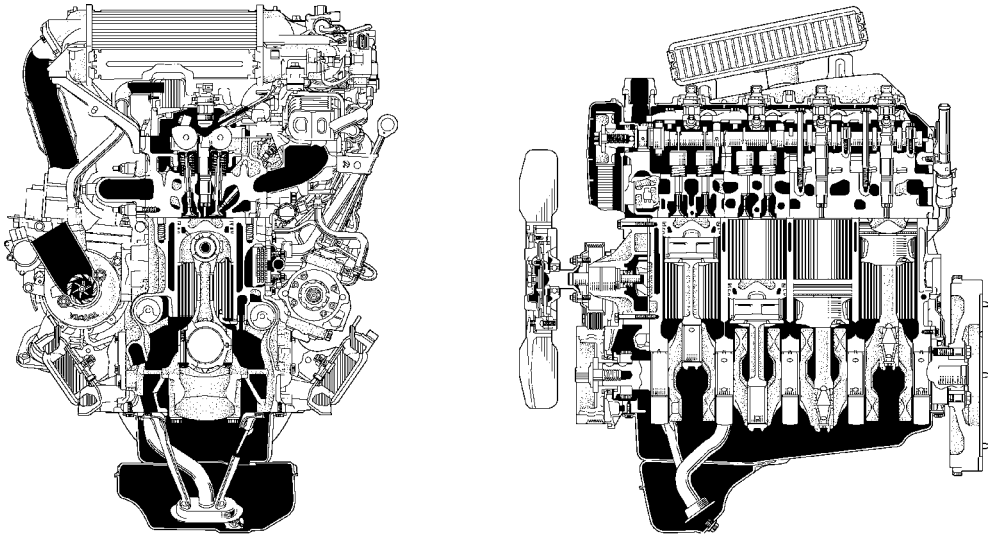
1KD-FTV AND 2KD-FTV ENGINES

■ DESCRIPTION

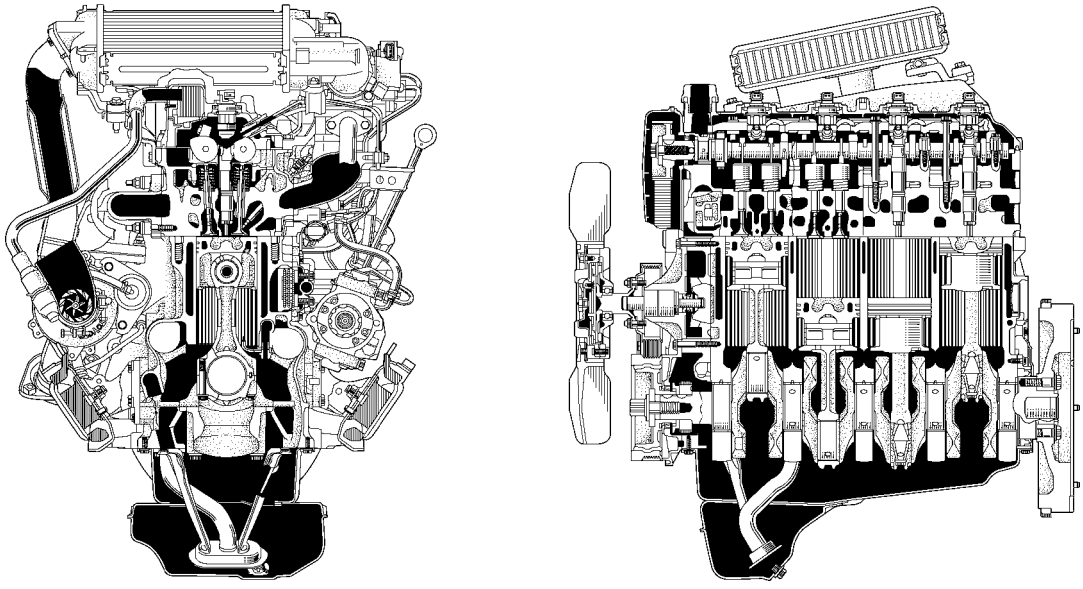
- The 1KD-FTV TOYOTA D-4D (Direct injection 4-stroke common-rail Diesel engine) is a 3.0-liter, in-line 4-cylinder, 16-valve DOHC diesel engine with turbocharger.
- The 2KD-FTV TOYOTA D-4D is a 2.5-liter, in-line 4-cylinder, 16-valve DOHC diesel engine with turbocharger.
- These engines use direct injection system and common-rail system to achieve higher performance, clean emission, low noise and low vibration.
- A 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.
- An intercooler is provided on the models with 1KD-FTV engine and models for Europe, Thailand, Brunei Darussalam and Chile with 2KD-FTV High Version engine. This lowers the intake air temperature and improves power output.
- The basic construction and operation of both the 1KD-FTV and 2KD-FTV engines are the same.

▶ 1KD-FTV Engine ◀



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▶ 2KD-FTV Engine ◀



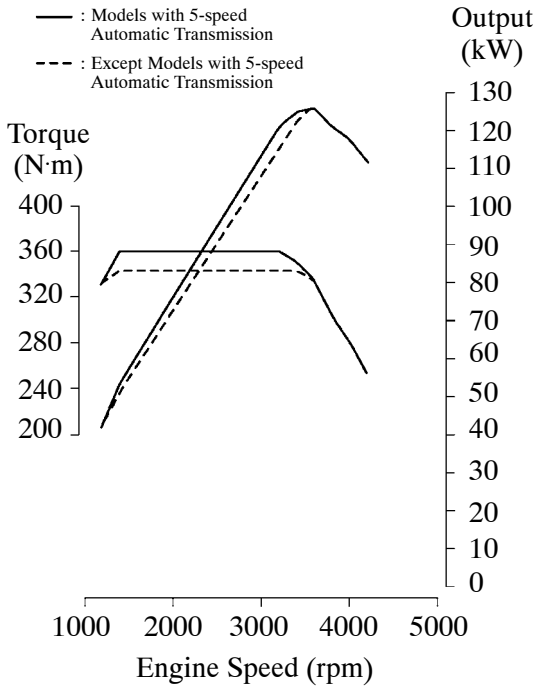
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▶ Engine Specifications ◀

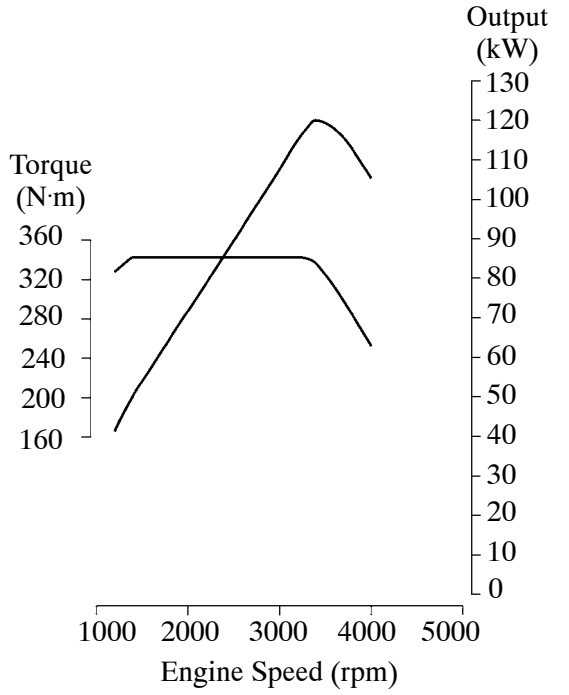
Engine Type			1KD-FTV	2KD-FTV	2KD-FTV High Version	
					Without Intercooler	With Intercooler
No. of Cyls. & Arrangement			4-cylinder, In-line	←	←	←
Valve Mechanism			16-valve DOHC, Belt & Gear Drive	←	←	←
Combustion Chamber			Direct Injection Type	←	←	←
Manifolds			Cross-flow	←	←	←
Fuel System			Common-rail Type	←	←	←
Displacement			2982 cm^3 (182.0 cu. in.)	2494 cm^3 (152.2 cu. in.)	←	←
Bore × Stroke			96.0 × 103.0 mm (3.78 × 4.06 in.)	92.0 × 93.8 mm (3.62 × 3.69 in.)	←	←
Compression Ratio			17.9 : 1	18.5 : 1	←	17.4 : 1*19
						18.5 : 1*20
Max. Output [SAE-NET]			126 kW @ 3600 rpm*2	75 kW @ 3600 rpm	←	88 kW @ 3600 rpm*21
			120 kW @ 3400 rpm*3			106 kW @ 3600 rpm*22
Max. Torque [SAE-NET]			360 N·m @ 1400 – 3200 rpm*4	200 N·m @ 1400 – 3400 rpm	260 N·m @ 1600 – 2400 rpm	325 N·m @ 2000 rpm*21
			343 N·m @ 1400 – 3400 rpm*5			
			343 N·m @ 1400 – 3200 rpm*3			343 N·m @ 1600 – 2800 rpm*22
Valve Timing	Intake	Open	2° BTDC	←	←	←
		Closed	37° ABDC	31° ABDC	←	←
	Exhaust	Open	45° BBDC	30° BBDC	←	←
		Closed	0° ATDC	←	←	←
Firing Order			1 – 3 – 4 – 2	←	←	←
Fuel Cetane Number			48 or Higher	←	←	←
Emission Regulation			EURO IV*6	EURO III*12	EURO III*15	EURO IV*23
			EURO III*7		EURO II*16	
			EURO II*8	EURO II*13	EURO I*17	
			EURO I*9		Tier 1*10	EURO III*24
			Tier 1*10	—*14	—*18	
			—*11			
Engine Service Mass*1 (Reference)			260 kg (573 lb)	235 kg (518 lb)	←	243 kg (536 lb)*21
						245 kg (540 lb)*22

*1: Weight shows the figure with the oil and water fully filled.
*2: Models compliant with EURO IV emission regulations
*3: Except models compliant with EURO IV emission regulations
*4: Models compliant with EURO IV emission regulations (5-speed automatic transmission)
*5: Models compliant with EURO IV emission regulations (except 5-speed automatic transmission)
*6: Models for Europe, Australia, Singapore and Chile
*7: Models for Thailand, Brunei Darussalam, TASA made models for Central & South America (except models for Brazil, export package and high altitude country) and TMT made models for Central & South America (except models for Chile, Ecuador, Colombia, export package and high altitude country)
*8: Models for Malaysia, Philippines, Vietnam, Indonesia, South Africa and Colombia
*9: TSAM made models for export package, TASA made models for Central & South America (models for export package and high altitude country) and TMT made models for Central & South America (models for Ecuador, export package and high altitude country)
*10: Models for Brazil
*11: Models for General countries
*12: Models for Thailand and Brunei Darussalam
*13: Models for Philippines, Vietnam and South Africa
*14: Models for G.C.C. countries, TSAM made models for export package, Kenya, KUN15L-TRMDYN, KUN15L-PRMDYN and General countries
*15: TASA made models for Central & South America (except models for Brazil, export package and high altitude country) and TMT made models for Central & South America (except models for Ecuador, Colombia, export package and high altitude country)
*16: Models for Philippines, South Africa and Colombia
*17: Models for Malaysia, ANCOM and Ecuador
*18: Models for G.C.C. countries, Pakistan, TSAM made models for export package, Kenya, KUN25L-TRMDHN, KUN25L-PRMDHN, General countries, TASA made models for Central & South America (models for export package and high altitude country) and TMT made models for Central & South America (models for export package and high altitude country)
*19: Models for Europe without variable nozzle vane type turbocharger
*20: Models for Thailand, Chile, Brunei Darussalam and models for Europe with variable nozzle vane type turbocharger
*21: Models without variable nozzle vane type turbocharger
*22: Models with variable nozzle vane type turbocharger
*23: Models for Europe and Chile
*24: Models for Thailand and Brunei Darussalam

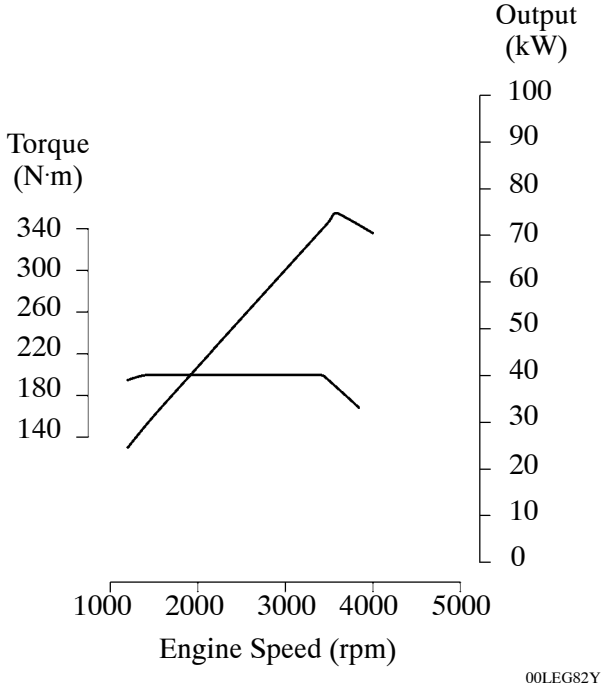
▶ Performance Curve ◀



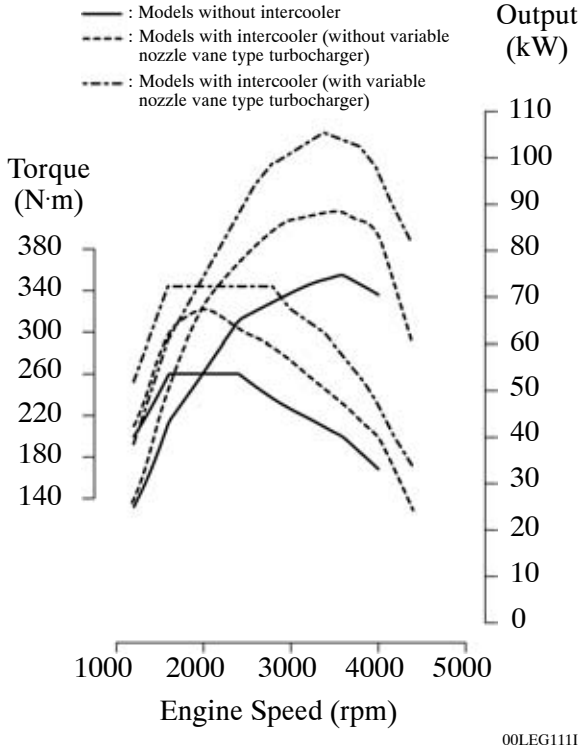
1KD-FTV Engine
(Models Compliant with EURO IV Emission Regulations)



1KD-FTV Engine
(Except Models Compliant with EURO IV Emission Regulations)



2KD-FTV Engine



2KD-FTV High Version Engine