

■ 1NZ-FE and 2NZ-FE ENGINES

1. Main Difference

The following chart describes the changes from the 1NZ-FE and 2NZ-FE engines on the previous model to the 1NZ-FE and 2NZ-FE engines on the new model.

Item	Outline
Emission Regulation	Change of the European regulation (STEP III → STEP IV)
Engine Proper	Change of the piston shape
Exhaust System	<ul style="list-style-type: none"> ● Change of the exhaust manifold shape ● Change of the TWC (Three-Way Catalytic Converter) construction and TWC number (1 → 2) ● Change of the heated oxygen sensor (Bank 1, Sensor 1) installation position
Engine Control System	<ul style="list-style-type: none"> ● Added of the cooling fan control ● Change of the engine ECU (16-bit → 32-bit)
Other	Configuration and structure are the same as 1NZ-FE and 2NZ-FE engines on the previous model.

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2. Engine Specification

► 1NZ-FE Engine ◀

Model			New	Previous
No. of Cyls. & Arrangement			4-Cylinder, In-line	←
Valve Mechanism			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.)	1497 (91.4)	←
Bore x Stroke		mm (in.)	75.0 x 84.7 (2.95 x 3.33)	←
Compression Ratio			10.5 : 1	←
Max. Output		[EEC]	77 kW @ 6000 rpm	78 kW @ 6000 rpm
Max. Torque		[EEC]	143 N·m @ 4200 rpm	145 N·m @ 4200 rpm
Valve Timing	Intake	Open	-7° ~ 33° BTDC	←
		Close	52° ~ 12° ABDC	←
	Exhaust	Open	42° BBDC	←
		Close	2° ATDC	←
Firing Order			1 – 3 – 4 – 2	←
Research Octane Number			95 or more	←
Emission Regulation			European STEP IV	European STEP III
Oil Grade			API SL-EC or ILSAC	←
Engine Service Mass (Reference)* kg (lb)		M/T	94.2 (207.7)	←
		A/T	—	—

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

► 2NZ-FE Engine ◀

Model			New	Previous
No. of Cyls. & Arrangement			4-Cylinder, In-line	←
Valve Mechanism			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.)	1299 (79.3)	←
Bore x Stroke		mm (in.)	75.0 x 73.5 (2.95 x 2.89)	←
Compression Ratio			10.5 : 1	←
Valve Timing	Intake	Open	-7° ~ 33° BTDC	←
		Close	52° ~ 12° ABDC	←
	Exhaust	Open	34° BBDC	←
		Close	2° ATDC	←
Firing Order			1 – 3 – 4 – 2	←
Research Octane Number			95 or more	←
Emission Regulation			European STEP IV	European STEP III
Oil Grade			API SL-EC or ILSAC	←
Engine Service Mass (Reference)*		M/T	92.5 (203.9)	←
		kg (lb) A/T	84.8 (187.0)	←

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