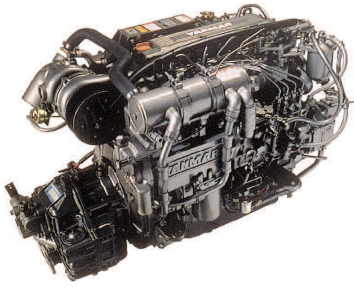


Yanmar type 4LHA-HTP



Configuration	4-stroke, vertical, water cooled diesel engine
Maximum output at crankshaft	* 118 kW (160 mhp) / 3300 rpm ** 113 kW (154 mhp) / 3300 rpm
Continuous rating output at crankshaft	91 kW (124 mhp) / 3100 rpm
Displacement	3.455 L (211 cu in)
Bore x stroke	100 mm x 110 mm (3.94 in x 4.33 in)
Cylinders	4 in line
Combustion system	Direct injection
Aspiration	Turbocharged with intercooler
Starting system	Electrical starting 12 V
Alternator	12 V - 80 A
Cooling system	Fresh water cooling by centrifugal fresh water pump and rubber impeller seawater pump
Lubrication system	Enclosed, forced lubricating system
Direction of rotation (crankshaft)	Counter clockwise viewed from flywheel side
Dry weight without gear	360 kg (794 lbs)
Environmental	EU RCD, BSO II, EMC
Engine mounting	Rubber type flexible mounting

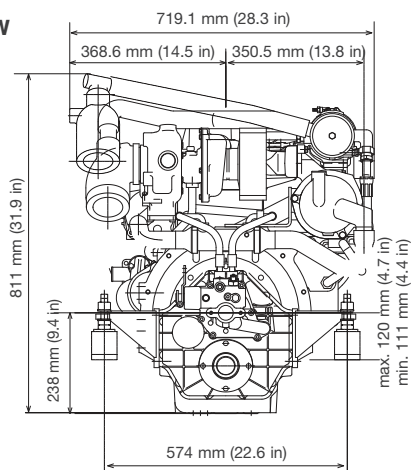
NOTE: Fuel condition: Density at 15°C = 0.842g/cm³; 1 mhp = 1 PS = 0.7355 kW = 0.9863 bhp

* Fuel temperature 25°C at the inlet of the fuel injection pump (ISO 3046-1)

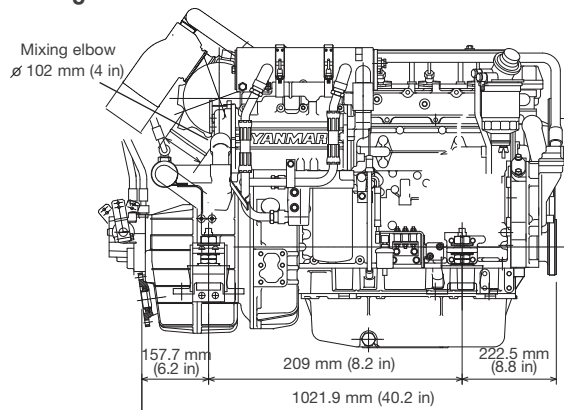
** Fuel temperature 40°C at the inlet of the fuel injection pump (ISO 8665 : 2006)

Dimensions (For detailed line-drawings, please refer to our web-site: www.yanmarmarine.com)

Rear view

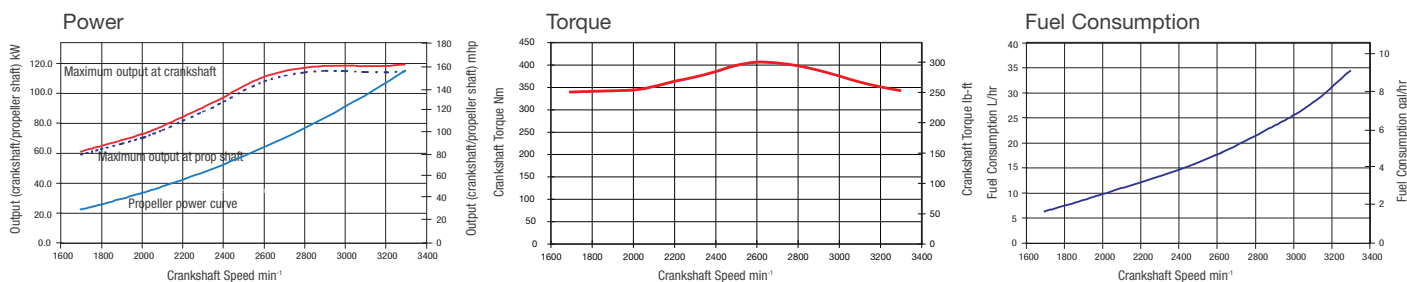


Right side view



4LHA-HTP with ZF45A marine gear

Performance Curves (Output is according ISO 8665 - Output includes +/- 3% tolerance)

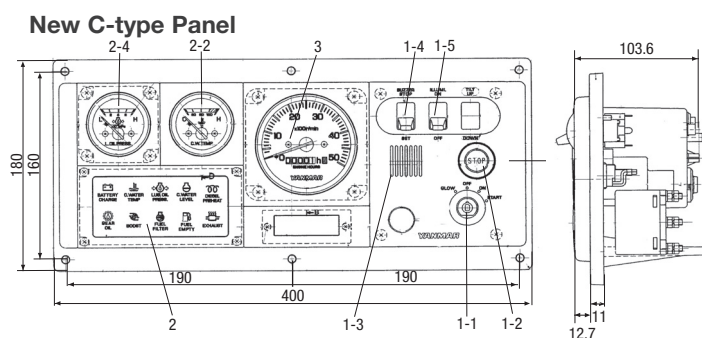


Marine Gears ***

Model	KMH50A				ZF45A		
Type	8° down hydraulic				8° down hydraulic		
Dry weight	44 kg (97 lbs)				28 kg (62 lbs)		
Reduction ratio (fwd/asn)	1.67/1.67	2.13/2.13	2.43/2.43	1.26/1.26	1.51/1.51	2.03/2.03	2.44/2.44
Propeller speed (fwd/asn)	1976/1976	1549/1549	1358/1358	2627/2627	2180/2180	1622/1622	1355/1355
Direction of rotation (propeller shaft - fwd)	Clockwise & counter clockwise viewed from flywheel side				Clockwise & counter clockwise viewed from flywheel side		
Dry weight engine and gear/drive	404 kg (891 lbs)				388 kg (855 lbs)		

*** Other marine gearboxes and configurations available upon request. Contact your local supplier for more information.

Instrument Panels



Function	Type of instrument panel
	New C-type Panel
① Switch unit	
1-1 Key switch for GLOW/OFF/ON/START (4-position switch)	O
1-2 Engine stop switch	O
1-3 Alarm buzzer (C.W. Temp., L.O. Pressure)	O
1-4 Alarm buzzer stop switch	O
1-5 Illumination switch for meters	O
② Alarm lamp unit	
Battery not charging	O
C.W. high temperature	O
L.O. low pressure	O
Boost pressure high (for 4LHA-STP)	O
③ Tachometer with hour meter	O
④ Sub meter unit	O
4-1 L.O. pressure meter	O
4-2 C.W. Temperature meter	O
4-3 Boost meter (turbo)	X
⑤ Quartz clock	X

Note: O = Equipped on panel X = Not equipped on panel

Accessories

Standard Package

- Sensor for various panels
- Exhaust/water mixing elbow (L-type)
- Cooling water hoses
- Alternator 12 V - 80 A

Optional

- Flexible mounts
- Exhaust/water mixing elbow, U-type (high riser)
- New C-type instrument panels
- Dual station Y harness
- Dipstick for opposite side
- Air venting device for cooling water tank

Texts and illustrations are not binding. Yanmar Marine reserves the right to introduce adaptations without prior notification.

4LHA-HTP Version: 2010-04