Just runs Dec 2010

I'm having a problem with the differential locker on my '05 Rubicon. The fronts would lock but the rear would not. The Rear Light would flash continually. I put the Jeep on my lift and determined that the air pump for the rear was not operating. There are two air pumps for the lockers on a Rubicon, one for front and one for the rear. When the diffs are fully locked, there are two lights on the instrument panel that say "Front" and "Rear". If the pump is energized, the lights flash until they are fully locked at which time they are constantly on. If there is an air leak, the pump will keep running and the lights will flash.

At first I thought I had a bad pump for the rear because the pump would not run when I energized the circuit. I bought a new pump for $165 and it would not run either. I finally figured out that I had a bad connector. When I spliced around the connector the old pump ran fine and turned off when the system was pressurized. However, the light on the instrument panel continued to flash. It appears my rear diff is locked but I haven't had time to check it for sure.

Does anyone know what causes the light on the instrument panel to go constant when the differential is fully locked?

One thing. The pump has 5 wires going to the pump side of the connector but only two on the wiring harness side. When I spliced I only connected two pairs of the wires, a Red-Red and a Black-Black. Since there are only two on the wiring harness side I was thinking the other 3 wires on the pump side may be for some other application. Does anyone have a wiring diagram for the locker pump system and the Locked vs. Unlocked feedback lights on the instrument panel?

If anyone has firsthand knowledge about what causes the Locker lights to remain constant and/or information about the 2 wires on the wiring harness vs. five wires to the pump, please email me at mullinsr@cox.net.

(By the way, if anyone goes to buy a replacement differential locker air pump from Jeep, their parts lists show both front and rear use the same pump. However, I found that there were different connectors on my front than on my rear pump and wiring harness. They look the same but they are slightly different and are not compatible.)
Roger

Rubicon lockers

The early Rubicon locker was one of the very few lockers that actually indicated it was locked. It did this by moving a steel disk with the locking mechanism to where a magnetic sensor on the pinion side could detect it. This told the computer to make the light solid. Unfortunately it was right behind the fill plug. Over-tightening the fill plug on some after-market covers (maybe the stock one too) would jam the disk. It would then break the rather flimsy tabs that held it to the mechanism and it would sort of float when the diff was unlocked. When the diff was locked it might not be in the proper position to trigger the sensor. This is what occurred on my '03. It may apply to later models.

The pumps are indeed identical. The connectors are different so you could not mismatch the front/rear connection. The extra wires are to confuse the enemy since only two are required. A positive which is switched and a ground. I moved my pump under the hood. I only had one stock locker because a bent rear axle tube destroyed the rear locker. I cut the bracket in half to use one pump and spliced the matching connector to the harness where it came through the firewall. I connected it to use the rear switch (first push) on the front axle. Since I also replaced the front axle with a real 44, it has no sensor and the rear locker light blinks continuously.

I have the Jeep manual in my motor home and can double check the wiring diagram if you wish.

When the system is air tight, the pump barely burps when actuating. When it is under the hood it is easier to hear. The air pressure is so low that the tubing merely pushes on. The usual failure is a split end which can be trimmed and re-attached. The dog clutch usually has to be rotated a little to actually engage. I am sure you know how to verify the diff is actually locked.