■FEATURES OF 1GR-FE ENGINE

The 1GR-FE engine has achieved the following performance 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	Upright intake ports are used.	○		○		
	A taper squish shape is used for the combustion chamber.	○				○
	A steel laminate type cylinder head gasket is used.	○				
	A cylinder block made of aluminum alloy is used.			○		
	The skirt portion of the pistons have a resin coating applied to reduce friction.	○	○			○
	An oil pan (oil pan No.1) made of aluminum alloy is used.		○	○		
Valve Mechanism	A VVT-i (Variable Valve Timing-intelligent) system is used.	○				○
	Shim-less type valve lifters are used.	○		○		
	Timing chains (3) and chain tensioners are used.	○	○	○		
Cooling System	The engine coolant that is used is the TOYOTA Genuine SLLC (Super Long Life Coolant).				○	
Intake and Exhaust System	A carbon filter is used in the air cleaner case.					○
	A cable-less type throttle body is used.			○	○	
	An intake air chamber made of plastic is used.			○		
	Stainless steel exhaust manifolds are used.			○		
Fuel System	12-hole type fuel injectors are used to improve the atomization of fuel.	○				○
	A fuel delivery pipe that is made of plastic is used.			○		
Ignition System	The DIS (Direct Ignition System) makes ignition timing adjustment unnecessary.	○			○	○
Charging System	A segment conductor type generator is used.	○		○		
Starting System	A PS type starter is used.			○		
Serpentine Belt Drive System	A serpentine belt drive system is used.			○	○	
Engine Control System	MRE (Magnetic Resistance Element) type VVT sensors are used.	○				
	The ETCS-i (Electronic Throttle Control System-intelligent) is used.	○				○
	An ACIS (Acoustic Control Induction System) is used.	○				○
	An air injection system is used.					○
	The cranking hold function is used.	○				
	An evaporative emission control system is used.					○