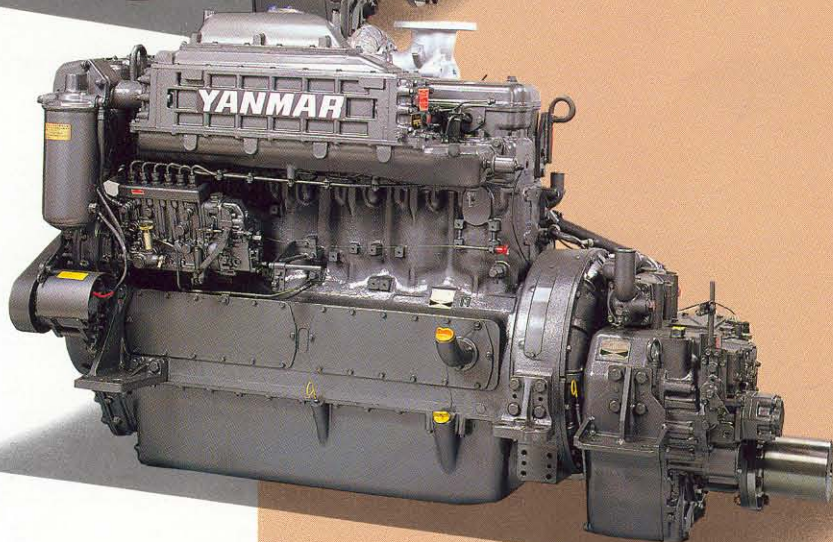
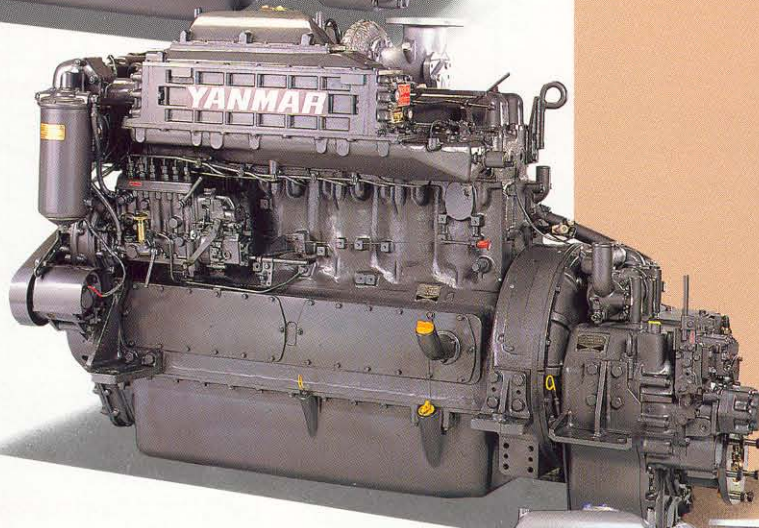
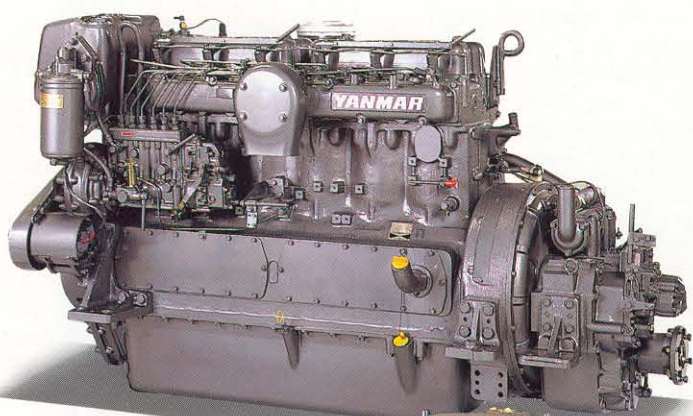


MARINE DIESEL ENGINES

HAE3 series
132~279kW(180~380hp)

YANMAR



Photograph may show optional equipment.

Yanmar's HAE3 Engines Provide Fu

Getting the most boat performance out of the least amount of fuel is one of the top priorities of today's fishing boat owners. Which is why Yanmar has introduced this marine diesel engine, specifically built for fuel-saving, ocean-going service. It is a no-nonsense engine built up of quality components developed from Yanmar's vast experience with marine engines, and the needs of the men who run them.

THRIFTY, NOT THIRSTY!

Direct injection = direct savings... Direct fuel injection helps you win the battle against rising fuel costs. This fuel injection system is partly responsible for the great fuel-saving features of the HA3 series, and accounts for far less consumption than any precombustion types. **and direct starting.** Easy starting is another bonus point

scored by the direct injection system. **Effective cooling = efficient combustion.**

Maintenance of a constant high temperature by the fresh water cooling system is one of the secrets to the peak combustion characteristics of these engines. It also chops down on lube oil costs and keeps them low, even with long usage.

ALL-SPEED STABILITY!

Constant temp. cooling = constant performance.

The fresh water high temperature cooling also means you get smoother performance levels at all speeds, especially in low-load conditions. After starting, the ideal temperature for combustion is attained quickly and maintained by thermostatic control.

RELIABLE AND DURABLE!

Clean cooling = clear advantages. Another tremendous advantage of

this fresh water cooling system is that it reduces thermal wear and stress on cylinder liners and piston rings, prevents corrosion, reduces calcium deposits and makes valuable contributions to the reliability of the engine. Added to this efficient system is an internal oil jet cooling system acting on inner piston walls maintaining critical tolerances. One more way Yanmar increases durability.

Low vibration = less wear.

The minimal vibration of these engines has been achieved through the use of light-weight moving parts and precise balancing, making the machines more durable and less wear prone. Critical components such as hard working rotating parts, valve trains and combustion chambers are made of special high grade alloys that have proven to be most durable for high speed engines.

ENGINE SPECIFICATIONS

Model	6HAE3 (with marine gear)	6HAME3 (without marine gear)	6HA-HTE3 (with marine gear)	6HAM-HTE3 (without marine gear)	6HA-DTE3 (with marine gear)	6HAM-DTE3 (without marine gear)	
Type	4-cycle, vertical, naturally aspirated diesel engine		4-cycle, vertical, turbo-charged diesel engine				
Number of cylinders	6 in-line						
Bore × stroke	mm(in.) 130 × 150 (5.12 × 5.91)						
Displacement	lit.(cu.in.) 11.946 (729)						
Output	Rated	132 (180) / 2,100	137 (186) / 2,100	199 (270) / 2,100	204 (278) / 2,100	235 (320) / 2,100	243 (330) / 2,100
kw (hp) / rpm	Max.	162 (220) / 2,170	167 (227) / 2,170	235 (320) / 2,170	243 (330) / 2,170	272 (370) / 2,170	279 (380) / 2,170
Fuel consumption		245 gr / kw-hr	238 gr / kw-hr	231 gr / kw-hr	224 gr / kw-hr	217 gr / kw-hr	210 gr / kw-hr
Direction of rotation (crankshaft)	Counterclockwise viewed from stern						
Combustion system	Direct injection						
Cooling system	Fresh water cooling with sea water & fresh water pumps						
Lubricating system	Forced lubrication with gear pump						
Starting system	Electric starting motor (DC 24V)						
Dry weight (kg)	1,375 (with YX-71)	1,145	1,495 (with YX-90)	1,230	1,570 (with YX-120)	1,250	

MARINE GEAR SPECIFICATIONS

for 6HAE3

Model	YX-71				MGN-46BL	
Type	Hydraulic multi-disc clutch wet type					
Reduction ratio (forward)	2.07	2.58	2.91	3.53	3.90	4.42
Propeller shaft speed (at rated)	1,014	814	722	595	538	475
Direction of rotation (prop. shaft)	Clockwise viewed from stern					
Dry weight (kg)	230				275	

for 6HA-HTE3

Model	YX-90				YX-120L	
Type	Hydraulic multi-disc clutch wet type					
Reduction ratio (forward)	2.06	2.52	2.96	3.52	4.00	4.59
Propeller shaft speed (at rated)	1,019	833	709	597	525	458
Direction of rotation (prop. shaft)	Clockwise viewed from stern					
Dry weight (kg)	265				400	

for 6HA-DTE3

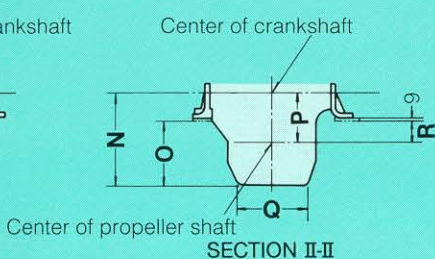
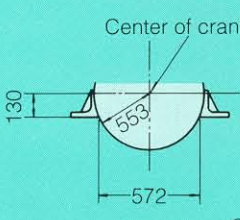
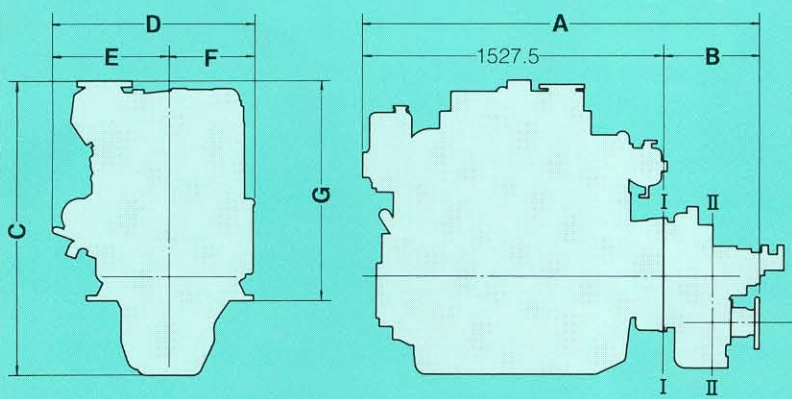
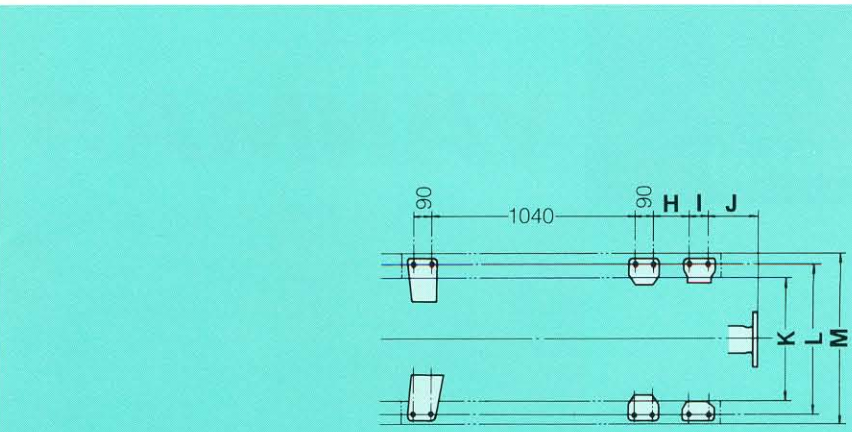
Model	YX-120				YX-120L	
Type	Hydraulic multi-disc clutch wet type					
Reduction ratio (forward)	2.03	2.57	3.04	3.55	4.00	4.59
Propeller shaft speed (at rated)	1,034	817	691	592	525	458
Direction of rotation (prop. shaft)	Clockwise viewed from stern					
Dry weight (kg)	320				400	

Fuel-Saving Formulas for Fishermen

DIMENSIONS

Unit:mm

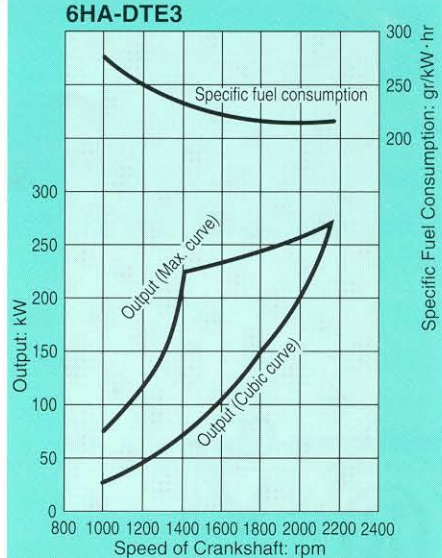
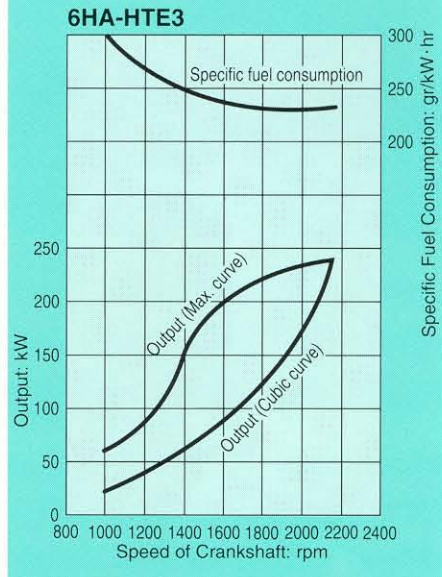
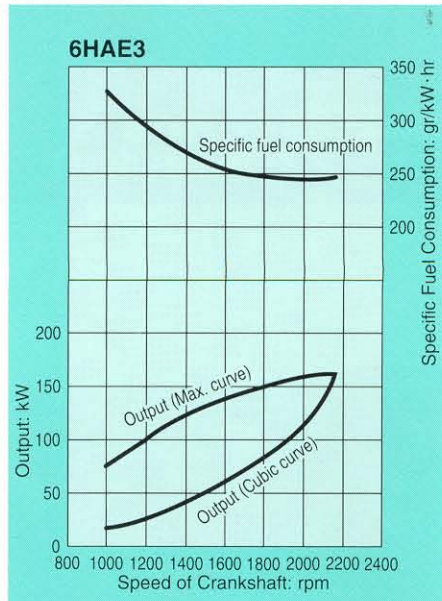
PERFORMANCE CURVES



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
6HAE3	1527.5	-	1097	885	436	449	846	-	-	-	-	-	-	-	-	-	-	-
6HAE3 × YX71	1925.5	398	1097	885	436	449	846	151.5	-	268	580	700	780	350	211	179	282	40
6HAE3 × MGN46BL	1904	375.5	1156	885	436	449	846	110	90	199	530	700	780	440	301	214	420	75

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
6HAM-HTE3	1527.5	-	1233	970	480	490	982	-	-	-	-	-	-	-	-	-	-	-
6HA-MTE3 × YX90	1941.5	414	1233	970	480	490	982	124.5	90	221	580	700	780	380	241	198	300	59
6HA-HTE3 × YX120L	1981.5	454	1362	970	480	490	982	145.5	120	210	580	700	780	510	371	258	350	119

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
6HAM-DTE3	1527.5	-	1233	970	480	490	982	-	-	-	-	-	-	-	-	-	-	-
6HA-DTE3 × YX120	1947.5	420	1250	970	480	490	982	134.5	120	187	580	700	780	398	259	208	317	69
6HA-DTE3 × YX120L	1981.5	454	1362	970	480	490	982	145.5	120	210	580	700	780	510	371	258	350	119



ACCESSORIES

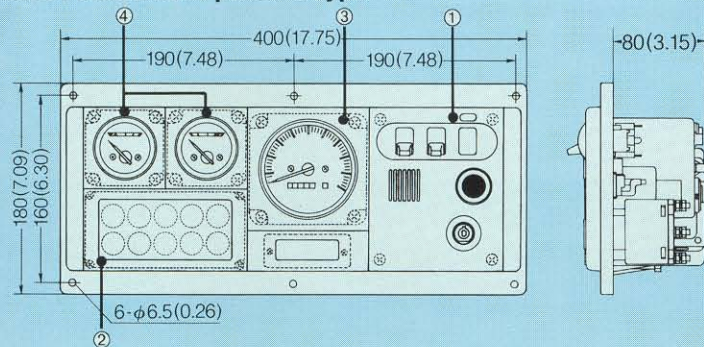
Remarks: ● Standard △ Optional — Not available

Item	Name of accessories	Q'ty	6HAE3	6HA-HTE3	6HA-DTE3	Item	Name of accessories	Q'ty	6HAE3	6HA-HTE3	6HA-DTE3	
Installation	Installation plate for wooden boat	2	△	△	△	Cooling system	Raw water pipe	1	△	△	△	
	Adjusting shim for engine	1 set	△	△	△		Electric device	Battery switch	1	△	△	△
	Adjusting shim for marine gear	1 set	△	△	△			Charging Alternator	1	●	●	●
	Installation bolt kit	1 set	△	△	△			Starting motor (1-pole type)	1 set	●	●	●
	Jack bolt	1 set	△	△	△			Starting motor w/harness (2-pole type)	1 set	△	△	△
	Chock liner, bolt & nut for steel boat	1 set	△	△	△			Battery	1 set	△	△	△
	B-type V-pully for front P.T.O	1 set	△	△	△			Remote control	Control head (2-handle type)	1	△	△
Air	Exhaust gas pipe	1	△	△	△	Control head (1-handle type)	1		△	△	△	
	Breather hose with fittings	1 set	●	●	●	Push-pull cable (- 10m)	2		△	△	△	
	Exh. flexible joint (T/C out)	1	△	●	●	Push-pull cable (12m ~ 20m)	2		△	△	△	
	Intake air filter	1	—	●	●	Wireharness (4m x Q'ty)			△	△	△	
	Exh. gas silencer	1	△	△	△	Instrument panel for wheelhouse (D-type)	Instrument panel for wheelhouse (D-type)		1	●	●	●
	Engine room ventilator	1 set	△	△	△		Dual type instrument panel (C-type)		1	△	△	△
	Fuel oil	Drain separator	1	●	●		●		Connection wireharness for dual panel	1	△	△
Duplex type fuel filter (mounted on eng.)		1	△	△	△		Engine panel (mounted on eng.)		1	△	△	△
Fuel sediment filter		1	△	△	△		Emergency stop push button with solenoid		1	△	△	△
Fuel oil pipe		1	△	△	△		Overspeed relay	1	△	△	△	
Lubrication oil	Evacuation hand pump	1	●	●	●	Others	Half coupling (rough bore type)	1	●	●	●	
	Duplex type oil filter (mounted on eng.)	1	△	△	△		Standard spare parts	1	●	●	●	
Cooling system	Kingston cock	1	△	△	△		Standard tool kit	1	●	●	●	
	Kingston valve	1	△	△	△		Operation manual	1	●	●	●	
	Raw water filter (simplex)	1	△	△	△		Parts book for engine	1	△	△	△	
	Bilge pump (electric type)	1	△	△	△		Service manual	1	△	△	△	
	Fresh water sub-tank	1	●	●	●							

INSTRUMENT PANEL CONTAINS FOLLOWING ITEMS

Unit:mm(in.)

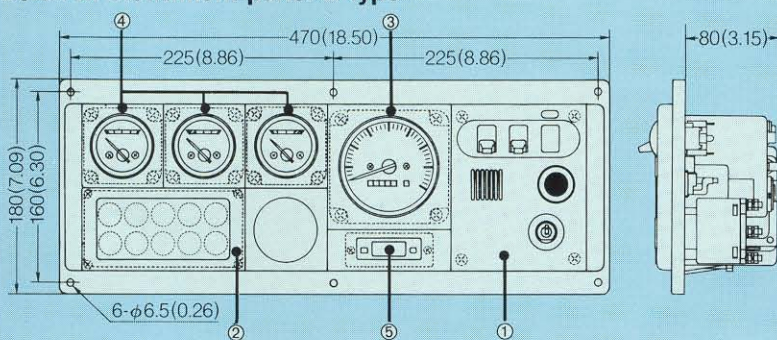
Detail of instrument panel C-type



- ① **Switch unit**
 - Key switch
 - Alarm buzzer
 - Alarm buzzer stop switch
 - Illumination switch
- ② **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

- ③ **Tachometer unit**
 - Tachometer with hour meter
- ④ **Sub meter unit**
 - L.O. pressure meter
 - C.W. temp. meter

Detail of instrument panel D-type



- ① **Switch unit**
 - Key switch
 - Alarm buzzer
 - Alarm buzzer stop switch
 - Illumination switch
- ② **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

- ③ **Tachometer unit**
 - Tachometer with hour meter
- ④ **Sub meter unit**
 - L.O. pressure meter
 - C.W. temp. meter
 - Boost meter (Turbo)
- ⑤ **Clock unit**
 - Clock

Note: All data subject to alteration without notice.

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