■ FEATURES OF 2UR-GSE ENGINE

The 2UR-GSE engine achieves 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 emission and fuel economy

Item		(1)	(2)	(3)	(4)	(5)
Engine Proper	Aluminum alloy cylinder head covers are used.			○		
	Steel laminate type cylinder head gaskets are used.	○				
	A taper squish shape is used for the combustion chamber.	○				○
	An aluminum alloy cylinder block containing an engine coolant distribution pathway is used.			○		
	Spiny-type liners are used in the cylinder bores.	○				
	Cylinder block water jacket spacers are used.	○				○
	The skirt portion of the piston has a resin coating applied to reduce friction.	○	○			○
	A No.2 oil pan sub-assembly made of aluminum alloy is used.		○	○		
	An oil pan sub-assembly made of vibration damping sheet steel is used.		○			
Valve Mechanism	Composite camshafts are used.	○		○		○
	Timing chains and chain tensioners are used.	○	○	○		
	No.1 valve rocker arm sub-assemblies are used.	○				○
	Fixed type valve rocker arm pivot are used.	○				
Lubrication System	An oil filter with a replaceable element is used.				○	
	A scavenging pump assembly is used.	○				
	A liquid cooled oil cooler assembly is used.	○				
Cooling System	TOYOTA Genuine SLLC (Super Long Life Coolant) is used as the engine coolant.				○	
	A sealed type cooling system is used.	○				
Intake and Exhaust System	A dual intake air cleaner is used.	○				
	A link-less type throttle body is used.			○	○	
	Stainless steel exhaust manifolds are used.			○		○
	Ceramic type TWCs (Three-Way Catalytic Converter) are used.					○
Fuel System	The D-4S (Direct injection 4-stroke gasoline engine Superior version) system is used.	○				○
	Double slit nozzle type high pressure direct injection injectors are used.	○				○
	Quick connectors are used to connect the fuel hose with the fuel pipe.				○	
Ignition System	The DIS (Direct Ignition System) 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 generator is used.	○		○		
Serpentine Belt Drive System	A serpentine belt drive system is used.			○	○	
Blowby Gas Ventilation System	A separator case is used.	○		○	○	
Engine Control System	MRE (Magnetic Resistance Element) type crankshaft position, camshaft position, and VVT sensors are used.	○				
	The ETCS-i (Electronic Throttle Control System-intelligent) system is used.	○				○
	The Dual VVT-i (Variable Valve Timing-intelligent) system is used. It consists of VVT-iE for the intake camshafts and VVT-i for the exhaust camshafts.	○				○
	The cranking hold function is used.	○				
	An evaporative emission control system is used.					○