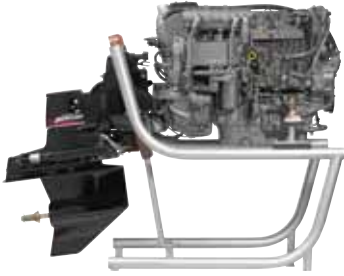


Yanmar type 4LHA-STZP

The Powerful Gem



Configuration	4-stroke, vertical, water cooled diesel engine
Maximum output at crankshaft	* 177 kW (240 mhp) / 3300 rpm ** 169 kW (230 mhp) / 3300 rpm
Continuous rating output at crankshaft	140 kW (190 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 - 2.5 kW
Alternator	12 V - 60 A (80 A optional)
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 stern
Dry weight without sterndrive	385 kg (849 lbs)
Environmental	BSO II, IMO, EMC and RCD compliant
Engine mounting	Rubber type flexible mounting

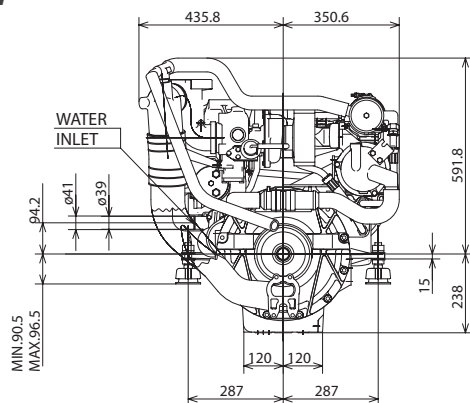
NOTE: Fuel condition: Density at 15°C = 0.842g/cm³; 1 mhp = 1 PS = 0.7355 kW = 0.9863 bhp

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

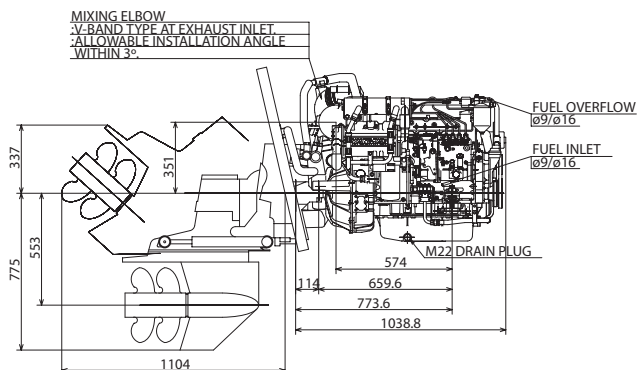
** Fuel temperature 40°C at the inlet of the fuel injection pump (ISO 8665)

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

Rear view

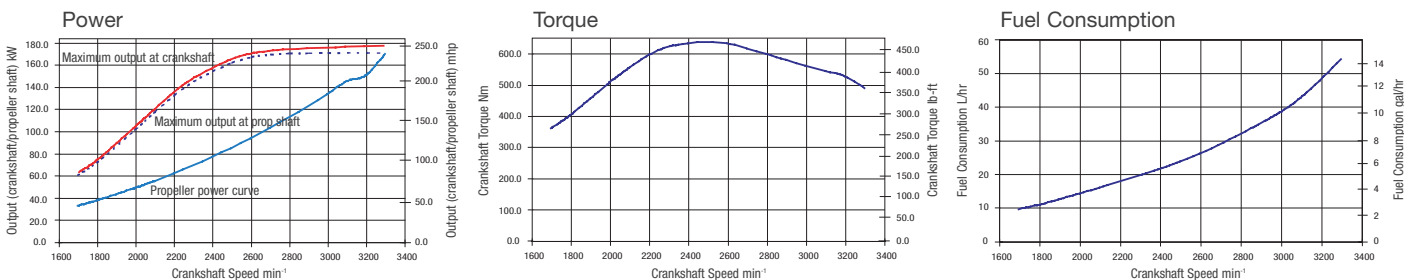


Right side view



4LHA-STZP w/ Bravo2 Sterndrive

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



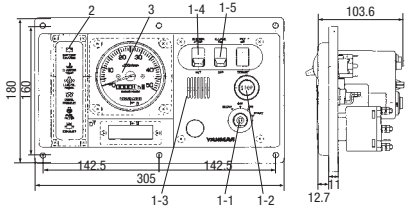
Mer cruiser Sterndrive set Engine ***

Model	Mer cruiser Bravo Sterndrive series							
	Bravo X-1		Bravo X-2				Bravo X-3	
Dry weight	88 kg (184 lbs)		94 kg (207 lbs)				98 kg (216 lbs)	
Reduction ratio (fwd/asn)	1,36/1,36	1,50/1,50	1,65/1,65	1,50/1,50	1,65/1,65	1,81/1,81	2,00/2,00	2,20/2,20
Propeller speed (fwd/asn)	2279/2279	2067/2067	1879/1879	2067/2067	1879/1879	1713/1713	1550/1550	1409/1409
Direction of rotation (propeller shaft - fwd)	Clockwise & counter clockwise viewed from stern		Clockwise & counter clockwise viewed from stern				Clockwise & counter clockwise viewed from stern	
Dry weight engine and sterndrive	473 kg (1043 lbs)		479 kg (1056 lbs)				483 kg (1065 lbs)	
Length engine and sterndrive	2037 mm (80 in)		2124 mm (84 in)				2143 mm (84 in)	

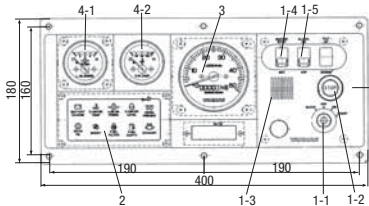
1. Inner and outer transome surface must be parallel within 3mm in area covered by transome plates and remain within transome thickness limits.
2. Area covered by gimbal housing assembly must be flat to within 1.6mm.
3. Area covered by inner transome plate must be flat to within 3.2mm.
4. Transome angle: 13° to 16°

Instrument Panels

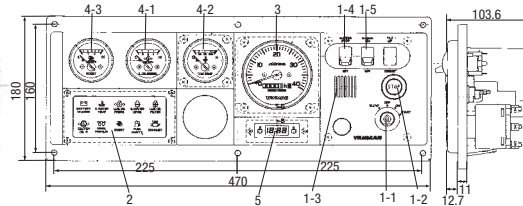
New B-type Panel



New C-type Panel



New D-type Panel



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

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

Accessories

Standard Package

- Standard Package
- Sensor for New B-type, New C-type or New D-type instrument panel
- Dry exhaust mixing elbow, U-type (high riser)
- Flexible mounts

Optional

- Water separator
- Analog (New B-type, New C-type and New D-type) instrument panels
- Lub oil evacuation pump
- Remote Oil filter (Oppiste side)
- 12V/80A alternator (instead of 60A)

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