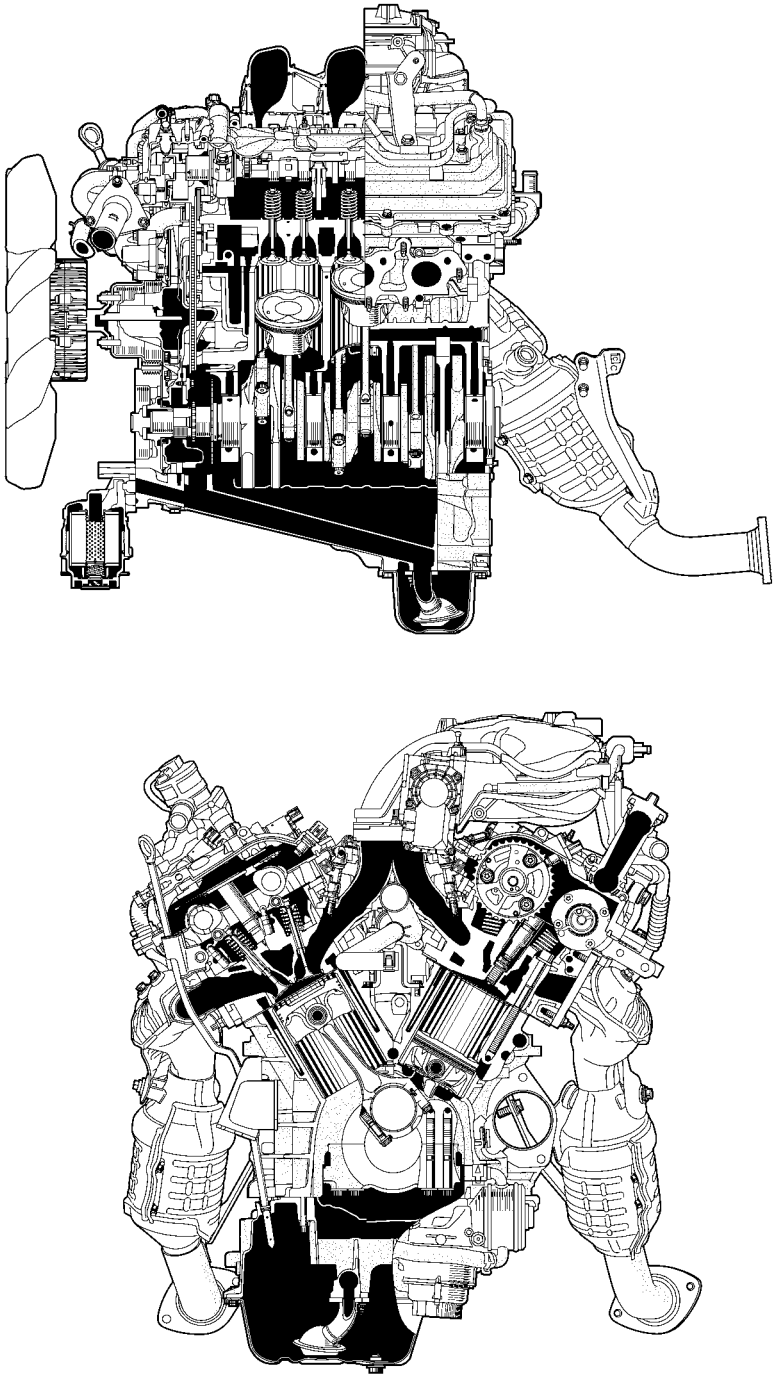
1GR-FE ENGINE

■ DESCRIPTION

- The 1GR-FE engine is a 4.0-liter, 24-valve DOHC V6 engine. In this engine, a Dual Variable Valve Timing-intelligent (Dual VVT-i) system, in which the VVT-i system has also been added to the exhaust side, and a valve rocker arm are used to minimize friction, offering excellent engine performance, fuel economy and clean emissions.
- The 1GR-FE engine is compatible with gasoline/ethanol mixed fuel which contains up to 20% ethanol (E20). Unleaded gasoline with research octane number 95 or higher can be used on this engine.
- For detailed comparisons to the new models, see Major Difference (see page 32).



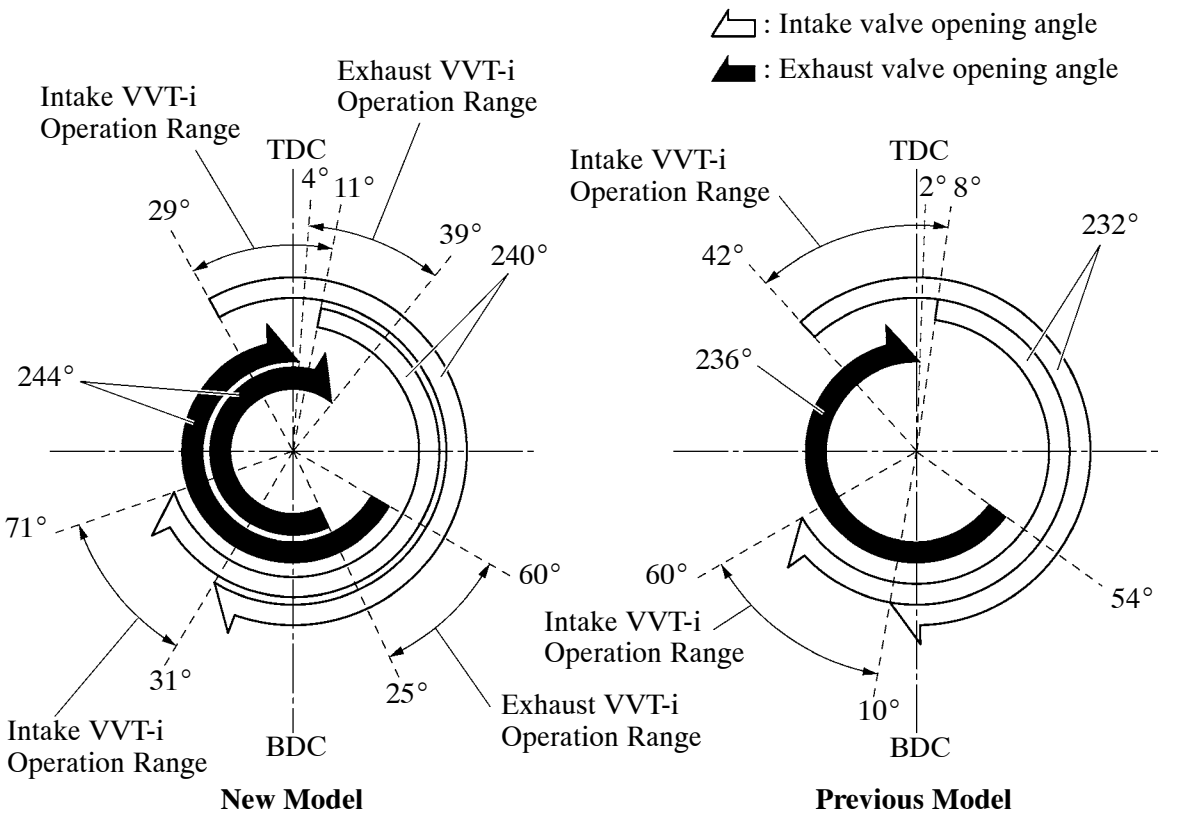
19U1EG56Y

▶ Engine Specification ◀

Model			New	Previous
No. of Cyls. & Arrangement			6-cylinder, V Type	←
Valve Mechanism			24-valve DOHC, Chain Drive (with Dual VVT-i)	24-valve DOHC, Chain Drive (with VVT-i)
Combustion Chamber			Pentroof Type	←
Manifolds			Cross-flow	←
Fuel System			EFI	←
Ignition System			DIS	←
Displacement			3956 cm^3 (241.4 cu. in.)	←
Bore × Stroke			94.0 mm × 95.0 mm (3.70 in. × 3.74 in.)	←
Compression Ratio			10.4 : 1	10.0 : 1
Max. Output [EEC-NET]			202 kW @ 5600 rpm	179 kW @ 5200 rpm
Max. Torque [EEC-NET]			385 N·m @ 4400 rpm	376 N·m @ 4000 rpm
Valve Timing	Intake	Open (BTDC)	–11° to 29°	–8° to 42°
		Closed (ABDC)	71° to 31°	60° to 10°
	Exhaust	Open (BBDC)	60° to 25°	54°
		Closed (ATDC)	4° to 39°	2°
Firing Order			1 – 2 – 3 – 4 – 5 – 6	←
Fuel			Gasoline or Alcohol Fuel*2	Gasoline
Research Octane Number (RON)			95 or higher	←
Emission Regulations			EURO 2*3	←
			EURO 3*4	←
			EURO 4*5	—
			EURO 5*6	—
Engine Service Mass*1 (Reference) kg (lb)		A/T	188 (435)	166 (366)
		M/T		181 (399)

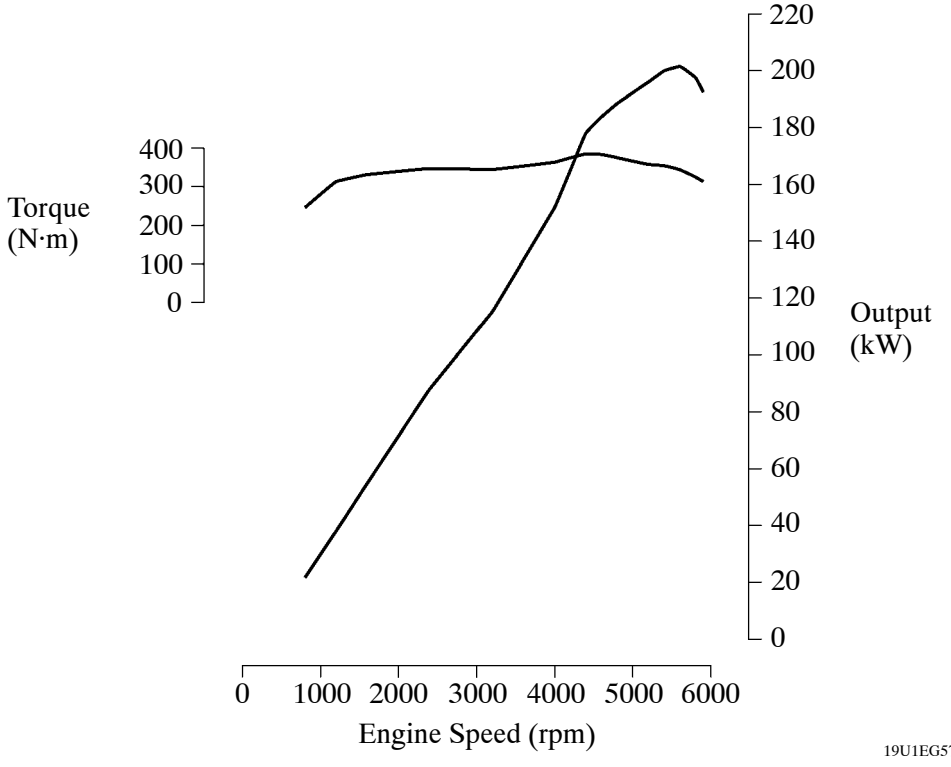
*1: The figure shown is the weight of the part without water and oil.
*2: Mixed fuel from 0% ethanol (E0) to 20% ethanol (E20) is available.
*3: Models for G.C.C. Countries
*4: Models for General Countries
*5: Models for China
*6: Optional equipment on models for China

▶ Valve Timing ◀



147EG03S

▶ Performance Curve ◀



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NF