■MAJOR DIFFERENCES

The major differences between the new 3UZ-FE engine on the LS430 and the previous 1UZ-FE engine on the LS400 are the following:

System	Features
Engine Proper	• The water passage outside of the cylinder head bolts has been changed to improve the flow of the water around the valve seats, thus reducing the temperature of the combustion chamber. • The cylinder bore has been increased in size, and the thickness of the liner has been decreased. • The shape of the cylinder head gasket has been changed in conjunction with the increase in the size of the cylinder bore. • The material strength of the cylinder head bolts has been changed to increase their axial tension. As a result, the head gaskets tightening has been improved. • The piston diameter has been increased in size, and its shape has been optimized to achieve weight reduction. • A piston ring made of stainless steel has been adopted for the No. 2 compression ring of the piston in the leaded gasoline engine model. Furthermore, the outer periphery of the No. 1 compression ring and the outer periphery of the oil ring side rail have been treated with ion plating. • The material of the inner surface of the bushing in the small end of the connecting rod has been changed from lead bronze alloy to phosphor bronze alloy. • The material of the sliding surface of the crankshaft bearing has been changed from kelmet to aluminum alloy.
Cooling System	• An electric cooling fan system has been adopted. • The shape of the water inlet housing has been optimized to increase the water flow and to achieve weight reduction. • On Europe and G.C.C. countries models, a pressurized reservoir tank has been adopted.
Intake and Exhaust System	• A resonator and a tuning hole have been provided in the air cleaner inlet to reduce the amount of intake air sound. • The air cleaner case has been increased in size to reduce the amount of intake air sound, and the construction of the air cleaner element has been optimized to achieve weight reduction. • A stainless steel exhaust manifold with a single-pipe construction has been adopted. As a result, the warm-up performance of the TWC (Three-way Catalytic Converter) has been improved. • On unleaded gasoline engine model, two TWCs (Three-way Catalytic Converters) have been provided in the front, and one in the center. • Ultra thin-wall, high-cell ceramic type TWCs have been adopted on unleaded gasoline engine model. • A link-less type throttle body has been adopted.
Fuel System	• A saddle-shaped fuel tank has been adopted. • A compact fuel pump in which a fuel filter, pressure regulator and jet pump are integrated in the module fuel pump assembly has been adopted. • The charcoal canister has been relocated.
Ignition System	The construction of the ignition coil has been optimized to achieve a compact and lightweight configuration.

(Continued)

System	Features
Engine Control System	• Torque activated power train control has been newly adopted for the control of ETCS-i. Also, the fail-safe control has been reconsidered with the adoption of the link-less type throttle body. • The engine ECU steplessly controls the speeds of the two fans along with the adoption of an electric cooling fan system. • A fuel cut control is adopted to stop the fuel pump when the airbag is deployed at the front or side collision.
Others	The engine ECU has been installed in the engine compartment for improved serviceability.