

010001

## MAIN DATA AND SPECIFICATIONS

Item	Engine model	4JA1	4JB1	4JB1T	4JB1TC
Engine type		Four-cycle, overhead valve, water cooled			
Combustion chamber type		Direct injection			
Cylinder liner type		Dry type, chrome plated, stainless steel tube			
Timing gear train system		Gear drive		Gear drive or Belt drive	Belt drive
No. of cylinders — bore x stroke	mm(in)	4 - 93 x 92 (3.66 x 3.62)		4 - 93 x 102 (3.66 x 4.02)	
No. of piston rings		Compression ring: 2/Oil ring: 1			
Total piston displacement	cm <sup>3</sup> (in <sup>3</sup> )	2,499 (152.4)		2,771 (169.0)	
Compression ratio (to 1)		18.4		18.2	
Compression pressure	kg/cm <sup>2</sup> (psi/kPa)	31 (441/3)			
Engine weight	kg(lb)	Approximately 226 (498)	Approximately 229 (505)	Approximately 250 (550)	Approximately 255 (562)
Fuel injection order		1 - 3 - 4 - 2			
Fuel injection timing BTDC	deg	12 (Gear drive)		12 (Gear drive) 10 (Belt drive)	
Specified fuel type		SAE No. 2 diesel fuel			
Idling speed	rpm	750 - 790			
Valve clearances (At cold): Intake	mm(in)	0.4 (0.016)			
Exhaust	mm(in)	0.4 (0.016)			
Intake valves	Open at (BTDC) deg	24.5		24.0	
	Close at (ABDC) deg	55.5		55.0	
Exhaust valves	Open at (BBDC) deg	54.0		54.0	
	Close at (ATDC) deg	26.0		26.0	
Fuel system		BOSCH distributor VE type			
Injection pump type		Mechanical (All speed)			
Governor type					
Injection nozzle type		Single spring, hole with 4 orifices		Single spring, hole with 4 orifices (Gear drive)	
		—		Two springs, hole with 4 orifices (Belt drive)	

4JB1T : 4JB1 Engine with turbocharger.

4JB1TC: 4JB1 Engine with turbocharger and intercooler.

**06F-2 4J DIESEL ENGINE**

Item	Engine model	4JA1	4JB1	4JB1T	4JB1TC
Injection nozzle opening pressure (Service value)	kg/cm <sup>2</sup> (psi/kPa)				
Single spring type (Gear drive models only)		185 (2,631/18,143)		185 (2,631/18,143)	
Two spring type: (Belt drive models only)				180 (2,560/17,653)	
: First pressure		—		274.5 (3,903/26,920)	274.5 (3,903/26,920)
: Second pressure		—			224* (3,185/21,968)
Main fuel filter type		Cartridge paper element and water separator			
Lubricating system		Pressure circulation			
Lubricating method		CC or CD   CD			
Specified engine oil (API grade)		Approximately 1.0 (14.2/98.1)/770 (SAE 10W-30 API CD grade) engine oil at an oil temperature of 80°C (176°F)			
Oil pressure	kg/cm <sup>2</sup> (psi/kPa)/rpm	Gear   Trochoid   Gear			
Oil pump type		Cartridge paper element			
Oil filter type		**Cartridge paper element			
*Bypass filter type		5.5 (1.5/1.2)			
Oil capacity	lit(US/UK gal)	Water cooled			
Oil cooler type		Centrifugal			
Cooling system		Wax pellet with jiggle valve			
Water pump type		Dry paper element			
Thermostat type		N702/12 x 1   NX120-7/12 x 1 or NX200-10/12 x 1			
Air cleaner type		12 - 40 (480) or 12 - 50 (600)			
Battery type/voltage x No. of units		12 - 2.0 or 12 - 2.2			
Alternator capacity	V-A (Kw)				
Starter motor output	V-Kw				

\*For E.G.R (Exhaust Gas Recirculation) system equipped models only.

\*\*Built-in to the oil filter element.

**Note:**

**Engine Application Chart**

	Vehicle Model	Transmission Model	Clutch Model
4JA1	KBD 4 × 2	MSG	Hydraulic
4JB1, 4JB1T, 4JB1TC	UBS	MUA	