

3. Construction

ENGINE MODEL		4JH	4JH-TE	4JH-HTE	4JH-DTE
Group	Part	Construction			
Engine Proper	Cylinder block	Integrally-cast water jacket and crankcase			
	Cylinder liner	Dry sleeve			
	Timing gear case	Cast aluminum			
	Oil sump	Cast aluminum, oil pan			
	Main bearings	Hanger-type bearings supports			
	Engine feet	Cylinder block and Flywheel mounting side			
Intake/Exhaust, Valve Drive	Cylinder head	Integrally-cast type, jet cooling between valves, Intake/exhaust valve seat inserts			
	Intake/exhaust valves	Mushroom shaped, seat angle: Intake: 120° Exhaust: 90°			
	Intake manifold	Aluminum diecast integral			
	Exhaust manifold	Water cooled integral with water tank			
	Air cooler			Plate fin type	Corrugated fin type
	Turbocharger	—	IHI RHB52 exhaust gas turbo	IHI RHB52HW exhaust gas turbo, Water cooled type.	
	Valve drive	Overhead valve push rod rocker arm system			
	Timing gear	Helical gear			
Main Moving Parts	Crankshaft	Stamped forging			
	Flywheel	Cast iron static balance with ring gear			
	Pistons	Cast aluminum, oval type			
	Piston rings	2 compression rings, 1 oil ring			
	Piston pin	Floating type			
	Connecting rod	Forged steel			
	Crank pin bushings	Aluminum bushings			
Lube Oil System	Lube oil pump	Trochoid type			
	Oil filter	Full flow paper element cartridge type			
	Oil cooler	Sea water cooled pipe type		Sea water cooled multi-pipe type	
	Control valve	Cylindrical type with external adjusting shims			
Cooling Water System	Fresh water pump	V-pulley driven, centrifugal type			
	Sea water pump	Gear driven, rubber impeller type			
	Thermostat	Wax pellet type			
	Fresh water cooler	Multi-tube type integral with exhaust manifold			
Bilge	Bilge pump	Electric			
Fuel Injection Equipment	Fuel injection pump	YANMAR YPES-CL type integral with governor			
	Fuel injection nozzles	Hole type			
	Fuel feed pump	Diaphragm type			
	Fuel filter	Paper element cartridge type			
Governor	Governor	Centrifugal all-speed mechanical type			
Remote Control Equipment	Engine speed & marine gearbox	Single control lever type with push-pull cable			
Starting Equipment	Electric starter	DC 12V, 1.8kW starter motor			
	Generator	12V, 55A with built-in IC regulator			
Marine Gearbox	Clutch	Multi-disc mechanical wet type			
	Reduction gear	Helical gear constant mesh type			