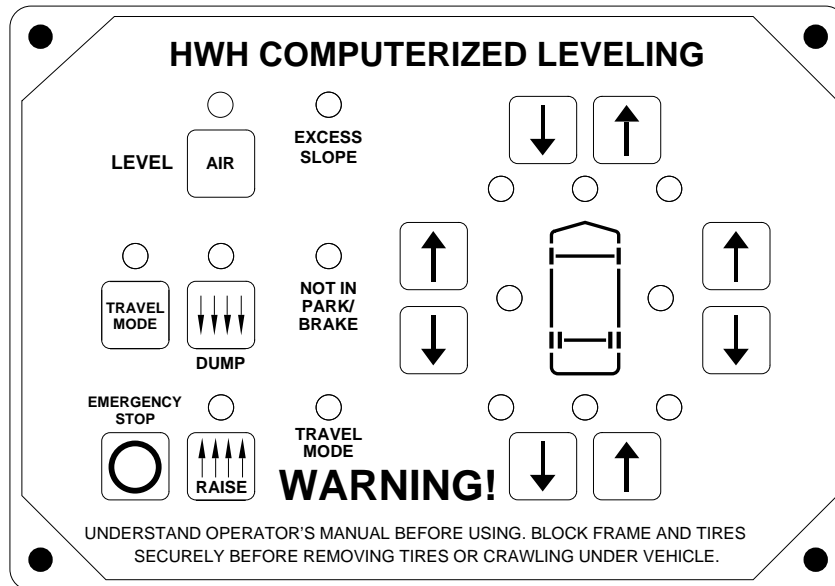




OPERATOR'S MANUAL

HWH® COMPUTER-CONTROLLED 2000 SERIES LEVELING SYSTEM

FEATURING:
*Single Step Touch Panel Control
Air Leveling*



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

WARNING !

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

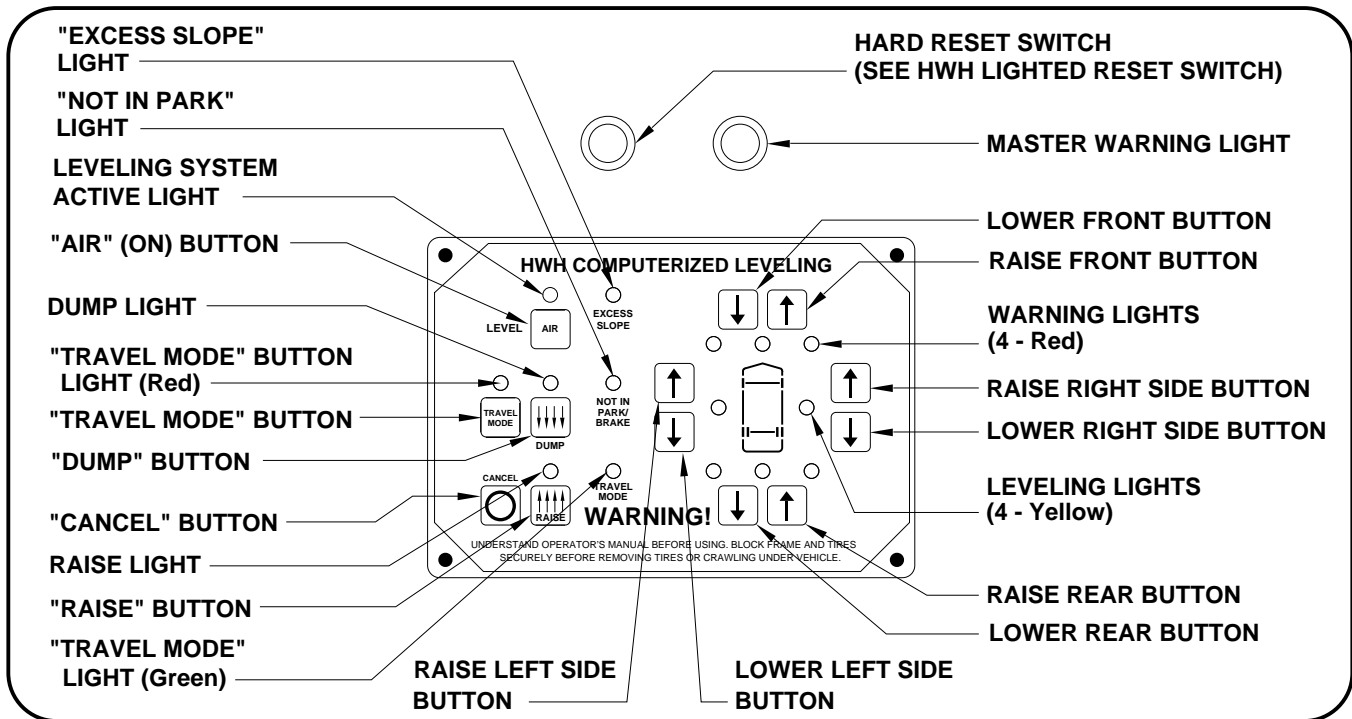
HWH CORPORATION strives to maintain the highest level of customer satisfaction. Therefore, if you discover a defect or problem, please do the following:

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

"AIR" BUTTON: This is the automatic operation button. It works if the ignition is in the "ON" position and the park brake is set.

"CANCEL" BUTTON: This button turns the system OFF but does NOT control power to the "DUMP" or "RAISE" buttons. Pushing this button will NOT put the system in the TRAVEL mode.

"TRAVEL MODE" BUTTON: This button will put the Leveling System in the TRAVEL mode. The ignition must be "ON" for the vehicle to return to proper ride height for traveling.

"DUMP" BUTTON: This button will lower the whole coach by dumping air from the suspension system.

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

IMPORTANT: Read "DUMP AND RAISE FUNCTIONS" before using the "DUMP" or "RAISE" buttons.

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

DOWN ARROWS (LOWER BUTTONS): These momentary buttons are used for manually operating the air leveling systems. Sides or ends of the vehicle will lower while these buttons are pushed.

INDICATOR LIGHTS

LEVEL SYSTEM ACTIVE LIGHT: ON when the system is active, and flashes during automatic leveling.

DUMP LIGHT: Flashes when "DUMP" button is pushed.

RAISE LIGHT: Flashes when "RAISE" button is pushed.

"EXCESS SLOPE" LIGHT: ON if the leveling system can NOT level the coach.

"TRAVEL MODE" BUTTON LIGHT (RED): Light flashes for 3 seconds after the "TRAVEL MODE" button is pushed.

"TRAVEL MODE" LIGHT (GREEN): ON if the ignition is in the "ON" position, the system is not being used, and there is sufficient air pressure in the suspension. See PREPARATION FOR TRAVEL.

WARNING LIGHTS: Function with the ignition in the "ON" position. ON when the LEVELING SYSTEM ACTIVE LIGHT is ON. See PREPARATION FOR TRAVEL.

LEVELING LIGHTS: One or two yellow lights can be on indicating the side, end or corner of the coach is low.

"NOT IN PARK/BRAKE" LIGHT: ON while the "AIR" button is being pushed if the Park Brake is NOT set. The light will go out when the "AIR" button is released.

MASTER WARNING LIGHT: ON any time the "TRAVEL" light is not ON, if the ignition is in the "ON" position.

OPERATING PROCEDURES

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 5 minutes after the ignition key has been turned "OFF". If the leveling system was turned "ON", the network will stay active for 5 minutes after automatic leveling is complete or the system goes "EXCESS SLOPE". If manual leveling buttons were used, the network stays active for 5 minutes after the last manual button is released.

GENERAL INSTRUCTIONS

Maintain adequate clearance in all directions for vehicles, room extensions, doors, steps, etc.. Vehicle may move in any direction due to raising or lowering of vehicle during leveling, settling of vehicle, equipment malfunction, etc..

The "DUMP" and "RAISE" buttons will function with the leveling system and park brake off, if the ignition is in the "ON" or "ACC" position or if the network is active. See AIR DUMP AND RAISE FUNCTIONS section of this manual.

The MASTER WARNING LIGHT will be on if an air bag has low pressure if the ignition is in the "ON" position.

If the Park Brake is not set, the Leveling System cannot be turned ON.

WARNING: DO NOT MOVE THE VEHICLE AT SPEEDS IN EXCESS OF 5 MPH IF THE MASTER WARNING LIGHT IS ON.

HWH LIGHTED RESET SWITCH

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

If the lighted reset switch 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.

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

WARNING: 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.

PREPARATION FOR TRAVEL

Visually check that the vehicle is at the proper ride height for traveling.

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

The ignition must be in the "ON" position for the vehicle suspension to be in the travel mode. Also the "TRAVEL MODE" button must be pushed or the park brake released for the suspension to be in the travel mode If the Leveling System was used.

Before traveling, the MASTER WARNING light must be off and the "TRAVEL MODE" light must be ON.

A lit "TRAVEL MODE" light indicates that the HWH Leveling System is in the TRAVEL MODE. It does not indicate that the suspension is at ride height or that the coach is ready to travel.

NOTE: Low air pressure can turn the green "TRAVEL MODE" light off and turn the MASTER WARNING light on.

Pushing the "TRAVEL MODE" button during an automatic leveling sequence will not put the suspension in the travel mode even if the ignition is on. It will stop the auto leveling sequence.

Refer to "DUMP" and "RAISE" FUNCTIONS operating procedures when moving the vehicle with the suspension NOT at the proper ride height.

OPERATING PROCEDURES

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 start the automatic leveling sequence. The LEVELING SYSTEM ACTIVE LIGHT will flash. 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. The system will first exhaust all air from the suspension air bags regardless of the status of the yellow level lights. After the air is exhausted from the air bags, if no yellow light is on, the system will go directly to the sleep mode. If yellow lights are on, the system will add air to air bags to raise the low side or end of the vehicle, starting with any lit side yellow light.

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

3. 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 any HWH room extension KEY SWITCHES are turned OFF, the CAN Network stays active for 5 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.

4. 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.

5. 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. The system will relevel the vehicle. 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 5 minutes after releveling the vehicle and then shut down, turning the touch panel lights OFF. This happens every time the system relevels the vehicle.

6. The SLEEP MODE will continue until the "CANCEL" button or the "TRAVEL MODE" button is pushed or the park brake is released, if the ignition is in the "ON" position.

NOTE: The "CANCEL" or "TRAVEL MODE" button will not turn the system off unless the network is active (LEVELING SYSTEM ACTIVE light pulsating dimly). If the ignition is on and the "TRAVEL MODE" button is pushed, the vehicle can return to ride height.

EXCESS SLOPE: The system will attempt to level the vehicle for approximately 30 minutes. After the 30 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.

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 "TRAVEL MODE" button is pushed or the park brake is released. In either case, the ignition key must be in the "ON" position.

OPERATING PROCEDURES

MANUAL AIR OPERATION

1. Place the transmission in the proper position for parking and set the park brake. The manual raise and lower buttons can only be used if the ignition is in the "ON" or "ACC" 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: The RAISE and LOWER buttons will not function if the system is in automatic leveling or the SLEEP mode. Push the "CANCEL" button with the ignition in the "ON" or "ACC" position to use the manual RAISE and LOWER buttons.

2. The vehicle can 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.

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

4. 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 "CANCEL" 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.

WARNING: 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.

The ignition must be in the "ON" or "ACC" position to use the "DUMP" or "RAISE" buttons.

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: When the "RAISE" button is pushed, the raise feature will latch in and remain on. The vehicle will raise to the maximum capability of the suspension and stay in that position.

When the "DUMP" button is pushed, the dump feature will latch in and stay on. The vehicle will lower until the suspension air bags are completely empty and stay in that position.

To stop a Dump or Raise function when the park brake is set:

A. Push the "CANCEL" button or turn the ignition off. the vehicle will stop raising or lowering and stay in that position.

B. Push the "TRAVEL MODE" button. The vehicle will stop raising or lowering and start to return to ride height.

To stop a DUMP or RAISE function if the park brake is NOT set:

A. If the vehicle is moving and the speed exceeds approximately 10 MPH, the system will return to the Travel Mode. The vehicle should return to ride height.

B. Push the "TRAVEL MODE" button or the "CANCEL" button. The system will immediately return to the "TRAVEL MODE". The vehicle should return to ride height.

C. Turn the ignition off. The vehicle will stop raising or lowering and stay in that position. **DO NOT turn the ignition off if the vehicle is moving.**

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 "CANCEL" button or "TRAVEL MODE" button is pushed; or the vehicle exceeds 10 MPH, putting the system in the TRAVEL MODE if the park brake is released.

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

INSTRUCTION SHEET

SENSING UNIT MAINTENANCE/SERVICE

SENSING UNIT ACCURACY TOLERANCE

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

SENSING UNIT ADJUSTMENT / WITHOUT ADJUSTING ENHANCEMENT SWITCH

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 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.

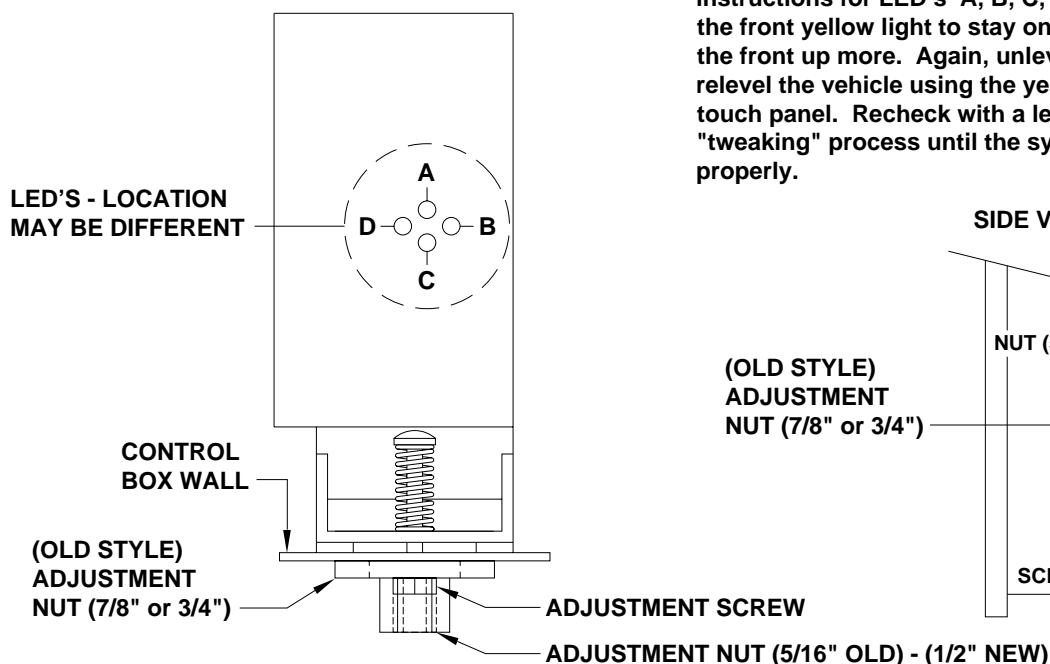
If LED (B) is lit: Turn the adjustment nut COUNTER CLOCKWISE until the LED is off.

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.

TOP VIEW - SENSING UNIT



INSTRUCTION SHEET

SENSING UNIT MAINTENANCE/SERVICE

SENSING UNIT ACCURACY TOLERANCE

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

SENSING UNIT ADJUSTMENT / WITH ADJUSTING ENHANCEMENT SWITCH

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 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 1/2", or 1/4" sizes will be needed.

The Sensing Unit is mounted inside the Control Box. The adjusting enhancement switch is on the same side of the control box as the sensing unit adjustment assembly.

The ignition (motorized units) or master power switch (towable units) must be on to adjust the sensing unit. Before adjusting the sensing unit, move the "adjusting enhancement switch" from the "NORMAL" (110) position to the "OVERRIDE" (220) position. This will make the sensing unit very sensitive. The LEDs on the sensing unit plate may "jump" around while adjusting the sensing unit. Allow the lights to settle down after each adjustment. Small, gentle movements will work best when moving the sensing unit adjustment nut or screw. When all four LEDs are off, move the enhancement switch back to the "NORMAL" (110) position.

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 lit LEDs on the sensing unit plate do not match the yellow level lights on the touch panel, the control box is not properly oriented. Contact HWH Corporation for assistance.

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

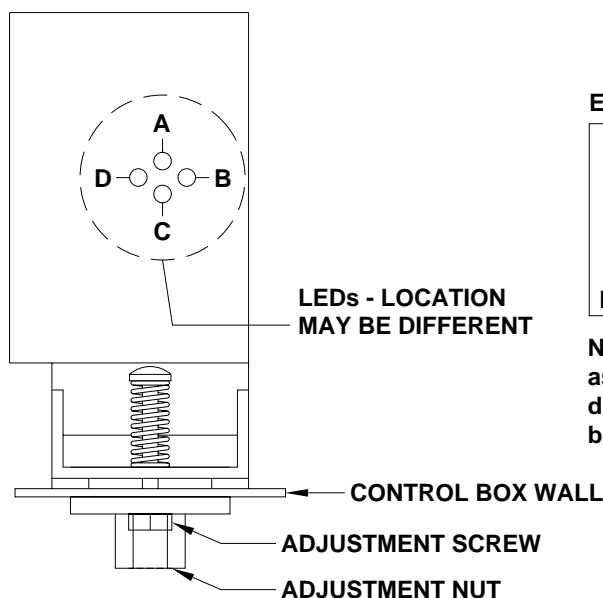
If LED (C) is lit: Turn the adjustment screw CLOCKWISE until the LED is off.

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

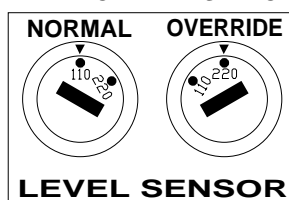
If LED (D) is lit: Turn the adjustment nut CLOCKWISE until the LED is off.

When the adjustment is complete, move the vehicle to an out of level position and level the vehicle according to the yellow level lights on the touch panel. If necessary, go through the adjustment procedure again.

TOP VIEW - SENSING UNIT

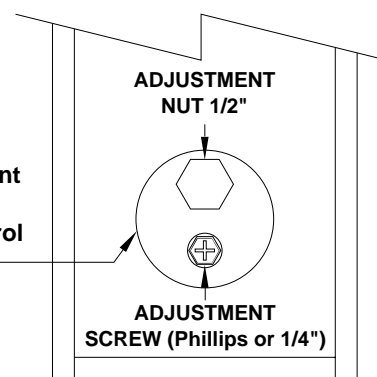


ADJUSTING ENHANCEMENT SWITCH



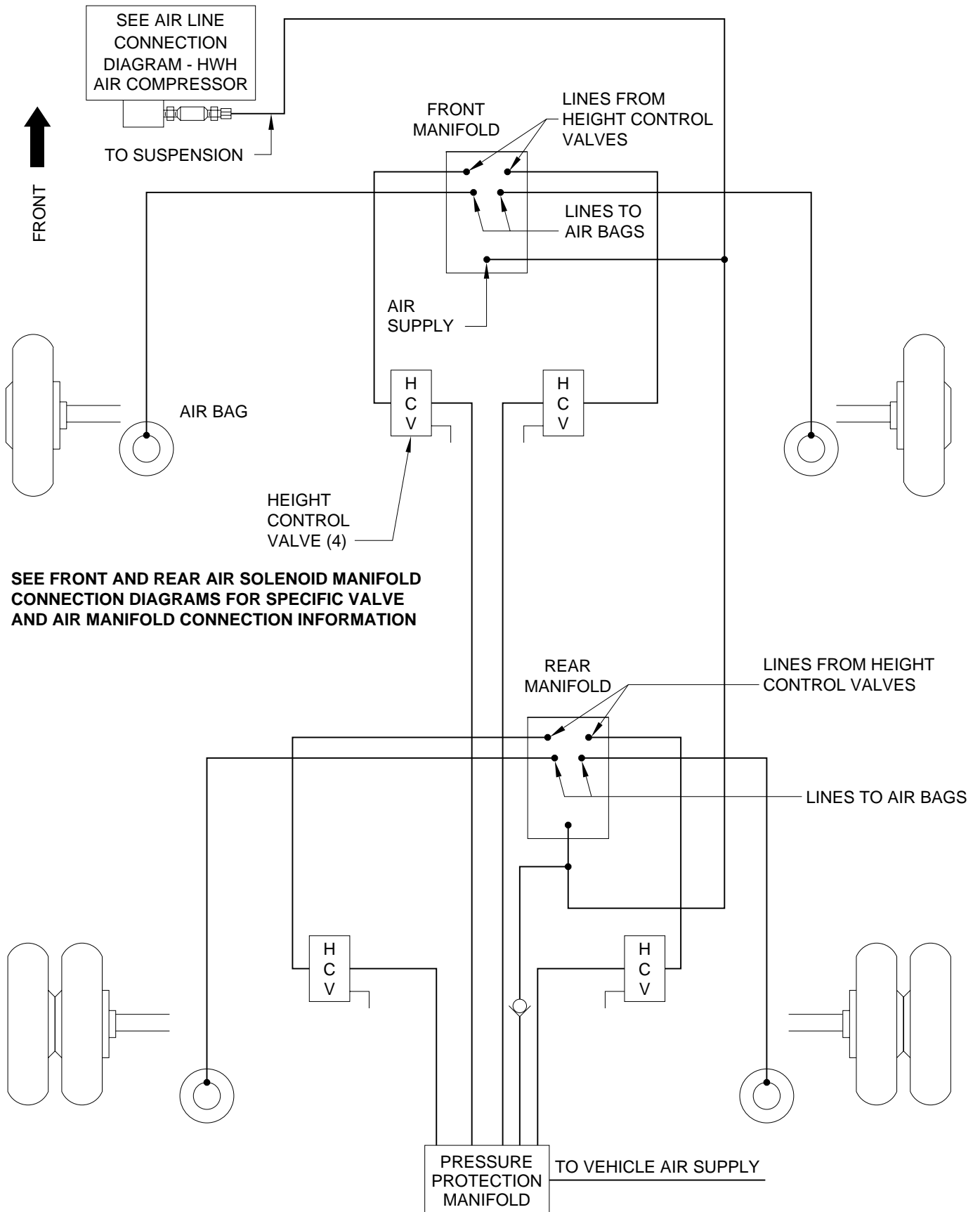
NOTE: Sensing unit adjustment assembly may be in a different position due to control box style or orientation.

SIDE VIEW - CONTROL BOX



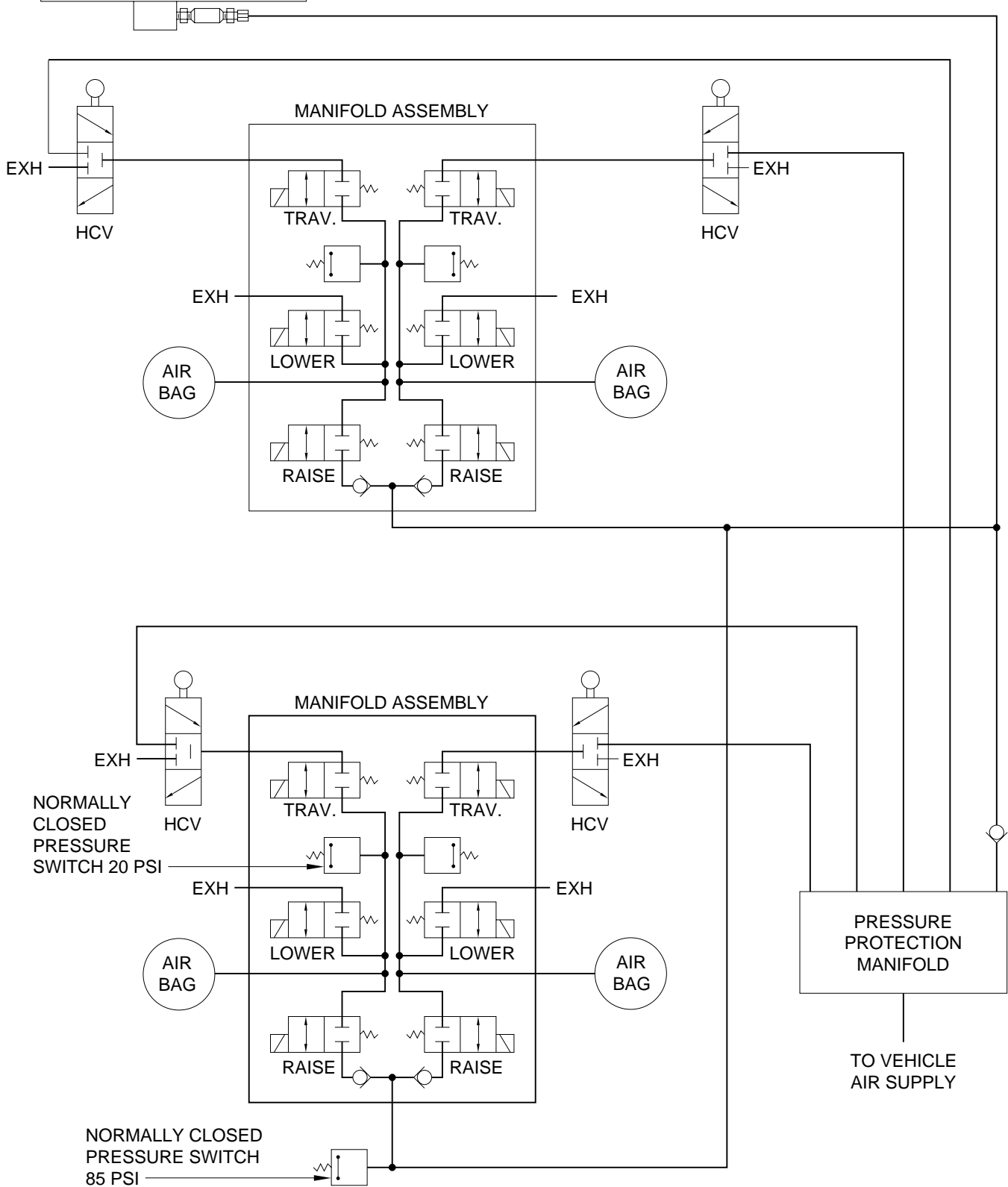
AIR LINE CONNECTION DIAGRAM

4 - POINT AIR LEVELING SYSTEM

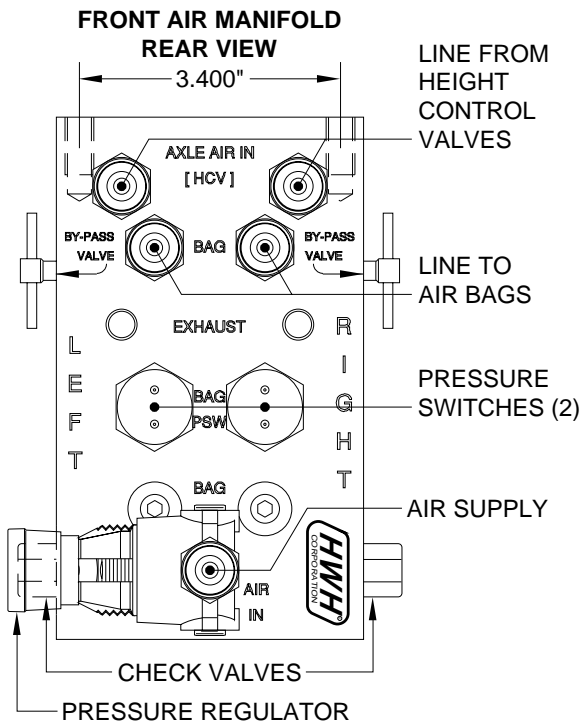


AIR LINE CONNECTION DIAGRAM 4-POINT LEVELING SYSTEM SCHEMATIC PRESSURE SWITCHES FRONT AND REAR

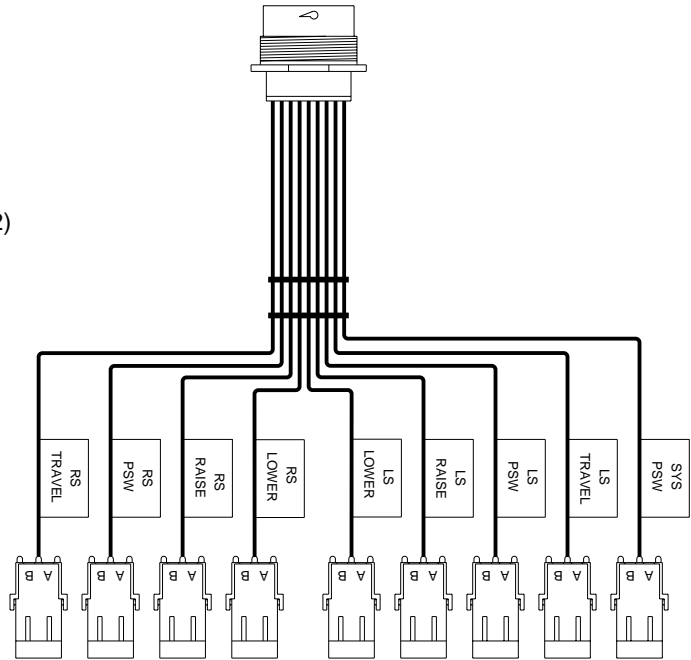
SEE AIR LINE CONNECTION
DIAGRAM - HWH AIR
COMPRESSOR SCHEMATIC



AIR SOLENOID MANIFOLD 6 VALVE WITH TWO PRESSURE SWITCHES AND BY-PASS VALVES



NOTE: SOLENOID VALVES AND AIR LINE CONNECTIONS ARE LABELED.



IMPORTANT: LEFT AND RIGHT CONNECTIONS MUST BE MAINTAINED AS SHOWN. GROUND SUPPLY WIRES FOR AIR PRESSURE SWITCHES AND AIR SOLENOID VALVES CANNOT BE INTERCHANGED.

MOUNTING HOLES

LINE FROM HEIGHT CONTROL VALVE (MAY BE TEED TOGETHER IF ONE HCV IS USED)

LINE TO AIR BAGS (2 LEFT AND RIGHT)

EXHAUST PORTS (2 LEFT AND RIGHT)

PRESSURE SWITCH 20 PSI (2 LEFT AND RIGHT)

AIR SUPPLY

PRESSURE REGULATOR

RIGHT SIDE VIEW

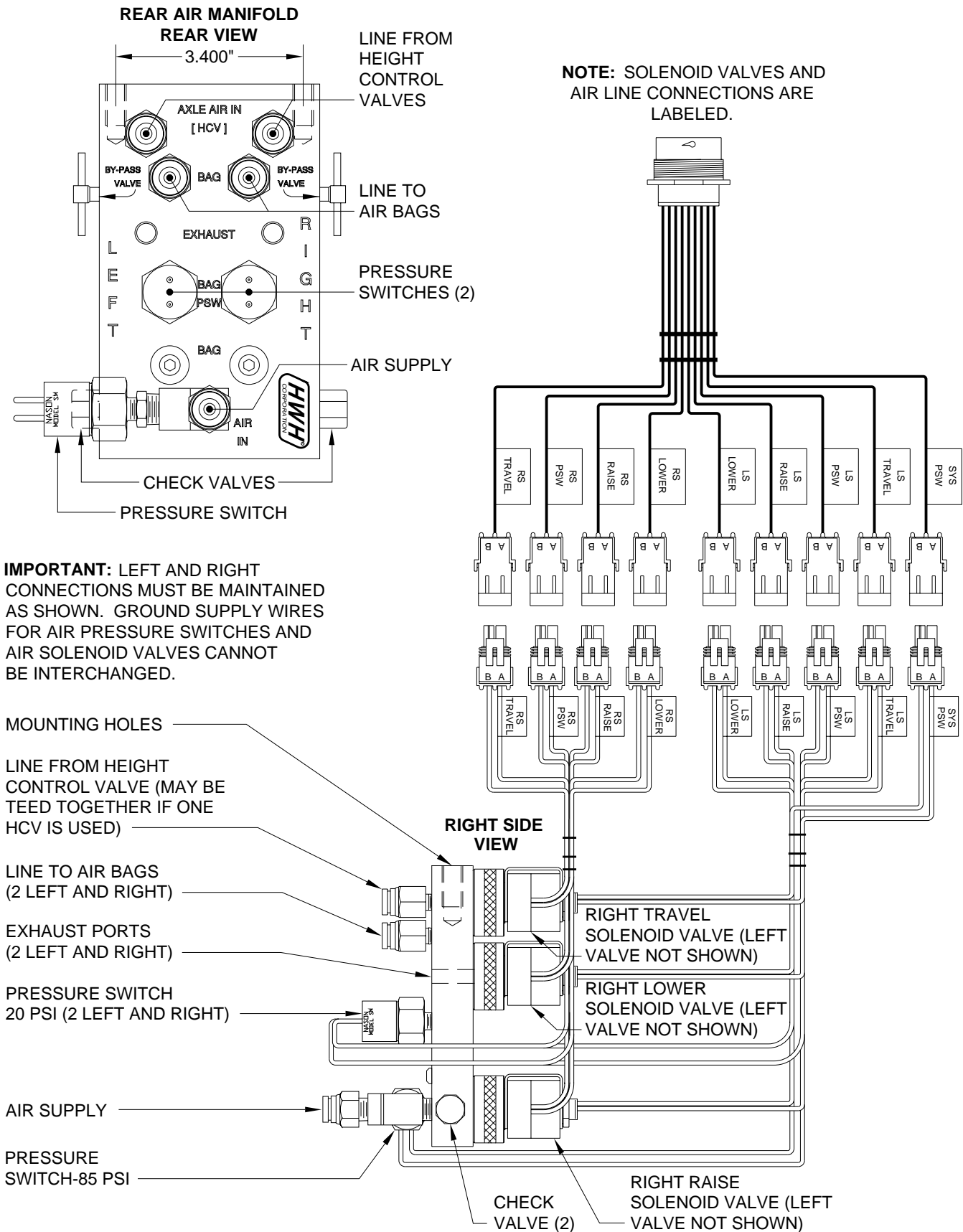
RIGHT TRAVEL SOLENOID VALVE (LEFT VALVE NOT SHOWN)

RIGHT LOWER SOLENOID VALVE (LEFT VALVE NOT SHOWN)

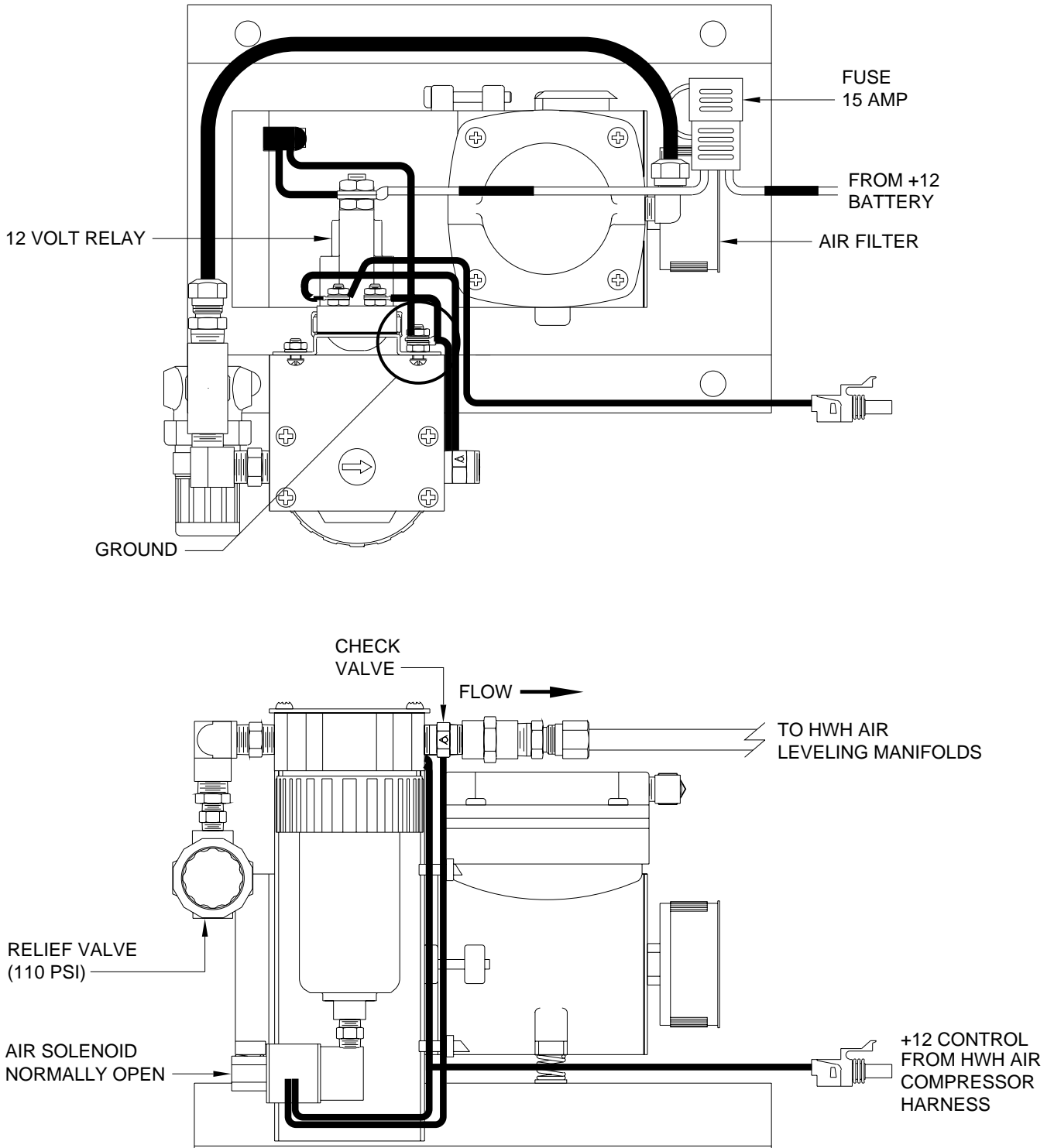
RIGHT RAISE SOLENOID VALVE (LEFT VALVE NOT SHOWN)

CHECK VALVE (2)

AIR SOLENOID MANIFOLD 6 VALVE WITH THREE PRESSURE SWITCHES AND BY-PASS VALVES

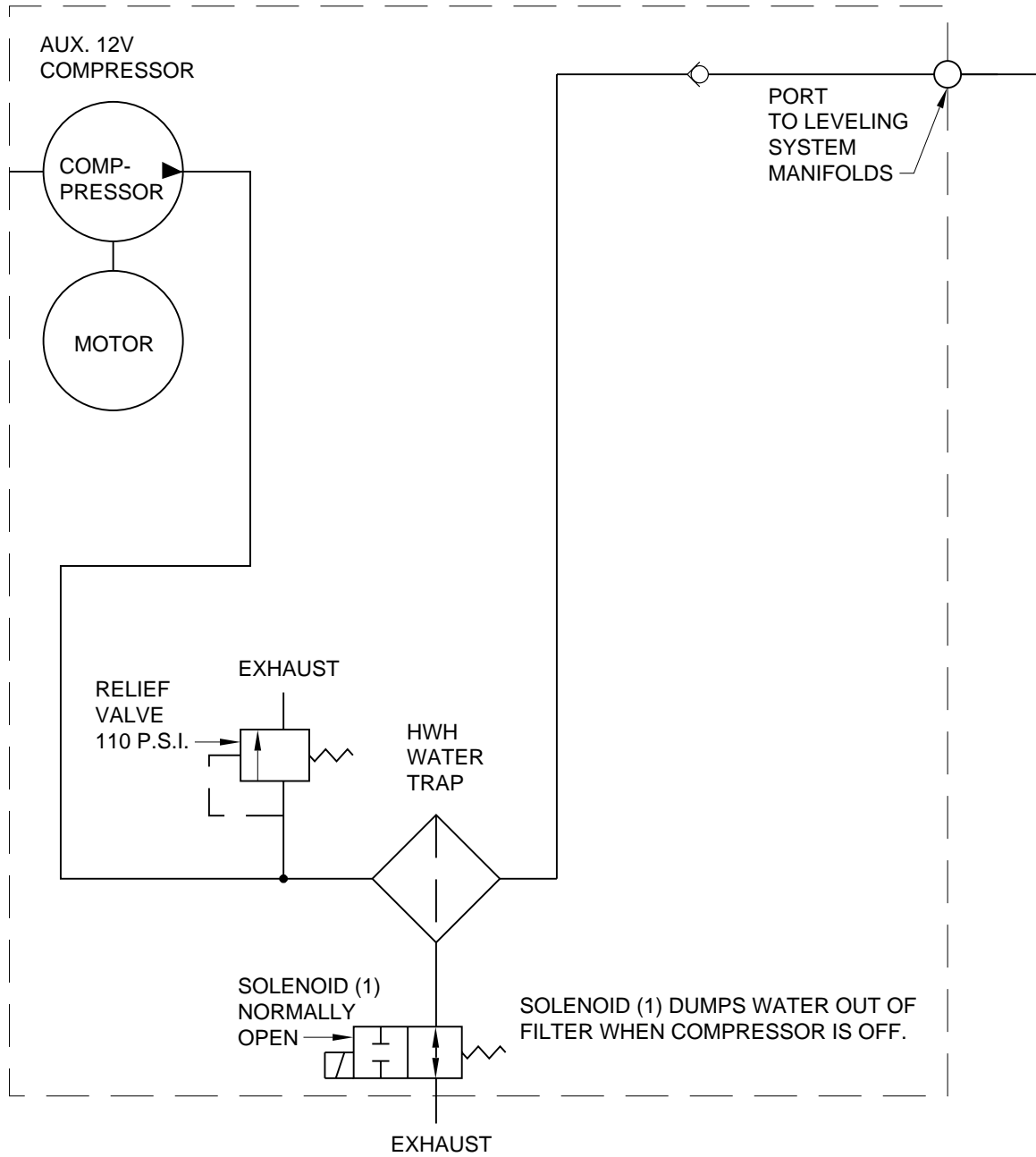


AIR LINE CONNECTION DIAGRAM HWH AIR COMPRESSOR



AIR LINE CONNECTION DIAGRAM

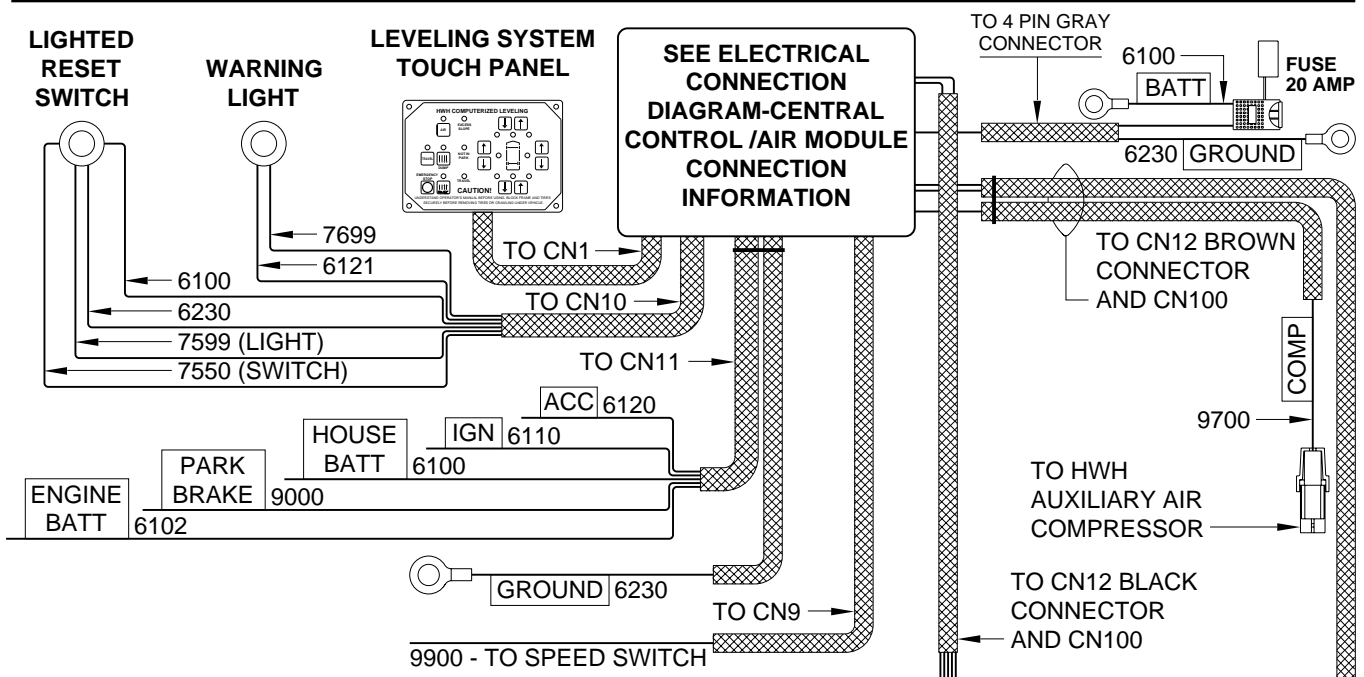
HWH AIR COMPRESSOR SCHEMATIC



ELECTRICAL CONNECTION DIAGRAM

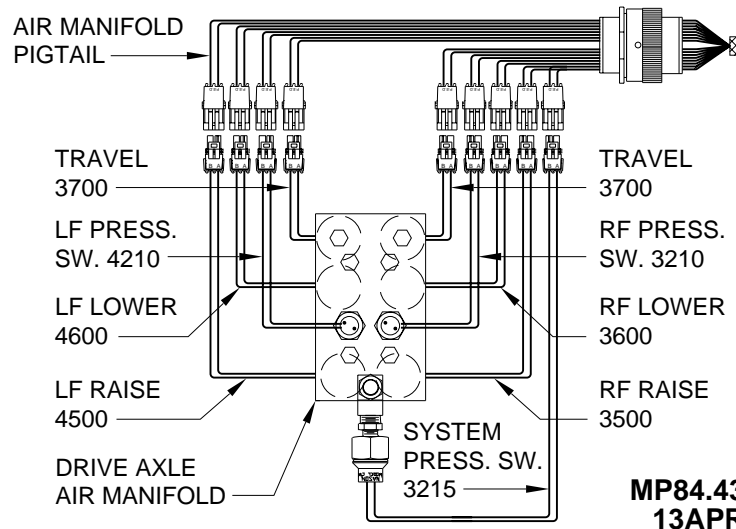
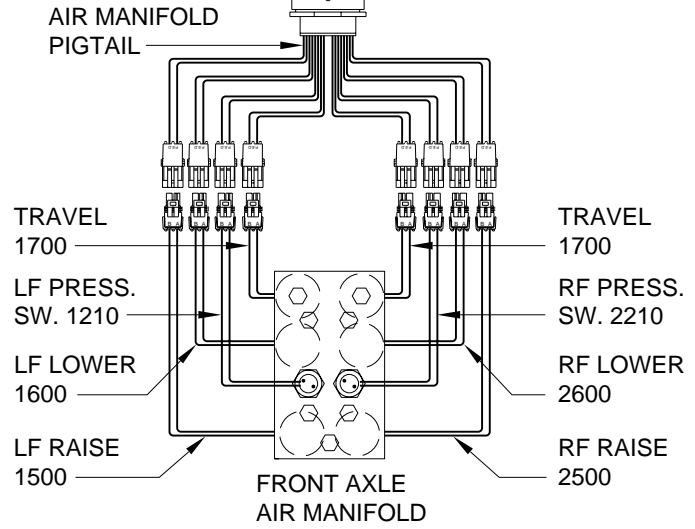
2000 SERIES CAN SYSTEM AIR LEVELING

HARNESS ROUTING



NOTE: THERE IS A DIODE IN WIRE 6102. WIRE 6102 WILL BE WIRE 6101 IN THE PLUG AT THE BOX.

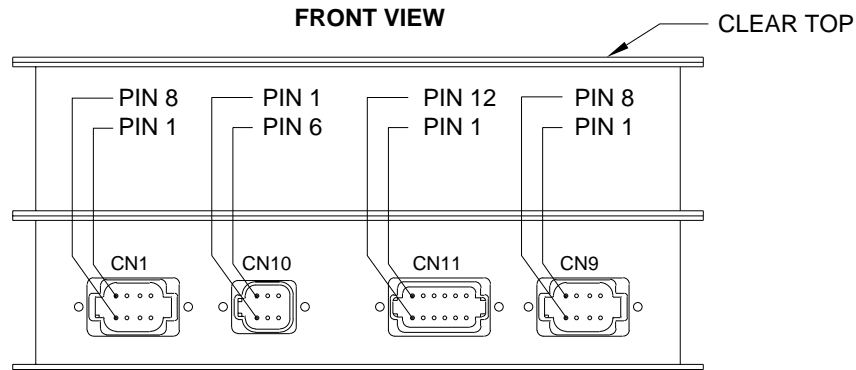
SEE ELECTRICAL CONNECTION DIAGRAMS FRONT AND REAR AIR MANIFOLD PIGTAIL AND VALVE CONNECTIONS FOR SPECIFIC VALVE AND PIGTAIL CONNECTION INFORMATION



ELECTRICAL CONNECTION DIAGRAM

CENTRAL CONTROL / AIR MODULE

WIRE AND CONNECTION INFORMATION - PAGE 1 OF 5

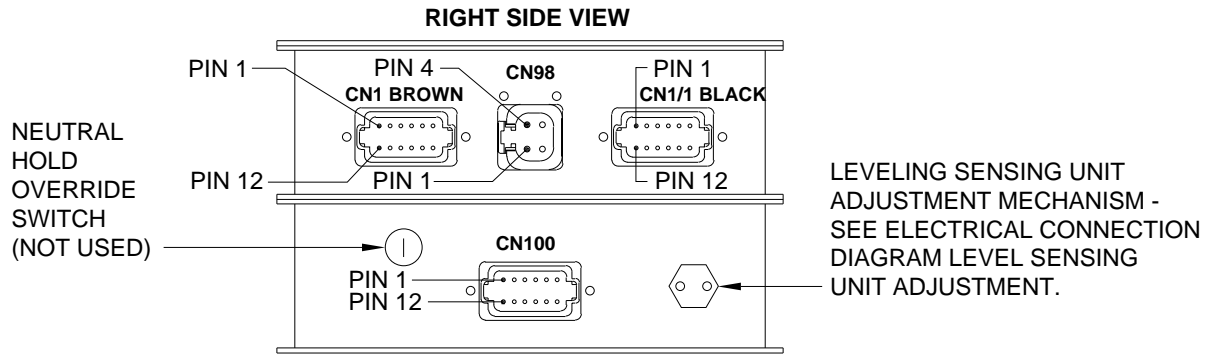


PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1			8 PIN BLACK CONNECTOR
1	-	-	NO CONNECTION
2	-	-	NO CONNECTION
3	RED	6800	+12 SWITCHED BATTERY TO TOUCH PANEL
4	WHITE	6230	GRND TO TOUCH PANEL
5	-	-	SHIELD WIRE FOR CAN CABLE
6	-	-	NO CONNECTION
7	GREEN	-	CAN DATA LINE LOW-DO NOT MODIFY
8	YELLOW	-	CAN DATA LINE HIGH-DO NOT MODIFY
CN10			6 PIN GRAY CONNECTOR
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 SUPPLY +12
5	WHITE	6230	RESET SWITCH LIGHT GROUND
6	BLACK	7699	WARNING LIGHT CONTROL - SWITCHED GROUND
CN11			12 PIN GRAY CONNECTOR
1	RED	6110	SWITCHED +12 FROM IGNITION
2	-	-	NO CONNECTION
3	-	-	NO CONNECTION
4	-	-	NO CONNECTION
5	RED	6120	SWITCHED +12 FROM ACCESSORY
6	RED	6100	HOUSE BATTERY +12
7	WHITE	6230	GROUND FOR PROCESSOR
8	-	-	NO CONNECTION
9	-	-	NO CONNECTION
10	-	-	NO CONNECTION
11	BLACK	9000	FROM PARK BRAKE SWITCH - SWITCHED GROUND
12	RED	6101	ENGINE BATTERY +12 (6102 IN OTHER CONNECTOR)
CN9			8 PIN GREEN CONNECTOR
1 THRU 4	-	-	NO CONNECTION
5	BLACK	9900	SPEED SW. +12 BELOW SPEED - OPEN ABOVE SPEED
6 THRU 8	-	-	NO CONNECTION

ELECTRICAL CONNECTION DIAGRAM

CENTRAL CONTROL / AIR MODULE

WIRE AND CONNECTION INFORMATION - PAGE 2 OF 5

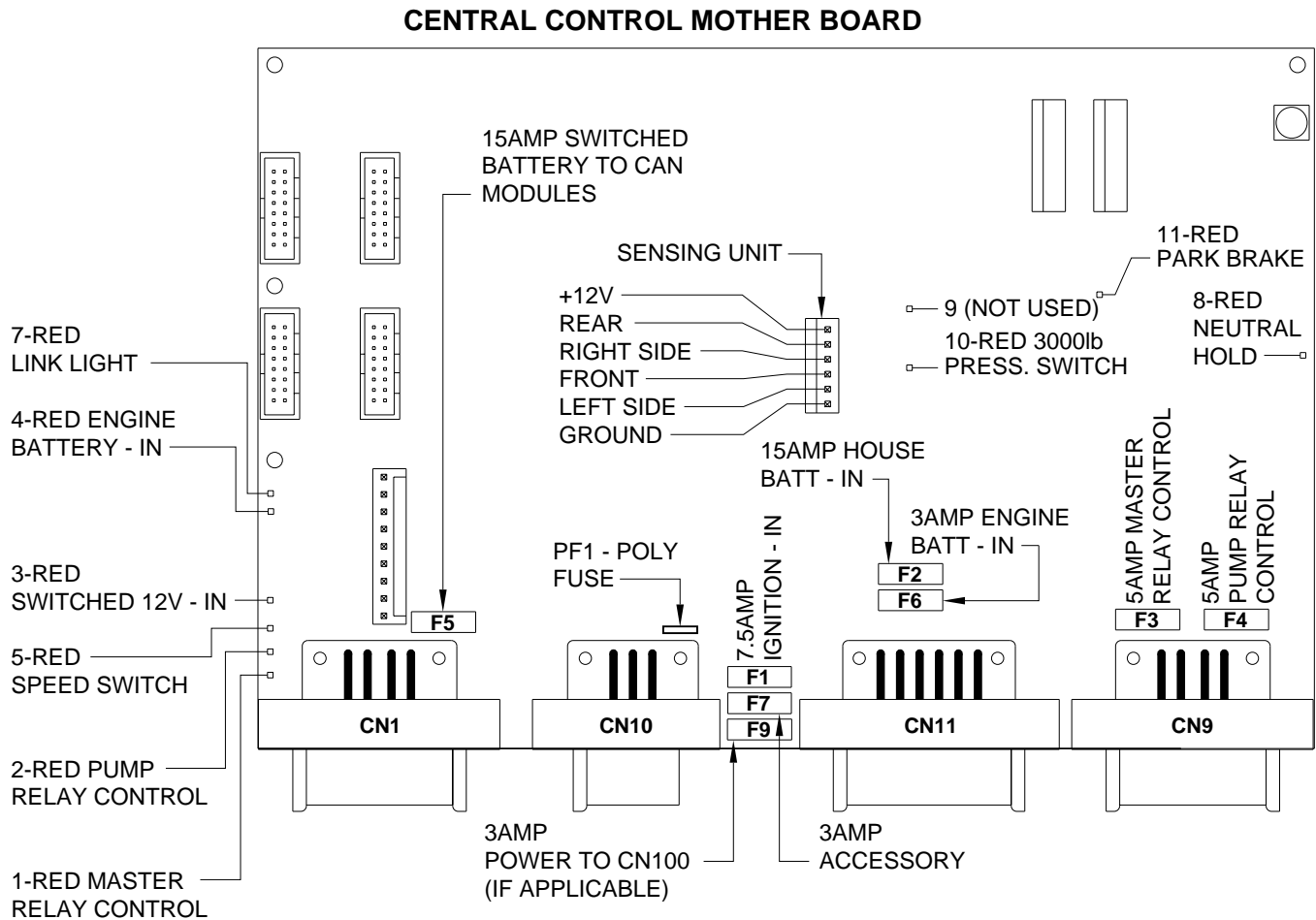


PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
CN1 (BROWN)			12 PIN BROWN CONNECTOR
1			NO CONNECTION
2	BLACK	1500	LEFT FRONT RAISE AIR VALVE CONTROL - SWITCHED +12
3	BLACK	1600	LEFT FRONT LOWER AIR VALVE CONTROL - SWITCHED +12
4	BLACK	2500	RIGHT FRONT RAISE AIR VALVE CONTROL - SWITCHED +12
5	BLACK	2600	RIGHT FRONT LOWER AIR VALVE CONTROL - SWITCHED +12
6	BLACK	9700	AUXILARY 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
CN98			4 PIN GRAY CONNECTOR
1	RED	6100	+12 BATTERY
2	RED	6100	+12 BATTERY
3	WHITE	6230	GROUND FOR SOLENOID VALVES
4	WHITE	6230	GROUND FOR SOLENOID VALVES
CN1/1 (BLACK)			12 PIN BLACK CONNECTOR
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 & 7			NO CONNECTION
8	BLACK	3700	REAR AIR MANIFOLD TRAVEL VALVES CONTROL - SWITCHED +12
9 & 10			NO CONNECTION
11	WHITE	6258	GROUND SUPPLY FOR REAR SOLENOID VALVES
12			NO CONNECTION
CN100 (GRAY)			12 PIN GRAY CONNECTOR
1			NO CONNECTION
2	BLACK	1210	LEFT FRONT PRESSURE SWITCH INPUT - SWITCHED GROUND
3	BLACK	2210	RIGHT FRONT PRESSURE SWITCH INPUT - SWITCHED GROUND
4	BLACK	3210	RIGHT REAR PRESSURE SWITCH INPUT - SWITCHED GROUND
5	BLACK	4210	LEFT REAR PRESSURE SWITCH INPUT - SWITCHED GROUND
6	WHITE	6231	GROUND SUPPLY FOR ALL AIR MANIFOLD PRESSURE SWITCHES
7			NO CONNECTION
8	BLACK	3215	AIR SYSTEM PRESSURE SWITCH - SWITCHED GROUND
9 THRU 12			NO CONNECTION

ELECTRICAL CONNECTION DIAGRAM

CENTRAL CONTROL / AIR MODULE

LED - FUSE LOCATION AND DESCRIPTION - PAGE 3 OF 5



LED	DESCRIPTION	CN AND PIN	FUSE DESCRIPTION
1-RED	MASTER RELAY CONTROL (NOT USED)	CN 9 - PIN 1	PF1 - POLY FUSE - POWER TO MASTER WARNING LIGHT AND RESET SWITCH F1 - 7.5AMP IGNITION - IN F2 - 15AMP HOUSE BATTERY - IN F3 - 5AMP MASTER RELAY CONTROL F4 - 5AMP PUMP RELAY CONTROL F5 - 15AMP SWITCHED BATTERY - IN F6 - 3AMP RESET OUT F7 - 3AMP ACCESSORY - IN F9 - 3AMP POWER TO CN100 (IF APPLICABLE)
2-RED	PUMP RELAY CONTROL (NOT USED)	CN 9 - PIN 4	
3-RED	SWITCHED 12V FROM MASTER RELAY	CN 1 - PIN 3	
4-RED	ENGINE BATTERY - IN	CN 11 - PIN 12	
5-RED	SPEED SWITCH*	CN 9 - PIN 5	
7-RED	LINK LIGHT	CN 1 - PIN 7 & 8	
8-RED	NEUTRAL HOLD**	CN 11 - PIN 8 & 9	
9-NOT USED	NOT USED	NOT USED	
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 / AIR MODULE CONNECTION INFORMATION PAGE 1 OF 5.

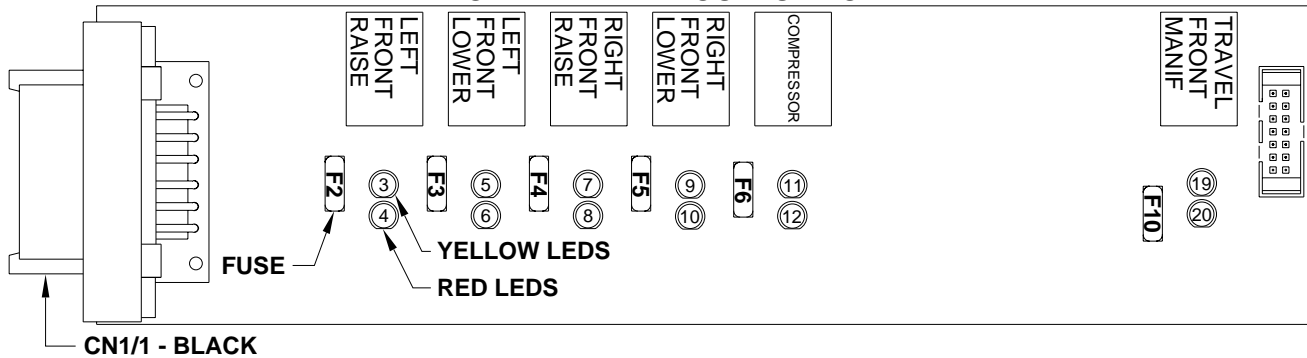
* LED 5 INDICATES A +12 SIGNAL FROM THE SPEED SWITCH - IGNITION ON COACH SPEED LESS THAN 10 MPH
 ** LED 8 INDICATES TRANSMISSION IS DISABLED WHEN LIT.

ELECTRICAL CONNECTION DIAGRAM

CENTRAL CONTROL / AIR MODULE

LED - FUSE LOCATION AND DESCRIPTION - PAGE 4 OF 5

FRONT AIR LEVEL OUTPUT BOARD



NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / AIR MODULE CONNECTION INFORMATION PAGE 2 OF 5.

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.

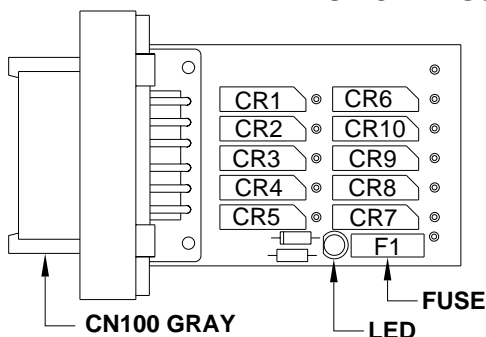
IF THE YELLOW LEDS ARE WORKING BUT NO RED LED IS COMING ON THERE IS A PROBLEM WITH INPUT VOLTAGE IN THE 4-PIN CONNECTOR ON THE MIDDLE RING.

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

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

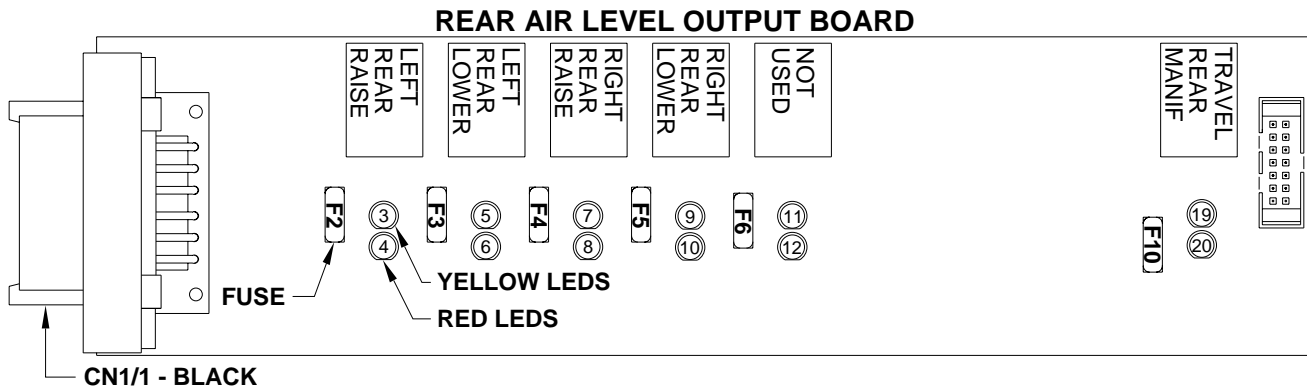
AIR PRESSURE SWITCH INPUTS - CN100 HYDRAULIC PRESSURE AND WARNING SWITCH INPUTS



NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / AIR MODULE CONNECTION INFORMATION - PAGE 2 OF 5.

READ SWITCH	DESCRIPTION
CR1 - PIN 1	NOT USED
CR2 - PIN 2	AIR LEFT FRONT PRESS SW
CR3 - PIN 3	AIR RIGHT FRONT PRESS SW
CR4 - PIN 4	AIR RIGHT REAR PRESS SW
CR5 - PIN 5	AIR LEFT REAR PRESS SW
CR6 - PIN 12	NOT USED
CR7 - PIN 8	SYSTEM PRESSURE SWITCH
CR8 - PIN 9	NOT USED
CR9 - PIN 10	NOT USED
CR10 - PIN 11	NOT USED
PIN 6	GROUND
PIN 7	NOT USED
FUSE - F1	3 AMP SWITCHED BATTERY
LED - RED	+12 POWER TO BOARD

ELECTRICAL CONNECTION DIAGRAM CENTRAL CONTROL / AIR MODULE LED - FUSE LOCATION AND DESCRIPTION - PAGE 5 OF 5



NOTE: FOR DETAILED INPUT / OUTPUT INFORMATION ABOUT PIN CONNECTIONS SEE ELECTRICAL CONNECTION DIAGRAM - CENTRAL CONTROL / AIR MODULE CONNECTION INFORMATION PAGE 2 OF 5.

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.

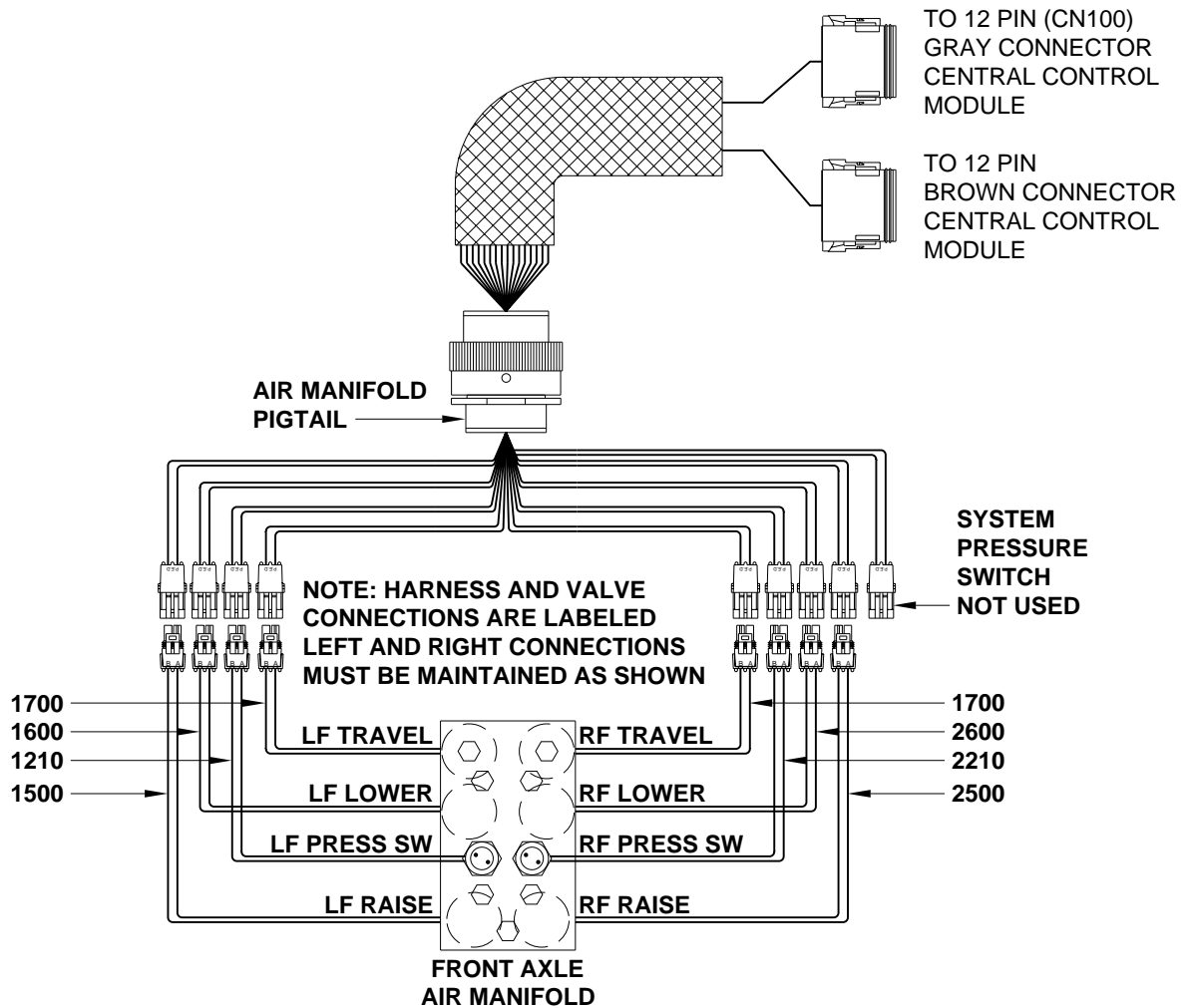
IF A YELLOW LED IS NOT LIT, THIS INDICATES A PROBLEM WITH A MODULE.

LED	RELAY DESCRIPTION	FUSE	BROWN
3-YELLOW	LEFT REAR RAISE		
4-RED	LEFT REAR RAISE	F2-5 AMP	PIN 2
5-YELLOW	LEFT REAR LOWER		
6-RED	LEFT REAR LOWER	F3-5 AMP	PIN 3
7-YELLOW	RIGHT REAR RAISE		
8-RED	RIGHT REAR RAISE	F4-5 AMP	PIN 4
9-YELLOW	RIGHT REAR LOWER		
10-RED	RIGHT REAR LOWER	F5-5 AMP	PIN 5
11-YELLOW	NOT USED		
12-RED	NOT USED	F6-5 AMP	PIN 6
19-YELLOW	TRAVEL - REAR MANIFOLD		
20-RED	TRAVEL - REAR MANIFOLD	F10-7.5 AMP	PIN 8

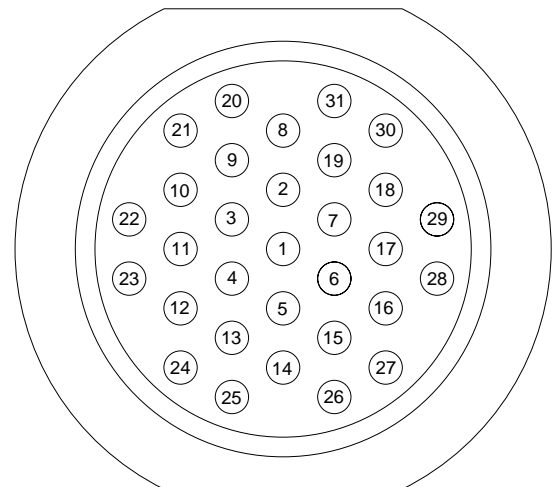
NOTE: THE TRAVEL RELAY IS WIRED AS A NORMALLY CLOSED RELAY. WHEN THE YELLOW LED (19) IS ON THE RELAY CONTACTS WILL OPEN. THE RED LED (20) WILL NOT BE ON. THE RED LED WILL BE ON IF THE LEVELING SYSTEM IS IN THE TRAVEL MODE AND THE IGNITION IS ON.

ELECTRICAL CONNECTION DIAGRAM

FRONT AIR MANIFOLD PIGTAIL AND VALVE CONNECTIONS

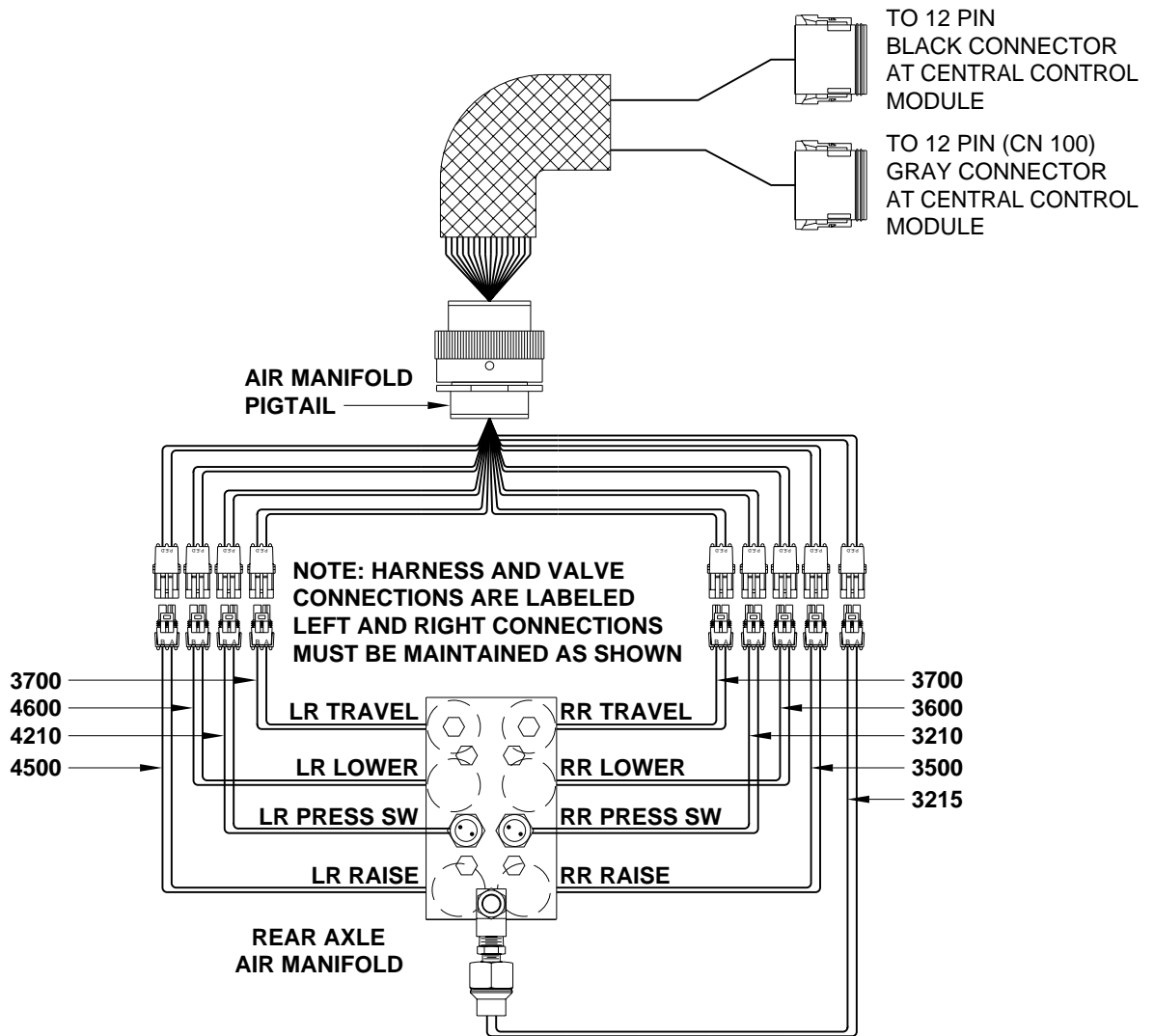


PIN	COLOR	DESCRIPTION
1	BLACK	TRAVEL - 1700 SW +12
2	WHITE	GROUND - 6254
3	BLACK	RIGHT SIDE PRESSURE SWITCH - 2210 SW GRND
4	WHITE	GROUND - 6230
5	BLACK	RIGHT SIDE RAISE - 2500 SW +12
6	WHITE	GROUND - 6254
7	BLACK	RIGHT SIDE LOWER - 2600 SW +12
8	WHITE	GROUND - 6254
9	BLACK	LEFT SIDE RAISE - 1500 SW +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

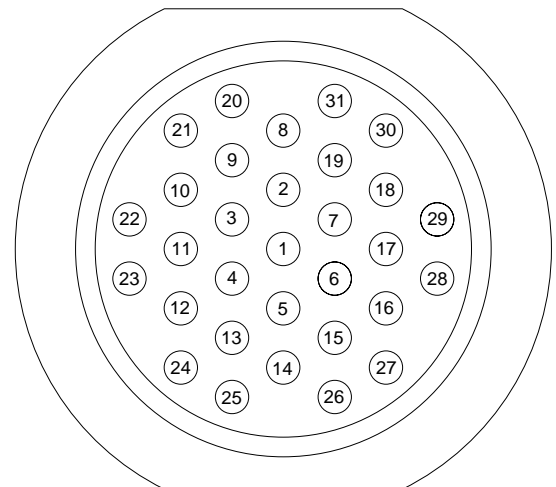


ELECTRICAL CONNECTION DIAGRAM

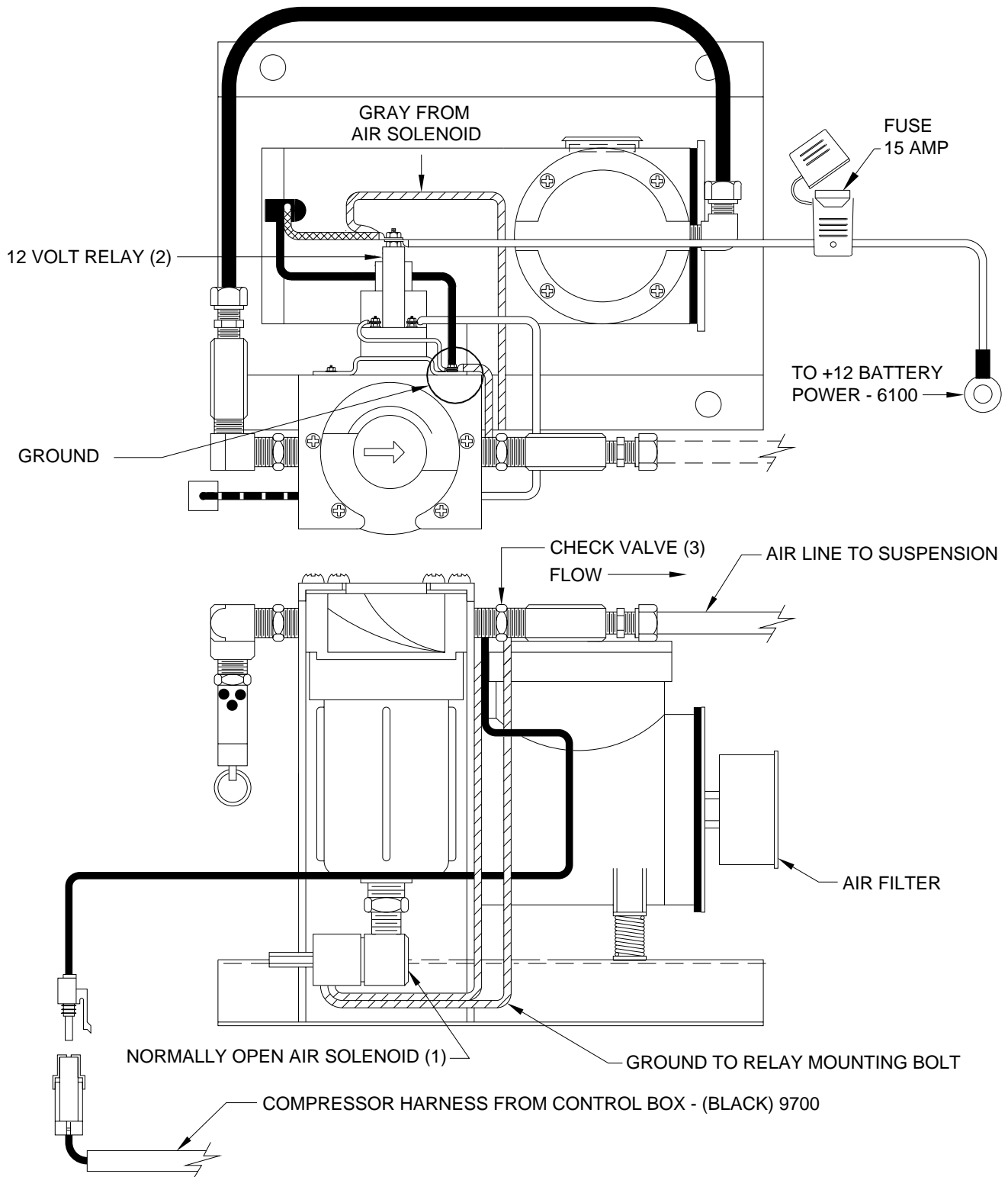
REAR AIR MANIFOLD PIGTAIL AND VALVE CONNECTIONS



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



COMPRESSOR DIAGRAM

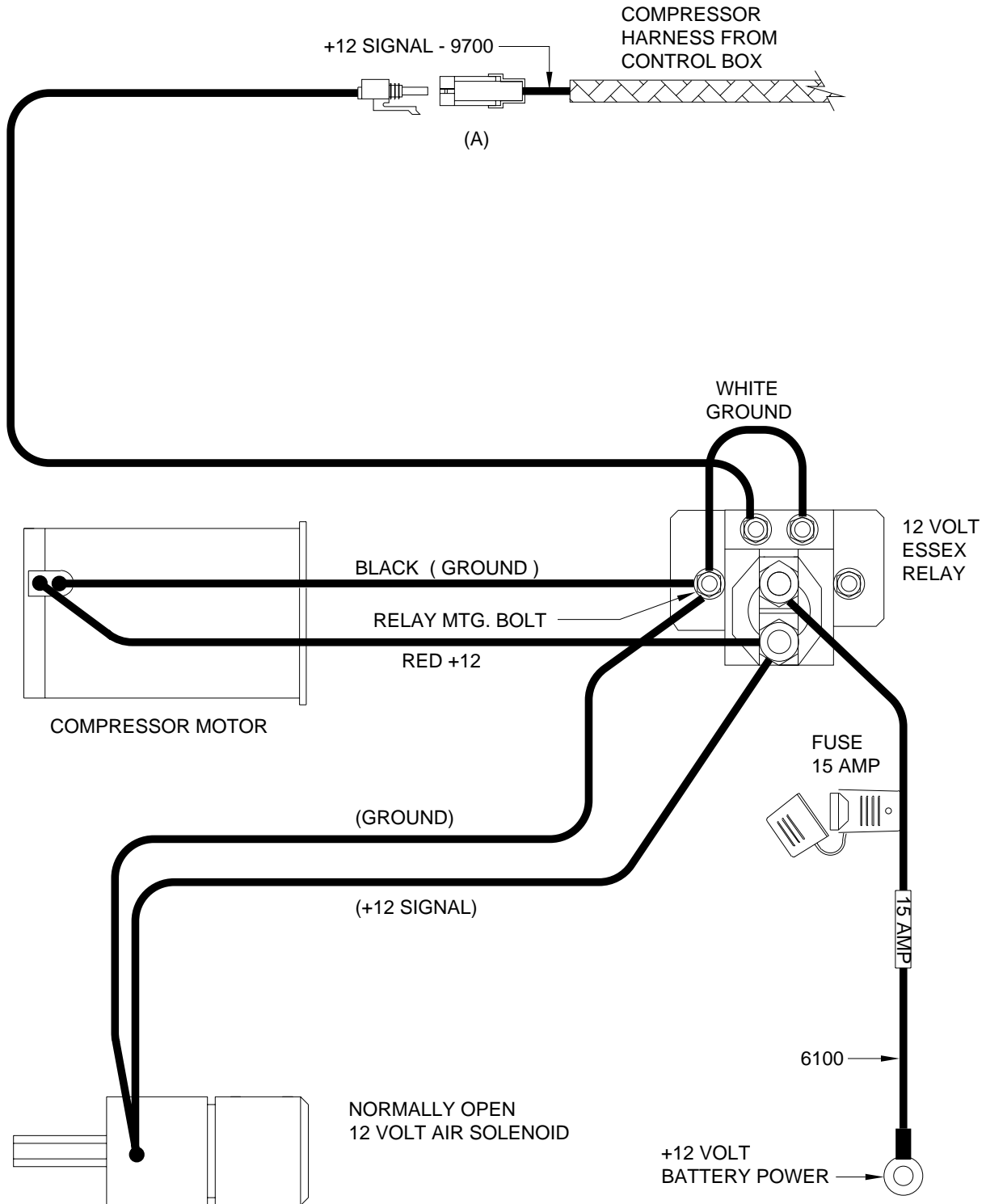


The control box sends a +12 signal to the normally open 12 volt relay. The 12 volt relay (2) will energize and the compressor will run. The normally open air solenoid (1) will close allowing the compressor to build pressure.

The normally open air solenoid (1) will open any time the compressor is not running, allowing internal pressure & moisture to bleed off. The check valve (3) will keep the suspension air from bleeding back to the compressor.

ELECTRICAL CONNECTION DIAGRAM

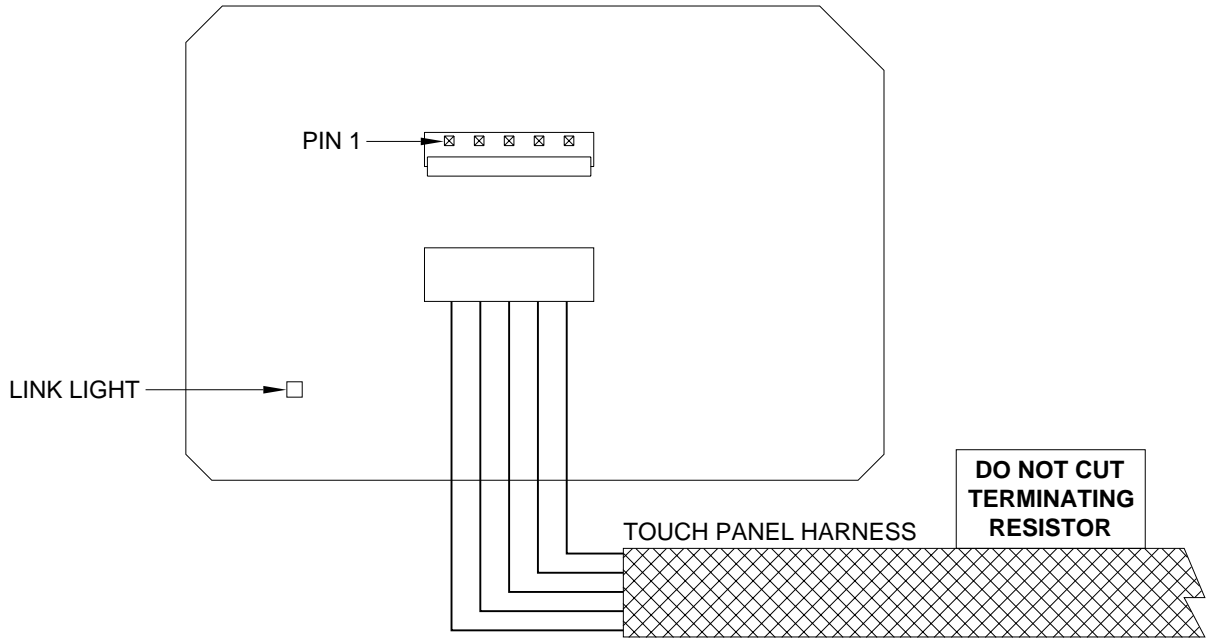
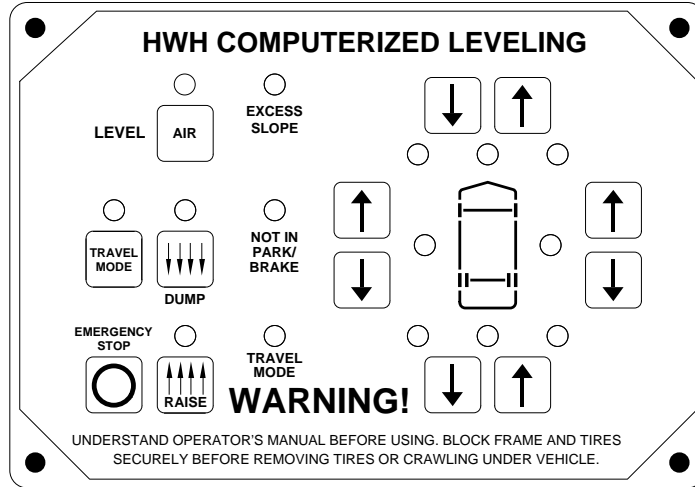
AIR COMPRESSOR



ELECTRICAL CONNECTION DIAGRAM

2000 SERIES AIR / HYDRAULIC LEVELING SYSTEM

TOUCH PANEL CONNECTIONS



NOTE: THERE IS A 120OHM TERMINATING RESISTOR AT EACH END OF THE TOUCH PANEL HARNESS. DO NOT REMOVE, CUT OR MODIFY THE HARNESS.

PIN #	WIRE COLOR	WIRE NUMBER	WIRE DESCRIPTION AND FUNCTION
1	YELLOW		CAN HIGH
2	GREEN		CAN LOW
3			CAN SHIELD
4	WHITE	6230	GROUND FROM CONTROL MODULE
5	RED	6800	SWITCHED BATTERY FROM CONTROL MODULE