

## OUTLINE

## a. 1GD-FTV Engine/1GD-FTV High Version Engine

- i. The 1GD-FTV TOYOTA Direct injection 4 stroke common-rail Diesel engine (D-4D) is an in-line 4-cylinder, 2.8-liter, 16-valve DOHC, turbocharged diesel engine. This engine uses the direct injection system and common-rail system to achieve high performance, clean emissions, low noise and low vibrations.

Engine Type		1GD-FTV	1GD-FTV High Version
Item	No. of Cyls. and Arrangement	4-cylinder, In-line	4-cylinder, In-line
	Valve Mechanism	16-valve DOHC, Chain Drive	16-valve DOHC, Chain Drive
	Displacement	2755 cm <sup>3</sup> (168.1 cu.in.)	2755 cm <sup>3</sup> (168.1 cu.in.)
	Max. Output	123 kW @ 3600 rpm	130 kW @ 3400 rpm
	Max. Torque	343 N*m @ 1400 to 3400 rpm	420 N*m @ 1400 to 2600 rpm*1 450 N*m @ 1600 to 2400 rpm*2

**HINT:**

\*1: Models with RC61 or RC61F manual transmission

\*2: Models with AC60E or AC60F automatic transmission

## b. 2GD-FTV Engine/2GD-FTV High Version Engine

- i. The 2GD-FTV TOYOTA Direct injection 4 stroke common-rail Diesel engine (D-4D) is an in-line 4-cylinder, 2.4-liter, 16-valve DOHC, turbocharged diesel engine. This engine uses the direct injection system and common-rail system to achieve high performance, clean emissions, low noise and low vibrations.

Engine Type		2GD-FTV	2GD-FTV High Version
Item	No. of Cyls. and Arrangement	4-cylinder, In-line	4-cylinder, In-line
	Valve Mechanism	16-valve DOHC, Chain Drive	16-valve DOHC, Chain Drive
	Displacement	2393 cm <sup>3</sup> (146.0 cu.in.)	2393 cm <sup>3</sup> (146.0 cu.in.)
	Max. Output	110 kW @ 3400 rpm	110 kW @ 3400 rpm
	Max. Torque	343 N*m @ 1400 to 2800 rpm	400 N*m @ 1600 to 2000 rpm

## c. 1KD-FTV Engine

- i. The 1KD-FTV TOYOTA Direct injection 4 stroke common-rail Diesel engine (D-4D) is an in-line 4-cylinder, 3.0-liter, 16-valve DOHC, turbocharged diesel engine with intercooler. This engine uses the direct injection system and common-rail system to achieve high performance, clean emissions, low noise and low vibrations.

Engine Type			1KD-FTV
Item	No. of Cyls. and Arrangement		4-cylinder, In-line
	Valve Mechanism		16-valve DOHC, Belt and Gear Drive
	Displacement		2982 cm <sup>3</sup> (182.0 cu. in.)
	Max. Output		120 kW @ 3400 rpm
	Max. Torque	M/T	343 N*m @ 1400 to 3200 rpm
		A/T	360 N*m @ 1600 to 3000 rpm

## d. 2KD-FTV Engine

- i. The 2KD-FTV TOYOTA Direct injection 4 stroke common-rail Diesel engine (D-4D) is an in-line 4-cylinder, 2.5-liter, 16-valve DOHC, turbocharged diesel engine. This engine uses the direct injection system and common-rail system to achieve high performance, clean emissions, low noise and low vibrations.

- ii. The 2KD-FTV High Version engine, which has a higher power output than the normal 2KD-FTV engine, is also available. The 2KD-FTV and 2KD-FTV High Version engines are equipped with ECMs containing engine control programs that differ from each other. However, both engines share the same mechanical components.

Engine Type		2KD-FTV	2KD-FTV High Version
Item	No. of Cyls. and Arrangement	4-cylinder, In-line	4-cylinder, In-line
	Valve Mechanism	16-valve DOHC, Belt and Gear Drive	16-valve DOHC, Belt and Gear Drive
	Displacement	2494 cm <sup>3</sup> (152.2 cu. in.)	2494 cm <sup>3</sup> (152.2 cu. in.)
	Max. Output	75 kW @ 3600 rpm	75 kW @ 3600 rpm
	Max. Torque	200 N*m @ 1200 to 3400 rpm	260 N*m @ 1600 to 2400 rpm

**e. 1TR-FE Engine**

- i. The 1TR-FE engine is an in-line 4-cylinder, 2.0-liter, 16-valve DOHC engine.
- ii. On this engine, the Electronic Throttle Control System-intelligent (ETCS-i) and Dual Variable Valve Timing-intelligent (Dual VVT-i) are used. These control functions have been optimized to further improve engine performance and fuel economy, and to reduce exhaust emissions.

Engine Type		1TR-FE
Item	No. of Cyls. and Arrangement	4-cylinder, In-line
	Valve Mechanism	16-valve DOHC, Chain Drive (with Dual VVT-i)
	Displacement	1998 cm <sup>3</sup> (121.9 cu. in.)
	Max. Output	102 kW @ 5600 rpm
	Max. Torque	183 N*m @ 4000 rpm

**f. 2TR-FE Engine**

- i. The 2TR-FE engine is an in-line 4-cylinder, 2.7-liter, 16-valve DOHC engine.
- ii. On this engine, the Electronic Throttle Control System-intelligent (ETCS-i), Dual Variable Valve Timing-intelligent (Dual VVT-i) and air injection system are used. These control functions have been optimized to further improve engine performance and fuel economy, and to reduce exhaust emissions.

Engine Type		2TR-FE
Item	No. of Cyls. and Arrangement	4-cylinder, In-line
	Valve Mechanism	16-valve DOHC, Chain Drive (with Dual VVT-i)
	Displacement	2694 cm <sup>3</sup> (164.4 cu.in.)
	Max. Output	122 kW @ 5200 rpm
	Max. Torque	245 N*m @ 4000 rpm

**g. 1GR-FE Engine**

- i. The 1GR-FE engine is a V-type, 6-cylinder, 4.0-liter, 24-valve DOHC engine.
- ii. On this engine, the Variable Valve Timing-intelligent (VVT-i) system, Acoustic Control Induction System (ACIS), and the Electronic Throttle Control System-intelligent (ETCS-i) are used. These control functions have been optimized to further improve engine performance and fuel economy, and to reduce exhaust emissions.

Engine Type		1GR-FE
Item	No. of Cyls. and Arrangement	6-cylinder, V-type
	Valve Mechanism	24-valve DOHC, Chain Drive (with VVT-i)
	Displacement	3956 cm <sup>3</sup> (241.4 cu. in.)
	Max. Output	175 kW @ 5200 rpm
	Max. Torque	376 N*m @ 3800 rpm

**h. 5L-E Engine**

- i.** The 5L-E engine is an in-line 4-cylinder, 3.0-liter, 8-valve OHC diesel engine. In addition, an Electronic Fuel Injection (EFI) system is used to achieve cleaner emissions.

Engine Type		5L-E
Item	No. of Cyls. and Arrangement	4-cylinder, In-line
	Valve Mechanism	8-valve, Belt Drive
	Displacement	2986 cm <sup>3</sup> (182.2 cu. in.)
	Max. Output	70 kW @ 4000 rpm
	Max. Torque	197 N*m @ 2200 rpm

**i. Automatic Transmissions**

- i.** A750F 5-speed automatic transmission is used.
- ii.** AC60E and AC60F 6-speed automatic transmissions are used.

**j. Manual Transmissions**

- i.** R151 and R151F 5-speed manual transmissions are used.
- ii.** RC60, RC60F, RC61 and RC61F 6-speed manual transmissions are used.

**k. Suspension**

- i.** A double-wishbone type independent suspension is used for the front.
- ii.** A leaf spring type rigid axle suspension is used for the rear.

**l. Brake**

- i.** A ventilated disc brake is provided for the front brake.
- ii.** A leading-trailing drum brake is provided for the rear brake.
- iii.** A brake control system equipped with an Anti-lock Brake System (ABS), Electronic Brake force Distribution (EBD), brake assist, Traction Control (TRC), Active Traction Control (A-TRC), Vehicle Stability Control (VSC), trailer sway control, hill-start assist control and downhill assist control is provided.

**m. Steering**

- i.** A rack and pinion type steering gear assembly is used.
- ii.** A hydraulic power steering is used.
- iii.** A manual tilt mechanism and telescopic mechanism are used.