

REAR AIR SUSPENSION SYSTEM

The stock rear air suspension system is a good, reliable system. However, as with many GMC systems, it can be made to work better.

There were three different systems used during the GMC Motorhome production run.

- First: Power Level. Used up to 1976 serial number 6V100877.
- Second: Electro-Level. Used from 1976 serial number 6V100878 to early 1978 (possibly 8V100528).
- Third: Electro-Level II. Used from early 1978 (possibly 8V100528) until the end of production.

Problem:

The height control valve assembly used with the first and second systems was the same one used on the 1967 thru the middle of 1977 Cadillac Eldorados and was optional on Toronados. The system used slightly weak rear springs, a vacuum operated air compressor, rear air adjustable shock absorbers and the height control valve to keep the car level under all loads. There was no control over this automatic system. This valve assembly was one of the many “Off the shelf” items used in the motor home to make it affordable.

I bought a 1974 Sequoia on November 2, 1977. It didn't take long to opt for campsites that required lowering the rear suspension to get level. The Regusa step was not yet available so lowering made it easier getting in and out. The first time I did this, I got the coach hooked up and level and we went out for dinner. When we returned to the coach, it had returned to ride height, so, once again, I lowered the rear. About ten minutes later, I noticed it was back at ride height again. With the Power Level systems large reservoir this was a built in problem. The height control valve assembly was not designed to be lowered and have air in the reservoir. It would do its designed job and level the coach to ride height even with the Power Level Control in “Hold”.

Solution:

I cured the problem by removing the air reservoir Schrader valve and installing an electric air valve from the Electro-level system. Now, when parked and level, I would let the air out of the reservoir. While this cured the problem, it put a lot on wear on the Dana 12VDC air compressor. (Electro Level solved this problem by using a much smaller reservoir. Before it could raise the coach, it would run out of air).

The next step was to install a 115VAC air compressor. The 1973 & 1974 GMC Motorhomes had wooden generator compartments that went to the back wall of the coach. There was enough room to mount the 115VAC compressor there. At that time, compressors and motors were separate items and the compressors had oil in them that required periodic maintenance. With access through the generator door, this was acceptable. I also found that running nylon tubing to the 115VAC Compressor would get hot and blow out. It was necessary to run a coil of copper tubing near the compressor. Copper tubing is hard to seal completely with compression fittings, however, this is not a problem because the leaks are very slow and only when the compressor is running. The line passes through a water filter (Picture 1) to a check valve where it enters the reservoir.



PICTURE 1

Controlling the 115VAC Compressor:

To control the 115VAC Compressor using 12VDC I used the parts shown in Picture 2. On the back wall of the



PICTURE 2



PICTURE 3

Motorhome was a 115VAC Romex line. I cut this and ran it through the metal box in Picture 2 connecting it to the top part of the receptacle. Picture 3 shows the "Bridge" cut on the "Hot" side only. The receptacle is mounted on the left side of the metal box and the relay (Radio Shack Part Number: 275-226) is mounted on the right side. The connections shown in Picture 3 are connected to the normally open connectors on the relay. The ground connector is connected to the receptacle ground (green wire). The 12VDC connector on the relay is connected to the unused connector on the air suspension pressure switch. The compressor is plugged into the switched (bottom) receptacle. Picture 4 shows the Completed Box.



PICTURE 4

In the summer of 1993, I acquired a 1977 Kingsley and started the process all over again. In late 1974 the generator compartment was made of fiberglass and was sealed (Big improvement!) and ended with the end of the access door. The area I installed the 115VAC Compressor on the 1974 coach was still there, but is now accessed from inside the

coach (Picture 5). 115VAC Compressors have improved and the motor and compressor are now one piece with Teflon moving parts requiring no oil and no drive belts. Except for the inlet air filter (Picture 6), it is maintenance free.



PICTURE 5



PICTURE 6

To install air bag pressure gauges in the Kingsley, I had to run three air lines to the dash. I also installed the electro level valve in place of the Schrader valve in the reservoir (Picture 7 arrow). I installed two dual pressure gauges (Picture 8). The forward (green) needles are the air bag pressures and the rear (red) needles are the reservoir pressure.



PICTURE 7



PICTURE 8

To control the system are six switches [Picture 9 (Top 5 and the “Bleed” switch below “Travel/Hold switch”)] and three lights (Picture 10).



PICTURE 9

Picture 10: **ACSC** stands for 115V**AC** Suspension **C**ompressor; **DCSC** stands for 12V**DC** Suspension **C**ompressor.



PICTURE 10

I have installed rear support jacks with built-in J Hooks (Pictures 11 & 12); I obtained from Pat Cerrina at the Temecula Western States Rally. Now, the only time the air bags are inflated is when I'm traveling.



PICTURE 11



PICTURE 12

I installed a set of Dave Lenzi's air manifolds (Picture 13). I like these because they mount on the fender well instead of hanging on the air bag. The red tube goes to the air bag, the black line to the electro-level system.



PICTURE 13

Chuck Garton-GMC Pacific Cruisers January 2, 2008