■ FEATURES OF 1UR-FE ENGINE

This engine has been able to achieve the following performance features through the use of the items listed below:

(1) High performance and reliability

(2) Low noise and vibration

(3) Lightweight and compact design

(4) Good serviceability

(5) Clean emissions and fuel economy

Item		(1)	(2)	(3)	(4)	(5)
Engine Proper	A taper squish shape is used for the combustion chamber.	○				○
	An aluminum alloy cylinder block containing a water distribution pathway is used.	○		○		
	Spiny-type liners are used in the cylinder bores.	○		○		
	Cylinder block water jacket spacer is used.	○				
	The piston skirt is coated with resin.	○	○			○
	A No. 1 oil pan made of aluminum alloy is used.	○	○	○		
Valve Mechanism	Timing chains and chain tensioners are used.	○		○		
	Valve lash adjuster assemblies are used.	○	○		○	○
	Valve rocker arm sub-assemblies are used.	○				○
Lubrication System	An oil filter with a replaceable element is used.				○	
	A water-cooled type oil cooler is used.	○				
Cooling System	Toyota genuine Super Long Life Coolant (SLLC) is used.				○	
Intake and Exhaust System	A linkless-type throttle body is used.	○		○		
	An intake manifold made of plastic is used.	○		○		
	Stainless steel exhaust manifolds are used.	○		○		○
	Ceramic type Three-Way Catalytic converters (TWCs) are used.					○
Fuel System	12-hole type fuel injector assemblies is used to improve the atomization of fuel.	○				○
Ignition System	The Direct Ignition System (DIS) makes ignition timing adjustment unnecessary.	○			○	○
	Long-reach type iridium-tipped spark plugs are used.	○			○	○

(Continued)

Item		(1)	(2)	(3)	(4)	(5)
Charging System	A segment conductor type alternator is used.	○		○		
Starting System	A planetary reduction type starter is used.			○		
Serpentine Belt Drive System	A serpentine belt drive system is used.			○	○	
Blowby Gas Ventilation System	A separator case is provided between the cylinder block and the intake manifold.	○				○
Engine Control System	Magnetic Resistance Element (MRE) type crank position, cam position, and VVT sensors are used.	○				
	The Electronic Throttle Control System-intelligent (ETCS-i) is used.	○				○
	The Dual Variable Valve Timing-intelligent (Dual VVT-i) system is used.	○				○
	The Acoustic Control Induction System (ACIS) is used.	○				○
	An air injection system is used.*					○
	The starter control (cranking hold function) is used.	○				
	An evaporative emission control system is used.					○

*: Models compliant with EURO 4 and EURO 5 emission regulations