

Small Installation Dimensions

These engines excel in their small dimensions due to their compact, robust and well designed concept. The lay-out of the boat's interior takes on a new aspect with the widened possibilities of installation.

Light-weight

The choice of materials, such as aluminium and cast iron, together with the small dimensions have resulted in a very light-weight engine, with a long life.

Low vibration level

The small mass of the oscillating parts, such as the pistons and connecting rods, help to maintain the quietness and the engine's vibration to the lowest level, without the help of complicated counterweights.

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 or 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 not 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.

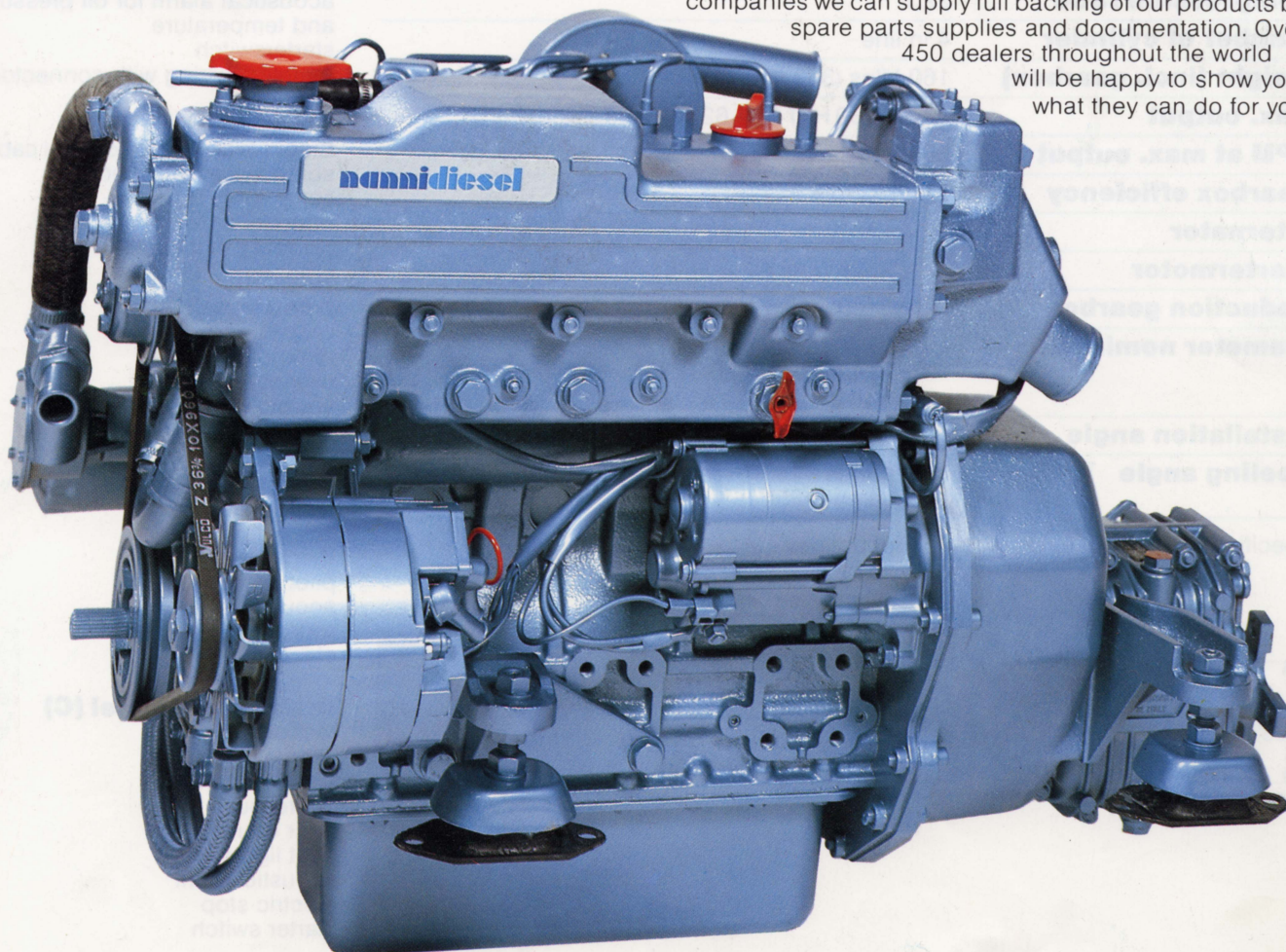
The engine is equipped with a small mainbox incorporating all electric functions and protections including circuit breaker and glow timing relay. All connections for remote control are fitted at the engine. The engine is equipped with electric stop.

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.

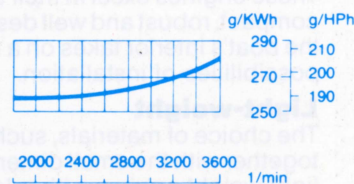
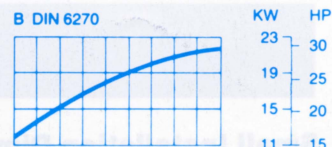
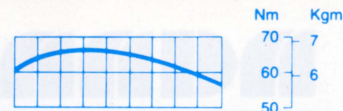
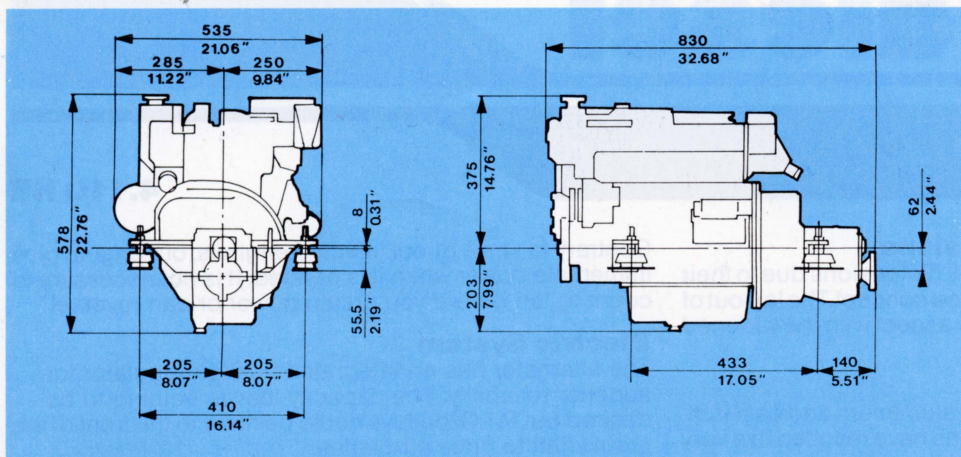
World-Wide Service

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



4.110 HE MARINE DIESEL ENGINE

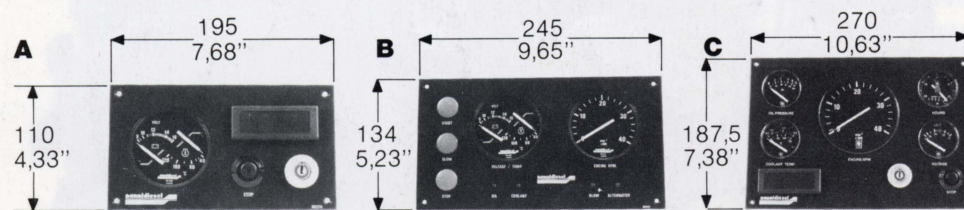
BASIC KUBOTA 22 KW (30 HP) AT 3600 R.P.M.



Technical Specification

Engine type	4.110 HE 4 (cylinder) 110 (cylinder displacement) HE (heat exchanger)
Basic	KUBOTA
Fuel	diesel
Injection	swirl chamber
Principle	Vertical, 4-stroke
Cooling	Heat exchanger, circulation pump, seawater pump, expansion tank, watercooled exhaust manifold with water injection
Displacement	1140 cm ³ (70 cu. inch)
Bore - Stroke	72 x 70 mm (2.83" x 2.75")
Compression ratio	22:1
Number of cylinder	4 in line
Weight (incl. gearbox)	160 kilos (352 lbs)
Max. output	22 KW (30 HP) DIN 6270B at tbijwheel
RPM at max. output	3600
Gearbox efficiency	Approx. 95%
Alternator	55 A - 14 V
Startermotor	12 V. - 1 KW
Reduction gearbox	HBW. 100
Diameter nominal	- exhaust : 50 mm. (1,97") - fuel pipe : 8 mm. (0,31") - seawater intake : 13 mm. (0,51")
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
sea water self-priming pump
fresh water cooled exhaust manifold
exhaust elbow with water injection
sea water circuit by zinc anode protection
stop electric
electric instrument panel (A) with tachometer and pilot lights for oil pressure, water temperature, alternator and glowplugs
acoustical alarm for oil pressure and temperature
starterswitch
4 meters wiring with connectors
feed pump
fuel filter, oil filter
brackets for remote control cables
sump pump attached
set of tools
operator's manual
warrenty certificate

Accessories

propellers
remote control
exhaust systems
flexible couplings
shafts and stern tubes

Instrument panel (B)

tachometer
voltmeter
thermometer
pilot lights
acoustic alarm
waterproof
electric stop

Instrument panel (C)

tachometer
voltmeter
thermometer
oilpressure
hour counter
pilot lights
acoustic alarm
electric stop
starter switch

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