

### Loss of Transmission Fluid at the Vent on the Powerglide Transmission

**To begin:** over the years I have encountered several instances of Powerglide transmissions blowing fluid out of the vent after highway driving in the summer, including one of my own. Not a dangerous amount but just enough to leave drips at the end of a long highway drive and a wet area opposite the vent. Excessive heat with an air cooled engine and original fluid was my first diagnosis and a **complete** change of fluid to Amsoil Synthetic (higher boiling point) eliminated the loss of fluid. I was satisfied with that fix on my car and some others that had that little nuisance, although at least one person had told me that the new fluid did not totally eliminate the issue. Larry Claypool told me that if the sprag clutch in the converter failed heat build up in the converter could cause that same symptom by overheating the fluid. You can test the sprag clutch with the converter out of the car by inserting a spare stator hub and spinning it; it will feel easy in one direction and it will have a different feel in the opposite direction.

**Next:** a couple of years ago Gary & Helen Moore's Rampside had a major fluid blowing issue with a completely rebuilt transmission from a professional transmission shop. When the re-builder was not available to discuss the problem (he later refused to back up the work), Gary replaced the transmission with one I had gone through and gave me the questionable unit to investigate. When I disassembled it I found that the rebuilder had substituted a plastic seal ring for one of the two steel rings that are located on the front pump hub and which seals to the inside of the clutch drum. This was obviously a good clue as to how the fluid under pressure from the front pump was getting into the vent area.

**And finally:** this spring one of my Powerglide Corvairs started spitting out some fluid on a 150 mile trip on the highway. The transmission was original with 130K and perfect Amsoil fluid, and I was absolutely sure it was not getting hot having checked it with an infrared heat gun. For repairs, I left the transaxle attached to the engine and only removed the front pump cover, front pump and clutch drum for inspection. The inside of the clutch drum had two grooves worn into the mating area and if you inserted the steel butt-end ring into the groove you could see the gap expand. I also could catch my fingernail in the grooves. Unfortunately, there is no good solution that I have for repair other than another good used drum. I did replace both rings with new ones from Clarks (sure glad they are there!) and I checked the two bushings involved (clutch drum and front pump) as well as the bushing area on the front pump shaft and the bushing area on the front pump hub since those could affect the loading on the sealing area if there was excessive clearance. The new rings from Clark's are butt joint and originals I have found could be either butt joint or interlocking. Other than the sealing ring areas I found no other indication of excessive wear on any of the parts I had removed in this limited operation. Ideally I should have gone completely through the transmission while it was accessible but I wanted to confirm once and for all that the sealing ring area could cause the fluid loss through the vent.

Last Saturday the car cruised to Savannah Missouri and back (180 miles) at mostly 70 mph in 90+ temperatures and it arrived back at home leak free.

If you have a fluid loss from the vent, I would try a **complete** change over to synthetic fluid first since it boils at a lot higher temperature than standard ATF. Original ATF may actually boil at lower temperatures than you would think due to a change in viscosity and loss of additives after 50 years. You will need to drain the converter, pull the pan, and pull the pickup in order to get the maximum amount of fluid out of the transmission. If changing fluid does not solve the problem, then perhaps the above information will be useful. Pictured nearby is the drum sealing area and the pump hub with its two rings. Also pictured is the plastic substitute that was residing in the Moore's Powerglide.

