

SHIFT LINKAGE

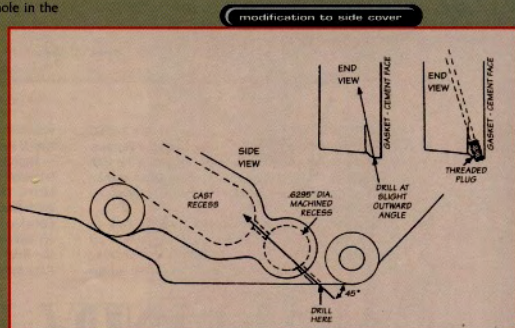
IF YOU'VE EVER DRIVEN A 308 COLD in normal weather, let alone a 308 cold in cold weather, then you know that engaging reverse and low gears, not to mention shifting from low gear into second gear, feels somewhat akin to shoveling frozen molasses. You know, I always wondered why. Logically, the ratio of the gears has nothing to do with ease or difficulty of engagement, if you stop to think about it. If high gear is easily engaged even when the transaxle fluid is cold, why then should low gear engagement be nearly impossible? Think about it.

Well, in the process of precisely aligning the shift linkage when we reinstalled the new engine/transaxle combination in the car, we performed the final, precise alignments with the transaxle bottom plate removed. Somehow, we thought we were experiencing a minor (but binding) misalignment between the shift lever itself and those pawls inside the transaxle which move the reverse/low, second/third, and fourth/fifth shift rails. Yet, visual inspection showed them to be exactly aligned with no visible burrs to hinder fluidity of movement.

After hours of frustration, coincident with someone turning off the noise of the grinder going next door, we heard a noise best described as "squishing" when the reverse/low rail was moved back and forth. Indeed, upon repeating the action, I suddenly got a small squirt of oil in my eye! This bore more looking into, and here's what we found. When the second/third and fourth/fifth shift rails slide back and forth, the left end of these rails passes through a precision hole in the left side of the transaxle casting and into a recess formed by the side-cover casting. However, when the reverse/low rail moves to the left, it pushes into a machined recess in the side casting, the only escape from which is via the ball-and-spring passage which houses the detent mechanism. Just a few movements of this rail made it evident that the oil, until it became ultra-thin from heating up, was being compressed into this machined recess because there was no relief passage. Likewise for shifting from reverse to low, suction is the cul-

prit. And even the low to second shift is affected because the reverse/low rail institutes the first half of this action. Oil, as you well know, does not compress... period.

The fix is simple and will make your car driveable at all times in all climes. In the illustration, the .6295" diameter machined recess is the culprit. Using the angles shown in both side and end views, drill a tiny pilot hole through the machined recess. Make sure the reverse/low shift rail is away from the end to be drilled. Otherwise, the drill bit will hit the reverse/low shaft. The hole is drilled intentionally off-center so as to line up better with the cast recess. This can be done without removing or even draining your transmission even on a stock 308. Run the drill very slowly and fill the flutes of the drill with white grease. Drilled slowly enough, the cuttings will deposit themselves in the white grease in the flutes, not in the transaxle sump. Periodically withdraw the drill to clean out the flutes and re-grease them. The maximum size of the pressure-relief hole should be smaller than 1/8", so as to allow for tapping to 1/8". You can then seal the bottom of the hole with a small Allen plug. The plug must be coated with a good sealant to prevent leakage. Now, when you make shifts into reverse, low, or the first half of the movement from low to second, the movement of the reverse/low rail is no longer restricted by either compression or suction of oil. No more sticky shifts... ever! This should be a factory fix.



While the above advice appears to have merit, FCA Technical Chairman, Bill Badurski, indicates that he has no direct experience with this modification.

