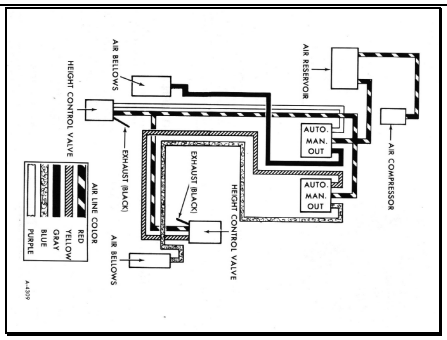
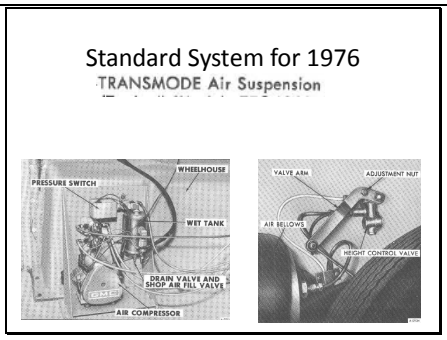
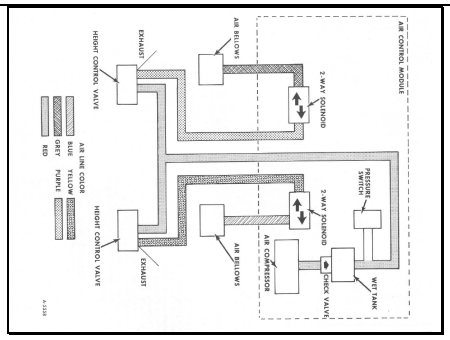
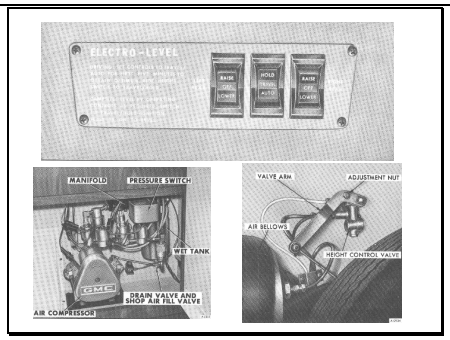
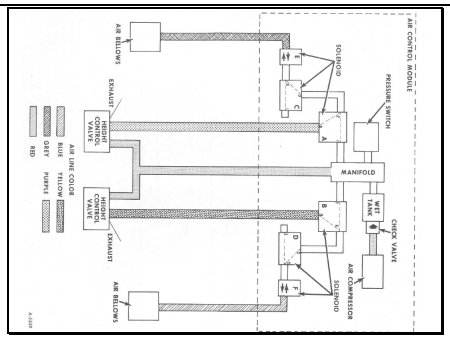
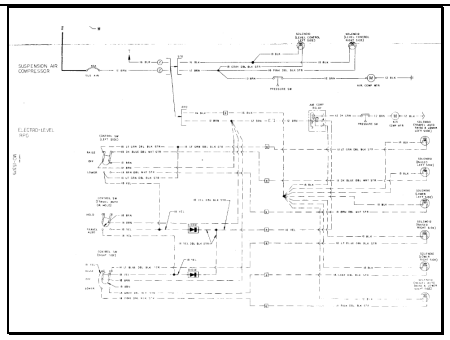
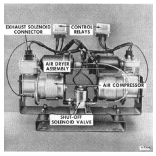
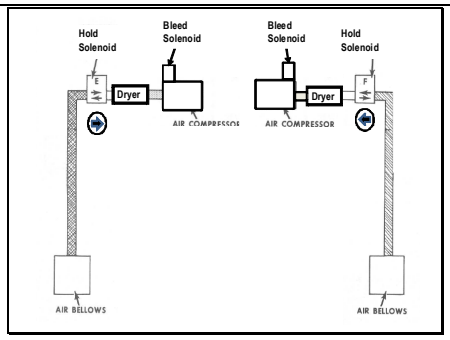
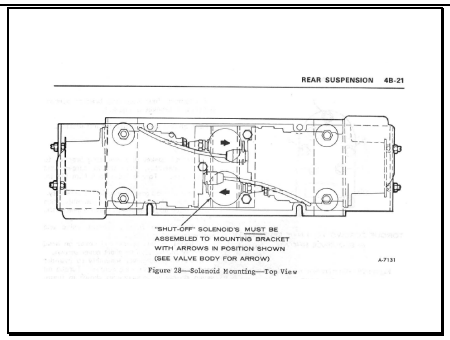
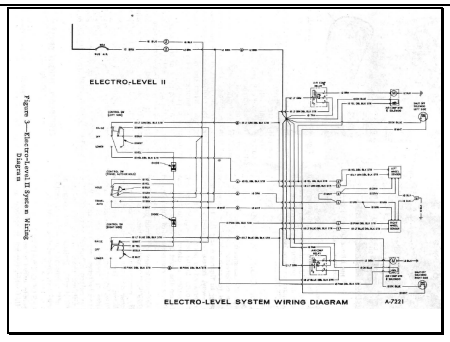
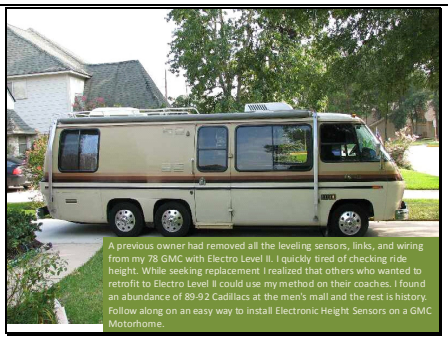
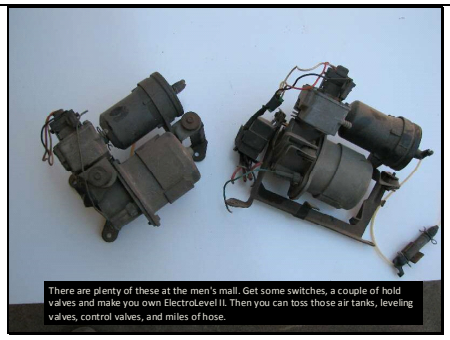
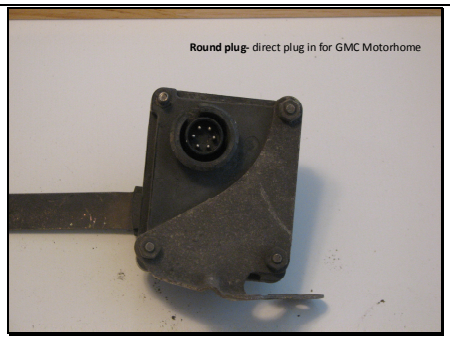
Slide 1		1st Generation Power Level Rotary Air Valves Hoses from front of coach to rear Air leveling valves Air Bags
Slide 2		Hoses from front to rear, back to front, back to rear. Lots of opportunity for potential leaks Wet air tank
Slide 3		Standard system- automatic height & Hold only, on transmodes only

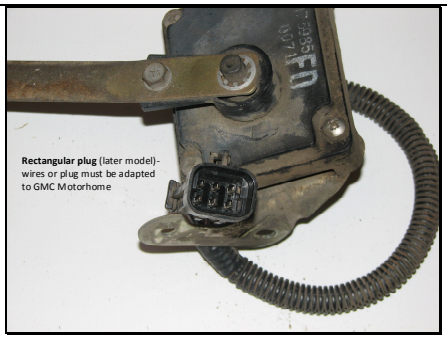
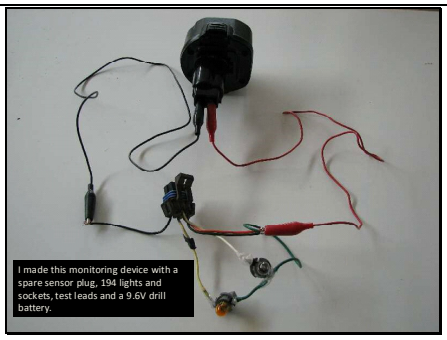
Slide 4		Automatic and hold only. No leveling capability. Wet Air Tank
Slide 5		Electro Level Electric switches for control panel 6 solenoid valves Compressor and Wet Air Tank leveling valves Eliminated the rotary valves
Slide 6		Compressor & All air hoses at the rear

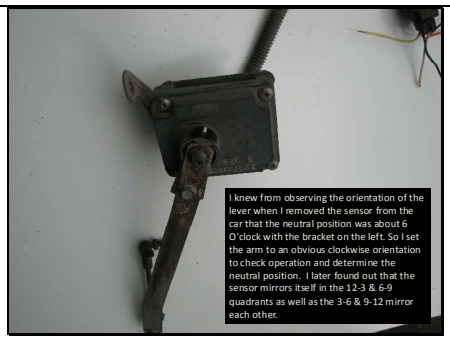
Slide 7		Wiring Diagram- 7 wires required from control panel to compressor & 6 valves in the rear.
Slide 8	  	Electro Level II Same switch control panel as Electro Level but wired differently Parts used on other GM vehicles Electronic Height Sensors 2 compressors- separate systems for each side of the coach Air Dryers- dry air system with no wet tank
Slide 9		**Air schematic of Electro Level II- Minimal hoses** from compressor to Air Bags **Dry air system-** dryer fills air bags with dry air. When air is bleed from system, the dry air dries the Dryer as it passes to the 'Bleed Solenoid' Clean system with no internal rust and corrosion Note the **arrow direction** on the 'Hold Solenoids'. I found that my air bag on the right side was leaking down. After much checking for leaks, and checking Dave Murmert's site I discovered that after 30 years the pressure was leaking though the

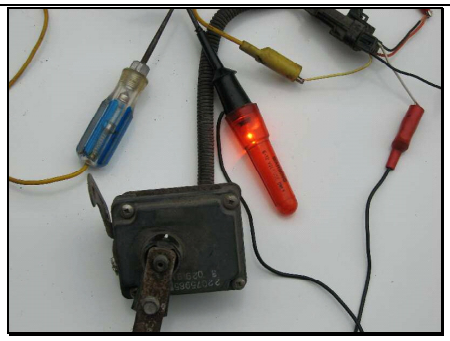
		'Hold Solenoid'. I ordered a new valve and turned the old one around while waiting for the new one to be delivered. No more leaking past the valve. So…. I am the proud owner of a new part that has never been installed.
Slide 10		In my opinion these arrow are 'WRONG'. They should point toward the normal lowest pressure. The internal spring must keep the valve closed if mounted in this orientation. Over the years they tend to leak. If mounted the opposite direction then the pressure keeps the valve closed.
Slide 11		**Electro Level II wiring diagram: Solenoids are switched by the negative** side of the circuit by both the switches and the electronic height sensors **6 wires required** from switch panel to compressors **Could probably rewire Electro Level to Electro Level II** and eliminate air height valves.

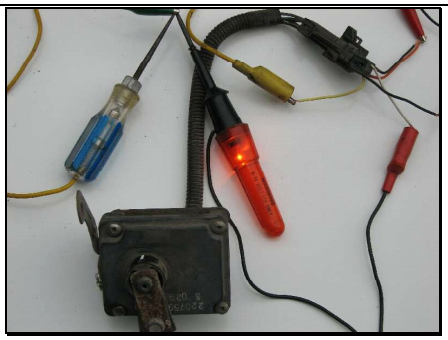
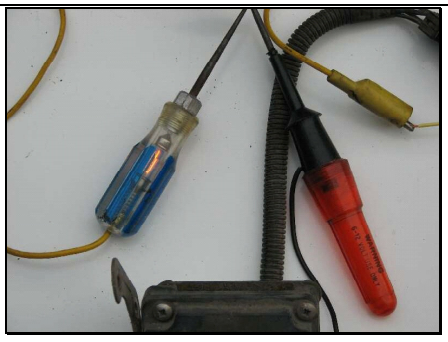
Slide 12	Electro level II Sensors	
Slide 13		Motorhome.
Slide 14		

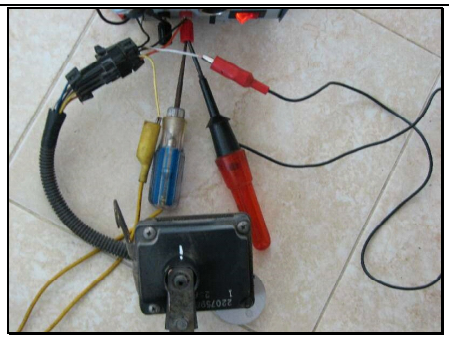
Slide 15		
Slide 16		Found on some 1989 and older autos.

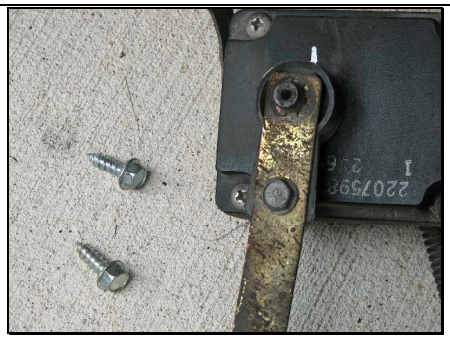
Slide 17		All Models 1990 up
Slide 18	Sensor Wiring • A- **Ground** (Black wire) • B- Output (Yellow wire) recommend for compressor- raise • C- Power (Orange/ Black stripe) • D- Power (Pink / Black stripe) • E- **Output** (White wire) recommend for Bleed valve- lower • F- **Unknown** (Dark Blue wire) no delay?	**Wire colors** seem to be consistent **Electronic circuit- *DO NOT SHORT*** or ***Reverse Polarity***
Slide 19		

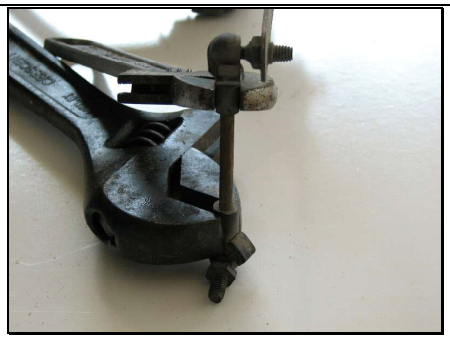
Slide 20		I knew from observing the orientation of the lever when I removed the sensor from the car that the neutral position was about 6 O'clock with the bracket on the left. So I set the arm to an obvious clockwise orientation to check operation and determine the neutral position. I later found out that the sensor 12,3,6,9 The same sensor can be used on either side because it will have the same switching if it is reversed and turned upside down. Or you can keep the same orientation and mount one on the front 'boggie' and mount the sensor on the other side of the coach on the rear 'boggie'.
Slide 21		**AVI movie** showing switching operation of sensor. ***From **neutral if the arm moves counterclockwise** the **air bleed switch** is activated after ~ 20 sec ***Moved clockwise to neutral** - switch goes **off** & **will stay off** until moved from the neutral position ***Moved **clockwise** the **air bleed switch** is activated after ~ 20 sec it only stays on for 3 seconds & goes off. Immediately the **compressor switch is activated** for ~ 5 min. and then goes off. If more time is needed then cycle the 'Travel Switch' or the ignition. This action could be **to purge the**

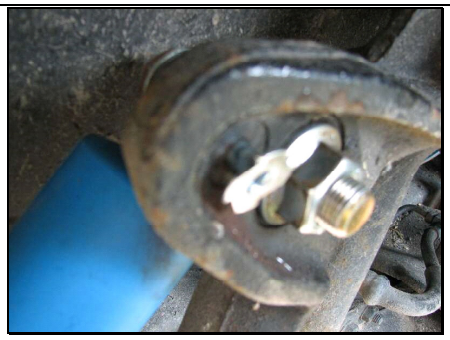
		dryer of moisture before the compressor starts and to only allow the compressor to **operate for a max of 5 min** at a time. I have found that 5 minutes is ample time to raise a fully deflated air bag. ***Moved counter-clockwise to neutral** - switch goes **off** & **will stay off** until moved from the neutral position ***The **12-3 quadrant repeats the 'Bleed' operation of the 6-9** quadrant ***Likewise the **3-6 quadrant repeats the 9-12 quadrant** of **'Bleed' for 3 sec and 'Compressor'** for 5 min. ***Moving from 6 to the 6-9 quadrant duplicates the first experience in this quadrant
Slide 22		These sensors have a 12" wire loom that exits the sensor with a 2 x3 water tight connector on the end. The terminals are labeled 'A' - 'F'. I consulting manuals and Dave Mumert's site (www.mumert.com/el2000.htm) to identify the terminals. Since terminal 'F' coincided to a blank on the wiring harness I did not check its purpose. Using a power source- 'A' to ground through a test light to limit load, 'C' & 'D' to positive, 'B' to a yellow test light to positive for detection of load, and 'E' to a red test light to positive for a detection of load. After a 20 sec. delay the ground circuit was completed to terminal 'E'. **You can use test lights** as well to test the circuits

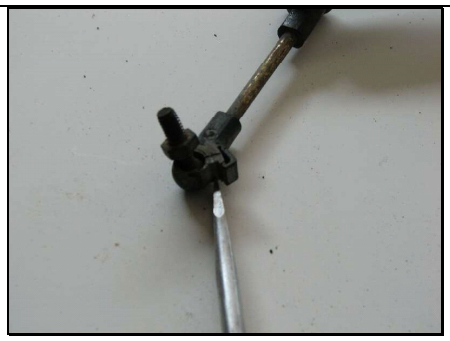
Slide 22.1		*Comes after slide 22* The lever was moved counterclockwise from neutral and after a 20 second delay terminal ground switching was active on terminal 'E' for 2 seconds.
Slide 23		When the connection on terminal 'E' turned off, ground switching on terminal 'B' was active for 5 minutes. If the lever is then moved to neutral or to a clockwise orientation the sensor would reset and again activate the appropriate circuit.

Slide 24		The lever was moved counterclockwise until the light went out and the sensor was marked. ***Marked before sensor is installed**
Slide 25		Supplies: 4 -1/4\" lag screws, 2- fender washers, 2- 1/4 x 7/16 T-nuts from Lowe\'s, 2- cable clips from Radio Shack
Slide 25.1		***Slide comes after 25***The circuit is cancelled if the lever is moved to the neutral position.

Slide 26		Square the bracket on sensor so that it will mount in the appropriate position on the left side of the wheel well.
Slide 27		Use an appropriate drill bit and 1/4" lag screw to secure the sensor to the wheel well.

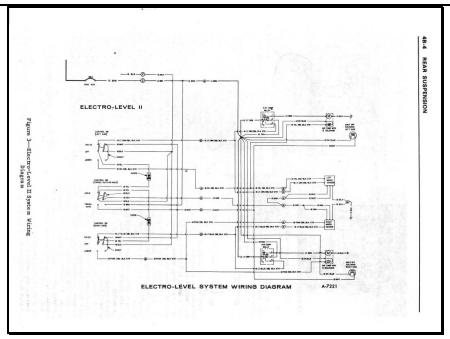
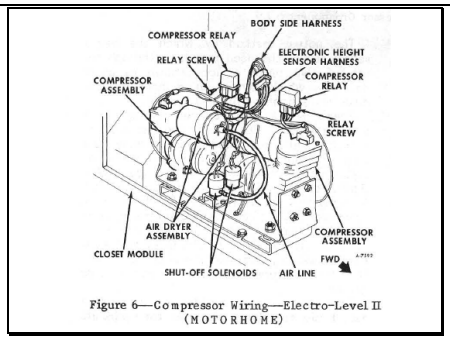
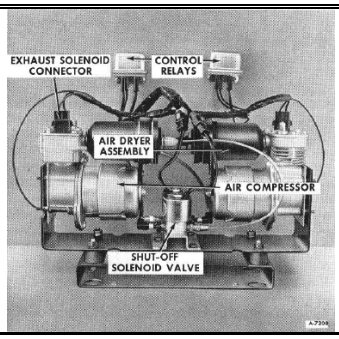
Slide 28		Mount the sensor in the center recess of the wheel well. It should be as close to the top and back wall as possible so that it is out of the way and is not obstructed in movement.
Slide 29		Rethread the stud ball to 1/4 x 20 threads to match those on the 'T nut'.
Slide 30		The orientation of the stud balls on the link can easily be done by using to wrenches on the flats of the ends to rotate them into position.

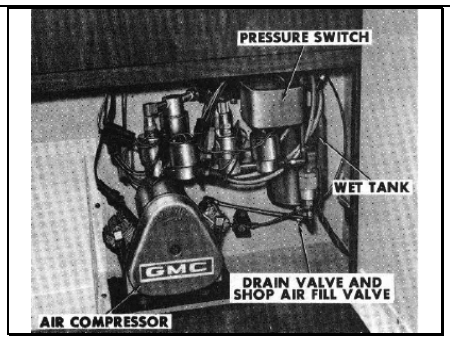
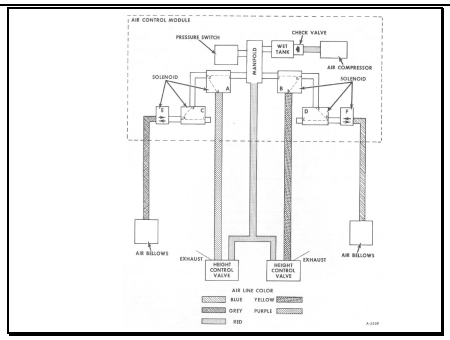
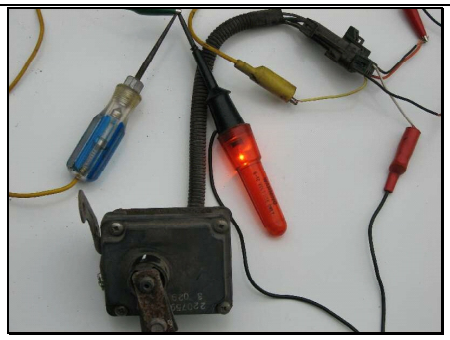
Slide 31		The stud balls need to be orientated in the same direction.
Slide 32		Drill out the mounting hole to 5/16".
Slide 33		Cut the barbs from the 'T nut' and slip it into the mounting hole.

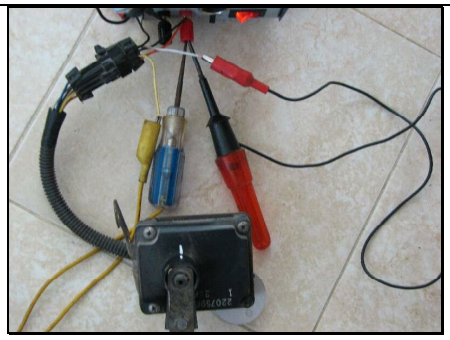
Slide 34		Release the end clip from one end of the link by prying the clip and allow the stud ball to slip out of the retainer.
Slide 35		Use a die and cut threads on the stud ball to match those on the 'T nut'. Screw the stud ball into the 'T nut'.
Slide 36		Stud ball mounted .

Slide 37		With the link mounted, the sensor lever end of the link tracks below the link end on the "suspension arm" through the "suspension arm's" travel arc. This does not allow the link to flip the sensor lever over to the top side of the suspension arm. If that was allowed to happen there would not be reliable sensor tracking.
Slide 38		Left sensor mounted.
Slide 39		I cut a height gage out of 2 x 6 (8 5/8" long). Place the gage in the proper location under the frame at the oval hole and carefully lower the coach to touch the gage.

Slide 40		The proper setting is out of adjustment range. So I used a large fender washer to clamp the sensor lever to the sensor shaft. * Could check with tester w/o having to try to monitor the compressor & Bleed solenoids
Slide 41		With the height gage in place and using the monitoring device set the arm so that the sensor is in its neutral position (no lights lit). The marks should be lined up. The height adjustment is made and the screw secured to lock-in the setting.
Slide 42		*The Red tell-tale lights indicate which compressor is being requested to run and raise the coach. *The yellow tell-tale lights indicate which bleed valve is being requested to exhale to lower the coach. *Ground wiring is readily available at the switch terminals.

Slide 43		
Slide 44	 Figure 6—Compressor Wiring—Electro-Level II (MOTORHOME)	
Slide 45		

Slide 46		
Slide 47		
Slide 48		*Comes after slide 22* The lever was moved counterclockwise from neutral and after a 20 second delay terminal ground switching was active on terminal 'E' for 2 seconds.

Slide 49		***Slide comes after 25***The circuit is cancelled if the lever is moved to the neutral position.