

The 4.190 HE is a 4-cylinder, 1.9 litres diesel engine based on Kubota, which excels in its compactness, power and low fuel consumption.

Installation dimensions

This engine, due to its compact, robust and well designed concept, gives many possibilities of installation, respecting the lay-out of the boat.

Low vibration level

The low engine speed, and the large capacity, maintain the quietness and the engine's vibration to the lowest level, without the help of complicated counterweights. The engine is mounted on vibration-damping rubber mounts.

Heat exchanger

All our engines are equipped with an inter-cooling system which guarantees an even engine temperature at the right level and therefore longer duration and complete combustion. On top of this, the inter-cooling enables you to connect a boiler heating system.

Indirect injection

The swirl chamber gives an even and clean combustion, therefore a low noise level and a clean exhaust emission, so the boat will keep a clean transom! The glow plugs provide immediate starting which does not make much demand on the starter or battery.

Contrary to small direct injected engines, our engine give immediate power when it is needed. It is no necessary to count to ten before you obtain power or can reverse!

Electric System

The alternator has an integrated voltage regulator for superior reliability. The capacity leaves nothing to be desired but P.T.O. pulleys could be fitted to the front of the crankshaft to drive auxiliaries.

The engine is equipped with a small mainbox incorporating all electric functions and protections including circuit breaker and glow timing relay. All connections for remote control are fitted at the engine. The engine is equipped with electric stop.

Reverse gearbox

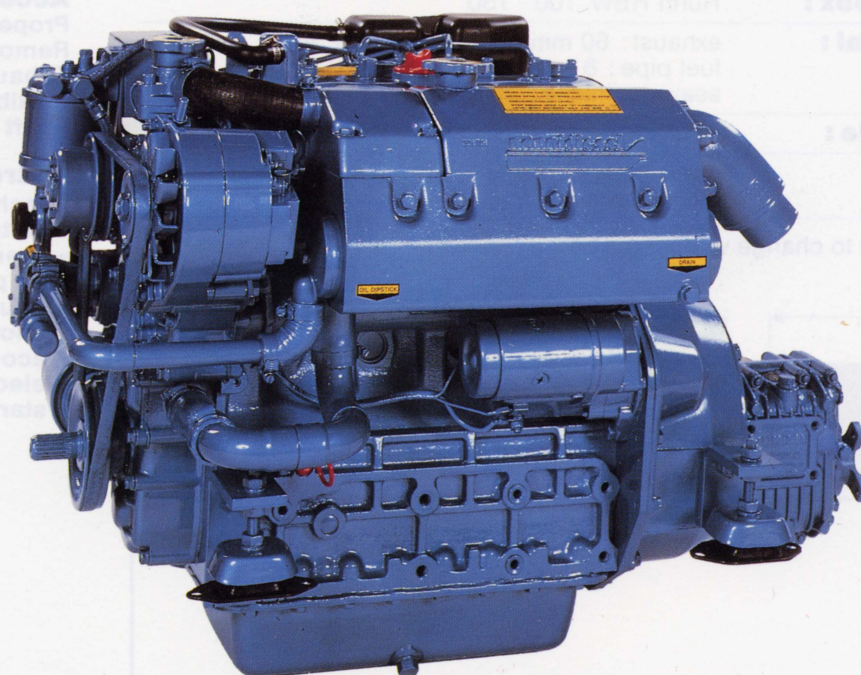
The robust mechanical gearbox with disc clutch and torque limiter enables you to make emergency shifts from full ahead to full astern in only one second. Ground and treated angle gear wheels take care of high efficiency and quiet transmission of power. The remote control is made by a push-pull cable and a single lever remote control box. The flexible mounts are equipped with a sea-worthy limitation which makes it impossible for the engine to come off its bed should the rubber fail. The specially designed mounts are capable of taking the full thrust.

Lubrication System

Pressure lubricating with easy replaceable oil filter and attached oil sump pump at the front of the engine.

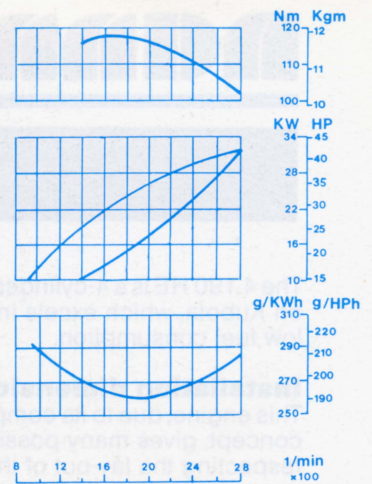
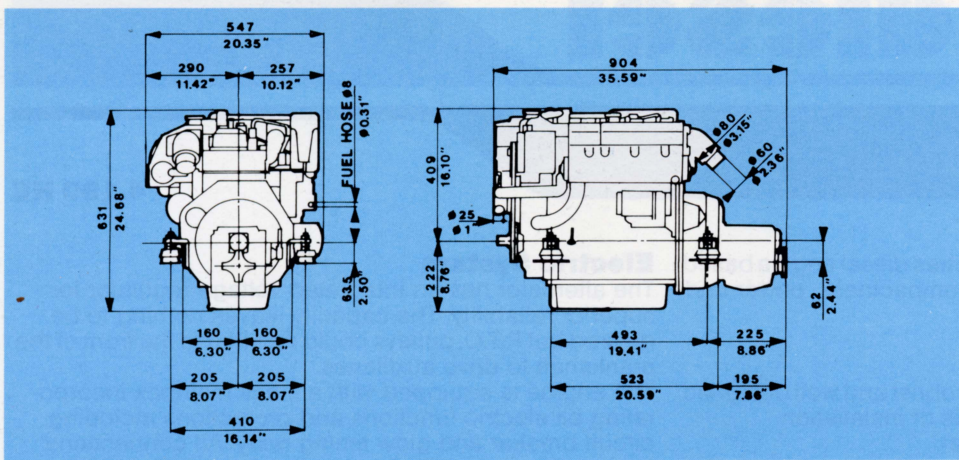
World-Wide Service

Through our twenty-one importers and three group companies we can supply full backing of our spare parts supplies and documentation. Over 450 dealers throughout the world will be happy to show you what they can do for you.



4.190 HE MARINE DIESEL ENGINE

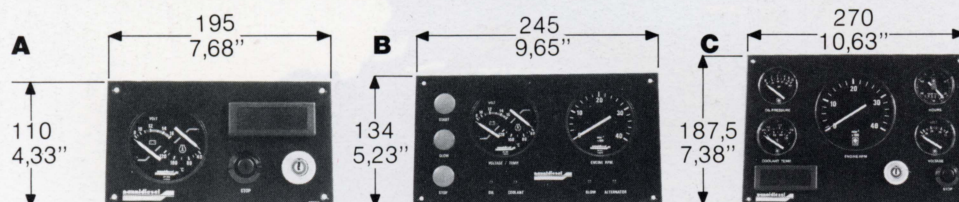
BASIC KUBOTA 31,1 KW (43 HP) AT 2800 R.P.M.



Technical Specification

Engine type :	4.190 HE 4 (cylinder) 190 (cylinder displacement) HE (heat exchanger)
Basic :	Kubota
Fuel :	diesel
Injection :	swirl chamber - indirect injection
Principle :	vertical, 4-stroke
Cooling :	heat exchanger, fresh water circulation, expansion tank. Cooled exhaust manifold with water injection elbow
Displacement :	1.861 cm ³ (113.57 cu. inch)
Bore & Stroke :	85 x 82 mm (3.35" x 3.23")
Compression ratio:	21:1
Number of cylinder :	4 in line
Weight (incl. gearbox) :	225 kg. (489 lbs)
Max. output :	31.1 KW (43 HP)
RPM at max. output :	2800
Gearbox efficiency :	approx. 95%
Alternator :	55 Amps. - 14 V.
Startermotor :	14 V. - 1.4 KW
Reduction gearbox :	Hurth HBW. 100 - 150
Diameter nominal :	exhaust : 60 mm bore minimum (2,36") fuel pipe : 8 mm (0,31") seawater intake : 25 mm (1")
Installation angle :	max. 15° backwards
Heeling angle :	continuous : 25° intermittent : 35°

Specification subject to change without notice



Standard Equipment

Reduction gearbox
Set of flexible mounts
Heat exchanger
Fresh water pump
Thermostat
Seawater self-priming pump
Freshwater cooled exhaust manifold
Exhaust elbow with water injection
Stop solenoid
Remote instrument panel, 2 instruments, with tachometer, voltmeter, and water temperature gauges, Pilot lights for oil pressure, water temperature, alternator and glowplugs, acoustic alarm for oil pressure and temperature, starterswitch with push button, 4 mtr. intermediate wiring and connections
fuel feed pump
fuel filter
Oil filter
Brackets for remote control cables
Set pump attached to the engine
Set of tools
Operators manual
Warrenty certificate

Accessories

Propellers
Remote controls
Exhaust system
Flexible coupling
Shaft and sterntubes

Instrument panel (C-A)

- tachometer
- voltmeter
- thermometer
- oil pressure
- hour counter
- pilot lights
- acoustic alarm
- electric stop
- starter switch

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