

**F1 series****SPECIFICATIONS**

Thermodynamic Cycle	Diesel 4 stroke
Air Handling	TAA
Arrangement	4L
Bore x Stroke (mm)	95,8 X 104
Total Displacement (l)	3
Valves per cylinder (n°)	4
Cooling System	liquid
Direction of Rotation (viewed facing flywheel)	CCW
Engine management	electronic
InjectionSystem	ECR

**STANDARD CONFIGURATION**

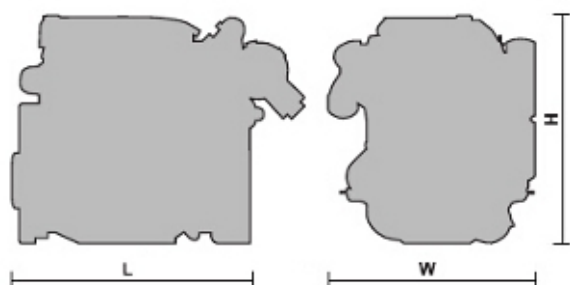
Flywheel housing (type)	SAE 4
Flywheel size (inch)	8"
Air Filter	rear side
Turbocharger	Waste Gate (water cooled) Turbo with Aftercooler (TAA)
Heat Exchanger	tube type
Exhaust gas water mixer - Exhaust cooled elbow	-
Water charge tank	included
Fuel filter (n°)	1
Fuel prefilter	included (loose)
Fuel Pump	included (loose)
Lift pump	-
Oil filter (n°)	1
Oil sump	aluminium
Oil vapours blow-by circuit	front
Oil heat exchanger	built in the crankcase
Oil filler	on front cover
Starter	12V - 2.3kW
Alternator	12V - 110A
Engine stop device	by electronic central unit
Wiring harness	with EDC (Electronic Diesel Control)
Painting color	white "ICE"

**ELECTRICAL SYSTEM**

Voltage	12
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**NOT INCLUDED IN STANDARD CONFIGURATION**

Battery - minimum capacity recommended [*] (Ah)	110
Battery - minimum cold cranking capacity recommended [*] (A)	800

**WEIGHT AND DIMENSIONS**

L = 780

W = 775

H = 753

Dry Weight (without marine gear)= Kg 330

**Legend**

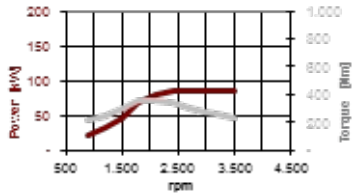
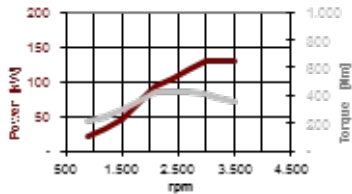
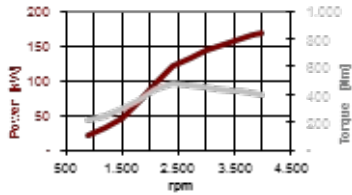
Arrangement	Air Handling	Turbocharger	InjectionSystem	
L (in line)	TAA (Turbocharged with aftercooler) TC (Turbocharged)	WG (Wastegate) VGT (Variable Geometry)	M (Mechanical) ECR (Electronic Common Rail)	SD: Stern Drive version PD (POD Drive version)

FOR INFORMATION ON THE AVAILABLE RATINGS NOT LISTED IN THIS DOCUMENT PLEASE CONTACT THE FPT INDUSTRIAL SALES NETWORK OR VISIT OUR SITE [WWW.FPTINDUSTRIAL.COM](http://WWW.FPTINDUSTRIAL.COM)



RATING TYPE	A1	A2	B	C
Maximum power (kW(HP))@rpm)	169 (230) @ 4000	-	129 (175,5) @ 3500	85 (115,6) @ 3500
High idle speed (rpm)	4280	-	3980	3980
Low idle speed (rpm)	± 715	--	± 715	± 715
Mean piston speed at rated speed (m/s)	13,9	-	12,1	12,1
BMEP at max power (kg/cm)	20,5	-	18	15,3
Specific fuel consumption at full load (best value) (g/kWh @ rpm)	260 @ 4000	-	260 @ 4000	260 @ 4000
Oil consumption at max rating (% of fuel cons.)			≤ 0.2	
Minimum starting temperature without auxiliaries (°C)			-10 °	
Oil and oil filter maintenance interval for replacement [****] (hours)			600	

[\*] Net Power at flywheel according to ISO 3046/1, after 50 hours running, Fuel Diesel EN 590. Power tolerance 5%.



- A1 High Performance Crafts. Full throttle operation restricted within 10% of total use period. Cruising speed at engine rpm <90% of rated speed setting - Maximum usage 300 hours per year.
- A2 Pleasure Commercial Vessels. Full throttle operation restricted within 10% of total use period. Cruising speed at engine rpm <90% of rated speed setting - Maximum usage 1000 hours per year.
- B Light Duty: Full throttle operation restricted within 10% of use period. Cruising speed at engine rpm <90% of rated speed setting - Maximum usage 1500 hours per year.
- C Medium Duty: Full throttle operation < 25% of use period. Cruising speed at engine rpm <90% of rated speed setting - Maximum usage 3000 hours per year.
- D Heavy Duty

## FEATURES

### SPECIFIC FEATURES

State-of-the-art 2nd generation Common Rail System (E.C.R.); accurate fuel delivery to achieve high performance in terms of torque and power with the minimum fuel consumption and exhaust gas emissions.

### TECHNOLOGICAL INNOVATION

Features achieved using innovative technologies and production processes such as: Electronic Common Rail, 4valves/cylinder, ladder frame cylinder block, fracture split connecting rods.

### TECHNOLOGICAL SOLUTIONS FOR SERVICING

To reduce maintenance operations and improve engine life and reliability, F1 Series engines adopt a valves clearance hydraulic adjustment for the dual overhead camshaft driven by chain and oil cooled pistons by J-jets.

### SOLUTIONS FOR LOW OPERATING COSTS

High functional engine design and solutions for long intervals in oil and filters replacement (up to 600 h).

### MARINIZATION

Functional engine lay-out, design and specific settings focused on marine duties. Optimized engine and turbo-charging cooling systems.

### COMPONENT INTEGRATION

Improved technical solutions such as: integrated oil cooler, integrated oil pump and water pump, blow-by system.

### OPTION LIST

Wide range of accessories including can-bus control & monitoring systems, stern drives, propulsion and emission certifications.

### SERVICEABILITY & MAINTAINABILITY

Easier engine servicing thank to advanced diagnostic equipment & widespread worldwide service network.

## BENEFITS

HIGH TORQUE AND POWER PERFORMANCE MINIMUM FUEL CONSUMPTION AND EXHAUST GAS EMISSION

ENGINE EFFICIENCY AND STIFFNESS VIBRATIONS & NOISE REDUCTION

REDUCED MAINTENANCE, LONGER ENGINE LIFE AND RELIABILITY

REDUCED MAINTENANCE NEEDS AND OPERATING COSTS

MARINE LAY-OUT AND SETTINGS SAFETY AND PROTECTION ON BOARD

LEAKAGE PREVENTION

CUSTOMER ORIENTATION

QUICK AND ACCURATE SERVICE SUPPORT

FPT INDUSTRIAL OFFERS THE WIDEST AVAILABILITY OF ENGINE BUILD OPTIONS TO CUSTOMER SPECIFIC REQUIREMENTS WITHIN THE ENGINE SUPPLY. TO FIND OUT MORE ABOUT THE CONFIGURATIONS AND ACCESSORIES WHICH ARE AVAILABLE

