



Engine specifications & Injection pump datas

DIESEL ENGINE for INDUSTRIAL
DE12
DE12T
DE12TIA
DE12TIS

1.7. Engine Specification

1.7.1. Specification

Engine Model		DE12T	DE12TI/A	DE12TIS
Items				
Engine type		4 cycle in-line, Water-cooled type Turbo charged	4 cycle in-line, Water-cooled type Turbo charged & intercooled	
Combustion chamber type		Direct injection type		
Cylinder liner type		Replaceable dry liner		
Timing gear system		Gear driven type		
No. of piston ring		2 Compression ring , 1 oil ring		
No. of cylinder-bore x stroke (mm)		6 - 123 x 155		
Total piston displacement (cc)		11,051		
Compression ratio		17.1 : 1	16.5 : 1	19.5 : 1
Engine dimension (length x width x height) (mm)		1,317 x 847 x 1,064	1,379 x 1,017 x 1,310	
Engine weight (kg)		909	900	
Rotating direction (viewed from flywheel)		Counter clockwise		
Fuel injection order		1 - 5 - 3 - 6 - 2 - 4		
Injection pump type		Mechanical	Mechanical	Mechanical
Governor type		RSV	RSV / RFD	RSV
Injection nozzle type		Multi-hole (5- ϕ 0.31)	Multi-hole(5- ϕ 0.31)	Multi-hole(5- ϕ 0.29)
Fuel injection pressure (kg/cm ²)		220	220	160 / 220
Compression pressure (kg/cm ²)		28 (at 200rpm)		
Intake and exhaust valve clearance(at cold) (mm)		0.3		
Intake valve	Open at	18° (B.T.D.C)	18.2° (B.T.D.C)	
	Close at	34° (A.B.D.C)	32.2° (A.B.D.C)	
Exhaust valve	Open at	46° (B.B.D.C)	69.8° (B.B.D.C)	
	Close at	14° (A.T.D.C)	29.8° (A.T.D.C)	
Lubrication method		Full forced pressure feed type		
Oil pump type		Gear type driven by crankshaft		
Oil filter type		Cartridge type		
Lubricating oil capacity (max./min) (liter)		25/17		
Oil cooler type		Water cooled		
Water pump		Centrifugal type driven by gear		
Cooling method		Fresh water forced circulation		
Cooling water capacity (engine only) (liter)		21		
Thermostat type (opening temperature)		Wax pallet type (71 or 85 °C)		
Alternator voltage - capacity (V - A)		24V - 50A		
Starting motor voltage - output (V - kW)		24 - 6.6		

1.7.2. Engine power

Production tolerance : ±5%

Engine Model		Performance					Remark	
Model	Suffix	Injection timing (BTDC °)	Power (PS / rpm)	Torque (kg.m / rpm)	Low idle (rpm)	High idle (rpm)		
DE12T	EBHEA	14	252 / 1,950	104 / 1,400	1,000~1,025	2,350~2,410	TIER-I	
	EBHLA	14	216 / 2,200	86 / 1,400	975±25	2,420±50		
DE12TI	EBIEA	14	216 / 1,950	86 / 1,400	975±25	2,095~2,195		
	EBIEB	14	286 / 2,000	114 / 1,400	1,100±25	2,200±50		
DE12TIA	EBIEC	17	320 / 2,000	128 / 1,400	1,000~1,025	2,250~2,275		
	EBIED	17	294 / 2,000	115 / 1,400	1,000~1,025	2,250~2,275		
	EBIEE	17	282 / 2,000	110 / 1,400	1,000~1,025	2,250~2,275		
	EBILA	14	305 / 2,100	115 / 1,400	975±25	2,310±50		
	EBILB	14	302 / 2,100	132 / 1,200	1,000±25	2,380~2,410		
	EBILC	14	302 / 2,100	132 / 1,200	1,000±25	2,380~2,410		
DE12TIS	EBILD	17	282 / 2,100	132 / 1,200	1,000±25	2,380~2,410		TIER-II
	ECIEA	6.5 ~ 7	282 / 2,000	132 / 1,200	1,000±25	2,380~2,410		
	ECIEB	6.5 ~ 7	294 / 2,000	115 / 1,400	1,000~1,025	2,250~2,275		
	ECIEC	5 ~ 6	257 / 1,900	105 / 1,400	1,000~1,025	2,090~2,140		
	ECIED	6.5 ~ 7.5	282 / 2,000	110 / 1,300	1,000~1,025	2,250~2,275		
	ECILA	5 ~ 6	305 / 2,100	132 / 1,200	1,000~1,025	2,350~2,410		
	ECILB	5 ~ 6	235 / 2,100	112 / 1,200	1,000~1,025	2,350~2,410		
	ECILC	5 ~ 6	282 / 2,100	132 / 1,200	1,000~1,025	2,350~2,410		

* Note : All data are based on operation without cooling fan at ISO 1585 (SAE J1349).