

CRANKSHAFT OIL SEALS

The GEN III V8 engine uses a multiple lip crankshaft rear main oil seal, designed for long life operation.

The seal includes a PTFE (Teflon®) centre lip (1) to minimise a major cause of rear main oil seal leaks. The anti-friction properties of the PTFE reduces the chances of “choking” or build-up of degraded oil on the lip (causing the lip to lift off the shaft), resulting in a leak.

Like the rear main oil seal, the front crankshaft oil seal also incorporates a PTFE lip.

Service implications for this seal material are that **no** lubricant is to be added to the seal lip on installation, as this will prevent correct ‘break-in’ of the seal. The PTFE is actually deposited on the **dry** crankshaft seal surface during initial operation by the heat generated from the rotating shaft.

The outside of the seal may be lubricated sparingly to ease installation.

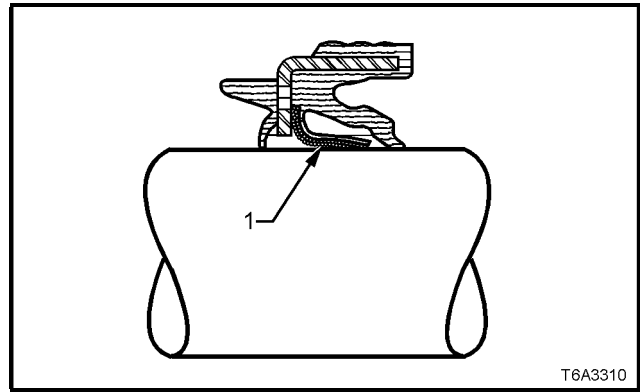


Figure 6A3-23

POSITIVE CRANKCASE VENTILATION SYSTEM

The engine ventilation system was developed to minimise oil consumption and ensure that oil ingestion could not occur during severe vehicle handling manoeuvres.

Filtered fresh air is routed from upstream of the throttle blade to the front of the right rocker cover via a formed rubber hose (2). To reduce the potential of oil pullover into the throttle bore area due to back flow of the ventilation system, the fitting in the right side rocker cover is located in a “quiet” area located between, and shielded from, the rocker arms. Crankcase blowby gases are routed from the rear of both rocker covers, through moulded nylon lines to a tee fitting, located on the centreline of the engine at the rear of the intake manifold (4). From there, a single hose carries crankcase vapours through an externally mounted, horizontal PCV valve (3) and enters the intake manifold behind the throttle body (1).

The hoses are foam insulated and the PCV valve (3) is conduction-heated from the cylinder block.

This “dual draw system” was developed to meet high ‘g’ forces (bold arrow) incurred during severe cornering manoeuvres. During sustained maximum lateral accelerations, the outboard rocker cover (1) may fill with oil.

The “dual draw” system “passively switches”, allowing the PCV valve to draw on the rocker cover with the least resistance. This results in the system drawing on the air filled, or inboard, rocker cover (2) and eliminates oil pullover that would result from drawing on the oil filled outboard rocker cover.

Sectioned view shown is looking rearward from the engine front.

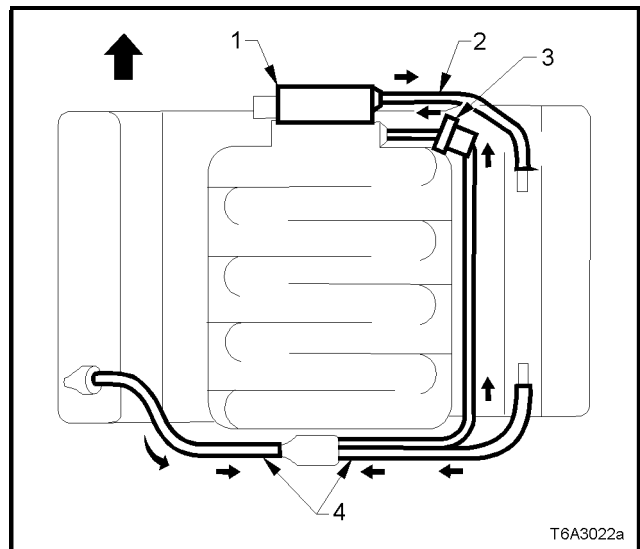


Figure 6A3-24

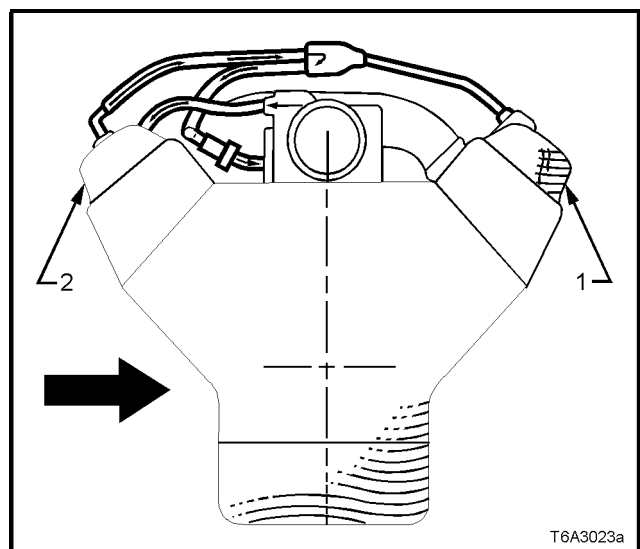


Figure 6A3-25