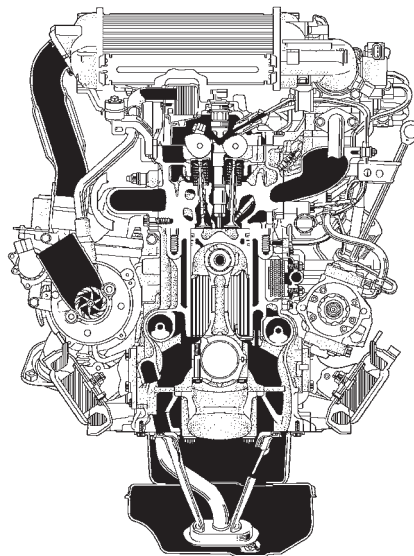
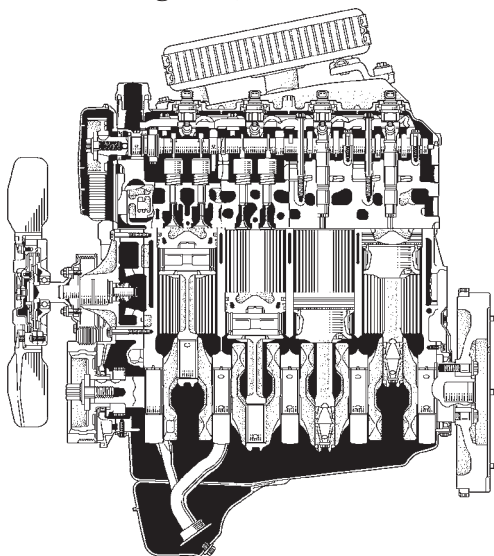


1KD-FTV AND 2KD-FTV ENGINES

■ DESCRIPTION

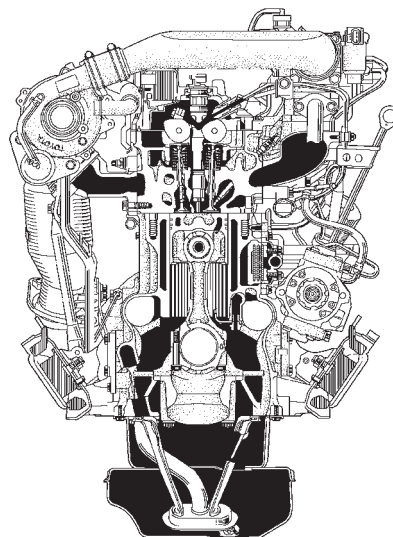
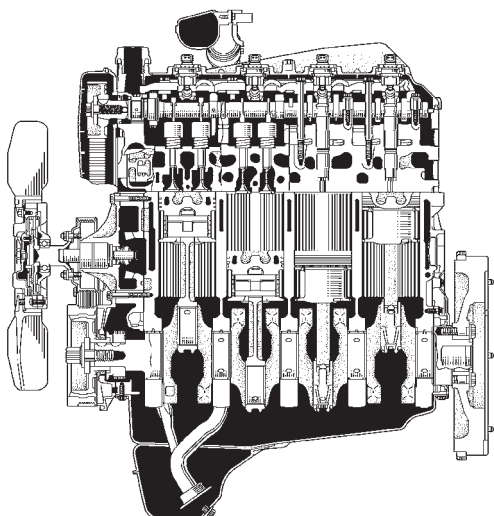
- 1KD-FTV TOYOTA D-4D (Direct injection 4-stroke common-rail Diesel engine) and 2KD-FTV TOYOTA D-4D are 3.0/2.5 liter, in-line 4-cylinder, 16 valve DOHC with turbocharged diesel engine.
- These engines use direct injection system and common-rail system to realize higher performance, clean emission, low noise and low vibration.
- A 2KD-FTV High Version, 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 engine ECUs containing engine control programs that differ from each other. However, both engine models share the same mechanical components.
- An intercooler is provided on all 1KD-FTV engine models and the 2KD-FTV High Version engine for Thailand. 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. For details, see “Major Difference” on [page EG-114](#).

► 1KD-FTV Engine ◀



271EG97

► 2KD-FTV Engine without Inter Cooler ◀



271EG98

► Engine Specifications ◀

Engine Type			1KD-FTV	2KD-FTV	2KD-FTV High Version
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 cm ³ (cu. in.)			2,982 (182.0)	2,494 (152.2)	←
Bore x Stroke mm (in.)			96.0 x 103.0 (3.78 x 4.06)	92.0 x 93.8 (3.62 x 3.69)	←
Compression Ratio			17.9 : 1	18.5 : 1	←
Max. Output [SAE-NET]			120 kW @ 3,400 rpm	75 kW @ 3,600 rpm	75 kW @ 3,600 rpm
					88 kW @ 3,600 rpm* ⁵
Max. Torque [SAE-NET]			343 N·m @ 1,400 ~ 3,200 rpm	200 N·m @ 1,400 ~ 3,200 rpm	260 N·m @ 1,600 ~ 2,400 rpm
					320 N·m @ 2,000 rpm* ⁵
Valve Timing	Intake	Open	2° BTDC	←	←
		Close	37° ABDC	31° ABDC	←
	Exhaust	Open	45° BBDC	30° BBDC	←
		Close	0° ATDC	←	←
Firing Order			1-3-4-2	←	←
Fuel Cetan Number			50 or higher	←	←
Oil Grade			CF-4, 10W-30	←	←
Emission Regulation			EURO III* ²	EURO III* ⁵	EURO III* ⁸
			EURO I* ³	EURO I* ⁶	EURO I* ⁹
			Tier 1* ⁴	—* ⁷	—* ¹⁰
Engine Service Mass* ¹ (Reference) kg (lb)			260 (573)	223 (492)	222 (489)

*1: Weight shows the figure with the oil and water fully filled.

*2: for Thai, Australian, and Central and South American Models

*3: for Philippine, and Central and South American Models (only for export package models)

*4: for Central and South American Models (only for Brazilian-spec models)

*5: for Thai Models

*6: for Philippine Models

*7: for General Countries Models

*8: for Thai, and Central and South American Models

*9: for Malaysian Models

*10: for General Countries, and Central and South American Models (only for export package models)