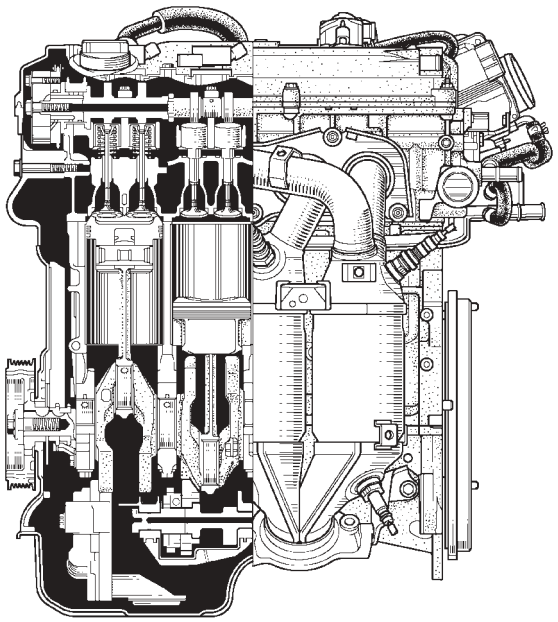
■2AZ-FSE ENGINE

1. General

The 2AZ-FSE TOYOTA D-4 (Direct Injection 4-stroke gasoline engine) is an in-line 4-cylinder, 2.4 liters, 16-valve DOHC engine.
This engine is uses direct injection system, high pressure fuel control system and VVT-i (Variable Valve Timing-intelligent) system to realize high performance, fuel economy, clean emission, low noise and low vibration. In addition, it has the ETCS-i (Electronic Throttle Control System-intelligent) to ensure excellent controllability of the vehicle.



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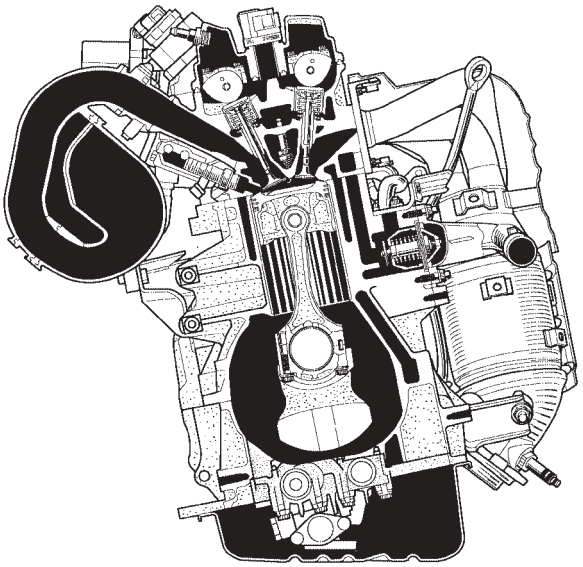

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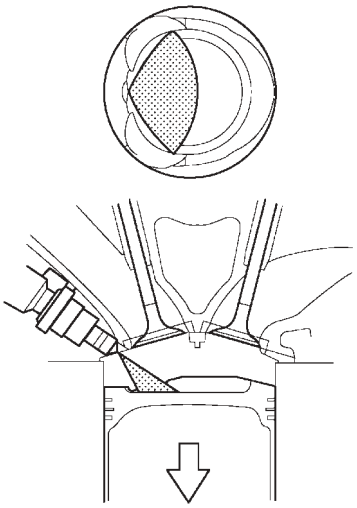
—REFERENCE—

TOYOTA D-4 (Direct injection 4-stroke gasoline engine)

- Usual gasoline EFI engine has the injector installed on the intake port and the air and fuel injected inside the intake port is mixed and suctioned into the cylinder.
- TOYOTA D-4 has the injector installed on the combustion chamber, which injects the fuel pressurized in the fuel pump (high pressure) to the combustion chamber directly. With this, vaporized latent heat effect is obtained, then the cubic footage has been improved and the knocking limit has been expanded, resulting in the out improvement.



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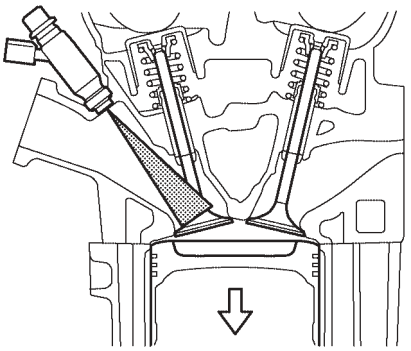
TOYOTA D-4



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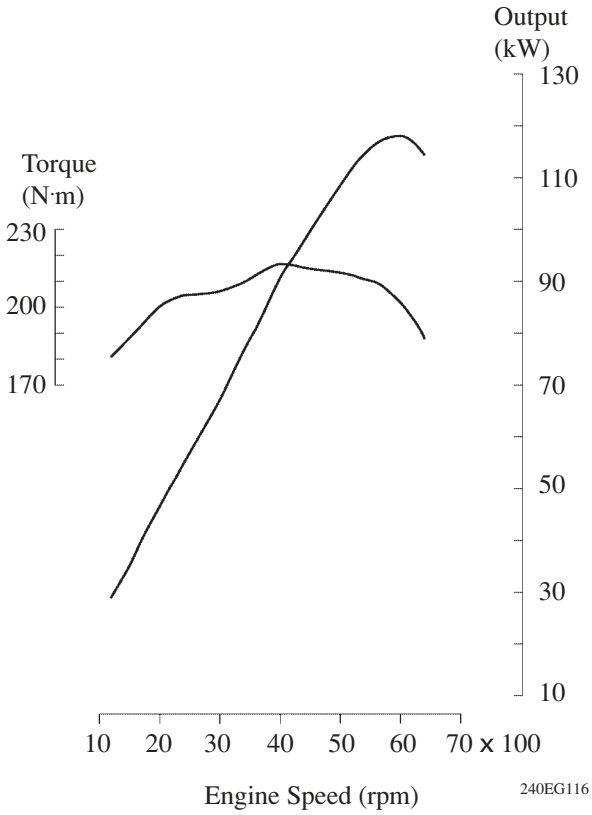
Usual Gasoline EFI

- Depending on the driving condition, by injecting the fuel at an optimal timing in the suctioning process, equal air-fuel mixture is uniformed.
- A slit nozzle type injector precisely controls the quantity of the high pressure fuel and produces a fine-grain atomization, thus improve the fuel efficiency.

▶ Engine Specification ◀

Model			2AZ-FSE	1AZ-FSE
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 D-4 (L-type)	←
Ignition System			DIS	←
Displacement	cm^3 (cu. in.)		2362	1998 (121.9)
Bore x Stroke	mm (in.)		88.5 x 96.0 (3.39 x 3.39)	86.0 x 86.0 (3.39 x 3.39)
Compression Ratio			11.0 : 1	←
Max. Output	(EEC)		120 kW @ 5800 rpm	108 kW @ 5700 rpm
Max. Torque	(EEC)		230 N·m @ 4000 rpm	196 N·m @ 4000 rpm
Valve Timing	Intake	Open	–3° ~ 44° BTDC	–12° ~ 31° BTDC
		Close	19° ~ 66° ABDC	15° ~ 58° ABDC
	Exhaust	Open	45° BBDC	←
		Close	3° ATDC	←
Firing Order			1 – 3 – 4 – 2	←
Research Octane Number			95 or higher	←
Oil Grade			API SL, EC or ILSAC	←
Emission Regulation			European STEP IV and European Cold Emission	←

▶ Performance Curve ◀



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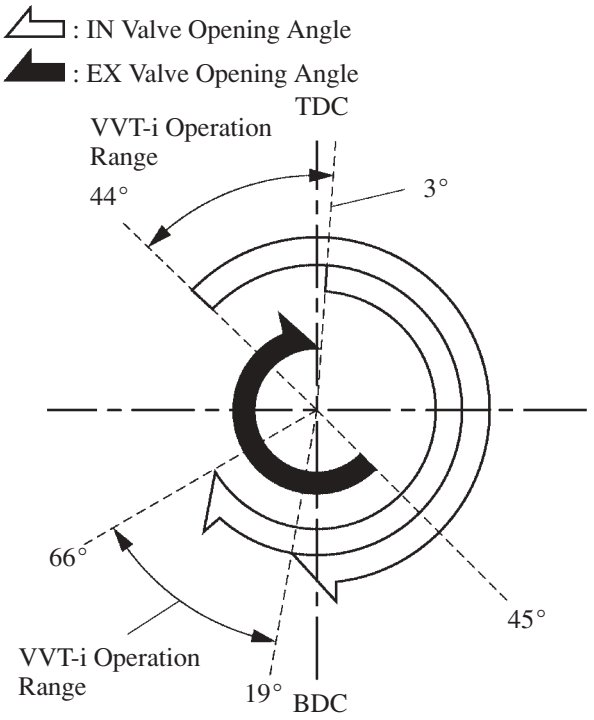

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