

4JH4-HTE

Engine Specifications

Parameter	Data
Configuration	4-cycle, Vertical, Water-Cooled Diesel
Crankshaft Rotation (Viewed from Stern)	Counterclockwise
Combustion System	Direct Injection
Aspiration	Turbocharged with Intercooler
Number of Cylinders	4
Bore x Stroke	84 mm x 90 mm (3.31 in. x 3.54 in.)
Displacement	1.995 L (121.74 cu in.)
Continuous Rating Output at Crankshaft (at 3101 rpm)	73.6 kW* (100 hp metric)*
Brake Mean Effective Pressure (Continuous Rating Output)	1.43 MPa 14.5 kgf/cm ² (207.35 psi)
Piston Speed (Continuous Rating Output)	9.3 m/sec. (30.5 ft/sec.)
Maximum Output at Crankshaft (at 3200 rpm)	80.9 kW* (110.0 hp metric)*
Brake Mean Effective Pressure (Maximum Output)	1.52 MPa* 15.5 kgf/cm ² * (220.4 psi)*
Piston Speed (Maximum Output)	9.6 m/sec. (31.5 ft/sec.)
High Idling Speed	3775 +25 -75 rpm
Low Idling Speed	800 ± 25 rpm
Firing Order	1 - 3 - 4 - 2 - 1 : 180° even
Starter Motor	DC 12 V, 1.4 kW
Alternator	DC 12 V, 80A DC 12 V, 60A - Option

Parameter	Data
Minimum Battery Capacity	12 V at 100 - 120 Ah
Cooling System	Closed Fresh Water Cooling
Coolant Capacity (Engine)	7.2 L (7.6 qt)
Coolant Recovery Tank Capacity	0.8 L (0.85 qt)
Engine Lubrication	Enclosed Forced
Engine Oil Capacity at 7° Rake Angle (Effective / Maximum) (with ZF30M)	2.4 / 5.7 ± 0.3 L (2.5 / 6.0 ± 0.3 qt)
Engine Oil Capacity at 0° Rake Angle (Effective / Maximum) (with ZF25A, KM4A2 or KMH4A)	2.4 / 6.9 ± 0.3 L (2.5 / 7.3 ± 0.3 qt)
Dry Weight (with ZF30M)	245 kg (540 lb)
Dry Weight (with ZF25A)	247 kg (544 lb)
Dry Weight (with KM4A2)	247 kg (544 lb)
Dry Weight (with KMH4A)	248 kg (547 lb)
Recommended Installation Rake Angle	ZF30M: 7°
	ZF25A: 0°
	KM4A2: 0°
	KMH4A: 0°
Maximum Installation Rake Angle	ZF30M: 14°
	ZF25A: 7°
	KM4A2: 7°
	KMH4A: 7°

Notes: Rating condition:

* Fuel temperature: 40°C at fuel pump inlet ISO 8665

Fuel density: 0.842 g/cm³ at 15°C

1. 1 HP (hp metric) = 0.7355 kW

Marine Gear Specifications

Use the ZF30M, KM4A2, KMH4A or ZF25A marine gears with the 4JH4-HTE engine. The ZF30M has a mechanical multi-plate clutch and is a parallel drive. The KM4A2 has a mechanical cone clutch, and the KMH4A and ZF25A have hydraulic wet multi-disk clutches and are angle drive.

ZF30M

Parameter	Data
Reduction Ratio (Ahead)	2.15 / 2.70
Reduction Ratio (Astern)	2.64
Marine Gear Oil Capacity (Effective / Maximum)	0.2 / 1.1 L (0.2 / 1.2 qt)
Propeller Rotation (Viewed from Stern)	Clockwise
Dry Weight	27.5 kg (61 lb)

KM4A2

Parameter	Data
Reduction Ratio (Ahead)	1.47 / 2.14 / 2.63
Reduction Ratio (Astern)	1.47 / 2.14 / 2.63
Marine Gear Oil Capacity (Effective / Maximum)	0.2 / 2.0 L (0.2 / 2.1 qt)
Propeller Rotation (Viewed from Stern)	Clockwise or counterclockwise
Dry Weight	30 kg (66 lb)

KMH4A

Parameter	Data
Reduction Ratio (Ahead)	2.04 / 2.45
Reduction Ratio (Astern)	2.04 / 2.45
Marine Gear Oil Capacity (Effective / Maximum)	0.2 / 2.0 L (0.2 / 2.1 qt)
Propeller Rotation (Viewed from Stern)	Counterclockwise or clockwise
Dry Weight	31 kg (68 lb)

ZF25A

Parameter	Data
Reduction Ratio (Ahead)	1.93 / 2.48
Reduction Ratio (Astern)	1.93 / 2.48
Marine Gear Oil Capacity (Effective / Maximum)	- / 1.8 L (- / 1.9 qt)
Propeller Rotation (Viewed from Stern)	Counterclockwise or clockwise
Dry Weight	30 kg (66 lb)

Fuel System Specifications

Injection Pump Type VE

Parameter	Data
Maximum Fuel Feed Pump Suction Head	0.5 m (19.7 in.)
Maximum Fuel Feed Pump Discharge Volume (Engine at 3200 rpm)	6.5 L/min. (1.43 gal/min.)
Maximum Fuel Feed Pump Discharge Pressure (Engine at 3200 rpm)	630 kPa (91.3 psi)
Fuel Inlet Pipe Connector Outer Diameter	8 mm (0.315 in.)
Fuel Return Pipe Connector Outer Diameter	8 mm (0.315 in.)
Fuel Consumption at Continuous Rated Output	16.0 L/hr (4.2 gal/hr)

Cooling System Specifications

Parameter	Data
Maximum Seawater Pump Suction Head	0.5 m (19.69 in.)
Seawater Inlet Pipe Connector Outer Diameter	26 mm (1.024 in.)
Thermostat Operating Temperature (Full Open)	90°C (194°F) Lift: 8 mm or more
Thermostat Operating Temperature (Opening)	75 - 78°C (167 - 172°F)
Maximum Overflow Pipe Length (Coolant Recovery Tank to Filler Cap)	1.0 m (39.36 in.)
Maximum Overflow Pipe Diameter (Coolant Recovery Tank to Filler Cap)	9 mm (0.355 in.)
Water Heater Tank Connector Thread Size	RC 3/8

Air Intake and Exhaust Specifications

Alarm System Specifications

Parameter	Data
Exhaust Pipe Outer Diameter Connection	76.2 mm (3.0 in.) or Optional U-Type: 76.0 mm (2.99 in.)
Minimum Engine Room Fresh Air Exchanges (Ventilator Capacity)	17.0 cu m/min. (600.3 cu ft/min.)
Maximum Back Pressure (measured within 250 mm [9.8 in.] of exhaust manifold inlet)	20 kPa (0.2 kgf/cm ²)
Maximum Output Exhaust Temperature (measured within 250 mm [9.8 in.] of exhaust manifold inlet)	685°C (1265°F)
Maximum Turbocharger Boost Pressure	132 kPa (1.35 kgf/cm ²)
Maximum Engine Room Ambient Temperature	60°C (140°F)

Parameter	Data
Coolant Alarm Switch Operating Temperature	ON: 97 - 103°C (206.6 - 217.4°F) OFF: 90 - 97°C (194 - 206.6°F)
Engine Oil Alarm Switch Operating Pressure	9.8 - 29.4 kPa (1.42 - 4.26 psi)