

MARINE Application

4021 M20

PLEASURE - Diesel
14.7 kW(20 HP) @ 3600 rpm (A1)

4000

SPECIFICATIONS

Thermodynamic Cycle	Diesel 4 stroke
Air Handling	NA
Arrangement	2L
Bore x Stroke (mm)	75 X 77.6
Total Displacement (L)	0.686
Valves per cylinder (n°)	2
Cooling System	liquid
Direction of Rotation (viewed facing flywheel)	CCW
Engine management	mechanical
InjectionSystem	MUI

STANDARD CONFIGURATION

Flywheel housing (type)	SAE B
Flywheel size (inch)	alignment, flexible couplig Ø 121.5 mm
Air Filter	dry
Turbocharger	-
Heat Exchanger	tube type
Exhaust gas water mixer - Exhaust cooled elbow	stainless steel Ø 45 mm
Water charge tank	included
Fuel filter (n°)	1 - right side
Fuel prefilter	-
Fuel Pump	included
Lift pump	-
Oil filter (n°)	1 - left side
Oil sump	pressed steel with corrosion inhibiting treatment
Oil vapours blow-by circuit	yes
Oil heat exchanger	-
Oil filler	on timing cover frontward
Starter	12V - 1.1kW
Alternator	12V - 65A
Engine stop device	electrical excitation
Wiring harness	wiring harness and electrical panel
Painting color	white "ICE"



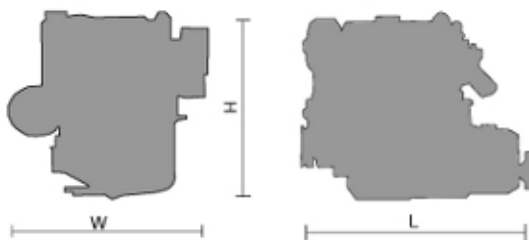
ELECTRICAL SYSTEM

Voltage	12
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NOT INCLUDED IN STANDARD CONFIGURATION

Battery - minimum capacity recommended [*] (Ah)	55
Battery - minimum cold cranking capacity recommended [*] (A)	-

WEIGHT AND DIMENSIONS



L = 560
W = 452
H = 522
Dry Weight (without marine gear)= Kg 99

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)

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RATING TYPE	A1	A2	B	C
Maximum power (kW(HP)@rpm)	14.7 (20) @ 3600	-	-	-
High idle speed (rpm)	3850	-	-	-
Low idle speed (rpm)	± 850	--	--	--
Mean piston speed at rated speed (m/s)	9.3	-	-	-
BMEP at max power (kg/cm)	8.06	-	-	-
Specific fuel consumption at full load (best value) (g/kWh @ rpm)	260 @ 2400	-	-	-
Oil consumption at max rating (% of fuel cons.)			≤ 0.2	
Minimum starting temperature without auxiliaries (°C)			-20 °	
Oil and oil filter maintenance interval for replacement [**] (hours)			250	

* 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

ENGINE DESIGN

FOCS Series - The unit injection pumps, located in the pearlitic grey cast iron cylinder head with the cross flow of the intake and exhaust pipes, allow engine length and weight reduction. CHD Series - The innovative design of the gear train, the injection system design and location and the reduced cylinder pitch allow shortening the engine length.

TECHNOLOGICAL INNOVATION

FOCS Series - The mechanical pump-injector units provide a better injection timing, resulting in great performance advantages. CHD Series - The QLC pump offers high performance on all engine speed. Compared to the conventional injection pump, QLC features a one-way flow and a unique delivery fuel system that prevent unwanted variations on injection pressure and timing, eliminating gas bubbles.

NOISE & VIBRATION REDUCTION

FOCS Series - Excellent results have been obtained as of noise emission reduction, thanks to the location of the injection system in the cylinder head, to a ribbing system along all the engine structure and to the complete absence of gears. CHD Series - The innovative design of the fuel injection system, as well as the use of hypereutectic pistons reducing piston slap and of a heavy-duty block, allow a strong reduction of noise levels that are normally associated with those of diesel engines. The special crankshaft balancing ensures exceptionally low vibrations and an excellent operational performance.

REDUCED EMISSIONS

FOCS Series - The injection system has been tested for exhaust emission levels to the lowest limits, thus positioning these engines well below the EEC requirements. CHD Series - The advanced design of the injection and combustion systems results in reduced environmental impact.

ACCESSORIES - MAINTENANCE - NETWORK

A wide range of accessories including the sail drive option are available for the 4000 Series. FOCS Series - Components subject to more frequent checking are located in the upper part of the engine, just under the cover. This allows easy and low cost equipment maintenance. CHD Series - All maintenance operations are easier due to the simple construction of the product. Furthermore, for the QLC pump maintenance the services of a pump specialist are not required, as parts servicing can be completed by any qualified workshop.

BENEFITS

COMPACTNESS AND LIGHTNESS.

HIGH PERFORMANCE AND EFFICIENCY IN ANY LOAD CONDITION.

EXCELLENT REDUCTION OF NOISE AND VIBRATION LEVELS
NAVIGATION CONFORT

REDUCED ENVIRONMENTAL IMPACT

SAIL DRIVE AVAILABILITY
EASY & ECONOMICAL MAINTENANCE
WORLDWIDE SERVICE NETWORK

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