Toyota 1NZ-FE

Full article: https://www.engine-specs.net/toyota/1nz-fe.html | Updated October 14, 2026

The Toyota 1NZ-FE is a 1.5 L (1,497 cc) naturally aspirated inline-four gasoline engine of the NZ family, built at the Kamigo plant since 1999. It has an aluminum block and head, DOHC with four valves per cylinder, VVT-i on the intake camshaft, a chain-driven valvetrain, ETCS-i and DIS-4 ignition.

Engine code: 1 - 1st generation; **NZ** - engine family; **F** - economy narrow-angle DOHC; **E** - multi-point fuel injection.

ENGINE SPECIFICATIONS	
Engine code	1NZ-FE
Layout	Four-stroke, inline-4, DOHC 16V, VVT-i (intake)
Fuel type / system	Gasoline; electronic fuel injection (EFI)
Production	1999-
Displacement	1.5 L, 1,497 cm^3 (91.35 cu in)
Bore x stroke	75.0 x 84.7 mm (2.95 x 3.33 in)
Compression ratio	10.5:1 (11.0:1 on JDM engines from 2012)
Power output	98-110 PS (72-81 kW) at 6,000 rpm, depending on market
Torque output	127-143 Nm (13.0-14.6 kg·m) at 4,200-4,800 rpm
Firing order	1-3-4-2
Cylinder block	Aluminum, thin-walled cast-iron liners, 5 main bearings
Timing drive	Chain (8 mm roller chain)
Weight	87 kg (191.2 lb)

MAINTENANCE DATA	
Engine oil	5W-30 or 10W-30, API SJ or newer
Oil capacity	3.7 L with filter / 3.4 L without filter (verify in the manual for your market)
Oil change interval	5,000-10,000 km (3,000-6,000 mi)
Compression	Standard 15.0 kg/cm^2; minimum 11.0 kg/cm^2
Valve clearance (type '99)	Intake 0.15-0.25 mm; exhaust 0.25-0.35 mm (cold)
Spark plugs (type '99)	Denso K16R-U11 / NGK BKR5EYA-11; gap 1.1 mm
Spark plugs (type '03)	Iridium: Denso FK20HR11 / NGK ILFR6D11; gap 1.1 mm

ENGINE VERSIONS		
	Type '99	**Type '03**
Valve train	Bucket tappets, shim adjustment	Roller rockers, hydraulic lash adjusters
Valve angle	33°	21°
EGR	No	Yes, with cooler
Thermostat opens	About 82°C	About 88°C
Used on	Early models; export Yaris/Echo/Vios/Scion	JDM from Sept. 2003 (first on Sienta XP80)

TIGHTENING TORQUES	
Cylinder head bolts	29 Nm (3.0 kg·m; 21 ft·lb), then +90°, then +90°
Camshaft sprocket	64 Nm (6.5 kg·m; 47 ft·lb)
Main bearing cap bolts	22 Nm (2.2 kg·m; 16 ft·lb), then +90°
Connecting rod bolts	15 Nm (1.5 kg·m; 11 ft·lb), then +90°
Crankshaft pulley bolt	128 Nm (13.0 kg·m; 94.5 ft·lb)
Drive plate (A/T) bolts	88 Nm (8.8 kg·m; 65 ft·lb)

ATTENTION: Specifications can differ by market, model year and engine version. Use the official service manual for your vehicle for repair work. Data are provided for reference only.

Copyright © engine-specs.net. All rights reserved.