1TR-FE ENGINE

■ DESCRIPTION

- The 1TR-FE engine is an in-line 4-cylinder, 2.0-liter, 16-valve DOHC engine.
- A Dual VVT-i controlling the intake and exhaust camshafts to their optimal valve timing according to engine conditions has been adopted.

▶ Engine Specifications ◀

Model			New	Previous
Engine Type			1TR-FE	←
No. of Cyls. & Arrangement			4-Cylinder, In-line	←
Valve Mechanism			16-Valve DOHC, Chain Drive (with Dual VVT-i)	16-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.)			1,998 (121.9)	←
Bore × Stroke mm (in.)			86.0 × 86.0 (3.39 × 3.39)	←
Compression Ratio			10.4 : 1	9.8 : 1
Max. Output [EEC]			100 kW @ 5,600 rpm	98 kW @ 5,600 rpm
Max. Torque [EEC]			182 N·m @ 4,000 rpm	←
Valve Timing	Intake	Open	30° BTDC to –8° BTDC	40° BTDC to – 0° BTDC
		Close	34° ABDC to 72° ABDC	24° ABDC to 64° ABDC
	Exhaust	Open	53° BBDC to 8° BBDC	44° BBDC
		Close	–1° ATDC to 44° ATDC	8° ATDC
Firing Order			1 – 3 – 4 – 2	←
Fuel			Unleaded Gasoline	←
Research Octane Number			91 or higher	←
Octane Rating			87 or higher	←
Oil Grade			API SL, SM "energy-conserving", SN "resource-conserving", or ILSAC	←
Emission Regulation			EURO V	←
Engine Service Mass* (Reference) kg (lb)			114.3 (252.0)	←

*: Weight shows the figure with oil and water fully filled.

▶ Valve Timing ◀

