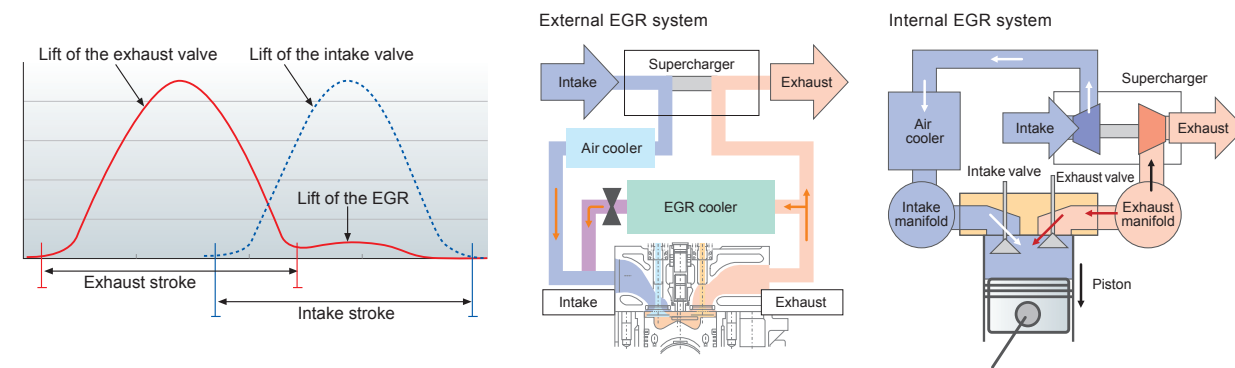


For Harmonious Living with Global Environment

Normally, when NOx emissions are reduced, the fuel consumption and smoke generation will increase, adversely affecting both the environment and management. As a solution to this, YANMAR has developed "Eco Diesel", which is designed so as to comply with marine environmental protection. It improves the fuel consumption and smoke generation in addition to reducing NOx emissions.

Techniques for Complying with EPA Tier III & IMO Tier II Exhaust Gas Recirculation (EGR)

In the 6AY engine, the internal EGR system is used. This design does not require any external control devices or any significant changes to the engine structure. In external EGR, the line of the engine and supercharger must be equipped with devices such as EGR solenoid valves and coolers, and control must be performed for them. But in internal EGR, these functions can be performed by controlling the lift of the intake and exhaust valve.



Performance

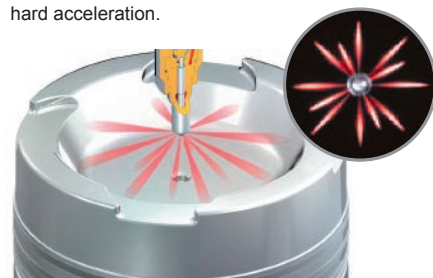
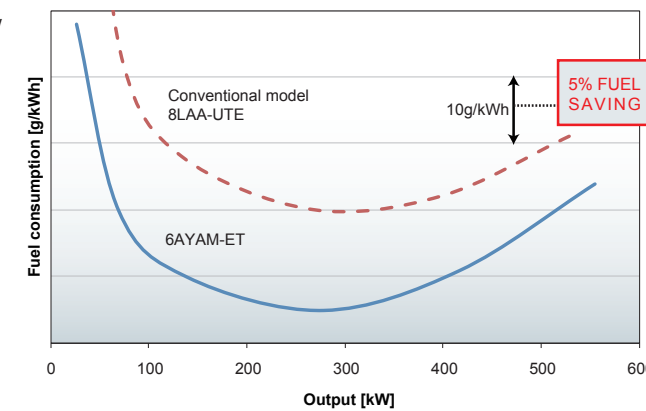
755mph (555kW) at 1900rpm in the continuous operating mode.

This 180 mm long stroker 20 liter class diesel, with 24 valves, the high performance turbo for, less turbo lag, and better mixing at low revs, the all-new high efficiency intercooler.

Good Fuel Economy together with Lower Emissions

The micro-sized multiple holes in the all-new injectors produce an even finer fuel-oil mist and combined with deep combustion chambers and new cylinder head shapes, produce even more power. It is power delivered smoothly, due to optimum combustion conditions being maintained across a far wider operating range. And it leads directly to the bonus of lower exhaust emissions and lower fuel consumption.

The boost compensator dramatically reduces black smoke under hard acceleration.



Staggered Layout Injection System

Both mono-grade and multi-grade lubrication oil can be used.



Amount of savings
In the case of an engine that consumed 100 liters of fuel per hour.

Annual Operation hour — 3,000hrs

Saving 5 liters / 1hr



Annual saving=15,000 liters
200liters Drum×75

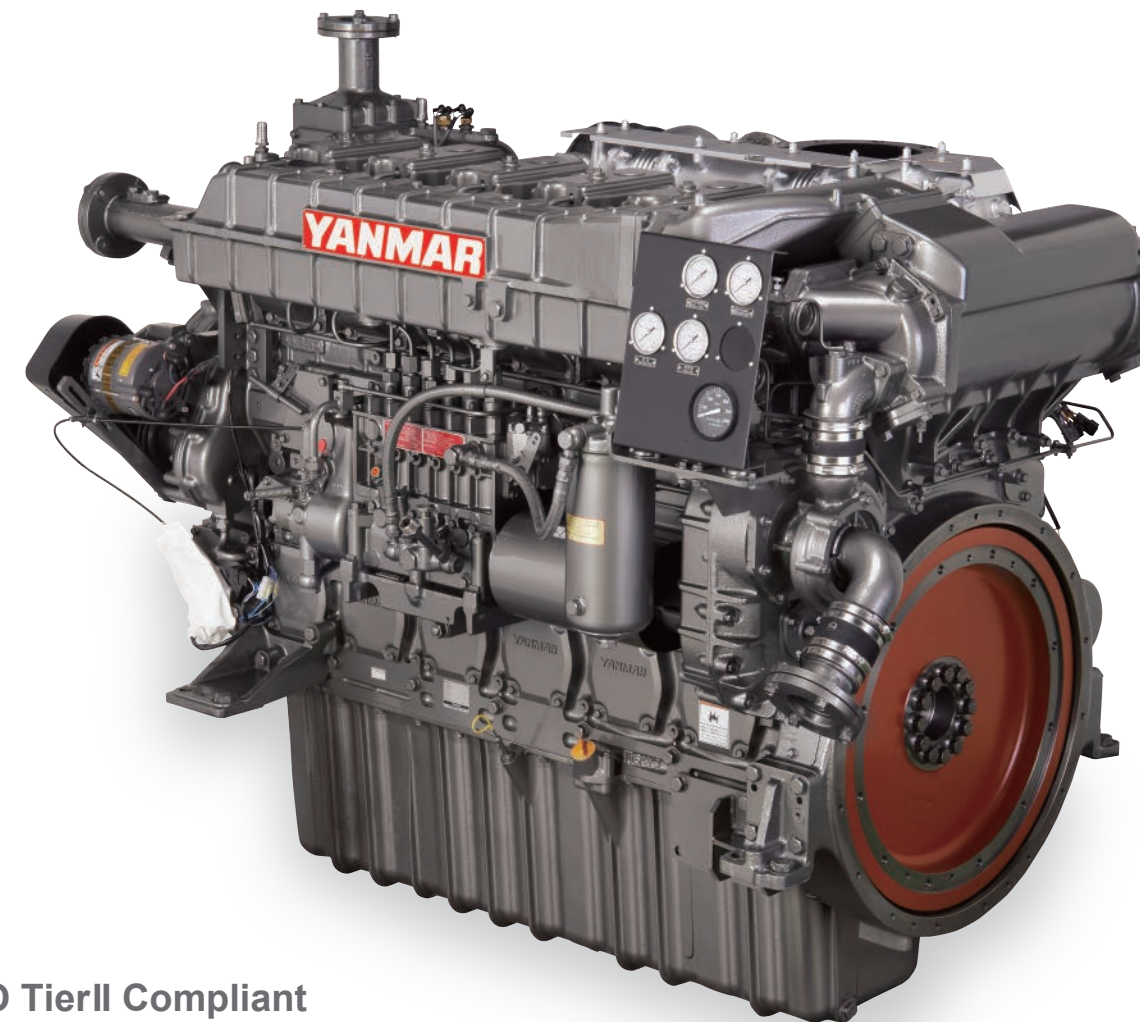


YANMAR

MARINE DIESEL ENGINE

6AYAM-ET

Continuous 555kW[755mhp]



Photograph may show optional equipment.

- IMO TierII Compliant
 - EPA TierIII Compliant
- Mechanical Engine Control

755mhp

555kW

**LONG
STROKE**

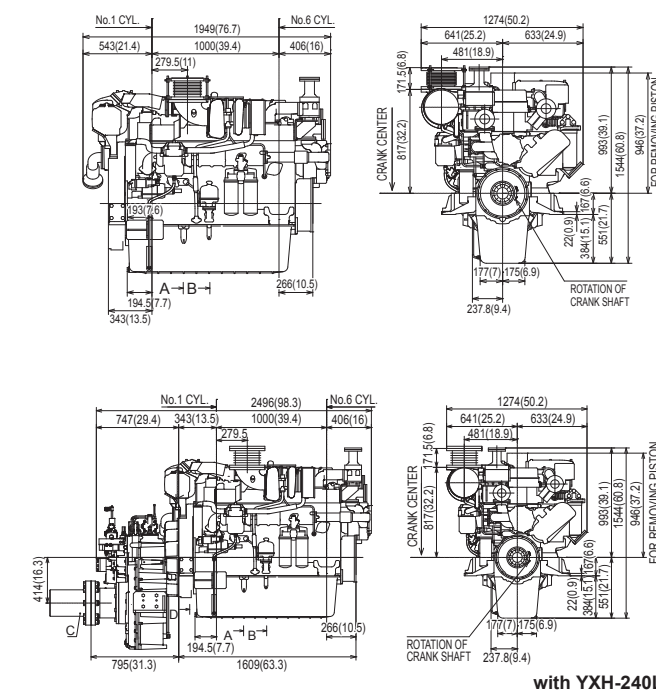
Engine Specifications

Model		6AYAM-ET
Type	4-cycle, Vertical, Turbo-charged with sea watercooled intercooler diesel engine	
No. of cylinders, Bore × stroke mm	6 in-line, 155 × 180	
Displacement	lit. 20.379	
Rated output	kW(mhp) / min ⁻¹ 555 (755) / 1900	
Emission	IMO Tier II, EPA Tier III	
Fuel consumption	gr/kW · hr 218*5% (at rated output)	
Direction of rotation	Counterclockwise viewed from stern (crankshaft)	
Combustion system	Direct injection	
Cooling system	Keel cooling [optional Heat exchanger]	
Cooling fresh water capacity	lit. 35 (engine only) [optional HE : 68]	
Lubricating system	Forced lubrication with gear pump	
Lubricating oil capacity	lit. Normal type : 91, Shallow type : 53	
Lubricating oil grade	SAE40 or SAE15W-40	
Starting system	Electric starting motor (DC 24V-8kW) [optional airtstarting]	
Flywheel housing size	inch SAE #0 and 18	
Dry weight	kg 2295 [optional HE : 2365]	

Marine Gear Specifications

Engine Model		6AYAM-ET								
Marine gear model		YXH-240				YXH-240L				
Type	Hydraulic multi-disc clutch									
Reduction ratio	1.95	2.27	2.56	3.03	3.48	4.89	5.36	5.91	6.57	6.95
Direction of rotation	Clockwise or Counterclockwise									
Dry weight	kg	605				1240				

Dimensions [Unit : mm (in.)]

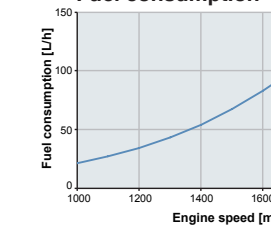


with YXH-240L

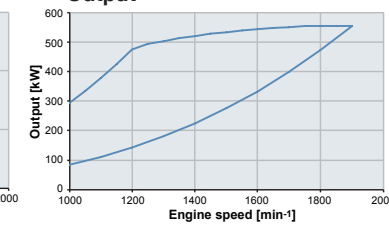
Performance Curves

6AYAM-ET

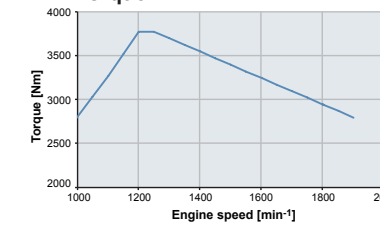
Fuel consumption



Output



Torque



Rating definitions : hp=0.7355kW Ratings are based on conditions of 100kPa, 30% relative humidity at 25°C.
Continuous Rating
Allowable operation hour at rated output : unlimited
Allowable operation hour per year : unlimited
Fuel rates : Specific gravity 0.835g/cc, low calorific value 42700kJ/kg (10200kcal/kg), Cetane No.45.

YANMAR POWER TECHNOLOGY CO., LTD.

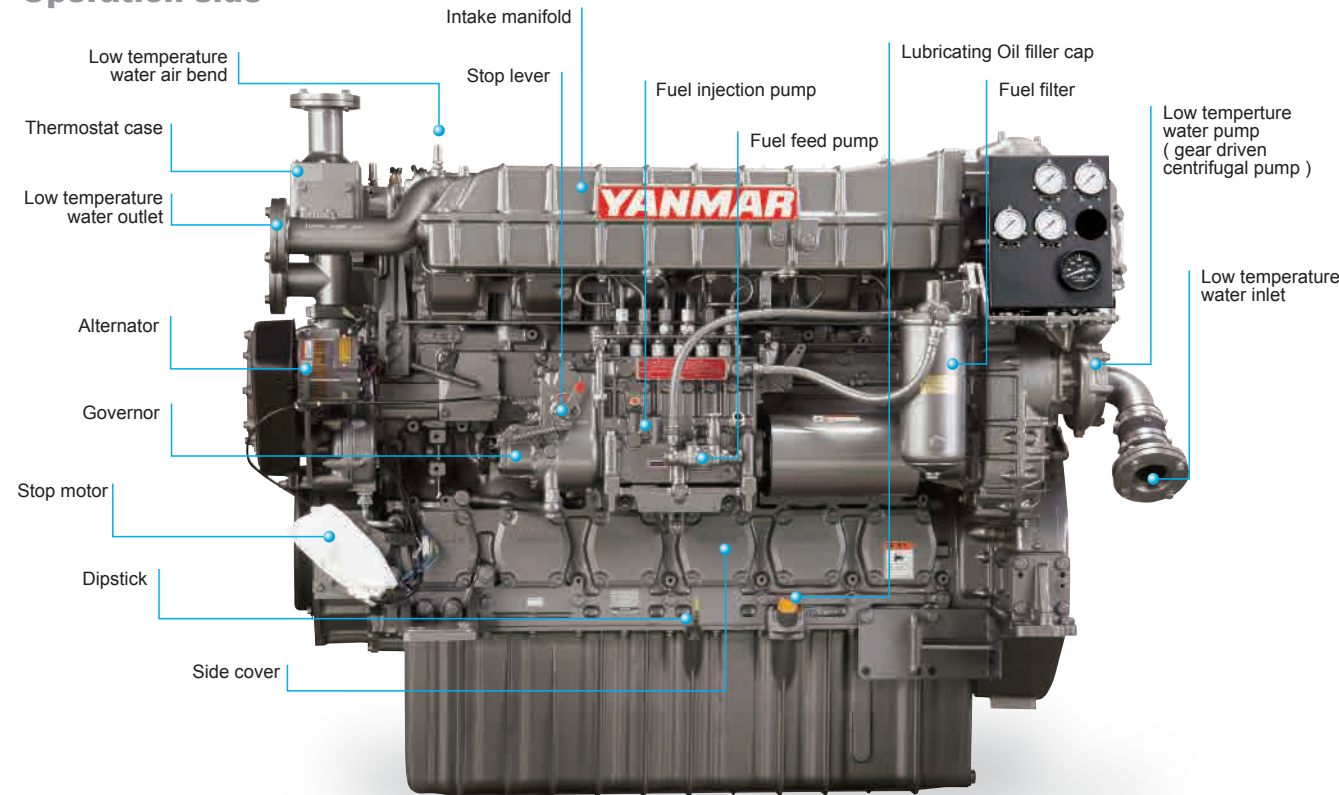
Large Power Products Business
1-1-1, Nagasu-Higashidori, Amagasaki, Hyogo, Japan
Tel : +81-6489-8069 Fax : +81-6489-1082
yanmar.com

Note : All Data Subject to Change Without Notice.

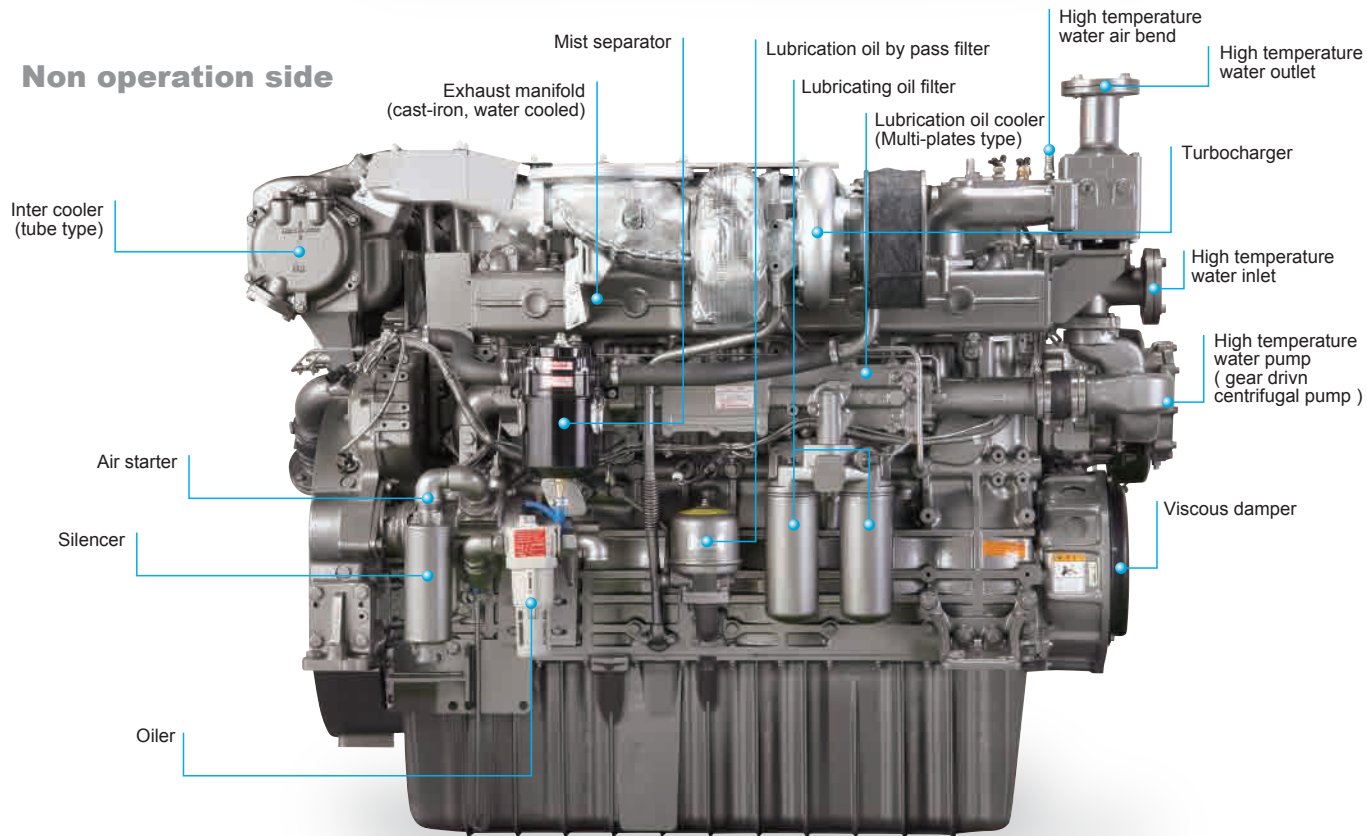
Please consult YANMAR or local distributors for the details.

YANMAR, Providing Quality Propulsion Engine Packages for Over 60 Years.

Operation side



Non operation side



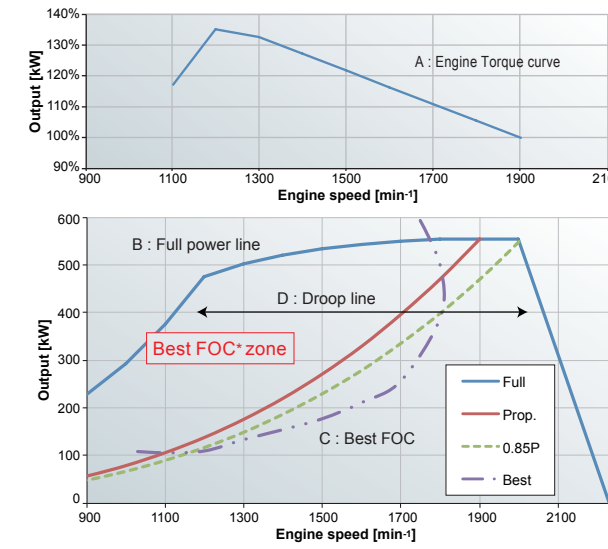
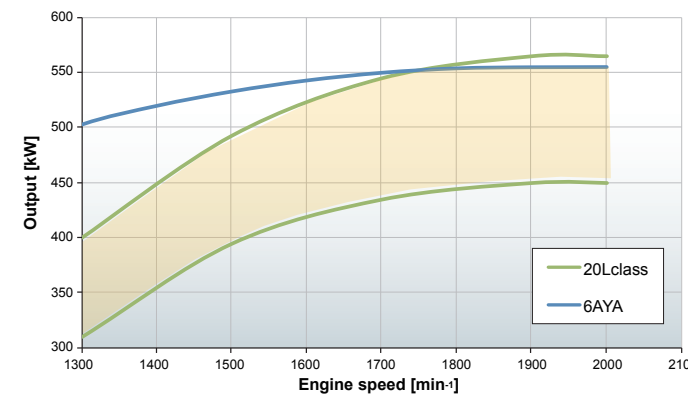
Photograph may show optional equipment.

Optional wiring to suit classification society requirement available.

Photograph show keel cooling applications Heat exchanger type is also available.

High Torque

Excellent Torque-Rise Characteristics in High Speed and High Load Range Enable Stable Performance of Job Duties even at High Load

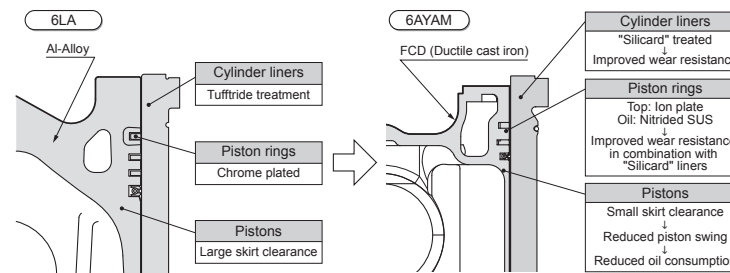


The Engine Performance Gives Following Advantages:

- The engine torque-rise characteristics having much in reserve, (Line A) → Stable cruising with least speed reduction against sudden load changes.
- Wide Max. Power Range, (Line B)
→ A wide range propeller matching, from the passenger ship (light/medium duty) to tug boat (heavy duty), is possible.
- Min. Fuel Consumption Range is Wide, (Line C)
→ Economical with wide min. fuel consumption range both during cruising or performing job duties. * FOC: Fuel Oil Consumption
- Wide Medium Load Range, (Line D) → Produces stable engine performance even doing other job duties.

Toughness

- Low, stable LOC (Lubricating Oil Consumption) and long overhaul interval, thanks to sillicard** (kind of artificial ceramic) treatment cylinder liner and nitrided stainless steel rings and the finely judged clearance between piston and liner. No cylinder kit replacement concept in YANMAR overhaul program.
- Purpose built marine engine with long stroke, optimized flywheel weight, water cooled exhaust manifold and special treatment injection nozzle. A Leak-free engine.
- Type Approved by Marine Class Societies.

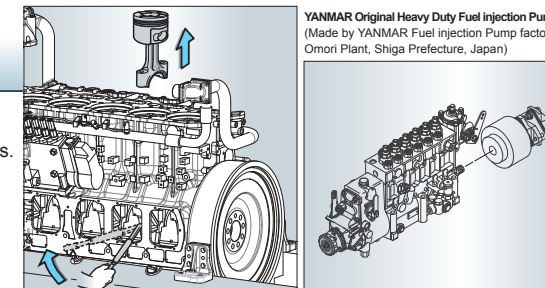


** Sillicard is a surface treatment that uses a special method to embed powdered Silicon Carbide (SiC), an artificial ceramic second only to diamond in hardness, to provide superior wear resistance and durability.

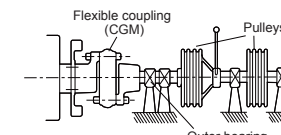
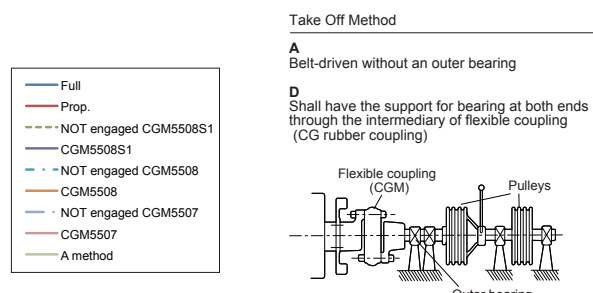
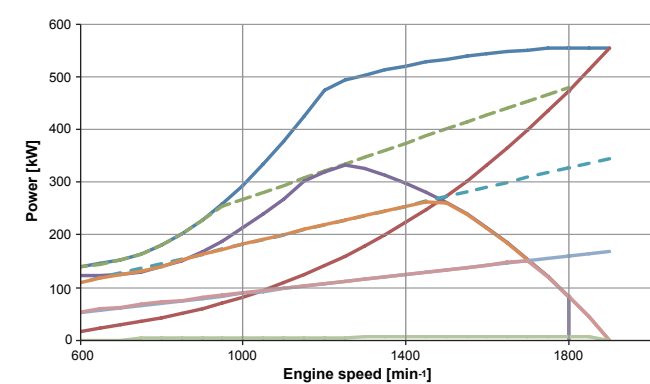
Lower Down Time

Easier Routine Inspection, Easier Maintenance.

- Large inspection windows on the side of the block allow in-site replacement of pistons.
- Full mechanical engine management avoids the chance of delicate and expensive electronics failing in hot, marine engine room conditions.
- 500 hours service interval.
- Individual cylinder heads for each cylinder.



High capacity front PTO



YANMAR original marine gear that can be adapted to a wide range of applications

YANMAR provides our original gearbox, which enables us to supply total marine engineering & servicing to customers!

High-Performance Marine Gear

YANMAR's original marine gear is designed to draw out best performance of YANMAR engines.

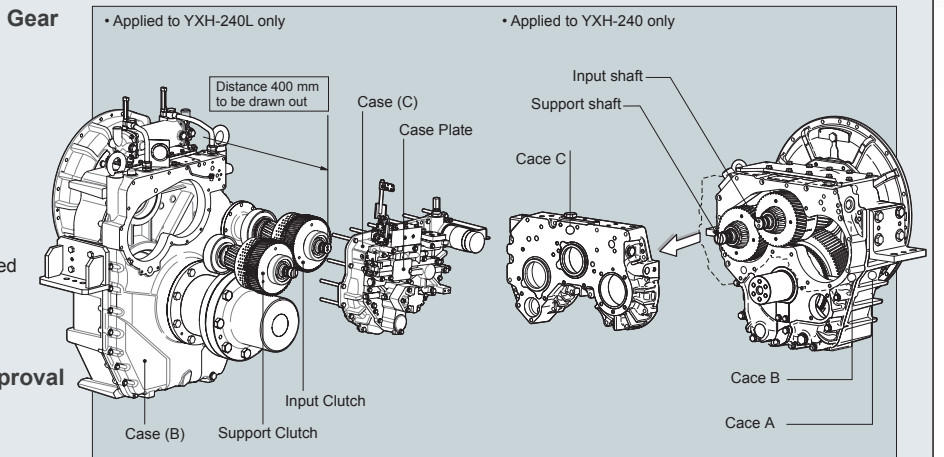
Easier Maintenance

The 3-part structure of the case enables the forward shaft and reverse shaft to be disassembled and reassembled while still installed on the boat. In addition, a cartridge system is now used for the L.O. filter.

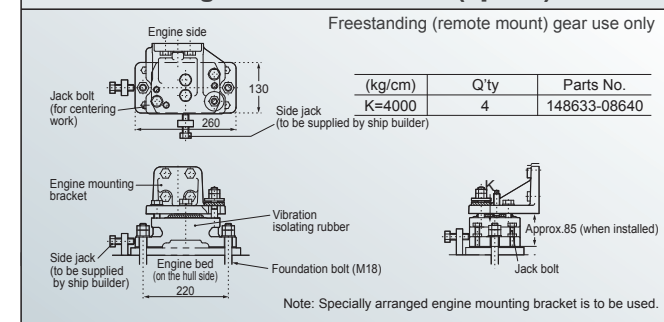
Marine class societies approval

Accessories

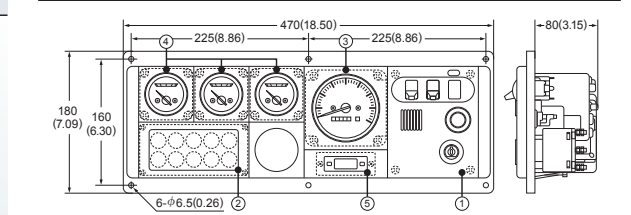
Optional Trailing pump. Propeller shaft half coupling (counter flange) supplied as standard.



YANMAR original rubber mounts (option)

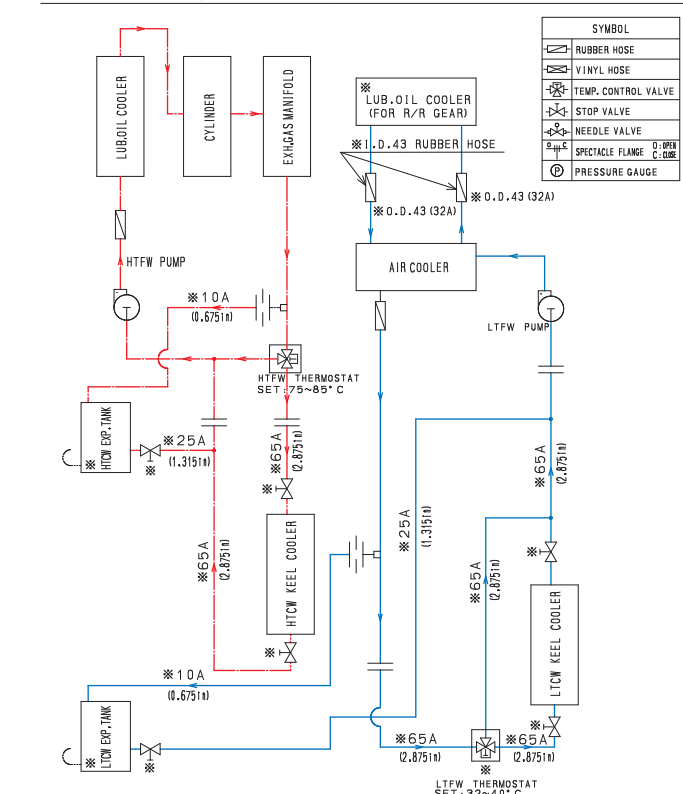


Detail of instrument panel D-type (Unit : mm)



- Switch unit**: Key switch, Alarm buzzer, Alarm buzzer stop switch, Illumination switch
- Alarm lamp unit with Alarm monitor device**: Battery not charging, C.W. high temp., L.O. low pressure, Clutch oil pressure, L.O. filter clogged, C.W.level
- Tachometer unit**: Tachometer with hour meter
- Sub meter unit**: L.O. pressure meter, C.W. temp. meter, Boost meter (Turbo)
- Clock unit**: Clock

PIPING LAYOUT(C.W.SYSTEM)



LTFW LINE: HTFW LINE: REMARK: PIPES & DEVICES MARKED * IN THIS DRAWING ARE NOT SUPPLIED.

HEAT BALANCE

