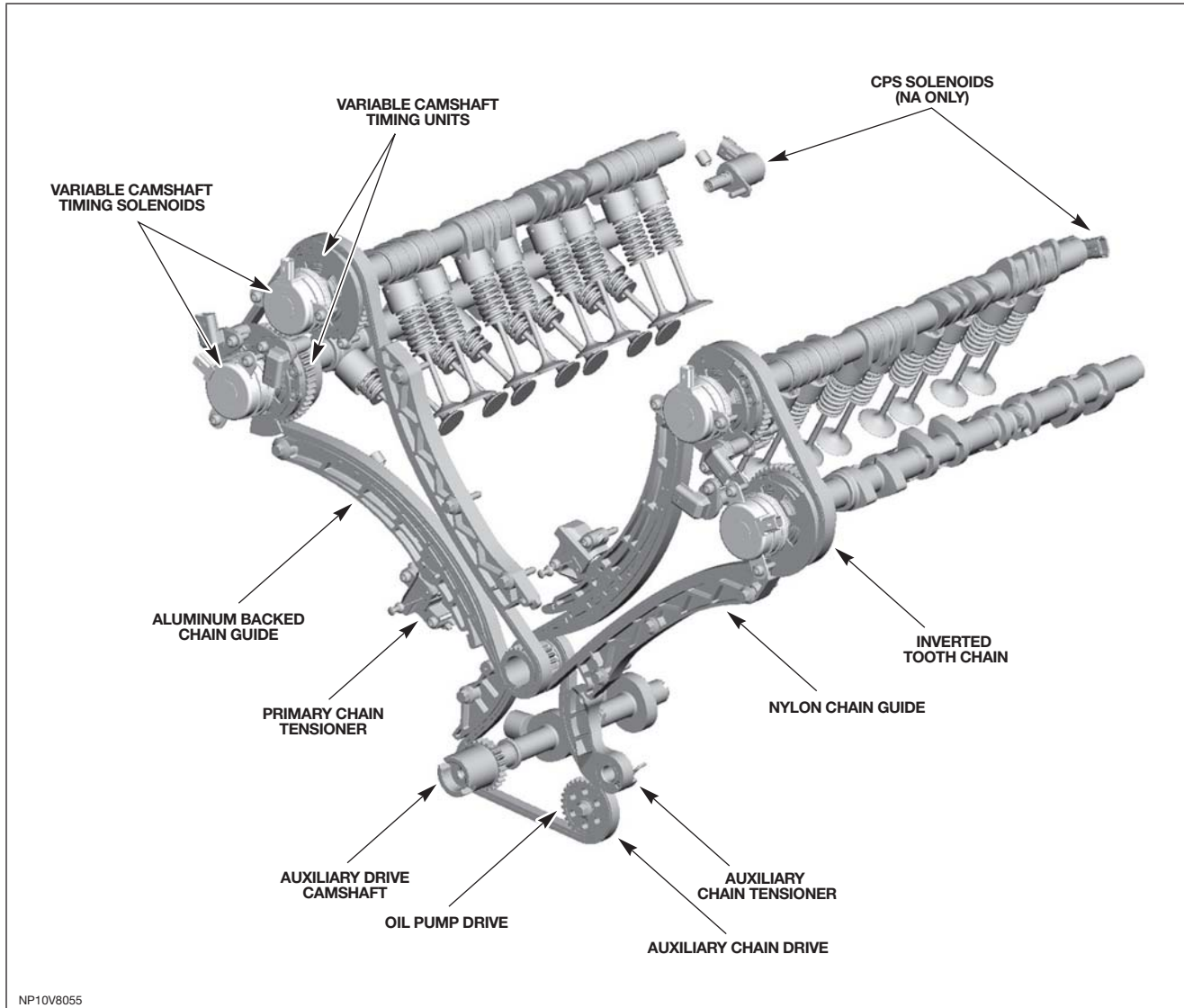


Valve Train

Twin overhead camshafts operate the engine's valves. A maintenance-free highly durable chain transfers drive from the crankshaft to the camshafts, via the variable camshaft timing (VCT) units. The oil pump is driven at 0.87 engine speed by a separate chain, also from the front of the crankshaft, for reduced friction.



Each camshaft chain has a spring-assisted hydraulic tensioner operated by engine oil pressure. The chain tensioners also incorporate a ratchet mechanism to eliminate start-up noise. The chains are lubricated via oil squirt tubes located at the front of the engine block. Nylon chain guides control chain motion on the drive side.