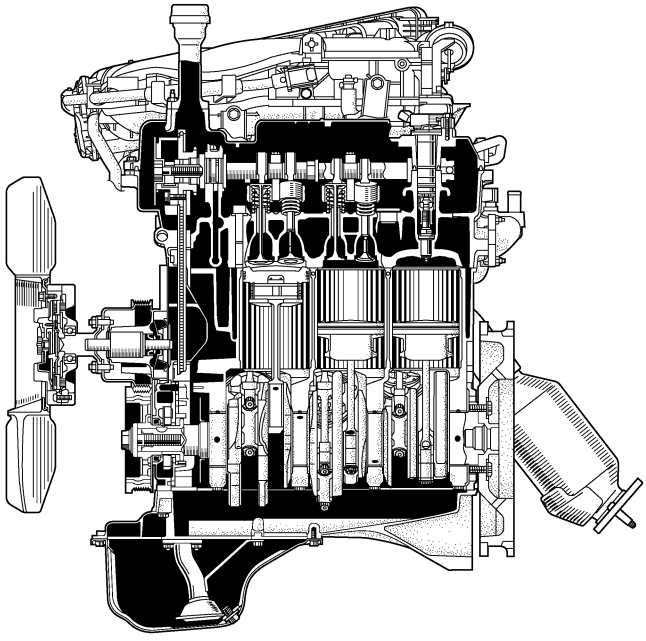
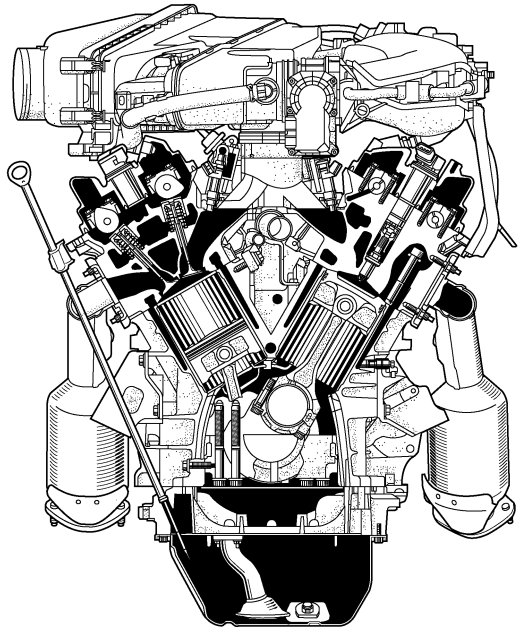
1GR-FE ENGINE

■ DESCRIPTION

- The 1GR-FE engine is a V-type, 6-cylinder, 4.0-liter, 24-valve DOHC engine.
- On this engine, the VVT-i (Variable Valve Timing-intelligent) system, ACIS (Acoustic Control Induction System), and the ETCS-i (Electronic Throttle Control System-intelligent) are used. These control functions have been optimized to further improve engine performance and fuel economy, and to reduce exhaust emissions.
- This engine has been made compact and lightweight through the use of an aluminum cylinder block and plastic type of intake air chamber, fuel delivery pipe, and water inlet pipe.



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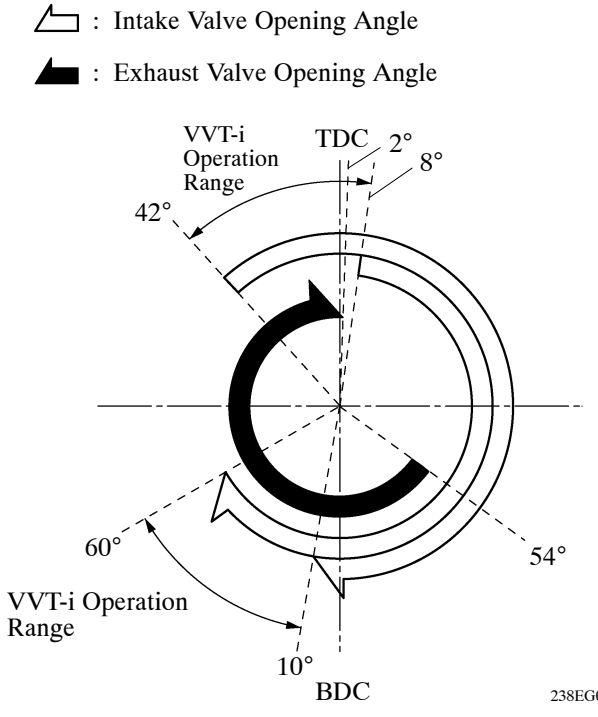
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▶ Engine Specifications ◀

No. of Cyls. & Arrangement			6-cylinder, V Type
Valve Mechanism			24-valve DOHC, Chain Drive (with VVT-i)
Combustion Chamber			Pentroof Type
Manifolds			Cross-flow
Fuel System			EFI
Ignition System			DIS
Displacement	cm^3 (cu. in.)		3956 (241.4)
Bore × Stroke	mm (in.)		94.0 × 95.0 (3.70 × 3.74)
Compression Ratio			10.0 : 1
Max. Output	[SAE-NET]	MT	175 kW @ 5200 rpm
		AT	175 kW @ 5200 rpm
Max. Torque	[SAE-NET]	MT	343 N·m @ 2400 - 4800 rpm
		AT	376 N·m @ 3800 rpm
Valve Timing	Intake	Open	42° BTDC - 8° ATDC
		Close	10° ABDC - 60° ABDC
	Exhaust	Open	54° BBDC
		Close	2° ATDC
Firing Order			1-2-3-4-5-6
Fuel			Unleaded Gasoline
Research Octane Number			95 or Higher
Emission Regulation			EURO III*2, BR-LEV*3
Engine Service Mass*1 (Reference)			166 kg (366 lb)

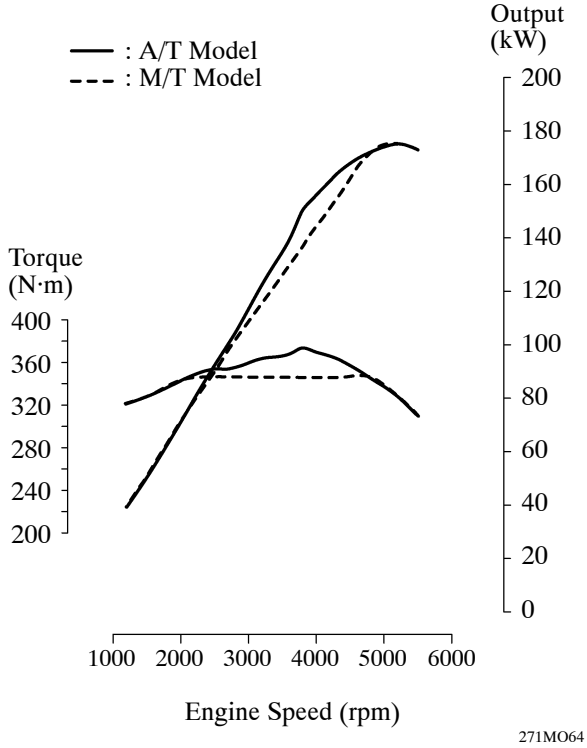
*1: Weight shows the figure without oil and water fully filled.
*2: Except models for Brazil
*3: Models for Brazil

▶ Valve Timing ◀



238EG04

▶ Performance Curve ◀



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