GM 6L50/80/90

INTERMITTENT FAILSAFE AFTER PULLING LOAD OR KICK-DOWN

COMPLAINT: One way the complaint is received is the driver explains that the problem was first noticed when making an entrance onto a freeway. The accelerator was punched to bring the vehicle up to speed for an appropriate highway entrance. At that time the vehicle neutralized which initiated failsafe. After an ignition cycle the vehicle returned to normal operation. It would slip from time to time only when a kick-down maneuver was needed.

Another way this complaint can be received is near the same as the first except the problem occurs when pulling a load. After an ignition cycle with the load removed, the vehicle returns to normal operation. When the vehicle is brought into the shop, the person diagnosing the problem may notice that the problem occurs fairly regularly when temperatures are above 210°F. Gear ratio codes may be stored in memory.

CAUSE: In past seminars, ATSG had provided technical information regarding a common problem with the 1-2-3-4/3-5-Reverse Clutch Drum (Figure 1) developing a crack in the weld area or by the bearing seat where the drum sits against the pump. This crack often times was difficult to see and would not leak with an air test in some cases. This required making a wet air check to the drum when it was hot for the crack to be detected.

One other cause which this bulletin is addressing may be a cracked 1-2-3-4 aluminum piston (# 414 in Figure 1). When you flip this piston over to view the bottom side, a rib type design is noticed. This gives the appearance of a more sturdy type piston when in actuality its design is to make the piston light in weight. As a result, the piston cracks and this crack is also very difficult to see or detect. A typical air test will apply the piston normally with no leak heard. It may take over 120 psi of shop air to open the crack to hear a leak.

CORRECTION: The was to replace the piston and/or drum. The big problem here is in replacing the common ribbed type piston for two reasons. For one, it will crack again in due time. Secondly, this piston lists for over $400 dollars and wholesales to the shop for near $300. There is a sturdy no-rib style piston available and it is for much less money ($25 to $30) which was thought too resolve the problem but it does not (See Figure 3). But this no-ribbed style piston has been cracking as well. At the time of printing, only Sonnax has a solution with a billet style piston.

SERVICE INFORMATION:

1-2-3-4 Rib Type Piston	24224146
1-2-3-4 Non-Rib Type Piston	24238700
6L50/80 Drum with Bushing and Bearing	24263590
6L90 Drum with Bushing and Bearing	24263592
Sonnax Billet Piston	104984-01

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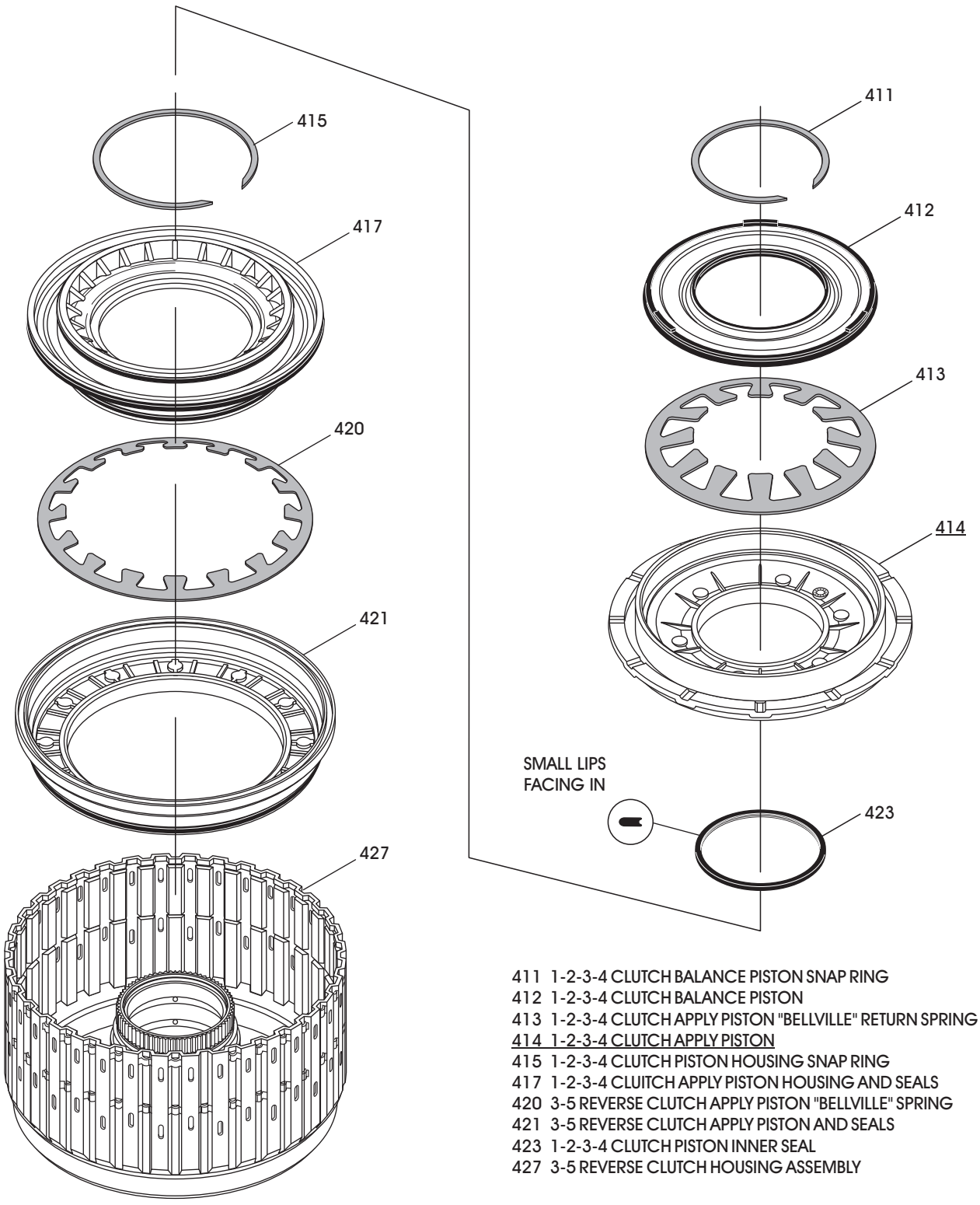

411 1-2-3-4 CLUTCH BALANCE PISTON SNAP RING
412 1-2-3-4 CLUTCH BALANCE PISTON
413 1-2-3-4 CLUTCH APPLY PISTON "BELLVILLE" RETURN SPRING
414 1-2-3-4 CLUTCH APPLY PISTON
415 1-2-3-4 CLUTCH PISTON HOUSING SNAP RING
417 1-2-3-4 CLUITCH APPLY PISTON HOUSING AND SEALS
420 3-5 REVERSE CLUTCH APPLY PISTON "BELLVILLE" SPRING
421 3-5 REVERSE CLUTCH APPLY PISTON AND SEALS
423 1-2-3-4 CLUTCH PISTON INNER SEAL
427 3-5 REVERSE CLUTCH HOUSING ASSEMBLY

Figure 1

GM 6L50/80/90

INTERMITTENT FAILSAFE AFTER PULLING LOAD OR KICK-DOWN

Rib Type 1-2-3-4 Piston

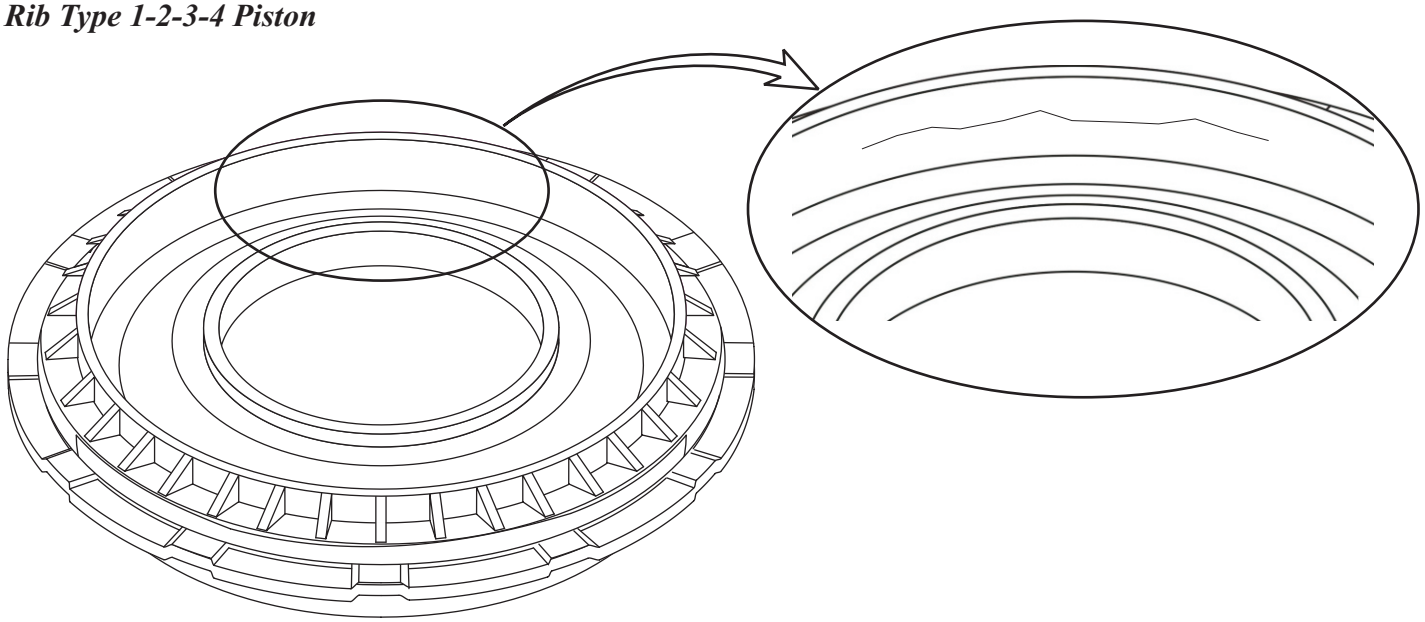

Figure 2

Non-Rib Type 1-2-3-4 Piston

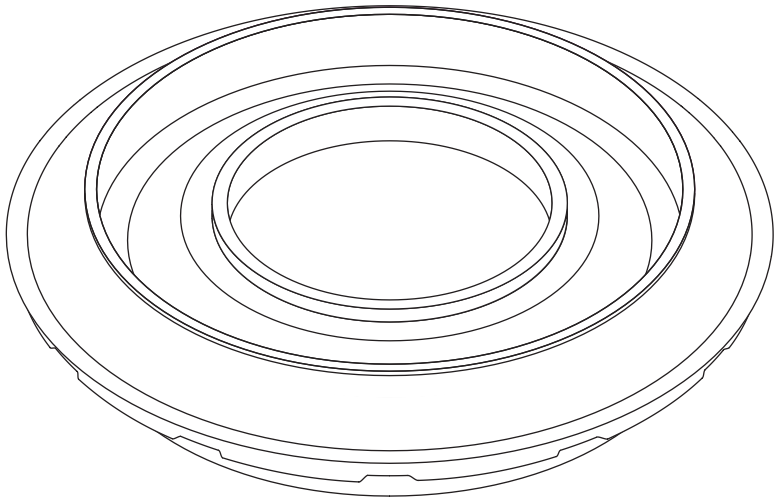

Figure 3