2. Features of 1UR-FE Engine

The 1UR-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 emission 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 an engine coolant distribution pathway is used.	○		○		
	Spiny-type liners are used in the cylinder bores.	○		○		
	Cylinder block water jacket spacers are 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.	○		○		
	Hydraulic lash adjusters are used.	○	○		○	○
	Roller rocker arms are used.	○				○
Lubrication System	An oil filter with a replaceable element is used.				○	
	A water-cooled type oil cooler is used.*	○				
Intake and Exhaust System	A carbon filter is used in the air cleaner cap.					○
	A linkless-type throttle body is used.	○		○		
	An intake manifold made of plastic is used.	○		○		
	A step motor type EGR valve is used.					○
	A water-cooled type EGR cooler is used.					○
	Stainless steel exhaust manifolds are used.	○		○		○
	Ceramic type Three-Way Catalytic converters (TWCs) are used.					○
Fuel System	12-hole type fuel injectors are 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.	○			○	○

*: Models with towing package

(Continued)

Item		(1)	(2)	(3)	(4)	(5)
Charging System	A segment conductor type generator 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	An Magnetic Resistance Element (MRE) type crankshaft position, a camshaft 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.	○				○
	The Exhaust Gas Recirculation (EGR) control is used.					○
	An air injection system is used.					○
	A starter control (cranking hold function) is used.	○				
	An evaporative emission control system is used.					○