITE	GROUND - 6254
7	BLACK	RIGHT SIDE LOWER - 2600 SW +12
8	WHITE	GROUND - 6254
9	BLACK	LEFT SIDE RAISE - 1500 SW +12
10	WHITE	GROUND - 6254
11	BLACK	LEFT SIDE LOWER - 1600 SW +12
12	WHITE	GROUND - 6254
13	BLACK	TRAVEL - 1700 SW +12
14	WHITE	GROUND - 6254
15	BLACK	LEFT SIDE PRESSURE SWITCH - 1210 SW GRND
16	WHITE	GROUND - 6230
17	BLACK	SYSTEM PRESSURE SWITCH - NA
18	WHITE	GROUND - NA
19 THROUGH 31		NOT USED

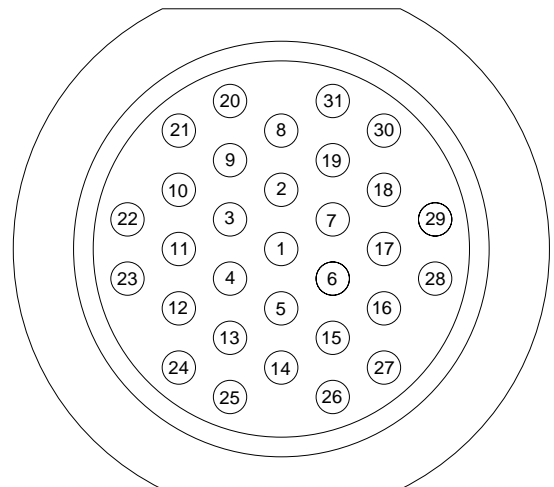


# ELECTRICAL CONNECTION DIAGRAM

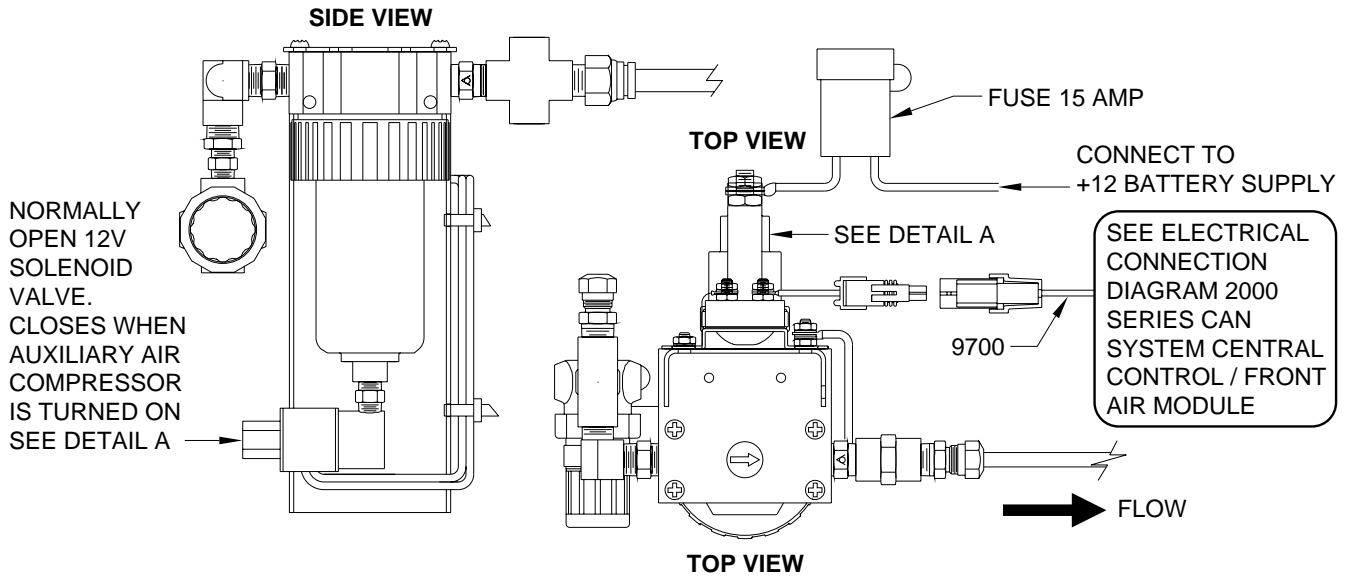
## REAR AIR MANIFOLD PIGTAIL AND VALVE CONNECTIONS



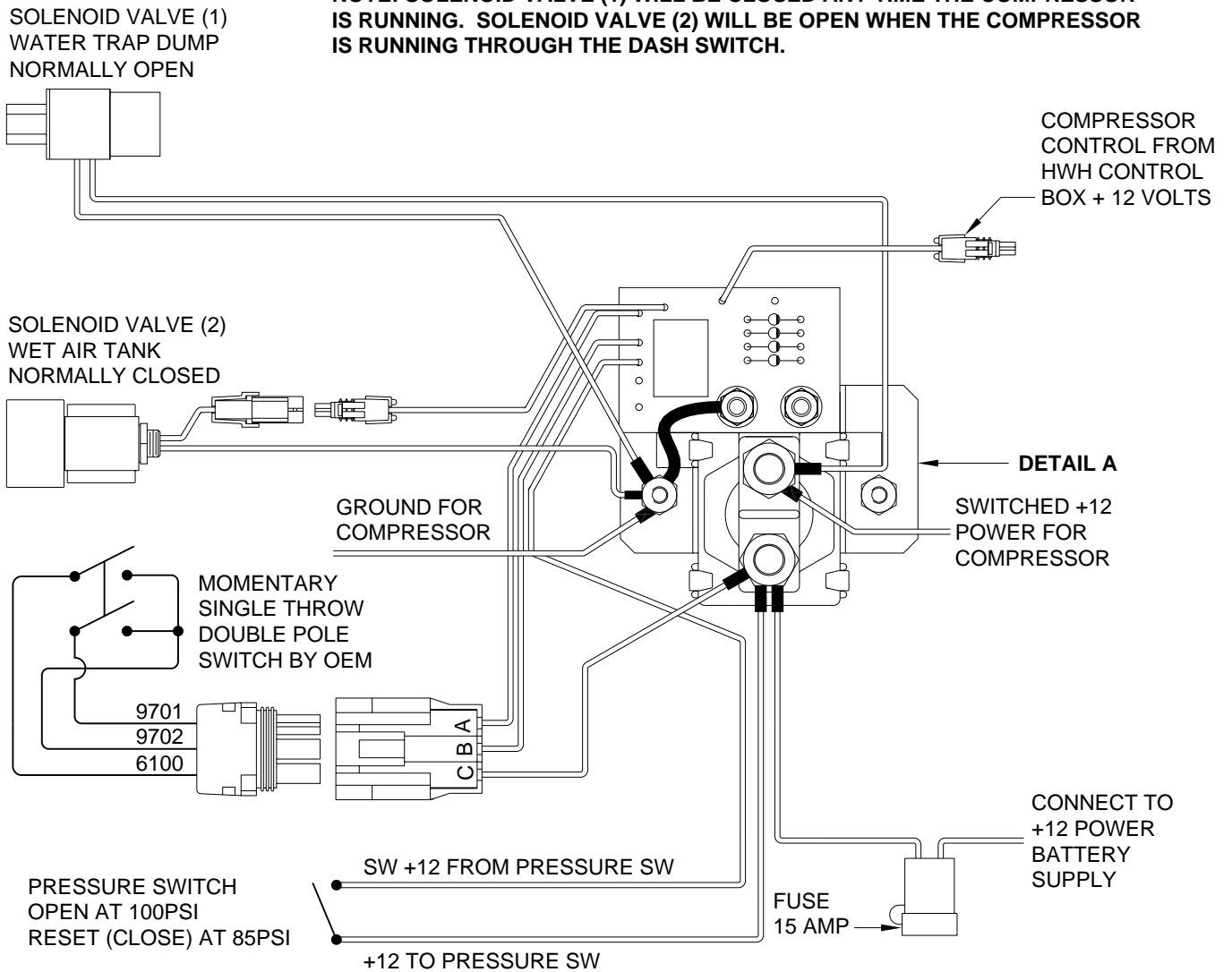
PIN	COLOR	DESCRIPTION
1	BLACK	TRAVEL - 3700 SW +12
2	WHITE	GROUND - 6258
3	BLACK	RIGHT SIDE PRESSURE SWITCH - 3210 SW GRND
4	WHITE	GROUND - 6232
5	BLACK	RIGHT SIDE RAISE - 3500 SW +12
6	WHITE	GROUND - 6258
7	BLACK	RIGHT SIDE LOWER - 3600 SW +12
8	WHITE	GROUND - 6258
9	BLACK	LEFT SIDE RAISE - 4500 SW +12
10	WHITE	GROUND - 6258
11	BLACK	LEFT SIDE LOWER - 4600 SW +12
12	WHITE	GROUND - 6258
13	BLACK	TRAVEL - 3700 SW +12
14	WHITE	GROUND - 6258
15	BLACK	LEFT SIDE PRESSURE SWITCH - 4210 SW GRND
16	WHITE	GROUND - 6232
17	BLACK	SYSTEM PRESSURE SWITCH - 3215 SW GRND
18	WHITE	GROUND - 6231
19 THROUGH 31		NOT USED



# ELECTRICAL CONNECTION DIAGRAM WATER TRAP ASSEMBLY



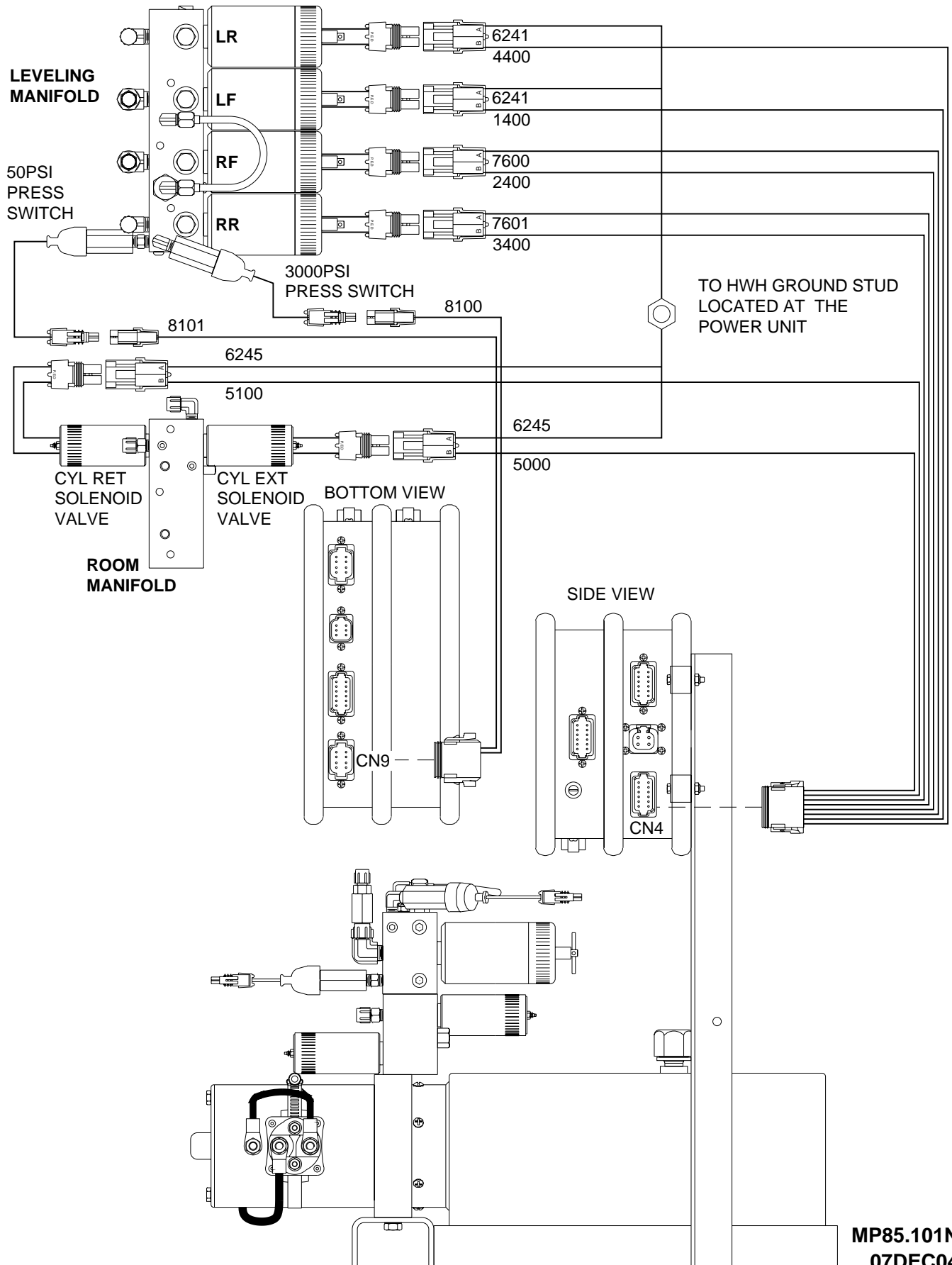
**NOTE: SOLENOID VALVE (1) WILL BE CLOSED ANY TIME THE COMPRESSOR IS RUNNING. SOLENOID VALVE (2) WILL BE OPEN WHEN THE COMPRESSOR IS RUNNING THROUGH THE DASH SWITCH.**



# ELECTRICAL CONNECTION DIAGRAM

## 2000 SERIES LEVELING SYSTEM

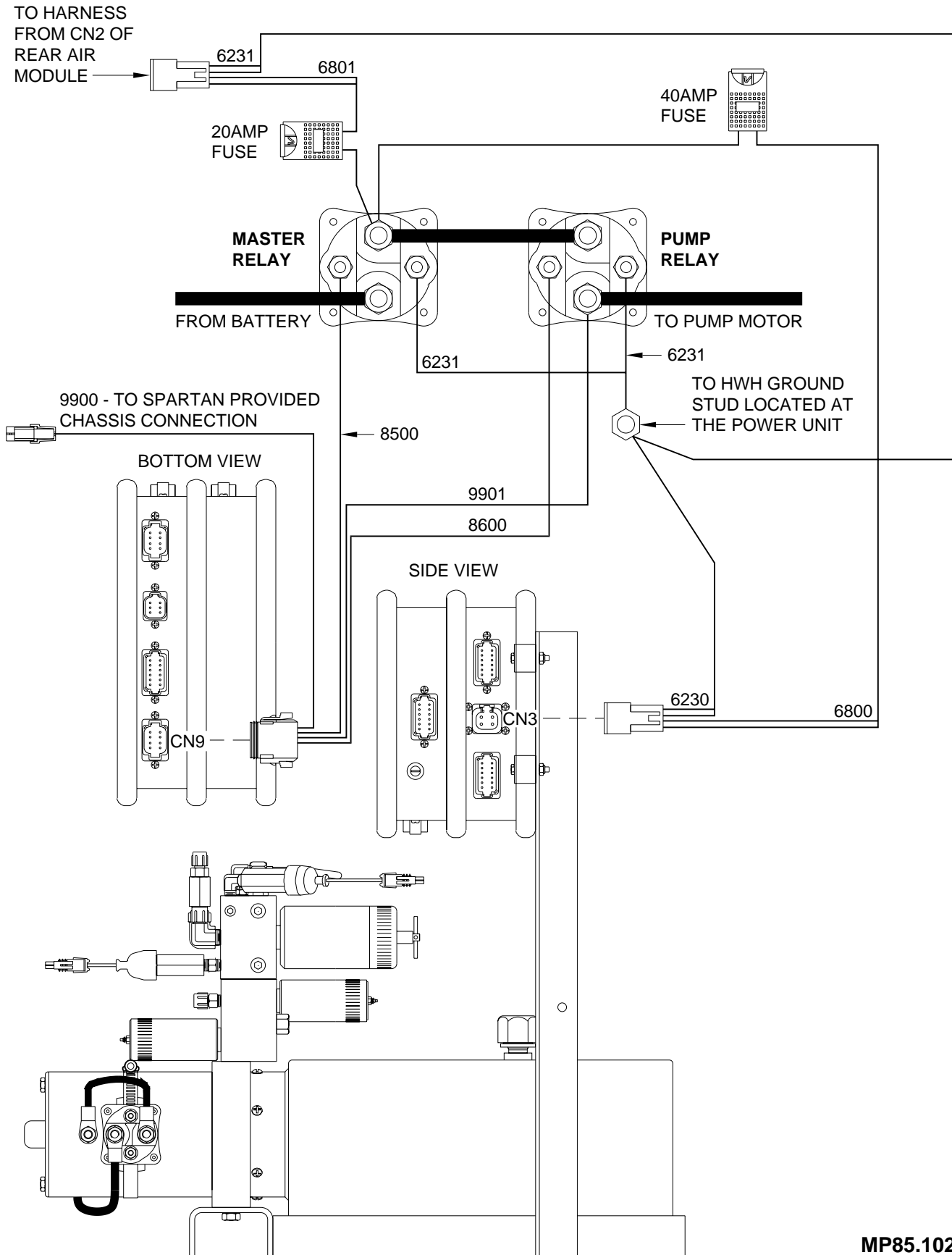
### LEVELING AND ROOM EXTENSION MANIFOLDS



# ELECTRICAL CONNECTION DIAGRAM

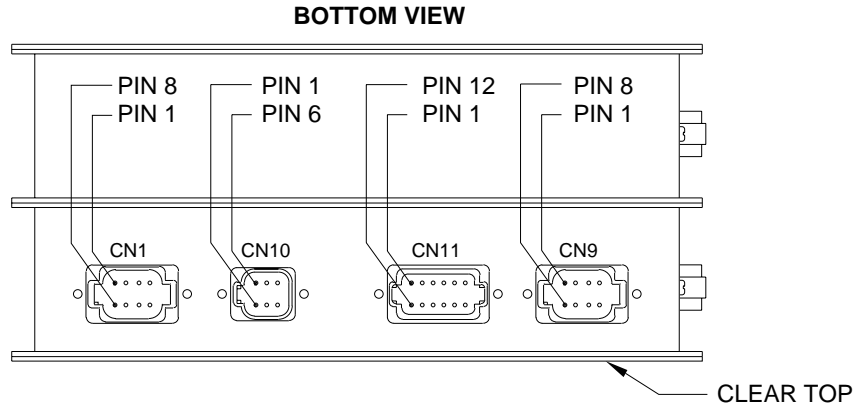
## 2000 SERIES LEVELING SYSTEM

### PUMP AND MASTER RELAYS





**ELECTRICAL CONNECTION DIAGRAM**  
**CENTRAL CONTROL / FRONT HYD - AIR / GEN SLIDE MODULE**  
**WIRE AND CONNECTION INFORMATION - PAGE 1 OF 2**

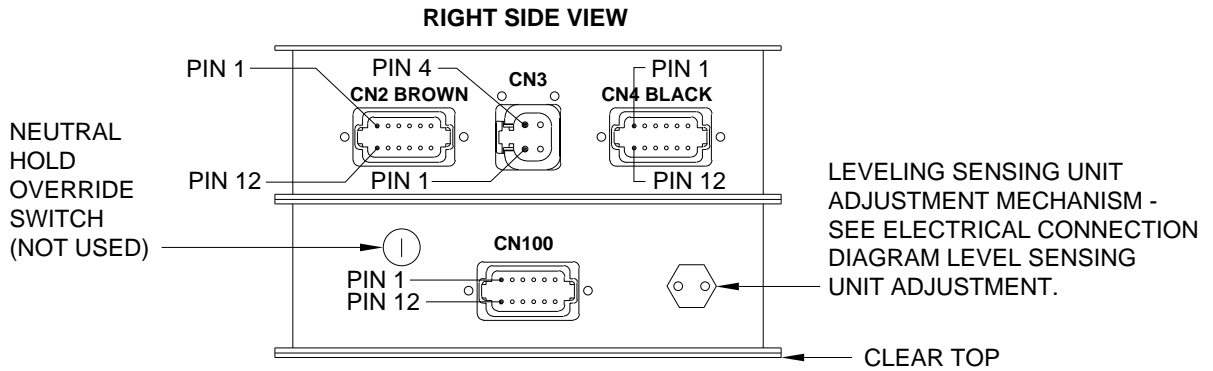


PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
<b>CN1</b>			<b>8 PIN BLACK CONNECTOR</b>
1 AND 2			NO CONNECTION
3	RED	6800	SWITCHED +12 TO TOUCH PANEL AND REAR AIR MODULE
4	WHITE	6230	GROUND
5			CAN SHIELD
6	RED	6110	IGNITION +12 TO REAR AIR MODULE
7	GREEN		CAN LOW
8	YELLOW		CAN HIGH
<b>CN10</b>			<b>6 PIN GRAY CONNECTOR</b>
1	BLACK	7599	RESET SWITCH LIGHT CONTROL-SWITCHED +12
2	RED	6100	RESET SWITCH SUPPLY +12
3	BLACK	7550	RESET SWITCH OUTPUT +12
4	RED	6121	WARNING LIGHT AND BUZZER SUPPLY +12
5	WHITE	6230	RESET SWITCH LIGHT GROUND
6	BLACK	7699	WARNING LIGHT AND BUZZER CONTROL - SWITCHED GROUND
<b>CN11</b>			<b>12 PIN GRAY CONNECTOR</b>
1	RED	6110	SWITCHED +12 FROM IGNITION
2 THRU 4			NO CONNECTION
5	RED	6120	SWITCHED +12 FROM ACCESSORY
6	RED	6100	HOUSE BATTERY +12
7	WHITE	6230	GROUND FOR PROCESSOR
8 THRU 10			NO CONNECTION
11	BLACK	9000	FROM PARK BRAKE SWITCH - SWITCHED GROUND
12	RED	6101	ENGINE BATTERY +12
<b>CN9</b>			<b>8 PIN GREEN CONNECTOR</b>
1	BLACK	8500	MASTER RELAY CONTROL SWITCHED +12
2	BLACK	8100	SWITCHED GROUND FROM 3000 LB PRESSURE SWITCH
3	BLACK	8101	SWITCHED GROUND FROM 50 LB PRESSURE SWITCH
4	BLACK	8600	PUMP RELAY CONTROL SWITCHED +12
5	BLACK	9900	SPEED SWITCH - +12 BELOW 5MPH WITH IGNITION ON
6	BLACK	9901	PUMP MONITOR - SWITCHED +12 FROM PUMP RELAY
7 AND 8			NO CONNECTION

# ELECTRICAL CONNECTION DIAGRAM

## CENTRAL CONTROL / FRONT HYD - AIR / GEN SLIDE MODULE

### WIRE AND CONNECTION INFORMATION - PAGE 2 OF 2



PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
<b>CN2</b>			<b>12 PIN BROWN CONNECTOR</b>
1			NO CONNECTION
2	BLACK	1500	LEFT FRONT RAISE AIR VALVE CONTROL - SWITCHED +12
3	BLACK	1600	LEFT FRONT LOWER AIR VALVE CONTROL - SWITCHED +12
4	BLACK	2500	RIGHT FRONT RAISE AIR VALVE CONTROL - SWITCHED +12
5	BLACK	2600	RIGHT FRONT LOWER AIR VALVE CONTROL - SWITCHED +12
6	BLACK	9700	AUXILIARY AIR COMPRESSOR CONTROL - SWITCHED +12
7			NO CONNECTION
8	BLACK	1700	FRONT AIR MANIFOLD TRAVEL VALVES CONTROL - SWITCHED +12
9			NO CONNECTION
10			NO CONNECTION
11	WHITE	6254	GROUND FOR AIR SOLENOID VALVES
12			NO CONNECTION
<b>CN3</b>			<b>4 PIN GRAY CONNECTOR</b>
1	BLACK	6800	SWITCHED +12 BATTERY
2	BLACK	6800	SWITCHED +12 BATTERY
3	WHITE	6230	GROUND FROM GROUND STUD - FOR SOLENOID VALVES
4	WHITE	6230	GROUND FROM GROUND STUD - FOR SOLENOID VALVES
<b>CN4</b>			<b>12 PIN BLACK CONNECTOR</b>
1	BLACK	7600	GROUND FOR RIGHT FRONT SOLENOID VALVE
2	BLACK	1400	SWITCHED +12 FOR LEFT FRONT SOLENOID
3	BLACK	2400	SWITCHED +12 FOR RIGHT FRONT SOLENOID
4	BLACK	5000	SWITCHED +12 FOR GEN SLIDE CYL EXTEND VALVE
5	BLACK	3400	SWITCHED +12 FOR RIGHT REAR SOLENOID
6	BLACK	7601	GROUND FOR RIGHT REAR SOLENOID VALVE
7	BLACK	4400	SWITCHED +12 FOR LEFT REAR SOLENOID
8 TRU 10			NO CONNECTION
11	BLACK	5100	SWITCHED +12 FOR GEN SLIDE CYL RETRACT VALVE
12			NO CONNECTION
<b>CN100</b>			<b>12 PIN GRAY CONNECTOR</b>
1	BLACK	5000	SWITCHED GRND FOR GEN SLIDE EXT VALVE FROM CONTROL PANEL
2	BLACK	1210	LEFT FRONT AIR PRESSURE SWITCH INPUT - SWITCHED GROUND
3	BLACK	2210	RIGHT FRONT AIR PRESSURE SWITCH INPUT - SWITCHED GROUND
4	BLACK	2000	SWITCHED GROUND FROM RIGHT FRONT JACK WARNING SWITCH
5	BLACK	1000	SWITCHED GROUND FROM LEFT FRONT JACK WARNING SWITCH
6	WHITE	6230	GROUND SUPPLY FOR ALL AIR MANIFOLD PRESSURE SWITCHES
7 AND 8			NO CONNECTION
9	BLACK	2200	SWITCHED GROUND FROM RIGHT FRONT JACK PRESSURE SWITCH
10	BLACK	1200	SWITCHED GROUND FROM LEFT FRONT JACK PRESSURE SWITCH
11			NO CONNECTION
12	BLACK	5100	SWITCHED GRND FOR GEN SLIDE RET VALVE FROM CONTROL PANEL

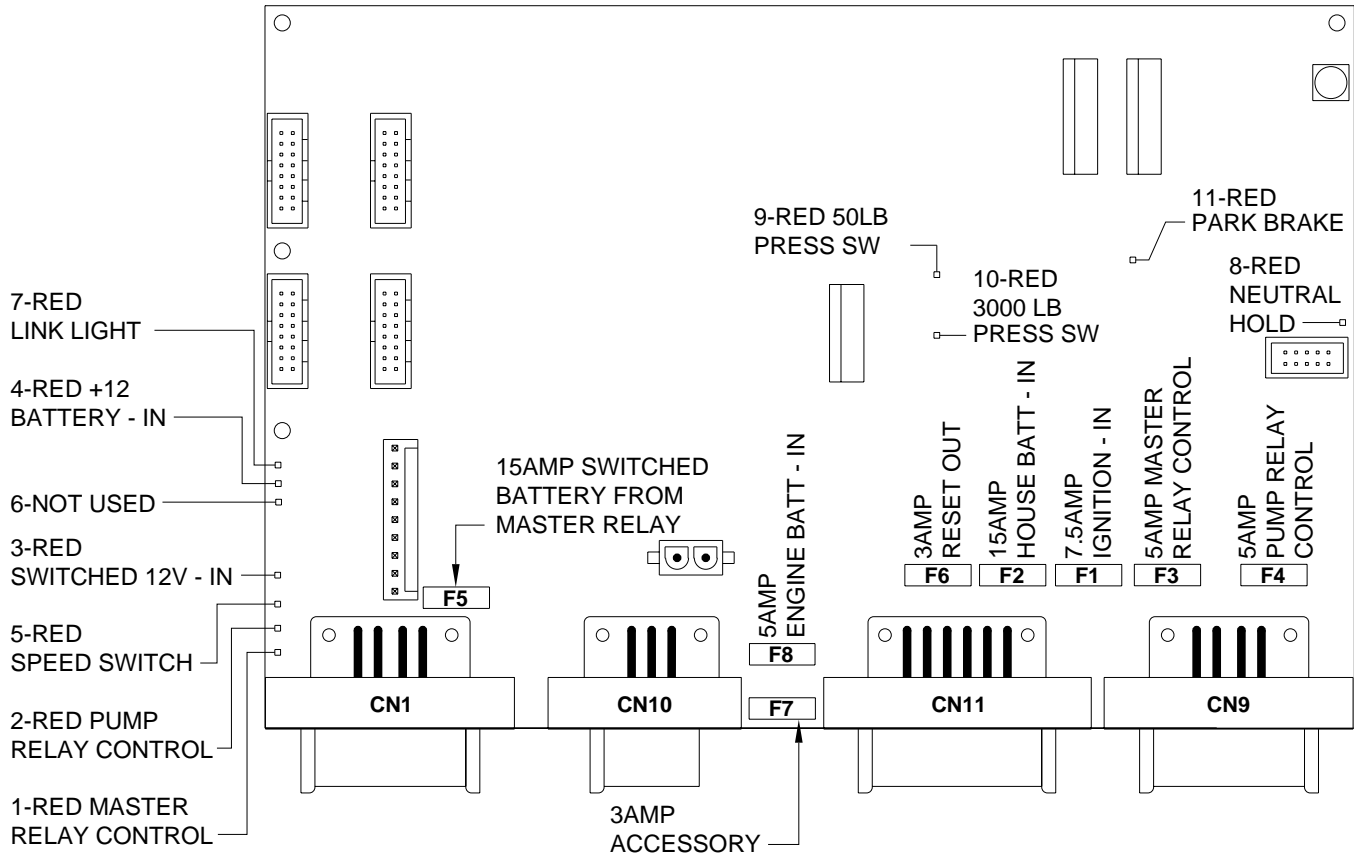
# ELECTRICAL CONNECTION DIAGRAM

## LED - FUSE LOCATION AND DESCRIPTION

### CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE

**PAGE 1 OF 3**

#### CENTRAL CONTROL MOTHER BOARD

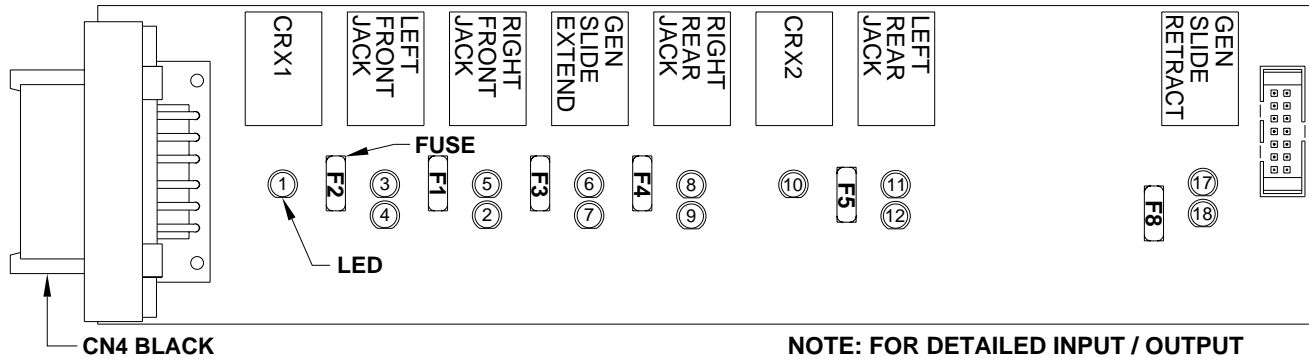


LED	DESCRIPTION	CN AND PIN	FUSE DESCRIPTION
1-RED	MASTER RELAY CONTROL	CN 9 - PIN 1	F1 - 7.5AMP IGNITION - IN
2-RED	PUMP RELAY CONTROL	CN 9 - PIN 4	F2 - 15AMP HOUSE BATTERY - IN
3-RED	SWITCHED 12V FROM MASTER RELAY	CN 1 - PIN 3	F3 - 5AMP MASTER RELAY CONTROL
4-RED	ENGINE BATTERY - IN	CN 11 - PIN 12	F4 - 5AMP PUMP RELAY CONTROL
5-RED	SPEED SWITCH	CN 9 - PIN 5	F5 - 15AMP SWITCHED BATTERY - IN
6-NOT USED	NOT USED	NOT USED	F6 - 3AMP RESET OUT
7-RED	LINK LIGHT	CN 1 - PIN 7 & 8	F7 - 3AMP IGNITION - IN
8-RED	NEUTRAL HOLD	CN 11 - PIN 8 & 9	F8 - 5AMP ENGINE BATTERY - IN
9-RED	50 LBS PRESS SWITCH - ON	CN9 PIN 3	
10-RED	3000 LBS PRESS SWITCH - ON	CN 9 - PIN 2	
11-RED	PARK PRAKE - ON	CN 11 - PIN 11	

**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE CONNECTION INFORMATION - PAGE 1 OF 2.**

**ELECTRICAL CONNECTION DIAGRAM**  
**LED - FUSE LOCATION AND DESCRIPTION**  
**CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE**  
**PAGE 2 OF 3**

**HYDRAULIC OUTPUT BOARD**



LED	RELAY DESCRIPTION	FUSE	BLACK
1-YELLOW	CRX1 - COIL		
2-RED	RIGHT FRONT JACK - CONTACT	F1-15 AMP	PIN 3
3-YELLOW	LEFT FRONT JACK - COIL		
4-RED	LEFT FRONT JACK - CONTACT	F2-15 AMP	PIN 2
5-YELLOW	RIGHT FRONT JACK - COIL		
6-YELLOW	GEN CYL EXTEND - COIL		
7-RED	GEN CYL EXTEND - CONTACT	F3-15 AMP	PIN 4
8-YELLOW	RIGHT REAR JACK - COIL		
9-RED	RIGHT REAR JACK - CONTACT	F4-15 AMP	PIN 5
10-YELLOW	CRX2 - COIL		PIN 6
11-YELLOW	LEFT REAR JACK - COIL		
12-RED	LEFT REAR JACK - CONTACT	F5-15 AMP	PIN 7
13	NOT USED		
14	NOT USED		
15	NOT USED		
16	NOT USED		
17-YELLOW	GEN CYL RETRACT - COIL		
18-RED	GEN CYL RETRACT CONTACT	F8-15 AMP	PIN 8

**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE CONNECTION INFORMATION - PAGE 2 OF 2.**

**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 CN1 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.**

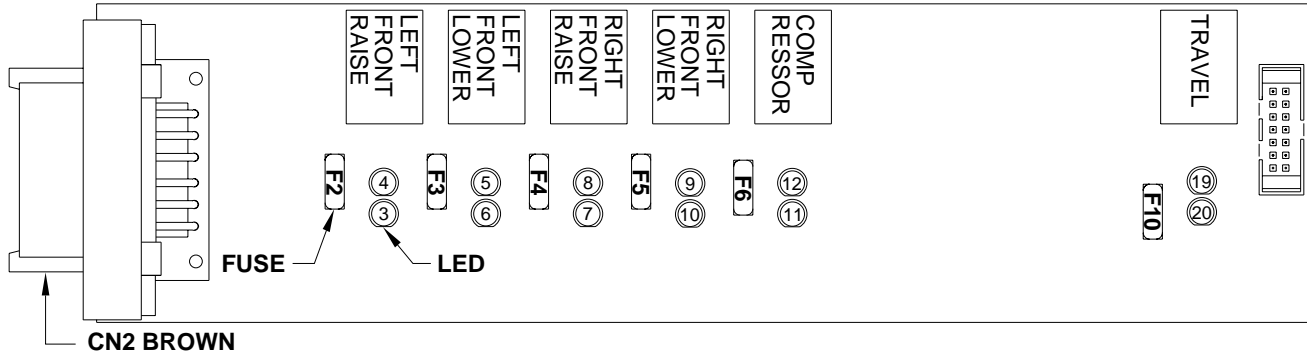
**IF THE YELLOW LEDS ARE WORKING BUT NO RED LED IS COMING ON THERE IS A PROBLEM WITH INPUT VOLTAGE IN THE 4-PIN CONNECTOR ON THE TOP RING.**

**LED'S 1 AND 10 (YELLOW) WILL BE ON WHENEVER THE TOUCH PANEL IS ON UNLESS THE "STORE" BUTTON IS PUSHED. TWO SECONDS AFTER THE "STORE" BUTTON IS PUSHED, LED'S 7 AND 20 WILL TURN OFF. 5 SECONDS LATER LED'S 3 AND 19 WILL TURN OFF.**

**IF A YELLOW LED IS NOT LIT, THIS INDICATES A PROBLEM WITH A MODULE.**

**ELECTRICAL CONNECTION DIAGRAM**  
**LED - FUSE LOCATION AND DESCRIPTION**  
**CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE**  
**PAGE 3 OF 3**

**AIR LEVEL OUTPUT BOARD**



**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE CONNECTION INFORMATION - PAGE 2 OF 2.**

**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 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. \***

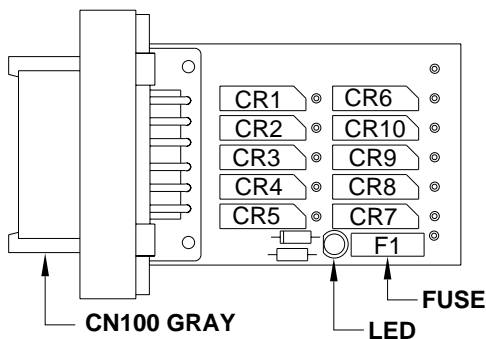
**IF THE YELLOW LEDS ARE WORKING BUT NO RED LED IS COMING ON THERE IS A PROBLEM WITH INPUT VOLTAGE IN THE 4-PIN CONNECTOR ON THE MIDDLE RING. \***

**IF A YELLOW LED IS NOT LIT, THIS INDICATES A PROBLEM WITH A MODULE. \***

LED	RELAY DESCRIPTION	FUSE	BROWN
3-RED	LEFT FRONT RAISE - CONTACT	F2-5 AMP	PIN 2
4-YELLOW	LEFT FRONT RAISE - COIL		
5-YELLOW	LEFT FRONT LOWER - COIL		
6-RED	LEFT FRONT LOWER - CONTACT	F3-5 AMP	PIN 3
7-RED	RIGHT FRONT RAISE - CONTACT	F4-5 AMP	PIN 4
8-YELLOW	RIGHT FRONT RAISE - COIL		
9-YELLOW	RIGHT FRONT LOWER - COIL		
10-RED	RIGHT FRONT LOWER - CONTACT	F5-5 AMP	PIN 5
11-RED	COMPRESSOR - CONTACT	F6-5 AMP	PIN 6
12-YELLOW	COMPRESSOR - COIL		
19-YELLOW	TRAVEL - COIL		
20-RED	TRAVEL - CONTACT	F10-7.5 AMP	PIN 8

**\* NOTE: THE TRAVEL RELAY IS WIRED AS A NORMALLY CLOSED RELAY. WHEN THE YELLOW LED (19) IS ON THE RELAY CONTACTS WILL OPEN. THE RED LED (20) WILL NOT BE ON. THE RED LED WILL BE ON IF THE LEVELING SYSTEM IS IN THE TRAVEL MODE AND THE IGNITION IS ON.**

**AIR PRESSURE SWITCH INPUTS**  
**HYDRAULIC PRESSURE AND WARNING SWITCH INPUTS**  
**GEN SLIDE CONTROL PANEL INPUTS**



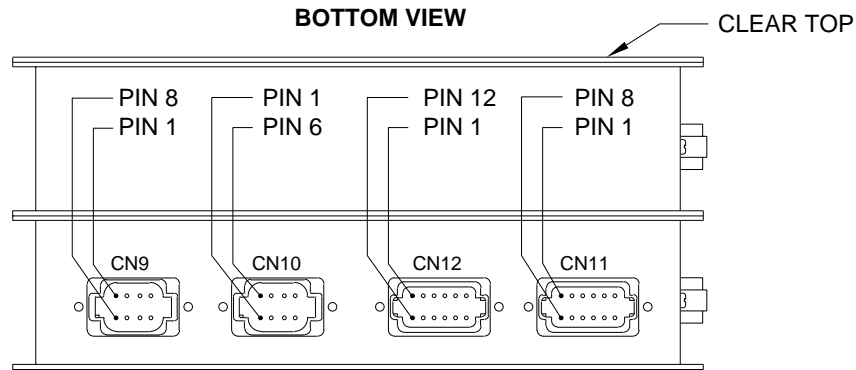
**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / FRONT AIR / GEN SLIDE MODULE CONNECTION INFORMATION - PAGE 2 OF 2.**

READ SWITCH	DESCRIPTION
CR1 - PIN 1	GEN SLIDE EXTEND
CR2 - PIN 2	AIR LEFT FRONT PRESS SW
CR3 - PIN 3	AIR RIGHT FRONT PRESS SW
CR4 - PIN 4	HYD RIGHT FRONT WARN SW
CR5 - PIN 5	HYD LEFT FRONT WARN SW
CR6 - PIN 12	GEN SLIDE RETRACT
CR7 - PIN 8	NOT USED
CR8 - PIN 9	HYD RIGHT FRONT PRESS SW
CR9 - PIN 10	HYD LEFT FRONT PRESS SW
CR10 - PIN 11	NOT USED
PIN 6	GROUND
PIN 7	NOT USED
<b>FUSE - F1</b>	<b>3 AMP SWITCHED BATTERY</b>
<b>LED - RED</b>	<b>+12 POWER TO BOARD</b>

# ELECTRICAL CONNECTION DIAGRAM

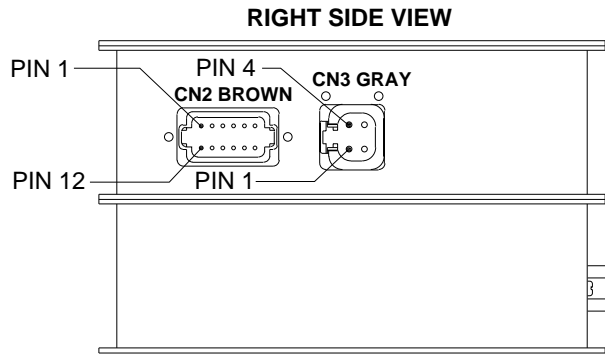
## REAR AIR / HYDRAULIC PRESSURE AND WARNING SWITCH MODULE

### WIRE AND CONNECTION INFORMATION - PAGE 1 OF 2



PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
<b>CN9</b>			<b>8 PIN BLACK CONNECTOR</b>
1 AND 2			NO CONNECTION
3	RED	6800	SWITCHED +12 TO TOUCH PANEL
4	WHITE	6230	GROUND
5			CAN SHIELD
6	RED	6110	IGNITION +12
7	GREEN		CAN LOW
8	YELLOW		CAN HIGH
<b>CN10</b>			<b>8 PIN GRAY CONNECTOR</b>
1 THRU 8			NO CONNECTION
<b>CN12</b>			<b>12 PIN GRAY CONNECTOR</b>
1 AND 2			NO CONNECTION
3	BLACK	3215	SWITCHED GROUND AIR SYSTEM PRESSURE SWITCH INPUT
4	BLACK	4200	SWITCHED GROUND FROM LEFT REAR JACK PRESSURE SWITCH
5			NO CONNECTION
6	WHITE	6231	GROUND
7 AND 8			NO CONNECTION
9	BLACK	4000	SWITCHED GROUND FROM LEFT REAR JACK WARNING SWITCH
10 THRU 12			NO CONNECTION
<b>CN11</b>			<b>12 PIN GREEN CONNECTOR</b>
1			NO CONNECTION
2	BLACK	4210	LEFT REAR AIR PRESSURE SWITCH
3	BLACK	3210	RIGHT REAR AIR PRESSURE SWITCH
4	BLACK	3200	SWITCHED GROUND FROM RIGHT REAR JACK PRESSURE SWITCH
5			NO CONNECTION
6	WHITE	6232	GROUND
7 AND 8			NO CONNECTION
9	BLACK	3000	SWITCHED GROUND FROM RIGHT REAR JACK WARNING SWITCH
10 THRU 12			NO CONNECTION

**ELECTRICAL CONNECTION DIAGRAM**  
**REAR AIR / HYDRAULIC PRESSURE AND WARNING SWITCH MODULE**  
**WIRE AND CONNECTION INFORMATION - PAGE 2 OF 2**



PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
<b>CN2</b>			<b>12 PIN BROWN CONNECTOR</b>
1			NO CONNECTION
2	BLACK	4500	LEFT REAR RAISE AIR VALVE CONTROL - SWITCHED +12
3	BLACK	4600	LEFT REAR LOWER AIR VALVE CONTROL - SWITCHED +12
4	BLACK	3500	RIGHT REAR RAISE AIR VALVE CONTROL - SWITCHED +12
5	BLACK	3600	RIGHT REAR LOWER AIR VALVE CONTROL - SWITCHED +12
6			NO CONNECTION
7	BLACK	3700	REAR TRAVEL SWITCHED +12
8 THRU 10			NO CONNECTION
11	WHITE	6258	GROUND FOR AIR SOLENOID VALVES
12			NO CONNECTION
<b>CN3</b>			<b>4 PIN GRAY CONNECTOR</b>
1	BLACK	6801	SWITCHED +12 BATTERY
2	BLACK	6801	SWITCHED +12 BATTERY
3	WHITE	6231	GROUND FROM GROUND STUD - FOR SOLENOID VALVES
4	WHITE	6231	GROUND FROM GROUND STUD - FOR SOLENOID VALVES

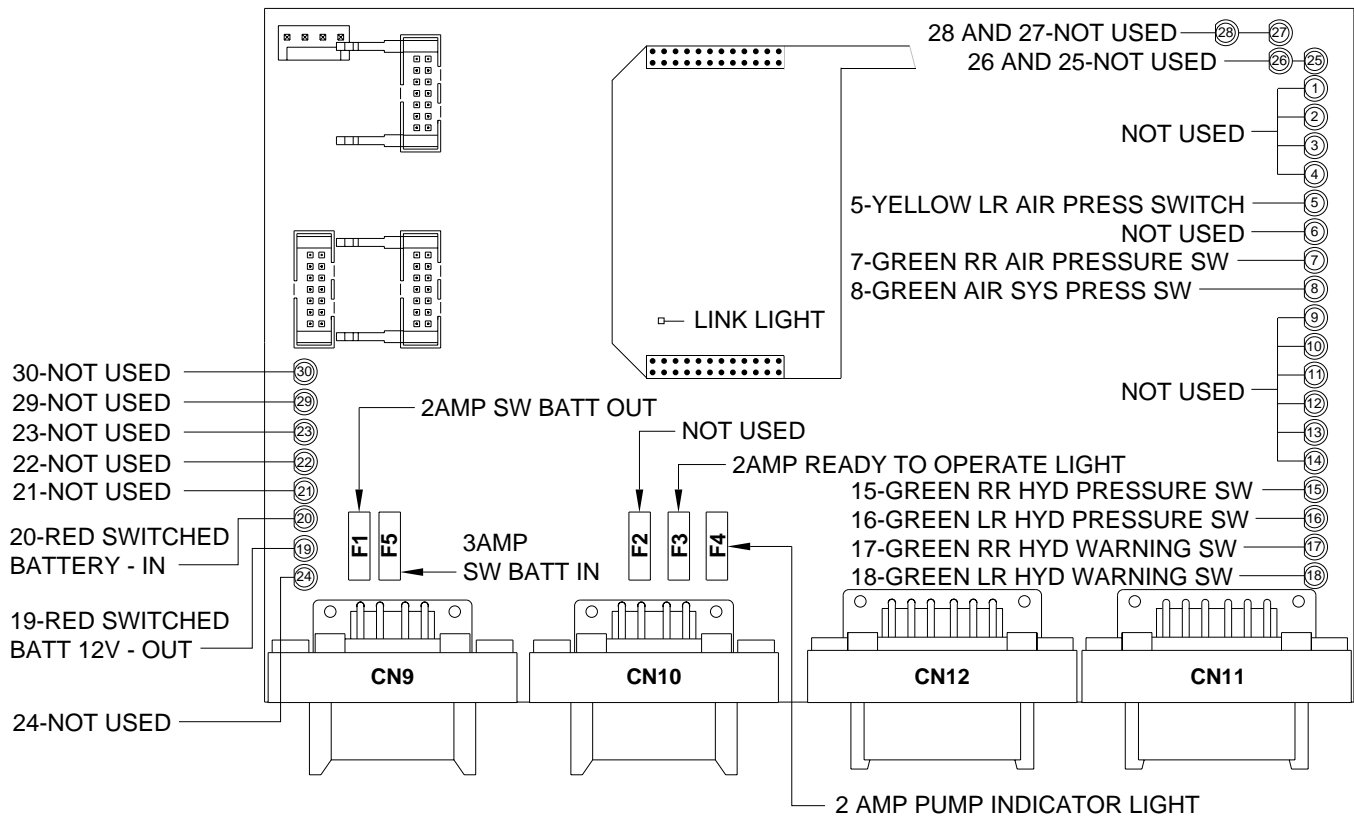
# ELECTRICAL CONNECTION DIAGRAM

## LED - FUSE LOCATION AND DESCRIPTION

### REAR AIR / HYDRAULIC PRESSURE AND WARNING SWITCH MODULE

#### PAGE 1 OF 2

#### REAR AIR - HYD I/O BOARD

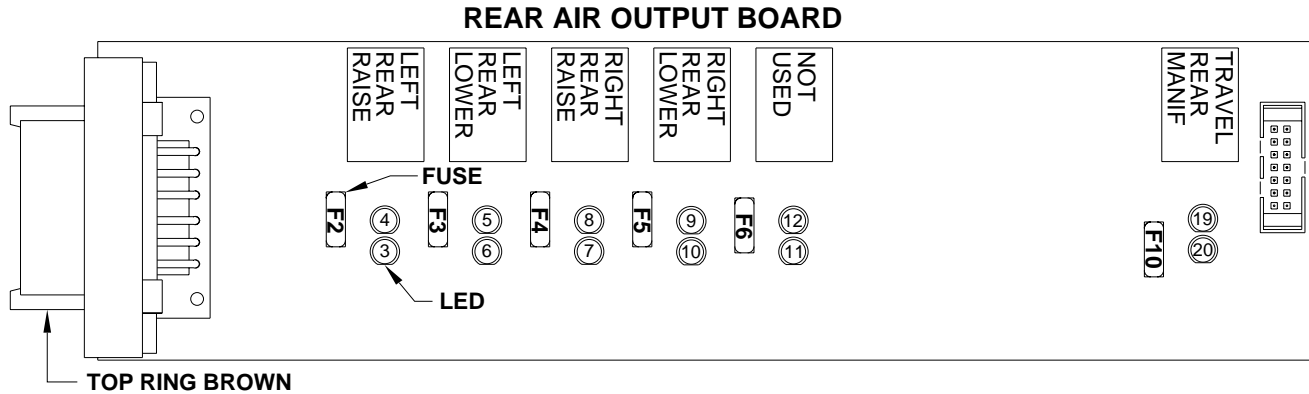


LED	DESCRIPTION	CN AND PIN	FUSE DESCRIPTION
1 THRU 4	NOT USED	NOT USED	F1 - 2AMP SW BATTERY OUT
5-YELLOW	LEFT REAR AIR PRESS SW	CN 11 - PIN 2	F2 - 2AMP NOT USED
6	NOT USED	NOT USED	F3 - 2AMP READY TO OPERATE LIGHT
7-GREEN	RIGHT FRONT AIR PRESS SW	CN 11 - PIN 3	F4 - 2AMP PUMP INDICATOR LIGHT
8-GREEN	AIR SYSTEM PRESS SW	CN 12 - PIN 3	F5 - 3AMP SWITCHED BATTERY IN
9 THRU 14	NOT USED	NOT USED	
15-GREEN	RIGHT REAR HYD PRESS SW	CN 11 - PIN 4	
16-GREEN	LEFT REAR HYD PRESS SW	CN 12 - PIN 4	
17-GREEN	RIGHT REAR HYD WARN SW	CN 11 - PIN 9	
18-GREEN	LEFT REAR HYD WARN SW	CN 12 - PIN 9	
19-RED	12 VOLT OUTPUT	CN 11/CN12 - PIN 7	
20-RED	SWITCHED BATTERY	CN 9 - PIN 3	
21 THRU 30	NOT USED	NOT USED	
LINK LIGHT	BOARD COMMUNICATION		

**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - REAR AIR / HYDRAULIC PRESSURE AND WARNING SWITCH MODULE CONNECTION INFORMATION - PAGE 1 OF 2.**



**ELECTRICAL CONNECTION DIAGRAM**  
**LED - FUSE LOCATION AND DESCRIPTION**  
**REAR AIR / HYDRAULIC PRESSURE AND WARNING SWITCH MODULE**  
**PAGE 2 OF 2**



LED	RELAY DESCRIPTION	FUSE	BLACK
3-RED	LEFT REAR RAISE - CONTACT	F2-5 AMP	PIN 2
4-YELLOW	LEFT REAR RAISE - COIL		
5-YELLOW	LEFT REAR LOWER - COIL		
6-RED	LEFT REAR LOWER - CONTACT	F3-5 AMP	PIN 3
7-RED	RIGHT REAR RAISE - CONTACT	F4-5 AMP	PIN 4
8-YELLOW	RIGHT REAR RAISE - COIL		
9-YELLOW	RIGHT REAR LOWER - COIL		
10-RED	RIGHT REAR LOWER - CONTACT	F5-5 AMP	PIN 5
11-RED	NOT USED	F6-5 AMP	PIN 6
12-YELLOW	NOT USED		
19-YELLOW	TRAVEL - REAR MANIFOLD - COIL		
20-RED	TRAVEL - REAR MANIFOLD - CONTACT	F10-3 AMP	PIN 8

**NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - REAR AIR / ROOM 2 MODULE CONNECTION INFORMATION - PAGE 2 OF 2.**

**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 CN1 PIN.**

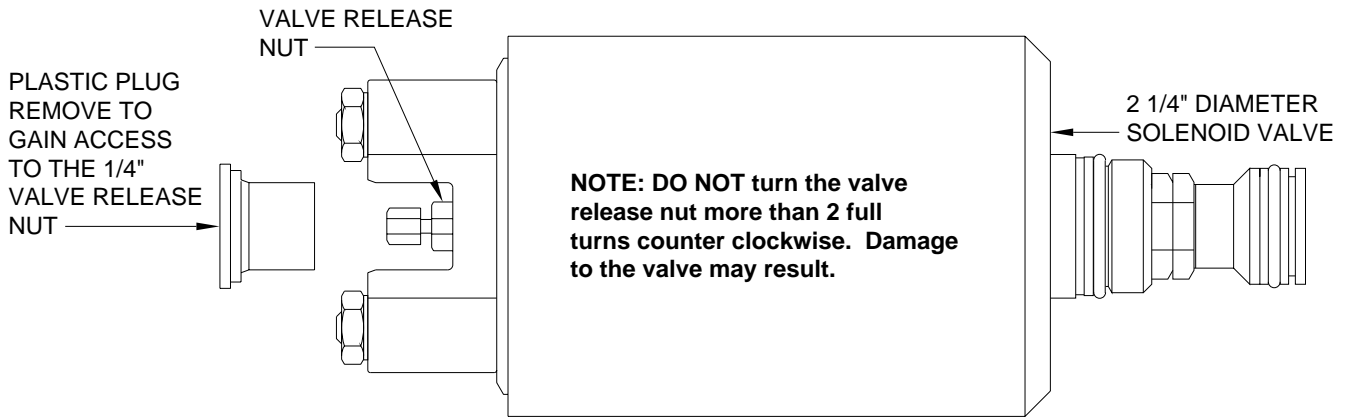
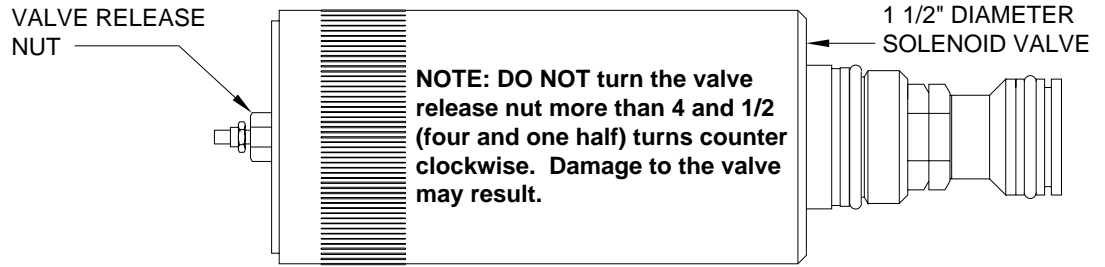
**IF A YELLOW LED IS LIT AND THE CORRESPONDING RED LED IS OFF, EITHER IT'S FUSE IS BLOWN OR THE RELAY IS BAD. \***

**\* NOTE: THE TWO TRAVEL RELAY IS WIRED AS NORMALLY CLOSED RELAYS. WHEN THE YELLOW LED (19) IS ON THE RELAY CONTACTS WILL OPEN. THE RED LED (20) WILL NOT BE ON. THE RED LED WILL BE ON IF THE LEVELING SYSTEM IS IN THE TRAVEL MODE AND THE IGNITION IS ON.**

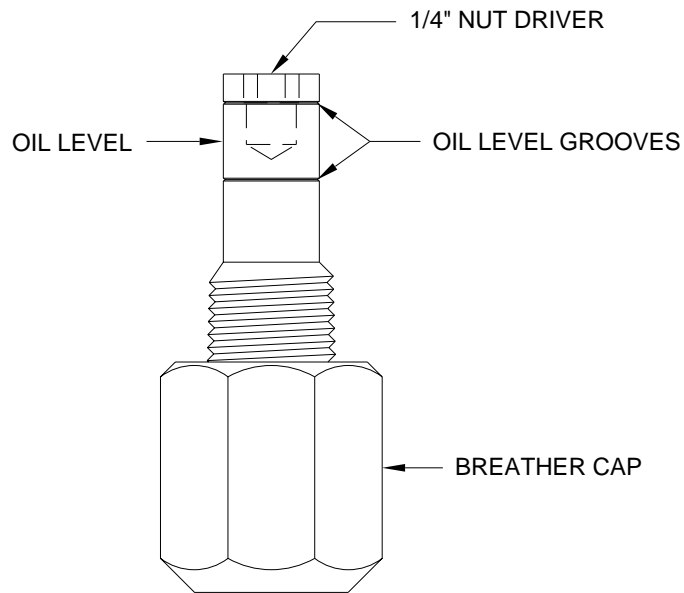
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**IF A YELLOW LED IS NOT LIT, THIS INDICATES A PROBLEM WITH A MODULE. \***

# 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.**