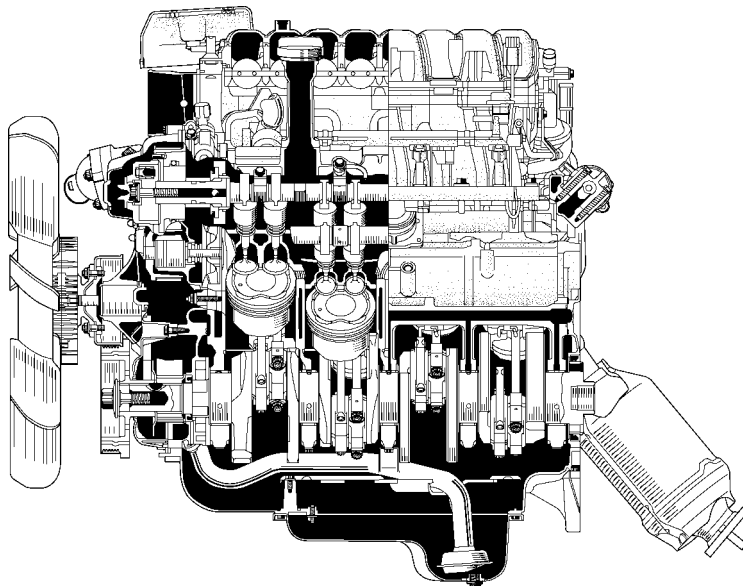


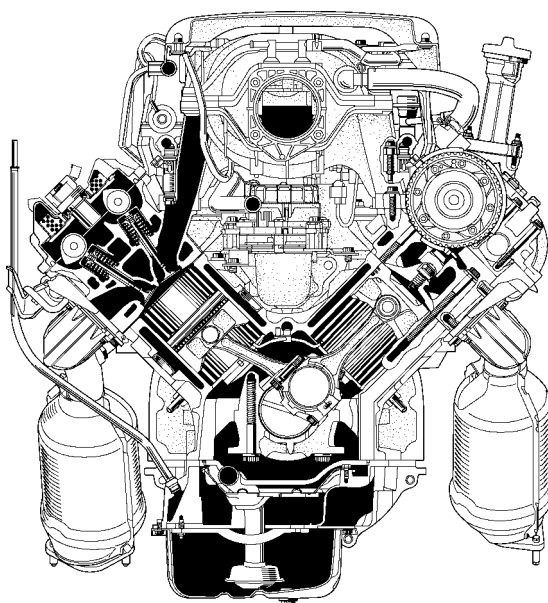
■ 2UZ-FE ENGINE

1. General

The 2UZ-FE engine is a V8, 4.7-liter, 32-valve DOHC engine. This engine is added the VVT-i (Variable Valve Timing-intelligent), ACIS (Acoustic Control Induction System), and AI (Air Injection) system to achieve high performance and reduce exhaust emissions.



275RN15



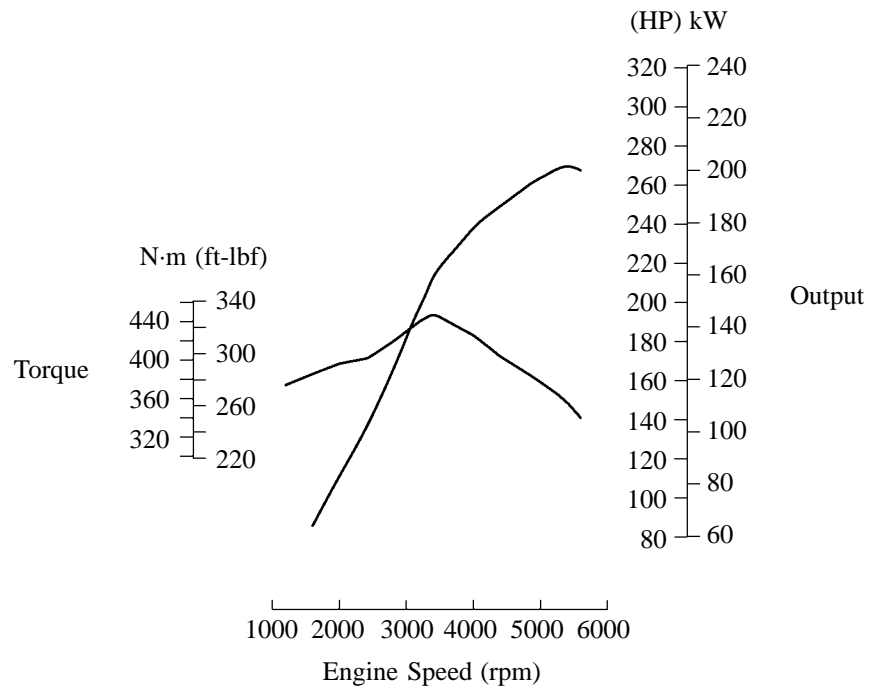
275RN16

► **Engine Specifications** ◀

Model		'05 4Runner	'04 4Runner	
Engine Type		2UZ-FE	←	
No. of Cyls. & Arrangement		8-Cylinder, V Type	←	
Valve Mechanism		32-Valve DOHC, Belt & Gear Drive (with VVT-i)	32-Valve DOHC, Belt & Gear Drive (without VVT-i)	
Combustion Chamber		Pentroof Type	←	
Manifolds		Cross-Flow	←	
Fuel System		SFI	←	
Displacement	cm ³ (cu. in.)	4664 (284.5)	←	
Bore × Stroke	mm (in.)	94.0 × 84.0 (3.70 × 3.31)	←	
Compression Ratio		10.0 : 1	9.6 : 1	
Max. Output	(SAE-NET)	201 kW @ 5400 rpm (270 HP @ 5400 rpm)	183 kW @ 4800 rpm (245 HP @ 4800 rpm)	
Max. Torque	(SAE-NET)	447 N·m @ 3400 rpm (330 ft-lbf @ 3400 rpm)	427 N·m @ 3400 rpm (315 ft-lbf @ 3400 rpm)	
Valve Timing	Intake	Open	30 - -14° BTDC	3° BTDC
		Close	15 - 59° ABDC	36° ABDC
	Exhaust	Open	46° BBDC	←
		Close	3° ATDC	←
Firing Order		1 - 8 - 4 - 3 - 6 - 5 - 7 - 2	←	
Research Octane Number		91 or more	←	
Octane Rating		87 or more	←	
Engine Service Mass* (Reference) kg (lb)		249 (549)	244 (538)	
Oil Grade		API SL, EC or ILSAC	←	
Tailpipe Emission Regulation		LEVII-ULEV, SFTP	ULEV, SFTP	
Evaporative Emission Regulation		LEV-II, ORVR	←	

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

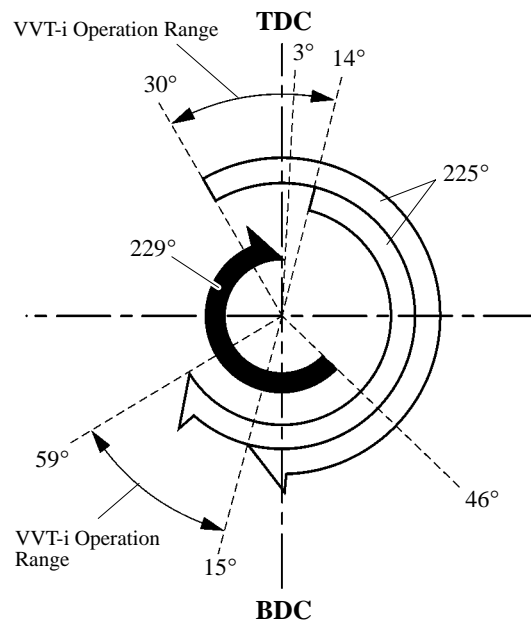
► Performance Curve ◀



273GX84

► Valve Timing ◀

◀ : Intake Valve Opening Angle
 ▶ : Exhaust Valve Opening Angle



273GX03

2. Major Difference

The major difference between the new 2UZ-FE engine on the '05 4Runner and the 2UZ-FE engine on the '04 4Runner are the following:

System		Features
Engine Specification		According to various changes, the following specifications are changed. <ul style="list-style-type: none"> • Valve Mechanism • Compression Ratio • Intake Valve Timing • Max. Output and Torque • Engine Service Mass
Engine Proper	Cylinder Head	<ul style="list-style-type: none"> • A lead-free valve seat is used. • The passage for the air injection is added.
	Cylinder Block	<ul style="list-style-type: none"> • A lead-free crankshaft bearing is used. • Oil jet for piston is added.
	Piston	Piston shape is changed.
	Connecting Rod	A lead-free connecting rod bearing is used.
Valve Mechanism		Intake camshaft for the VVT-i (Variable Valve Timing-intelligent) is used.
Lubrication System		Oil passage for the VVT-i and oil jet for the piston are added.
Intake and Exhaust System		<ul style="list-style-type: none"> • The throttle body shape is changed. • The material of the intake manifold is changed from aluminum to plastic. • The air injection pipe is provided on the exhaust manifold. • The number of TWCs (Three-Way catalytic Converter) in the front exhaust pipe has been changed from one to two.
Engine Control System		<ul style="list-style-type: none"> • Mass air flow meter is changed from the plug-in type to the slot-in type. • Camshaft position sensor is changed from the pick-up type to the magnetic resistance element type. • Two VVT-i sensors are added. • Knock sensor is changed from the resonant type to the non-resonant type. • Two air fuel ratio sensors are used. • Idle speed, when the shift position is D, is changed from 600 rpm to 550 rpm. • VVT-i control is added. • ACIS (Acoustic Control Induction System) control is added. • Air injection control is added. • The construction of the evaporative emission control system is changed.
Diagnosis		Some DTCs (Diagnostic Trouble Codes) have been added and discontinued.

3. Engine Proper

For details, see page 147 in the 2UZ-FE engine section in Toyota Tundra.

4. Valve Mechanism

For details, see page 149 in the 2UZ-FE engine section in Toyota Tundra.

5. Lubrication System

For details, see page 150 in the 2UZ-FE engine section in Toyota Tundra.

6. Intake and Exhaust System

Throttle Body

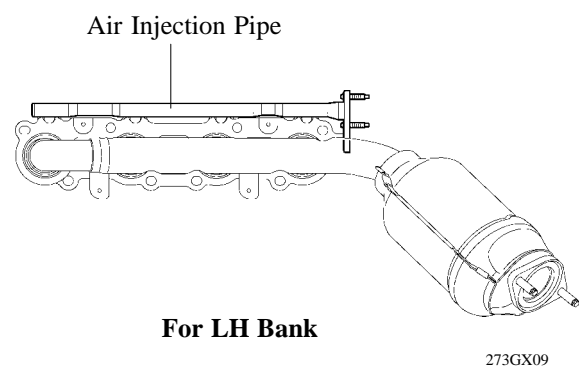
For details, see page 151 in the 2UZ-FE engine section in Toyota Tundra.

Intake Manifold

For details, see page 151 in the 2UZ-FE engine section in Toyota Tundra.

Exhaust Manifold

According to the addition of an air injection system, an air injection pipe is provided on the exhaust manifold.



Front Exhaust Pipe

To reduce exhaust gases, the number of TWCs (Three-way catalytic Converters) in the front exhaust pipe has been changed from one to two.

