1GM10

Engine Specifications

Parameter	Data
Configuration	4-cycle, Vertical, Water-Cooled Diesel
Crankshaft Rotation (Viewed from Stern)	Counterclockwise
Combustion System	Swirl Pre-Combustion Chamber
Aspiration	Naturally
Number of Cylinders	1
Bore x Stroke	75 mm x 72 mm (2.95 in. x 2.83 in.)
Displacement	0.318 L (19.4 cu in.)
Continuous Rating Output at Crankshaft (at 3400 rpm)	5.9 kW (8.0 hp metric)
Brake Mean Effective Pressure (Continuous Rating Output)	0.65 MPa 6.66 kgf/cm^2 (94.73 psi)
Piston Speed (Continuous Rating Output)	8.16 m/sec. (26.78 ft/sec.)
Maximum Output at Crankshaft (at 3600 rpm)	6.7 kW (9.1 hp metric)
Brake Mean Effective Pressure (Maximum Output)	0.69 MPa 7.07 kgf/cm^2 (100.5 psi)
Piston Speed (Maximum Output)	8.64 m/sec. (26.71 ft/sec.)
High Idling Speed	3800 - 3850 rpm
Low Idling Speed	825 - 875 rpm
Firing Order	-
Starter Motor	DC 12 V, 1.0 kW
Alternator	DC 12 V, 35A
Minimum Battery Capacity	DC12 V - 70 Ah

Parameter	Data
Cooling System	Direct seawater cooling
Coolant Capacity	-
Engine Lubrication System	Enclosed, Forced
Engine Oil Capacity at 8° Rake Angle	1.3 L (1.37 qt)
Dry Weight with KM2P-1	76 kg (168 lb)
Dry Weight with SD20	104 kg (229 lb)
Recommended Installation Rake Angle	KM2P-1: 8°
	SD20: 0°
Maximum Installation Rake Angle	KM2P-1: 15°

Notes:

1. Rating condition: ISO3046-1
2. 1 HP (hp metric) = 0.7355 kW

Marine Gear / Sail Drive Specifications

Use the KM2P-1 or the SD20 with the 1GM10 engine. KM2P-1 has a mechanical cone clutch and SD20 has a constant mesh gear with dog clutch.

KM2P-1

Parameter	Data
Reduction Ratio (Ahead)	2.21 / 2.62 / 3.22
Reduction Ratio (Astern)	3.06
Marine Gear Oil Capacity	0.3 L (0.32 qt)
Propeller Rotation (Viewed from Stern)	Clockwise
Dry Weight (without Engine)	10.3 kg (27.7 lb)

SD20

Parameter	Data
Reduction Ratio (Ahead)	2.64
Reduction Ratio (Astern)	2.64
Sail Drive Oil Capacity	Standard 2.2 L (2.3 qt)
	Long-reach 2.5 L (2.6 qt)
Propeller Rotation (Viewed from Stern)	Counterclockwise
Dry Weight (without Engine)	30 kg (66.12 lb)

Fuel System Specifications

Parameter	Data
Maximum Fuel Feed Pump Suction Head	0.8 m (31.50 in.)
Maximum Fuel Feed Pump Discharge Volume (Engine at 3000 rpm)	2.3 L/min. (0.61 gal/min.)
Maximum Fuel Feed Pump Discharge Pressure (Engine at 3000 rpm)	2.94 kPa (0.43 psi)
Fuel Inlet Pipe Connector Outer Diameter	8.3 mm (0.327 in.)
Fuel Return Pipe Connector Outer Diameter	8.3 mm (0.327 in.)
Fuel Consumption at Continuous Rated Output	2.1 L/hr (0.55 gal/hr)

Cooling System Specifications

Parameter	Data
Maximum Seawater Pump Suction Head	0.5 m (1.6 ft)
Seawater Inlet Pipe Connector Outer Diameter	14 mm (0.551 in.)
Thermostat Operating Temperature (Full Open)	52°C (125.6°F)
Thermostat Operating Temperature (Opening)	40 - 44°C (104 - 111°F)

Air Intake and Exhaust Specifications

Parameter	Data
Exhaust Pipe Outer Diameter Connection	45 mm (1.772 in.)
Minimum Engine Room Fresh Air Exchanges (Ventilator Capacity)	0.5 cu m/min. (17.66 cu ft/min.)
Maximum Back Pressure (measured within 250 mm [9.8 in.] of exhaust manifold inlet)	500 mmAq (19.69 in.Aq)
Maximum Output Exhaust Temperature (measured within 250 mm [9.8 in.] of exhaust manifold inlet)	580°C (1076°F)
Maximum Turbocharger Boost Pressure	-
Maximum Engine Room Ambient Temperature	60°C (140°F)

Alarm System Specifications

Parameter	Data
Coolant Alarm Switch Operating Temperature	ON: 63 - 67°C (145.4 - 153°F) OFF: 58 - 63°C (136.4 - 154.4°F)
Engine Oil Alarm Switch Operating Pressure	9.81 - 29.42 kPa (1.42 - 4.27 psi)